

Agenda
Reef Fish Management Committee

Gulf of Mexico Fishery Management Council

Grand Hotel Marriott
Azalea Ballroom
Point Clear, Alabama

Monday, January 26, 2015 – 1:30 p.m. – 5:30 p.m.
Tuesday, January 27, 2015 – 8:30 a.m. – 5:30 p.m.

- I. Adoption of Agenda (**Tab B, No. 1**) – Greene
- II. Approval of Minutes (**Tab B, No. 2**) – Greene
- III. Action Guide and Next Steps (**Tab B, No. 3**)
- IV. Red Snapper Update Assessment (**Tab B, No. 14**) - Calay
 - a. SSC recommendations (**Tab B, No. 4**) – Patterson
 - b. ACL/ACT control rule recommendations (**Tab B, No. 5a,b**) - Atran
 - c. Committee recommendations – Greene
- V. Reevaluation of Gag OFL and ABC for 2015-16
 - a. SSC recommendations (**Tab B, No. 4**) – Patterson
 - b. ACL/ACT control rule recommendations (**Tab B, No. 6a,b**) - Atran
 - c. Committee recommendations – Greene
- VI. Draft Framework Action – Greater Amberjack (**Tab B, No. 7**)
 - a. SSC recommendations (**Tab B, No. 4**) – Patterson
 - b. Committee recommendations on draft Framework Action – Froeschke/Greene
- VII. Draft Amendment 39 – Red Snapper Recreational Regional Management (**Tab B, No. 8**) – Lasseter
 - a. MAFMC presentation on summer flounder management (**Tab B, No. 9**) – Dancy
 - b. Committee recommendations – Greene
- VIII. Revised Public Hearing Draft Amendment 28 – Red Snapper Allocation (**Tab B, No. 10**) – Diagne
- IX. Report of the Ad Hoc For-hire Red Snapper AP (**Tab B, No. 11**) – Diagne
- X. Final Action – Framework Action to Adjust Recreational For-Hire Red Snapper Management Measures – Atran
 - a. For-hire red snapper bag limit (**Tab B, No. 12a**)
 - b. For-hire red snapper split season (**Tab B, No.12b**)
 - c. Codified text for framework action (**Tab B, No.12c**)
 - d. Committee recommendations – Greene

- XI. Options Paper – Update Minimum Stock Size Threshold for Reef Fish Stocks with Low Natural Mortality (**Tab B, No. 13**) – Atran
- XII. Red Snapper Poaching by Mexican Lanchas – Brand
- XIII. Other Reef Fish SSC Summary (**Tab B, No. 4**) – Patterson Atran
 - a. Progress report on mutton snapper update assessment
 - b. Reorganization of SSCs
 - c. Review of SEDAR assessment schedule
 - d. Discussion of alternative red snapper MSY proxies
- XIV. Other Business – Greene

Members:

John Greene, Chair
Camp Matens, V. Chair
Doug Boyd
Roy Crabtree/Steve Branstetter
Jamie Miller/Dale Diaz
Randy Pausina/Myron Fischer
Robin Riechers/Lance Robinson
David Walker
Nick Wiley/Martha Bademan
Roy Williams

Staff: Steven Atran/Carrie Simmons

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

REEF FISH MANAGEMENT COMMITTEE

Battle House Renaissance Mobile Mobile, Alabama

October 21, 2014

VOTING MEMBERS

Robin Riechers Texas
Kevin Anson (designee for Chris Blankenship) Alabama
Martha Bademan (designee for Nick Wiley) Florida
Roy Crabtree NMFS, SERO, St. Petersburg, Florida
Pamela Dana Florida
Dale Diaz (designee for Jamie Miller) Mississippi
Myron Fischer (designee for Randy Pausina) Louisiana
John Greene Alabama
Campo Matens Louisiana
Harlon Pearce Louisiana

NON-VOTING MEMBERS

Leann Bosarge Mississippi
Doug Boyd Texas
Jason Brand USCG
Dave Donaldson GSMFC
Corky Perret Mississippi
John Sanchez Florida
Greg Stunz Texas
David Walker Alabama
Roy Williams Florida

STAFF

Stephen Atran Population Dynamics Statistician
Assane Diagne Economist
John Froeschke Fishery Biologist
Doug Gregory Executive Director
Beth Hager Financial Assistant/IT Coordinator
Ava Lasseter Anthropologist
Mara Levy NOAA General Counsel
Emily Muehlstein Fisheries Outreach Specialist
Charlene Ponce Public Information Officer
Ryan Rindone Fishery Biologist/SEDAR Liaison
Charlotte Schiaffo Research & Human Resource Librarian
Carrie Simmons Deputy Executive Director

OTHER PARTICIPANTS

1 Pam Anderson Panama City, FL
2 Luiz Barbieri FL
3 Jeff Barger Ocean Conservancy, Austin, TX
4 Jane Black
5 Harry Blanchet
6 Ellen Bolen Ocean Conservancy
7 Randy Boggs Orange Beach, AL
8 Steve Branstetter NMFS
9 Eric Brazer Reef Fish Shareholder's Alliance
10 J.P. Brooker Ocean Conservancy
11 Gary Bryant Fort Morgan, AL
12 Shane Cantrell Galveston, TX
13 Lara Clark Pew Environmental Group
14 Mike Colts
15 Jason Delacruz Reef Fish Shareholder's Alliance/Gulf Wild
16 Michael Drexler Ocean Conservancy
17 Troy Frady Orange Beach, AL
18 Benny Gallaway LGL Ecological Associates
19 Will Geraghty Naples, FL
20 Sue Gerhart NMFS
21 Chad Hanson Pew Environmental Group
22 Ben Hartig SAFMC
23 Matt Hill MDMR
24 Glenn Hughes American Sportfishing Association
25 Steven Hunsucker Clearwater, FL
26 Larry Huntley
27 Kelly Lucas MDMR
28 Thomas Maruel
29 Paul Mickle MDMR
30 Dennis O'Hern FRN, FL
31 Bart Niquet Panama City, FL
32 Bob Perkins USCG
33 Bonnie Ponwith SEFSC
34 Sean Powers University of South Alabama, AL
35 Lance Robinson TX
36 Bob Shipp AL
37 Tom Steber Orange Beach, AL
38 Phil Steele NMFS
39 Andy Strelcheck NMFS
40 Wayne Werner Alachua, FL
41 Daniel Willard EDF
42 Libby Yranski American Sportfishing Association
43 Bob Zales Panama City, FL
44
45

- - -

46 The Reef Fish Management Committee of the Gulf of Mexico Fishery
47 Management Council convened at the Battle House Renaissance
48 Mobile, Mobile, Alabama, Tuesday morning, October 21, 2014, and

1 was called to order at 8:30 a.m. by Chairman Robin Riechers.
2

3 **ADOPTION OF AGENDA**
4

5 **CHAIRMAN ROBIN RIECHERS:** We are starting here on Tuesday
6 morning, October 21, at 8:30. We are going to have a long day
7 of Reef Fish, as it is scheduled, and so we're going to get
8 started on it on time and endeavor to finish on time, if we can.
9

10 With that, we are going to look at the agenda, Tab B, Number 1,
11 and as I understand it, there are some suggested changes to the
12 agenda, at least one of those being a presentation that was
13 skipped yesterday during Data Collection, due to Mr. Strelcheck
14 being in an airport somewhere. Mr. Anson, do you have a
15 suggestion about where to add that?
16

17 **MR. KEVIN ANSON:** Yes, I do. I would recommend that we add that
18 after present Item Number IV, Estimates of Red Snapper
19 Abundance. That would place it before discussion on the various
20 amendment dealing with red snapper, to give us a little bit
21 better context.
22

23 **CHAIRMAN RIECHERS:** You said after Item IV? I just want to make
24 sure.
25

26 **MR. ANSON:** That's correct.
27

28 **CHAIRMAN RIECHERS:** Okay and could we get -- Andy, do you know
29 the tab number on that, just so that people can reference that
30 quickly? We will get to it before we get there.
31

32 **MR. DALE DIAZ:** I would also recommend that we move Item Number
33 XIII also to after Item Number IV and whichever order you want
34 to do them.
35

36 **CHAIRMAN RIECHERS:** We have had suggestions to move Andy's
37 presentation after Item IV and then we would have Item XIII and
38 we will just make that after Andy's presentation then, if I hear
39 no objections to that. Any other changes to the minutes?
40 Hearing none, do I hear a move for adoption?
41

42 **MR. ANSON:** So moved.
43

44 **CHAIRMAN RIECHERS:** Mr. Anson moves and Mr. Diaz seconds. All
45 those in favor say aye; all those opposed same sign. The agenda
46 passes then as amended. With that, we go to Tab B, Number 2 and
47 looking for any corrections or additions to the minutes.
48

1 **APPROVAL OF MINUTES**

2
3 **MR. ANSON:** I have several. On page 53, line 5, change "type"
4 to "typo". On page 106, line 10, change "its" to "is" and page
5 125, line 24, change "Carter" to "Collier" and on page 132, line
6 47, change "underfished" to "overfished".

7
8 **CHAIRMAN RIECHERS:** Thank you for those changes. With those
9 changes, are there any other changes that anyone has?

10
11 **MS. MARA LEVY:** On page 96, line 1, it should, I believe "ACL is
12 divided into both recreational and commercial sectors" and so we
13 need to add "commercial" in there. Thank you.

14
15 **CHAIRMAN RIECHERS:** Since we have had several changes, do I now
16 hear movement or adoption of the minutes? A motion, please.
17 It's been moved and seconded then that the minutes be adopted as
18 amended. All those in favor say aye; all those opposed same
19 sign. The minutes are passed as amended.

20
21 With that, that takes us into the business of the day and I will
22 reference here the staff guide as far as what we're trying to
23 get done today, the Action Guide and Next Steps. I won't go
24 through those, but certainly reference those as we move through
25 the agenda today to help each of you know what it is we're
26 trying to do on each one of these items, or at least what the
27 end goal is in some respects.

28
29 With that, I think we now turn to Dr. Powers and are going to
30 have a presentation regarding Estimates of Red Snapper Abundance
31 on Alabama's Offshore Reefs and those are in Tabs B, Number 4(a)
32 and (b). Dr. Powers, where are you? He is coming. I see him.

33
34 **ESTIMATES OF RED SNAPPER ABUNDANCE ON ALABAMA'S OFFSHORE REEFS**
35 **PRESENTATION**

36
37 **DR. SEAN POWERS:** Thank you. The version I am going to give you
38 today is slightly different than what's in your briefing book.
39 It is just shorter. It's a shorter version and I didn't think
40 your agenda allowed for the hour-and-a-half or two-hour
41 discussion and presentation that we had at the SSC.

42
43 So, unfortunately, you're going to have to look at the screens a
44 little bit. The slides are just deleted and so if you are
45 looking at your laptop, you just might have to just move ahead a
46 few slides.

47
48 The purpose of this briefing to you is to talk about a different

1 approach that we've adopted in Alabama to looking at the
2 snapper, mainly the snapper resource in the short term, but the
3 reef fish resource off our coast altogether, but we will focus
4 primarily on snapper.

5
6 The program we have has several long-term goals that involve
7 ecosystem-based management of the reef fish complex and also
8 some short-term goals, which is to help the State of Alabama
9 manage their snapper resource and also inform the larger stock
10 assessment.

11
12 It's been referred to a couple of times as an assessment and
13 you'll see on the slide that it's actually referred to as an
14 estimation and we will talk about the difference between those
15 two, but essentially, if you look at the Alabama coast, we have
16 a large network of artificial reefs in pre-permitted zones that
17 really support the red snapper and other reef fish fisheries.

18
19 The coast, we have further divided that zone into two-kilometer-
20 by-two-kilometer grids and so the whole zone, both in the permit
21 zone as well as the outside the permit zone and the unstructured
22 bottom, largely unstructured bottom, is gridded. This allows us
23 to sample in a random manner and extrapolate to the whole coast
24 and that's key, is the knowledge of our universe and what
25 extrapolation we can do.

26
27 At the heart of the survey, we use multiple gears to sample the
28 entire community. We use bottom longlines to get those large
29 red snapper and those sharks that are in the system. We will
30 side scan the whole area, so we have a knowledge of the number
31 of structures in the system and then we'll drop an ROV on those
32 structures and get video counts and then we'll do vertical
33 longline or bandit gear and actually remove animals for the age
34 composition.

35
36 The key here is that we're covering it with multiple gears and
37 we know the number of structures and so our estimation routine
38 is really simple and the design of this is to keep it as simple
39 as possible. Essentially if we know the number of structures
40 and the average density or biomass on those structures, we just
41 multiply the two and we get a standing stock offshore. Age
42 composition also allows us to divide that into the different
43 ages.

44
45 This is kind of a typical type of structure, the typical type of
46 program that we've run in a normal year. We choose several
47 sites randomly and we go in there and map them and then we'll go
48 in there and sample intensively to get the estimates. The type

1 of artificial reefs we see there range quite considerably in
2 size, from large Liberty ships, like you see here on this side
3 scan mosaic, to smaller reef pyramids.

4
5 Alabama also has a lot of natural reef structure. We don't
6 think of it too much, because that reef structure is deeper.
7 Essentially once you get over sixty or seventy meters, you start
8 to get a lot of natural structure and that's going to be
9 important in our estimation, because we're going to estimate
10 biomass on artificial reefs, on natural structure, as well as on
11 the unstructured bottom habitat.

12
13 Again, what we're going to do is we're going to get density
14 estimates, age composition, and we're going to quantify the
15 number of structures and then we're going to multiply the two
16 up. Obviously there's some devil in the details on how we get
17 both of those.

18
19 If we looked at the type of artificial reef structures out there
20 that we find, a large amount of these are prefab pyramids and we
21 have larger structures and also some rock outcroppings and
22 chicken coops or, officially, chicken transport devices. Those
23 actually -- Chicken coops and pyramids probably represent the
24 majority of them.

25
26 Our estimation, again, we're trying to just estimate the number
27 of structures, the biomass on each structure, the age
28 composition on each structure, and essentially add those up. We
29 have classified them into artificial reefs and natural reefs and
30 then unstructured bottom, unstructured bottom in the reef permit
31 zone as well as unstructured bottom outside the reef permit
32 zone. We can solve for biomass or we can solve for number.

33
34 If we look at the number of structures out there and here, we've
35 stratified it by depth and so we have a shallow, mid-depth, and
36 deep zone. The shallow is sixty to 120 feet and 120 to 180 feet
37 is the mid and then plus 180 feet is the deep and you will see a
38 progression that in the shallows we don't have much natural reef
39 occurring. We have a lot of artificial reef that we've brought
40 up there to enhance that area.

41
42 Mid-depth, you start to get a little more natural reef and you
43 can see the percentages there of natural reef increasing from 2
44 percent to 10 percent and then the deep structure, we have
45 almost 98 percent natural reef and so we have a lot of natural
46 reef. That natural reef is generally too far off to be heavily
47 exploited, we believe, and so that biomass in that natural reef
48 zone is going to be very, very important for Alabama when they

1 consider management options.

2
3 Then I should mention that these structures, for example -- So,
4 shallow and mid-depth, you have close to 12,000 structures. We
5 believe that is a low, low estimate for it. We know that 22,000
6 structures out there have been planted and one of the reasons
7 that we think it's low is just because of random selection.

8
9 We really haven't hit those areas that we know have high
10 concentrations of artificial reef, particularly that zone that's
11 circled on the map, which is close to Orange Beach and we know
12 there's a tremendous amount of artificial reef habitat there, a
13 lot more than twenty per grid, but essentially we just have to
14 wait until they get randomly selected. In our scenario, we map
15 about twenty-four a year. With some additional funding, we hope
16 to increase that substantially.

17
18 Again, we side scan and we drop the ROV and we can count fish on
19 the ROV and there was a lot of discussion of how we do that at
20 the SSC meeting and there's a workshop about ROV methodology and
21 so that's very much in a state of flux right now and we're
22 trying to come to a consensus on how we use ROV and video data.

23
24 We use the ROV right now as an index. So imagine, if you will,
25 an Alabama artificial reef and you drop on the artificial reef
26 and there's hundreds of fish scattering all over the place, even
27 on a small structure.

28
29 It's impossible in one frame of an ROV video to get all of
30 those. It's also impossible to do multiple frames, because then
31 you have to worry about double counting fish. What we have
32 decided to do is a depletion-based estimate and essentially you
33 drop the ROV down first and you get an index of abundance and
34 you fish that structure and hopefully heavy enough to remove
35 enough biomass and you know how much biomass you have removed
36 and then you drop the ROV afterwards.

37
38 So that index should change. You should decrease that index and
39 so you know what the percent decline is in your ROV index and
40 you know absolutely what your removals are and so you should be
41 able to solve then for the overall biomass and that's worked a
42 lot of times.

43
44 In a lot of cases, we have such high densities of fish that with
45 just three drops or even six ten-hook vertical longline drops,
46 we simply can't deplete the local population enough to get that
47 depletion index and that's something the SSC talked a lot about,
48 is how we actually use this depletion index, but we have been

1 able to successfully do it quite a few times and usually we get
2 about 8 percent depletion and so we are going to use that 8 or 9
3 percent depletion estimation to correct our removals for the
4 total biomass.

5

6 We multiply biomass removed per structure by the depletion ratio
7 or index and then we multiply it by the number of structures and
8 we can do that in each zone. Non-structured bottom is a little
9 different. We have to decide on the total area of fish. We
10 think that area is defined -- A conservative estimate is that
11 area is defined by a seventy-five-meter circle, which is based
12 on the swim speed of a snapper and the radius to get to our
13 bait. There is a lot of details there, again, that are in the
14 presentation, the longer presentation.

15

16 If we look at where the fish are in our system, we see that red
17 snapper are much more abundant on artificial structures and
18 that's not surprising. We see this in numerous studies,
19 especially when you start thinking of it on a density.

20

21 Natural structures, we still find lots of red snapper, but
22 slightly lower catch per unit efforts and then no structure is
23 very, very small. Now, remember though that very, very small
24 number encompasses a very large area and so that's going to
25 affect it as well and so we're going to essentially take those
26 estimates and then we're going to weight them or bring them up
27 by the overall amount of structure.

28

29 An important point to note is on the artificial structures and
30 some of the natural structures we sampled that we are not
31 sampling the whole population. It looks like we're sampling
32 three to seven-year-olds, primarily, and this is what we catch
33 on those structures, anywhere -- You can see the age comp peaks
34 at about five years and then drops off and so there's two ways
35 to look at that scenario.

36

37 One is it could be heavy fishing mortality driving that
38 population down and second, it could be some ontogenetic
39 movement off the reef or it could be some of both.

40

41 Well, we think a lot of this -- This is vertical longline and we
42 think a lot of it is movement off the reef, because when we go
43 out to our bottom longline surveys, again in the exact same
44 areas, we start to catch those older fish.

45

46 The bottom longline and the vertical longline share a 15/0 hook
47 and so it's not all due to selectivity of the gear, but we find
48 lots of older individuals and this isn't the cryptic biomass

1 that we've talked about in deep waters and whether that
2 possibility exists. This is in the same strata that we're
3 sampling on artificial reef. It's just larger, older fish are
4 off reef more in our system and that's important also, because
5 when you think about where our fishermen target fish, they are
6 targeting it on the artificial reef. They are not fishing off
7 structure like the bottom longline is fished and so these older
8 fish may be less susceptible to the fishery.

9

10 A couple of notes. One is we are primarily estimating biomass
11 of age three to seven, because it's largely based on vertical
12 longline -- We are primarily estimating three to seven-year-
13 olds. We are primarily estimating the number, that age
14 composition, and the number of fish on the artificial reef. We
15 think, and we have clear evidence from the bottom longline, that
16 there is older fish, older age comp, in the population off the
17 reef as well as in the unstructured bottom, both in the permit
18 zone and away. That's all this slide is telling you.

19

20 We also do collect younger fish in the bottom trawl, but they
21 are not included and so we are going to eventually inform our
22 estimation by a recruitment index based on the trawling data or
23 I should say the trawl data and the bottom longline data are in
24 the NMFS assessment now. Two or three years ago, we had enough
25 data and we have included it because we used their same
26 methodology and so those datasets are incorporated in the
27 broader NMFS bottom longline and in the SEAMAP trawl data.

28

29 Again, remember the mode here on the vertical longline was four
30 to five-year olds and here, the mode is more on the order of
31 seven to eight-year olds, but, again, you do see a fairly rapid
32 decline after eight or nine years.

33

34 How do we derive the estimates? Again, our model is simple.
35 It's number of structures times the number of individuals in
36 each age class. We use a range of estimates, because, again, we
37 have -- We are in the beginning stages of this and we have a
38 commitment from the state to continue this for multiple years
39 and we will refine these estimates more and more, but,
40 essentially, we are not going to give a point estimation at this
41 point. We are going to give a range and how we get that range
42 is we look at the standard error associated with our point
43 estimates.

44

45 Our depletion ratio is an uncertainty right now and so we give
46 that a real large range, plus or minus 50 percent, and the
47 number of artificial structures, we are estimating between
48 10,000 and 15,000. We think that is a low, conservative number

1 right now, but until we get those grids with the larger number
2 of structures, we are going to stay with that conservative.

3
4 Number of natural units right now we have kept artificially low
5 as well. Our recent side scan survey came across two or three
6 areas with a tremendous amount of natural reef that really
7 elevated that average number and we felt that, again, because of
8 the relatively low sample size, we wanted to keep that number
9 artificially low and so we have reduced that average. Again,
10 our estimate is primarily focused on three to eight or three to
11 seven-year olds.

12
13 So what is the estimate? Essentially, if you look, this is the
14 SEDAR-31 eastern Gulf estimate for biomass of red snapper from
15 three to eight-year olds and essentially it's -- Alabama
16 accounts for anywhere from 30 to 50 percent of that estimate and
17 so if you look, most of our estimates tend to be in the
18 neighborhood of twelve to seventeen-million pounds. Again, this
19 is three to eight-year olds, but the SEDAR number I'm showing
20 you there is also three to eight-year olds and so a large amount
21 of the red snapper are off of Alabama in the eastern Gulf.

22
23 Again, if we wanted to solve for number of red snapper, we see
24 the same overall pattern, 30 to 50 percent, off those and again,
25 this is a very, very -- We have tried to limit the number of
26 parameters we are estimating. We are only estimating five or
27 six parameters here.

28
29 The graph doesn't show up and so where are the red snapper?
30 This is showing you that -- If you looked at the pie diagrams
31 that you hopefully have on your PowerPoint, it's about 60
32 percent of them are on artificial reefs and 35 percent on
33 natural reefs and the remaining 5 to 10 percent are on the
34 unstructured bottom.

35
36 That's important for us, because what our fishermen target is
37 the artificial reefs and so because those fish in the deeper
38 water, in the natural reef, aren't harvested -- They don't seem
39 as heavy of pressure and the age composition -- It seems to be
40 that the age composition, some of the older fish aren't as
41 available to the fishermen. We think those are both very
42 important things about Alabama and probably other areas that
43 aren't being picked up right now in the model.

44
45 One of the things we're looking at is can we look at within-year
46 trends. I gave you the average composite over the last three
47 years. Can we use this to look at annual patterns?

48

1 Right now, we do not have the sample size. We have increased
2 the sample size dramatically with assistance from the state and
3 the MARFIN in 2014 and 2015 and so we may be able to look at
4 before and after season. That's how our design is set up, but
5 right now, we essentially don't have enough power, resolution,
6 to look at before and after, although we can look at a CPUE
7 index.

8
9 What this shows you is in 2011, 2012, and 2013 -- This is before
10 and after and this is just catch per unit effort and we don't
11 see much of a decrease before and after sampling. In fact, we
12 don't see any statistically-significant increase in the catch
13 per unit effort, although the trend is relatively flat over the
14 years and a lot of that is because we have saturated our
15 vertical longline gear there. Essentially so many snapper are
16 on a lot of our artificial reefs that we are coming close to
17 saturating the gear and so we're talking about adding more hooks
18 to the gear to resolve that.

19
20 That's not to say we don't see a trend in the fishery. What we
21 see is if you look here in the red, in the vertical longline,
22 it's set up the same way, pre and post-season and pre and post-
23 season. In 2012, we did see essentially a year, almost a half-
24 year, decrease in the average age, which makes sense. The
25 fishermen are targeting those fish and so we should see the
26 older fish being replaced by younger fish on the reef.

27
28 The catch per unit effort tells us there's enough fish around to
29 go back and we don't see a before and after season, but we do
30 see, on the vertical longline, in at least 2011 and 2013, we do
31 see a decrease in pre and post-season in the average age and so
32 we do see an element of fishing mortality clearly there.

33
34 The bottom longline is interesting in that the bottom longline
35 shows a steady increase over time in the age, which is obviously
36 what we want to see in the rebuilding plan, is that those older
37 age classes are increasing in relative abundances. So we think
38 that is a very, very positive sign.

39
40 In summary, our simple estimation routines would predict a large
41 fraction of the eastern Gulf red snapper off of Alabama, again,
42 not probably very surprising, 30 to 45 percent. Continue the
43 refinement in the estimates as needed, particularly in the
44 depletion ratio. The SSC talked about this in a fair amount of
45 detail and then integrating these older bottom longline-captured
46 fish into our estimate is one of our goals, too, to see if we --
47 Because they are different gears fishing on different types of
48 structures, we have to look at some more selectivity issues of

1 the two gears and so it has get a little more complex than we
2 hoped for.

3
4 Overall, we think that it's a very useful survey. I talked
5 about, at the beginning, the difference between this is an
6 estimation as opposed to an assessment. This informs the state,
7 and hopefully others, into what the current standing stock is
8 and what the biomass trends are. It does not predict
9 benchmarks. It doesn't tell you what the potential for the
10 stock is the way the NMFS assessment does, but it does tell you
11 what the overall expectation for the standing stock is and it is
12 a data-driven approach to look at changes in pre versus post red
13 snapper season and so very much we think it's complementary and
14 can inform it, although, again, it's an estimation and it's not
15 an assessment. Assessment involves the production of benchmarks
16 and looking at the potential of the stock.

17
18 We also think that the way the SEAMAP in the vertical longline
19 program is increasing that we can use this approach in other
20 states, particularly if you know the number of structures and
21 you can define your universe.

22
23 It might be oil and gas platforms off of Louisiana. I have
24 talked to Gregg and it might be toppled reefs off of his system,
25 but if you know your sampling universe and you know the number
26 of structures, you can get an idea of the universe and then
27 bring this estimation up. When we talked to Clay Porch about
28 this and at the last assessment, he was very, very interested in
29 moving forward with a habitat aspect to the assessment, but,
30 essentially, very few states have enough data to inform that.
31 That's a very -- That would be very spatially explicit and
32 eventually we may become with the data there, but it's an
33 important -- I think everybody recognizes including habitat is
34 the next, one of the next, steps we want to do in the
35 assessment. With that brief overview, I will take any
36 questions.

37
38 **CHAIRMAN RIECHERS:** Any questions for Dr. Powers? I am sure we
39 have some.

40
41 **MR. CORKY PERRET:** Thank you very much for that presentation.
42 My question is relative to the trawl survey for the younger
43 fish. I assume you are trawling in those artificial reef zones
44 and not on the rubble. Otherwise, you would be having a lot of
45 gear problems, but my question is if the trawl sampling is in
46 those artificial reef zones, are you also trawling outside the
47 zones to get a comparison of number of younger fish in the
48 artificial reef zones versus on just the natural bottom?

1
2 **DR. POWERS:** Yes, we have. We have started to do some of our
3 own. We have done inside the artificial reef for the last four
4 years and you are right that we need a side scan map of the area
5 before so we can avoid structures and snags. The SEAMAP takes
6 care of outside the reef permit zone already and so we can --
7 Since we're using the same gear and when the state does it for -
8 - We are using the same vessel and we can compare our numbers to
9 SEAMAP numbers.

10
11 We do see a trend of as you increase the number of structures in
12 an area, it seems to increase the number of snapper recruits in
13 the area, but right now, that R is fairly low. It's 0.4, but
14 it's in an increasing direction and we have seen fluctuations
15 dramatically in our catch per unit effort. Essentially in 2011,
16 we saw low abundances of juveniles and in the other years, we
17 have seen relatively good abundances of juveniles.

18
19 **MR. PERRET:** Well, it came up in 2012 and 2013 and I am looking
20 at that one graph you have, but my interest was artificial reef
21 zone samples versus natural and I think you have answered that.
22 Thank you very much.

23
24 **MR. HARLON PEARCE:** Great presentation, Doctor. How do we
25 relate this to the rebuilding of the stocks? In other words,
26 we're looking at -- I am seeing that this bottom longline shows
27 we're getting a lot more older fish into the system and we're
28 doing things in a better way and can we relate this to where we
29 are in our rebuilding of the red snapper stock, what you've done
30 with this program?

31
32 **DR. POWERS:** I think the data that we gather here can inform,
33 but, like I said, already the Southeast Fisheries Science Center
34 is including our bottom longline and so it's in there from
35 Alabama, but, again, that's a relatively small area in the
36 overall assessment.

37
38 The trick for us is what is the number at these age classes we
39 want and essentially what we want to say is more in the ten-plus
40 age category and more in the -- A few in the twenty-plus
41 category and it seems like we're getting there. The ideal
42 number of that is, again, a little bit different between an
43 assessment and an estimation. The assessment has an idea of
44 what they want to get as far as those number and age classes,
45 but yes, we can relate the two. We can relate the two as far as
46 local spawning stock biomass.

47
48 **MR. JOHNNY GREENE:** Dr. Powers, great presentation. Being from

1 Alabama and seeing you guys around the docks, I can certainly
2 salute you guys for all the hard work you put into it. For
3 those of you that don't know, these guys have really put a lot
4 of effort and time in it and seeing a lot of the guys just
5 running around the docks has been incredible.

6
7 My question is when you were talking about the bottom longline,
8 was it done in comparable areas with the vertical areas or was
9 it done more offshore? Could you expand a little bit on that?
10 Maybe you said it and I missed it, but I was trying to pay
11 attention.

12
13 **DR. POWERS:** Sure, absolutely. If you look at this graph and
14 that's the key thing that we've looked at and NMFS has looked at
15 this idea, is there is this deep offshore kind of cryptic
16 biomass that's not picked up and the consensus right now, from
17 the NMFS bottom longline, is we don't see evidence for that off
18 in the deep waters, but this is actually bottom longline in the
19 exact same area.

20
21 If you look, it's all within a two-kilometer-by-two-kilometer
22 and so when we say it's three to seven-year olds, this isn't
23 necessarily on the artificial reef and then older in that same
24 area off the reef. These aren't fish that we think are
25 necessarily migrating to deeper waters. These are just fish
26 that are probably secure enough in their own self now where they
27 are spending more time off reef, but they are in the local area.

28
29 **MR. DIAZ:** Thank you, Dr. Powers. Great presentation. Whenever
30 you reference your estimation of 30 to 50 percent in the eastern
31 Gulf, where do you draw the line for the eastern Gulf?

32
33 **DR. POWERS:** We draw it where the current stock assessment draws
34 it and so that eastern Gulf, we are basing it on what the SEDAR-
35 31 did, which is, I'm pretty sure, at the River. Is that right,
36 Bonnie, or is it at the Mississippi/Louisiana border? It's at
37 the River.

38
39 **DR. ROY CRABTREE:** Sean, I've gotten emails with all kinds of
40 speculations about your findings and the assessment, but the 30
41 to 45 percent of the eastern Gulf biomass, given the
42 uncertainties of all that, that's not all that -- That doesn't
43 seem out of line or anything, would you say?

44
45 **DR. POWERS:** Yes and I mean Clay -- I don't want to speak for
46 Clay, because Clay has not reviewed that. He only gave me his
47 reaction to it and his reaction was it's not inconsistent with
48 the current stock assessment, as far as the biomass estimate.

1
2 **DR. CRABTREE:** Right and the other thing is in terms of biomass,
3 roughly half of the biomass off of Alabama was on natural bottom
4 and about half of the biomass on artificial reefs and is that
5 roughly correct?
6

7 **DR. POWERS:** Yes and it's probably more like 55 percent
8 artificial reefs and 45 percent natural, but a tremendous amount
9 is on the natural reefs, yes.
10

11 **DR. CRABTREE:** Yes and that's a little -- Based on all the
12 discussions and what I've heard in the past, you would have
13 thought all the fish off of Alabama were on artificial reefs,
14 because that's what everybody talked about, but in fact, there's
15 more natural bottom and more fish on natural bottom than --
16

17 **DR. POWERS:** I agree and I think that was one of the kind of
18 surprising things for off of this as well, is how much natural
19 reef is, because, like I said, everybody -- If you fixate on
20 that catch per unit effort graph and you see that large
21 difference between catch per unit on artificial and natural, you
22 would think, well, all of it is on artificial, but when you take
23 into account the amount of habitat, exactly.
24

25 Like I said, I think a lot of that -- That needs to be taken in
26 both counts. It was surprising, but also, if you talk to the
27 fishermen, I mean they are fishing off the artificial reefs.
28 They go to the natural reefs for other ways and so it would be
29 great, once we get more power in our sampling design, to
30 actually estimate the depletion or the F in the natural versus
31 the artificial.
32

33 **CHAIRMAN RIECHERS:** Any other questions?
34

35 **MR. BEN HARTIG:** This is an intriguing study and how do you fund
36 this?
37

38 **DR. POWERS:** I fund it from multiple sources. Right now, the
39 primary funding comes from Sportfish Restoration, with
40 additional funding from MARFIN, the Marine Fisheries Initiative,
41 out of the Southeast Fisheries.
42

43 **DR. GREGG STUNZ:** Sean, I've got a question for you and it
44 wasn't quite clear in the way that you explained it. So when
45 you look at a natural structure -- So you are weighting that for
46 the overall volume of the structure, because I saw like in your
47 summary, you say, for example, there is thirty-five fish per
48 like 750 cubic meters and so that's -- I am trying to figure out

1 how you got at that number.

2
3 **DR. POWERS:** So our natural reef is different than -- I don't
4 know if it's different, but it occurs in discreet patches,
5 discreet outcroppings, that you can actually count the number of
6 units.

7
8 Right now, one of the limitations of our model is we're assuming
9 all natural reef is the same, every unit of natural reef is the
10 same, every unit of artificial reef is the same. In reality,
11 obviously we have large structures and we have small structures
12 and so it's going to be -- It's going to fit a biomass by area
13 relationship, but we just, right now, for simplicity, we are
14 just keeping it per unit.

15
16 **DR. STUNZ:** Right and so that's what I thought. Then you're
17 saying that this is pretty conservative then in what you're
18 looking at. In other words, I am looking at maybe there is --
19 If you're saying there's thirty-five per natural, but 111 per
20 artificial, that's a big difference, when in reality there's
21 probably a lot more there, but you're just not capturing it.

22
23 **DR. POWERS:** Correct and right now we're keeping it artificially
24 low, for example, because we know that there is -- If you use
25 just the nominal average off natural reef, it would be a much,
26 much higher number of units and we think that's because we hit
27 two or three grids with a tremendous amount and that's not
28 representative.

29
30 The same thing with what we talked about with the artificial
31 reef, is that it's not representative, because we don't think we
32 hit those high areas, but that's a pitfall of random selection,
33 but obviously the advantage is we can extrapolate them.

34
35 **DR. STUNZ:** One more quick question, Sean. I am trying to
36 remember and it was like around thirty-something-thousand
37 structures that you know about and how good is that number? Is
38 there maybe 40,000 or is there less or --

39
40 **DR. POWERS:** We think the upper bounds is 22,000. I mean Marine
41 Resources has a general idea of how many they have permitted
42 over time. Right now, our average -- We are estimating that
43 it's 12,000. Now, if they put 22,000 structures out there and
44 they have lost some to hurricanes and some have been buried and
45 so we think that the number, the real number, is probably
46 between 12,000 and 22,000, but it's essentially until we get
47 more grids resolved. Dude, you miss the SSC, don't you?

48

1 **DR. STUNZ:** I know. I just miss it and I just can't get enough,
2 but actually, I was talking and I should have clarified my
3 question. On natural reefs and how confident you are you
4 captured all the natural reefs that are out there. I guess
5 that's what I'm --
6

7 **DR. POWERS:** Not very. Not yet. We have lots more grids and we
8 think that there's a lot more natural structure out there than
9 we thought. If you talk to the fishermen, that depth contour is
10 known to have natural structure, but it's just -- We didn't
11 understand how laterally impressive that feature was. We knew
12 that it kind of went along that isobath, but I think the idea of
13 how broad that area is has been surprising.
14

15 **CHAIRMAN RIECHERS:** Any other questions of Dr. Powers before we
16 move on to the SSC report? All right. Thank you, Dr. Powers.
17 I assume you're going to be around a little bit today in case we
18 need you back up for any questions? Thank you. Who is going to
19 be our SSC representative? Luiz. Okay. I noticed that Dr.
20 Shipp has snuck in the room and we are glad to be in your home
21 and welcome to our meeting again. Obviously Dr. Shipp has just
22 moved off the Council from another nine-year appointment with
23 the Council, but obviously still enjoys coming to hear us and
24 talk and I assume he's going to visit with us some later
25 tomorrow. Thank you, Dr. Shipp, for being here and welcome. Uh
26 oh. Corky is going to say something to Dr. Shipp. Bob, I am
27 sorry about this, whatever it is.
28

29 **MR. PERRET:** Hello, Dr. Shipp, but we have another former
30 Council member that was in the room a little earlier. Jane, are
31 you still here? Jane Black represented Louisiana and her last
32 meeting was in 1993 and she was here a while ago. She must have
33 found it more interesting outside, but I just wanted to say that
34 she was also here, but thank you, Robin.
35

36 **CHAIRMAN RIECHERS:** Go ahead, Luiz.
37

38 **SSC COMMENTS**

39
40 **DR. LUIZ BARBIERI:** Thank you, Mr. Chairman. The SSC discussed
41 this presentation and Sean explained earlier that he gave a
42 longer presentation, a more detailed presentation, to the SSC
43 and we had a lot of discussion about it. A couple of points I
44 want to bring up is this has a potential to provide some
45 independent estimates there of biomass and abundance off of
46 Alabama and it's very promising in that way, but it still needs
47 some fine-tuning.
48

1 Sean, during his presentation this morning, outlined some of
2 those issues that he is still working with. For all of us who
3 have been in fisheries research for most of our careers, you
4 know that work like this evolves over time and it takes some
5 time for you to sort of fine tune and adjust things to the point
6 where you are happy with the methodology and you are happy with
7 the numbers, but obviously the methodology has a lot of promise.

8
9 The main SSC concern centered around then application of the
10 depletion ratio and without going too much into the weeds,
11 because Sean already discussed with you some of his own
12 questions and issues regarding the depletion ratios that were
13 applied, one is that application of those depletion ratios
14 really requires or assumes closed populations, which in this
15 case there might be indication of some movement of fish in and
16 out of those reefs.

17
18 If you remember when Sean mentioned that during the before and
19 after sometimes he would get different numbers with large
20 numbers during the second survey and so there are some
21 correction factors there that still need to be factored in.

22
23 Another thing that the SSC discussed is that, given the
24 different sizes and configurations of reefs that were being
25 surveyed or that the estimates were expanded to, you really need
26 to have a more specific depletion estimate that applies to
27 specific sampling events and specific years and specific reef
28 types.

29
30 Another concern was comparing the numbers and the biomass
31 estimate that comes out of the actual artificial reef when we
32 are looking at some of the age composition and the weights that
33 were being applied were derived from the vertical longline,
34 which, as Sean demonstrated, has a different age composition.

35
36 Since the reefs, the artificial reefs, are actually holding, as
37 estimated, younger fish, there are relatively smaller, and you
38 end up with a correction factor there at this point he is not
39 being able to apply and so overall, I just wanted to point out
40 some of our concerns.

41
42 The SSC, as you know, is just a collection of pinheads and so we
43 really get into excruciating detail and way into the weeds, but
44 despite these comments, we do see credibility in the
45 methodology. We feel that it is consistent with the results of
46 the assessment and it just needs to have more time to mature and
47 for Sean to continue his research and continue refining it and
48 so that completes my presentation, Mr. Chairman.

1 **MR. ANSON:** Thank you, Dr. Barbieri, and I was able to listen to
2 most, if not all, of the discussion that was had during the SSC
3 meeting via webinar and so as Dr. Powers had pointed out, there
4 are certain elements of the research that he's conducting that
5 has been used in the most recent assessments as far as some new
6 indexes and such and certainly that was our desire from the
7 start.

8
9 It was one of the goals that we had, was to get statistically
10 and scientifically reliable data to kind of help move the model
11 along, if you will, and we still see that there's some
12 opportunity in there for at least adding some small parts to
13 effect change in the model and how the model interprets the data
14 and such.

15
16 So one of the things that I talked to Sean about and I think
17 we've talked briefly about is this issue of the selectivity of
18 these ages of the catch and how, as Dr. Powers had mentioned,
19 that most of the fishermen, at least off of Alabama, when they
20 catch red snapper, they are primarily fishing off of artificial
21 reefs and their fishing activities are primarily centered
22 literally above the reef and they don't drift off and get into
23 that halo or into those areas where those older fish are and so
24 that's one other thing that as the SSC looks at this data
25 hopefully and hopefully other states will be able to provide
26 some more data from artificial structures too, but to try to --
27 One other issue in the model is trying to reconcile that
28 fishery-dependent age composition data that's coming for the
29 recreational fishery and trying to realize that there might be
30 some selectivity issues there related to the effort,
31 particularly in the eastern Gulf, and that might have some
32 impact, because you may not see enough of the two to three-year
33 olds coming in because the catch the fishermen are targeting,
34 because of the regulations and the bag limits, they are trying
35 to catch the oldest that they can catch, but then there might be
36 this older segment of the population that just isn't coming in
37 because they don't fish in those areas.

38
39 So it's one of those details that as you get more data,
40 potentially, over a little bit more wider geographically larger
41 area, that maybe you can help kind of resolve that and it might
42 show some benefits in trying to, again, show that there's older
43 fish out there, larger numbers of older fish out there, which is
44 what we've all been trying to shoot for and what the model is
45 trying to shoot for as well. Thank you.

46
47 **DR. BARBIERI:** Yes, undoubtedly. I mean I think that this work
48 shows a lot of potential and it really gives a different

1 perspective than what we've been able to really look at before
2 in terms of data sources going into the assessment. I mean both
3 Sean and I served on the last assessment panel for this last
4 benchmark assessment of red snapper and discussion of the
5 inclusion of this data was really trying to include as much of
6 this information as possible, because it is something that we
7 haven't had in the past and I agree with you that continuing
8 this type of work going forward, not just off of Alabama, but
9 off of some of the other Gulf states, I think would be
10 incredibly beneficial.

11
12 You and I have talked about this and I have been talking to
13 folks in Alabama and in Mississippi and hopefully we can discuss
14 with colleagues in other states as well, to try and take
15 advantage of some of this post-Deepwater Horizon funding
16 opportunities that have come up and since we are working
17 together with NMFS in amongst ourselves in developing these into
18 a coordinated effort across the Gulf that would serve as an
19 additional source of data and so yes, by all means.

20
21 **DR. BONNIE PONWITH:** The point that you raised is an important
22 one and it's been really important to be working with Dr. Powers
23 in preparation for the last stock assessment, to find ways to
24 determine the portions of those data that had matured to the
25 point where they were ready to be incorporated and we did indeed
26 incorporate some of that information into the current stock
27 assessment and, in fact, when it comes to selectivities -- I can
28 double check my facts, but I am almost certain that for the
29 recreational fleet that we did use a dome-shaped selectivity.

30
31 I believe it was only for the bottom longline fishery itself
32 that we used a flat-top selectivity and so even to that point,
33 in the determination of the selectivities, the data bore out
34 that that pattern was the case and Dr. Powers' presentation
35 corroborates that decision and so it's very valuable to have
36 these sources of data come in to either use directly in the
37 assessment or corroborate the assumptions that are used in the
38 assessment.

39
40 **CHAIRMAN RIECHERS:** Any other questions of Luiz? Hearing none,
41 thank you and I assume you're going to be around as well if we
42 need to have you back up?

43
44 **DR. BARBIERI:** Yes, I will be around, Mr. Chairman, and I have
45 some other quick presentations throughout the day. Thank you.

46
47 **CHAIRMAN RIECHERS:** Thank you. With that, and as Andy is
48 getting up, Gregg, would you mind commenting on -- Because I

1 know we were just talking about similar states and other work
2 that's going on and I know we have some work or you have some
3 work going on off of Texas. There may be other folks who may
4 want to also comment on similar work that could be going on in
5 their states, just to update the council on kind of where it
6 stands now and when it may mature enough for us to see those
7 results.

8
9 **DR. STUNZ:** Sure. Our group is working with the Parks and
10 Wildlife Artificial Reef Program to look at artificial reefs off
11 of our region and we're seeing a lot of the similar same
12 patterns that Dr. Powers has shown and we obviously have very
13 different structures that represent quite a bit of challenge and
14 sampling and much larger oil and gas platforms and how do you
15 capture the fish on those in terms of estimating abundance, but
16 we are working hard on that.

17
18 I know the state is doing a little bit of bottom longline and we
19 have some plans to expand that as well and so while we're not
20 quite as far along as Dr. Powers, we are seeing a lot of the
21 same similar trends out in our region.

22
23 **CHAIRMAN RIECHERS:** Any other states want to comment on work
24 they may be doing in that same kind of regard, just to update
25 folks? If not, then we'll turn it over to Andy and sorry for
26 your delay yesterday, but we're glad to have you. For those
27 trying to reference that, it's Tab E-3.

28
29 **PRESENTATION ON MRIP CALIBRATION WORKSHOP SUMMARY**

30
31 **MR. ANDY STRELCHECK:** Great and so I'm going to give a
32 presentation on behalf of Dave Van Voorhees and the Office of
33 Science and Technology. He wasn't able to be here. He's out on
34 the west coast. I was a member of the calibration workshop
35 steering committee and participated in the workshop.

36
37 This presentation was originally designed for the SSC and it was
38 cut back and it wasn't cut back sufficiently and so I'm going to
39 try to breeze through as much as I can and hit the highlights,
40 for your reference, and discuss the implications of the
41 calibration.

42
43 A general outline of the presentation, I will just hit on the
44 terms of reference and the workshop itself involved some
45 background presentations and a lot of analyses related to what
46 changes in the survey design occurred and whether we could
47 determine if those changes affected the estimates.

48

1 Then the main point of the workshop was obviously to recommend
2 methods for calibration and then also develop a transition plan
3 for future MRIP changes to ensure that we can do side-by-side
4 testing and we can transition off of one methodology into
5 another methodology more smoothly than has occurred with this
6 change.

7
8 I will let you guys read the terms of reference on your own
9 time, but essentially I think the most important terms of
10 reference were two and three, which those were essentially the
11 initial determination by this working group as to whether design
12 change effects occurred.

13
14 John Foster of the Office of Science and Technology did a
15 tremendous amount of work and gave several lengthy presentations
16 walking through the changes that were observed and what impact
17 those might have on the estimates for 2013 compared to previous
18 years.

19
20 Based on that and the determination that there was in fact a
21 change and that there was an effect on the estimates, we then
22 keyed in on developing calibration approaches and broke it into
23 subgroups to discuss those calibration approaches and then
24 another subgroup focused in on what I mentioned earlier, which
25 is kind of the transitioning planning of how do you move forward
26 when you have design changes such as this occur.

27
28 Here is a laundry list of people that participated in the
29 workshop. As you can see, there was lots of state personnel.
30 Gulf States Marine Fisheries Commission was represented and NMFS
31 personnel from the Southeast.

32
33 In addition, obviously there were statistical consultants,
34 experts in survey design, that participated in the meeting as
35 well as the Office of Science and Technology, which was
36 responsible for generating the estimates. So a large group of
37 people convened in Charleston to work on the calibration
38 methods.

39
40 Just real briefly, obviously we're here because of the change in
41 the angler intercept survey. I will go through those changes,
42 but this is our main source of catch data dockside that occurs.
43 There is a sampling frame in which port agents go out and they
44 collect data from fishing trips on what is being caught, species
45 being caught, and other basic information that goes into our
46 catch estimation procedures.

47
48 In 2006, we had the National Research Council study that told us

1 that we needed to make changes to our survey and a project team
2 was developed and in 2009, they developed a new sampling method
3 and that was then further pilot tested in North Carolina in 2010
4 and 2011.

5
6 Based on that report and an independent peer review, that
7 methodology was ultimately implemented by the agency in 2013 and
8 so it went through some extensive testing and analysis before a
9 design change was ultimately implemented.

10
11 Important to note what is different, because a lot of the
12 calibration hones in on the change in temporal coverage of the
13 sampling itself. If you recall probably about a year ago, we
14 came to you in August to talk to you about red snapper estimates
15 and we showed you some graphs that I will show you here in a
16 minute that indicated we were picking up a lot more trips later
17 in the day.

18
19 The new survey design establishes blocks of sampling time in
20 which interceptors go out and collect that data and these are
21 six-hour time blocks and we were capturing obviously a lot more
22 trips, especially in the 4:00 to 8:00 P.M. window that
23 previously weren't being captured and there was a variety of
24 reasons.

25
26 It varied across states in terms of the impacts, but there was
27 quotas in terms of the number of intercepts that were conducted
28 at sites and once those quotas were met, then they could stop
29 sampling. There was also flexibility for the port agents to
30 move sites and a lot of those impacted and biased the survey
31 design and so changes were made to address those and ultimately
32 affected obviously our catch estimates moving forward.

33
34 I don't think there's really anything important there, other
35 than to note that this design change did occur in March of 2013.
36 Obviously we saw the changes not only to red snapper, but some
37 other species once those estimates starting coming in in 2013.

38
39 As I mentioned previously during the workshop, there was an
40 extensive amount of analytical work that went into evaluating
41 those design change effects and determining how they influenced
42 the catch estimates and what were the driving factors that were
43 affecting the estimates the most and that temporal coverage of
44 sampling was one of the biggest driving factors that was making
45 changes to the estimates.

46
47 This just gives you a sense of how that changed and so this is
48 off of Alabama, private boat mode, annual estimates from 2010 to

1 2013 and this is the proportion of angler trips that were
2 surveyed in each of those years. You can see in 2013 that over
3 to the right-hand side of that graph now is a lot more trips
4 that are being captured in the survey that previously weren't
5 being captured in the survey and obviously that results in a
6 change in our estimates and statistics and we have to account
7 for that, obviously, in terms of a design change effect and how
8 that then gets calibrated to the estimates back in time.

9
10 I will skip past this, but moving forward with the calibration
11 workshop, the main focus that we honed in on for calibration was
12 where the design change effects were occurring.

13
14 If you take a look at this graph, it just shows kind of the
15 temporal distribution and trips throughout an entire day and
16 there's a peak time period where most of the trips are being
17 intercepted and obviously less trips are intercepted on either
18 side of that peak.

19
20 One of the main assumptions or determinations that we had to
21 make in terms of calibration was how representative was
22 historically the peak sampling time period, which we know we
23 sampled very well, versus peak sampling time period in 2013,
24 which was being sampled as well as those wider time blocks. A
25 lot of the calibration hinges on that middle time period, the
26 middle of the day, when we know we were sampling both the
27 historic data very well as well as the more recent data.

28
29 In terms of where the calibration work landed, we did recognize
30 there was a discontinuity in the time series and that obviously
31 creates the assessment and management difficulties that we've
32 been experiencing.

33
34 We agreed that it wasn't appropriate to compare the estimates
35 from the new survey design to ACLs and management benchmarks
36 based on the old design. We also discussed that in the short
37 term that it may be important to align our estimates with the
38 old methodology, until such time that a long-term time series
39 could be adjusted to the new survey methodology.

40
41 With that said, our goal is for red snapper, with the upcoming
42 assessment, to make those adjustments to the time series
43 calibrated back in time and so the workgroup developed three
44 methodologies.

45
46 We, as I mentioned, broke out into two subgroups and three
47 methodologies were developed. The first two are the focus of
48 short-term work and the last one, the model-based approach, is a

1 longer endeavor that is going to require additional data and
2 information, but it should shed some additional light in terms
3 of the consistency and differences between the calibration
4 approaches.

5
6 The first two, ultimately the workgroup believe that these could
7 be done in a very short timescale and provide results for use in
8 red snapper and other fisheries in the near term. I will skip
9 past this and where we're at now, and I'll talk about this a
10 little bit further, is defining those criteria for the most
11 appropriate method.

12
13 We have produced some results, but we want to make sure that the
14 method that's preferred and used for calibration has been
15 thoroughly vetted and reviewed and it's undergone the scientific
16 review by the consultants and statisticians and then there's
17 been a determination made in terms of a preferred methodology,
18 based on the assumptions that go into the methodologies as well
19 as any other pros and cons or other information that can shed
20 light on the utility of the methodology.

21
22 We also had that North Carolina pilot study that we can use to
23 compare results against and give us a way of validation and
24 evaluation of the methodology and at this point, there is not a
25 preferred method that has been selected.

26
27 We do have the two methods already developed and some iterations
28 of those methods, but it's a work in progress in terms of
29 essentially landing on a preferred option.

30
31 To give you just a quick sense of what the methodologies are,
32 the first one is a simple time block ratio method. Essentially
33 if you look at those last two bullets, this is really just a
34 simple scaler and so you take the total catch estimate for MRIP
35 and divide it by the peak estimate in 2013 and then you revise
36 the time series back in time by taking that scaler and
37 multiplying by the catch estimate during that peak time period.

38
39 If you recall that graph I showed you earlier, where it showed
40 the peak distribution of sampling and landings, that obviously
41 becomes very important in terms of an assumption, that that peak
42 sampling time period is representative of catch estimates
43 currently as well as in the past.

44
45 A little bit more complex method is a method that was developed
46 that essentially takes the time of day, in terms of when
47 sampling occurred, and looks at historically how that sampling
48 was weighted and then applies that weighted sampling to the 2013

1 data and re-estimates the 2013 estimate to come up with
2 essentially a revised estimate and so it's going to back-
3 calculate the 2013 data to a different number and that
4 difference then can be applied to the historical data in order
5 to adjust the landings back in time.

6
7 I will note that at this stage the calibration only calibrates
8 data from 2004 to 2012. 2013 doesn't need to be calibrated,
9 because we were generating estimates on our MRIP at that stage.

10
11 The last approach is a model-based approach and I won't get into
12 detail of that, but this is more of a long-term effort. The
13 group believed that it was important to pursue this, but would
14 need additional data from not only 2013, but 2014 and ultimately
15 to utilize this maybe in the long term for calibrating and so we
16 essentially have set up an interim approach, but would be either
17 Method 1 or 2, or a longer-term approach, which would be Method
18 3, that evolves obviously with more time and data available.

19
20 Then from the transitioning planning standpoint, obviously one
21 of the key considerations is conducting side-by-side comparison
22 testing, to get us out of a situation like we have currently,
23 where we're having to come up with a calibration factor after
24 the fact.

25
26 Ideally, cost permitting and time permitting, we want to develop
27 those side-by-side comparisons and do it before we phase out the
28 old methodology and phase in the new methodology and so that was
29 a strong recommendation from the workgroup proceeding forward.

30
31 Some other kind of key recommendations are obviously we need to
32 do a better job in terms of outreach and education and informing
33 the council and informing managers of these upcoming changes and
34 how they're going to take place and what impact and influence
35 they might have.

36
37 With all of the work that MRIP is doing right now, it's key for
38 us to continue the peer review process and ensure that whatever
39 methods are selected and we move forward with, that those are
40 peer reviewed. If they're calibration methods, obviously we
41 continue to peer review that information until it's approved and
42 then adjust the time series accordingly and make that
43 information available to scientists and managers.

44
45 I will end with kind of where we're at now. The calibration
46 workshop, we are drafting a report and there's a first version
47 of the report circulated among members and that is under review.
48 Science and Technology has developed calibrations for red

1 snapper and red grouper, based on the first two approaches I
2 mentioned. That is currently under review with MRIP consultants
3 and they are evaluating the assumptions and determining a best
4 methodology for proceeding. Once that is selected, then results
5 will be provided for science and management.

6
7 With that said, when you get into Amendment 40, we have at least
8 taken the opportunity to go ahead and, given the preliminary
9 results, calculate the allocations based on the methodologies
10 that have been used to date and at least give you an indication
11 of what the maximum change could be.

12
13 It doesn't necessarily mean it will be the absolute change, but
14 at least it will give you an idea of the directionality of
15 change and the magnitude of the change overall that could occur,
16 but because we don't have a preferred methodology, we can't
17 obviously tell you exactly what the change in the calibration
18 will be at this stage. With that, I will take any questions.

19
20 **MR. PERRET:** Andy, obviously there is a long, long way to go
21 before you are going to be able to -- You or the representative
22 of this group is going to be able to give us any idea of the
23 magnitude of the possible differences by individual species.

24
25 Saying that, I guess the bottom line I know I want to know and
26 probably most people want to know is when will we be at point
27 where we will be able to get some sort of difference or
28 magnitude of difference by species? How far off are we from
29 that?

30
31 **MR. STRELCHECK:** I think we're within just a few weeks for
32 species like red snapper and red grouper. I would say early
33 next year for all the species that are managed by the Gulf
34 Council would be a reasonable timeframe. In terms of that
35 longer term approach and alternative calibration methods, that's
36 probably still farther down the road from that, but with the
37 existing approaches that they're taking a look at now, the next
38 few months.

39
40 **CHAIRMAN RIECHERS:** Andy, given that we have a few weeks for red
41 snapper and then a few more weeks for the other species, there's
42 also at least, and I think Gordon spoke to it last time, some
43 other changes that are going to be ongoing that also might
44 impact those estimates.

45
46 I am not putting you on the spot and if he's the better person
47 to ask, just tell me that, but do you know about those or can
48 you explain when those are going to occur, from a timing

1 perspective, and when we would expect to start seeing that?

2
3 **MR. STRELCHECK:** The major change that would be next would be a
4 change to the effort estimation, the coastal household telephone
5 survey, and how that estimates private recreational angler
6 effort. Timing-wise, I can't speak to when those changes would
7 be implemented.

8
9 We have done four or five pilot studies in various forms for
10 that work and I know, given all the work from this group and
11 prior to it with transitioning planning, that the goal will be
12 to do side-by-side comparison testing and phase that in and so
13 even if it rolls out as early as next year, it won't influence
14 management and science for at least a year or more.

15
16 **MR. PEARCE:** Good presentation, as always, Andy. I guess my
17 question is if we put all of what you just said in a big paper
18 bag and shake it up and dump it out, how will it affect any of
19 our deliberations today? Is anything you said going to be
20 usable in what we're going to be talking about in Reef Fish
21 today?

22
23 **MR. STRELCHECK:** We worked up a slide for consideration during
24 Amendment 40 and I will be happy to walk you through that. In
25 terms of whether it's usable, I think that will be up to you and
26 the council members to decide, but I think it will at least be
27 informative of the directionality of the change and the
28 magnitude of the change and give you some sense of what impact
29 or less of an impact this might have in terms of your preferred
30 alternative as well as other alternatives in the amendment.

31
32 **MR. ANSON:** Thank you, Andy, for the presentation. I just want
33 to make sure I understand when you say best calibration method
34 that you're talking about after it goes through the criteria
35 that's established by the workshop relative to statistical
36 robustness and that type of thing. Is that what you mean by
37 best?

38
39 **MR. STRELCHECK:** Yes and certainly the conversations we had at
40 the workgroup meeting, as well as after the fact, have really
41 focused in on what are the biases and assumptions you have to
42 make with each one of these approaches.

43
44 Method 1 is more of a catch-based approach and Method 2 is more
45 of an effort-based approach. Ultimately, at the end of the day,
46 both methods might be suitable, depending on decisions made, but
47 we want to obviously make sure that these assumptions and biases
48 are rigorously though through and reviewed and ultimately the

1 decision is made based on the merits of those assumptions and
2 biases, first and foremost, before presenting results and people
3 deciding based on just the results and outcome of the
4 calibration.

5
6 **MR. HARTIG:** Andy, thank you and are you seeing the same kind of
7 results in 2014, in the preliminary results from 2014? Do we
8 know that this is continuing as well, the magnitude of the
9 catches in the later timeframes?

10
11 **MR. STRELCHECK:** I have looked at some of the major species,
12 mostly in the Gulf, because we saw increases in estimates in
13 2013 and 2014. For red snapper, the increases were in line with
14 the previous year. Obviously we've had some early closures this
15 year for red grouper and greater amberjack and so I would say
16 yes, for some species, they are continuing.

17
18 **CHAIRMAN RIECHERS:** Any other questions? Hearing none and
19 seeing no hands up, we will move on now to -- It was Number XIII
20 on your item and it's Tab B, Number 19 and Dr. Ponwith.

21
22 **SEFSC COMMENTS ON RED SNAPPER ABUNDANCE GRAPH**
23

24 **DR. PONWITH:** Thank you, Mr. Chairman. If we could get the
25 presentation pulled up and that is Tab B, Number 19. The
26 history behind this is that at the council meeting, during the
27 public testimony, Ms. Thompson, who is a staff person from
28 Congressman Southerland's staff, came and gave testimony and
29 included in her testimony was a slide that was up and, of
30 course, with the three-minute timeframe being so short and some
31 technical difficulties in actually being able to see that slide,
32 because it was quite dark, it made it very, very difficult to
33 have a meaningful conversation about that slide.

34
35 The agreement was that at the close of the session is that we
36 would bring that back up again at this council meeting and talk
37 about that slide itself and our reaction to that and then
38 address any questions that the council had and so that is the
39 purpose of this presentation.

40
41 The materials that I am showing you here have been submitted to
42 the SSC for their briefing book. They went through this
43 presentation.

44
45 Dr. Barbieri gave the presentation at the SSC meeting and they
46 had a conversation about the presentation as well and I believe
47 that Dr. Barbieri, after I give this presentation to you, will
48 come and share with you the reaction of the SSC to the

1 presentation and we thought rather than just including this in
2 the briefing book and going over the reaction that it might be
3 meaningful to walk through these slides with you as well, just
4 to make sure everybody is comfortable with what we're seeing.
5 With that as the introduction, the next slide, please.

6
7 This first slide is the slide that was presented at the public
8 testimony and you will see, I think, that I just bring to your
9 attention the thing that's the most stark and that is at the
10 base of this area chart you will see red and that area of red is
11 very small and the area of blue is quite large.

12
13 This graph depicts the amount of two-plus-year-old fish that are
14 estimated to be in existence relative to the landings of two-
15 plus-old fish in numbers over time and so this was the
16 presentation that was given at the meeting and that's what
17 generated all of the concern.

18
19 So in response to that, the first thing that I would like to do
20 is a second depiction of the data and this is a combination of
21 removals, total removals versus the recreational landings, and
22 these are also of age two-year-old fish and older over time.

23
24 What you will see is that the red is what was depicted in Ms.
25 Thompson's presentation. Again, she was showing the numbers of
26 recreational landings only, but, of course, we know that
27 recreational landings aren't the only removals in the fisheries.
28 We also have removals in the commercial and we have dead
29 discards in bycatch.

30
31 So if you look at this, it's showing just the recreational
32 removals and then it's showing the total removals, so you
33 understand the gap between the two of those. Then if we go to
34 the next slide, what you're seeing is, again, the same slide
35 that shows all of the removals, the recreational, the
36 commercial, the dead discards relative to the total of age-two-
37 plus abundance. Again, the age two-plus abundance is in the
38 blue and the other colors, the green and the red, represent the
39 total removals.

40
41 So you will see that that number is still lower than what you
42 see in the blue, but it's considerably higher than that very
43 thin stripe of red that we saw at the bottom of the original
44 slide and so prior to revising the rebuilding plan, about 25
45 percent of the population abundance, in numbers, was being
46 removed every year.

47
48 Then after the revision of the rebuilding plan and ending

1 overfishing, the number of removals represented around 10 or
2 less than 10 percent of the population being removed each year
3 and so let's go to the next slide.

4
5 This one shifts from presenting the information in numbers to
6 presenting the information in biomass and so what you see here
7 is the red snapper biomass versus the total commercial and
8 recreational landings in biomass and looking at in terms of
9 biomass, you see sort of the black brackets on the left-hand
10 side of the slide.

11
12 Underneath that black bracket, you will see that prior to the
13 revision of the rebuilding plan that somewhere around 25 to 30
14 percent of the population, in terms of biomass, was being
15 removed from the population each year.

16
17 Then to the right of that vertical black line, you will see that
18 after revising that rebuilding plan and ending overfishing that
19 it's around 10 to 15 percent of the population biomass has been
20 removed per year. The thing to note is that the response of the
21 population to those changes in the fisheries management regime
22 is a very stark increase in the population biomass, which is
23 ultimately what we're trying to do. We have ended overfishing
24 and now what we're trying to do is rebuild that biomass so that
25 we're also no longer overfished.

26
27 If we go to the next slide, what we're looking at here is the
28 fraction of fish removed versus the age of two-plus abundance
29 and you see basically two lines that cross one another. The red
30 line is the abundance of two-plus-aged fish and the blue line is
31 the fraction of the fish that are removed and you can see the
32 blue line, the scale for that is over on the right-hand side.
33 We go from that 25 to 30 percent of the fish being removed on an
34 annual basis down to right around 10 or a little less than 10
35 percent being removed and the reaction of the population to that
36 is the red line going up and seeing an increase in the abundance
37 of fishes that are two and older.

38
39 If we go to the next slide, the numbers are small, I know, on
40 the bottom of those columns and what those are, they are the
41 years and these data depict patterns that we're seeing in the
42 years 2000 through 2006 and so it was sort of pre major changes
43 to the plan.

44
45 What you see is indeed we are seeing an increase in the number
46 of two-year-olds in those later years, but, unfortunately, those
47 two-year-olds are not translating to an increase in the number
48 of three-year-old and older going beyond and so basically what

1 we're seeing is those two-year-olds are either dying of natural
2 causes or are being captured by one or another of our fisheries.

3
4 If we go to the next slide, this is the difference between what
5 you are looking at -- That past slide was 2000 to 2006 and this
6 slide is 2007 to 2014, which is a much, much rosier picture and
7 so this is after the modification to the plan, revisions to the
8 rebuilding plan.

9
10 The abundance of your two-plus-year-old red snappers increased
11 from twenty-two million to twenty-nine million fish and the
12 increase of this is obviously -- You can see the number of two-
13 year-olds is stabler going down, but the most notable change in
14 this slide, in contrast to the last one, is the change in the
15 number of three-plus-year-olds. We are seeing gradually more
16 and more of those fish living to three or older going forward.

17
18 If we can go to the next slide, this is just another way of
19 depicting the numbers of fish at age two-plus and so between
20 2000 and 2006, age two and three red snapper accounted for 75
21 percent of the population abundance. I don't want you to get
22 bogged down in all the colors. The main point of this slide is
23 look at the relationship of blue to all the other colors and
24 what that is showing you is the blue are the age two-year-old
25 fish and all the other colors are ages of fish that are older
26 than two.

27
28 What we're seeing is what we want to see, which is a lower
29 proportion of those total fish being two and a higher
30 proportion, progressively, that are older than two. That's a
31 good news picture.

32
33 If we go to the next slide, this is the same type of depiction,
34 but it's showing the numbers of fish at age four and older and
35 so the green area down below are the four-year-olds and the
36 massive numbers of colors above that are five and older. Again,
37 what you're seeing is not much change in the earlier years, but
38 when those regulations went through that were put in place to
39 rebuild this stock, rebuilding is happening. We are seeing a
40 rounding out of the age structure of these fish and this is good
41 news.

42
43 We go to the next slide and it shows the age composition of the
44 stock and the upper panel is the age composition in 2000 and
45 what you will see is the age distribution is heavily skewed to
46 the left side of that graph. It's basically comprised mainly of
47 two-year-olds with a few three to six-year-olds in the family
48 and then as you get out to these older year classes, it's either

1 very nominal numbers of fishes or devoid of representation in
2 those older year classes.

3
4 Then in 2014, sort of the present status, you see a really,
5 really pronounced shift to the right in the contribution of
6 older fish to these numbers, which is very good. Ultimately,
7 our goal, in the lower panel, is the depiction of the age
8 composition we're targeting for in 2032 and that's an even
9 longer stretching out of that age contribution of the older fish
10 in the population and that's the sign, we believe, of a healthy
11 and very sustainable population.

12
13 If we go to the next slide, we can talk about our spawning
14 potential ratio. In 2000 to 2006, we saw basically no change in
15 the SPR of the population. It was rumbling along at a very,
16 very low 4.4 percent and basically that's potentially one
17 disaster away from a very bad and difficult to recover from
18 scenario for this stock.

19
20 It basically represents very low resilience to environmental
21 perturbations and then when you hit 2006, where the rebuilding
22 plan was revised, you are seeing a steady increase to our
23 current state, which is about right around 15 percent. The
24 target that we're aiming for for a fully rebuild stock right now
25 is 26 percent.

26
27 Remember the age composition that I showed you and how back in
28 2000 it was way skewed to the left and so they were really young
29 fish and very few older fish in the population.

30
31 If you go to the next slide, we will talk a little bit about why
32 that matters and so this slide shows egg production of these
33 fish and it's not only just that they're bigger and they are
34 heavier, but the bigger and heavier they are, the more
35 productive they are in terms of egg production and you see some
36 statistics on the top and that is that a five-year-old fish
37 spawns twice as often and produces fifty-eight times more fish
38 than a two-year-old.

39
40 Then to the right, you see another little factoid and that is
41 that a ten-year-old fish spawns 2.5 times as often and almost
42 250 times as many eggs for each of those spawning events as a
43 two-year-old fish does. I think the point of this slide is a
44 fish is not a fish and all these fish are not equal in their
45 contribution to the sustainability and that these older, larger
46 fish are really where your potential and your stability in the
47 population is coming from.

48

1 The last slide here addresses a question that Congressman
2 Southerland put up and it was asking if we could go to a
3 fishery-mortality-driven management regime as opposed to using
4 quotas and the bottom line is that fishing mortality is kind of
5 the root of the management regime right now.

6
7 We are looking at a mortality rate that will produce maximum
8 sustainable yield and then converting that mortality rate into a
9 quota that enables that stock to rebuild and that is the
10 presentation that was provided to the SSC.

11
12 I understand that they had some very lively conversations about
13 the presentation and before I turn the microphone over to Dr.
14 Barbieri to talk a little bit about the SSC's reaction, I just
15 wanted to make sure that we had a time to address any questions
16 that you had on the presentation.

17
18 **MR. GREENE:** Bonnie, thank you for that presentation. Looking
19 at the age composition of stock on that slide, it talks about
20 the 2000 age composition and the 2014 age composition. Well,
21 there was a lot of things changed between the years 2000 and
22 2014 and it shows in this trend.

23
24 What I am concerned about and where I'm trying to go with this
25 is in 2007 and 2008, we had very strict bag limits put in place,
26 as you well know, and the economy suffered and effort offshore
27 went down.

28
29 What I am wondering is being that the fishery has changed as
30 much as it has, where I used to run a lot of long trips and fish
31 in deeper water and catch a lot of those big fish, I am now
32 staying in real close and how is that encompassed in this whole
33 deal?

34
35 **DR. PONWITH:** That's an excellent question and, as you know, we
36 have two main categories of data with lots of subcategories
37 within each of them. One is the fishery-dependent data and
38 those are the data about the fisheries themselves, the
39 recreational fishery, the commercial fishery, the bycatch in
40 each of those, and the bycatch in the shrimp. So we look
41 closely at those as a way to recognize patterns in the way
42 people are fishing and how those may change.

43
44 The second category is the fishery-independent data. Those are
45 the data where we, either on a NOAA ship, chartered ship or
46 cooperative research with the fishing industry, go out and
47 collect data according to a scientific protocol with the
48 objective of depicting the actual status of those fishes in

1 their natural habitats in a way that isn't biased by changes in
2 fishing practices.

3
4 We go out and collect those data the same way every year, so
5 that if there are changes in the stock age structure that we
6 aren't picking up in the commercial and recreational fishery,
7 because of the way they are fishing, we would be able to see
8 that difference in the fishery-independent.

9
10 The way that would look is if the recreational fishery was
11 actually leaving older fish in the water, because they were
12 going back to the same close places, because gas was so high,
13 and fishing on really young fish, what we would see is a stark
14 contrast in the age structure of the fishery-independent
15 relative to the dependent and that would tell us that yes,
16 there's bias in the way the recreational people are fishing and
17 we need to account for that in our status of the stock, so we
18 don't misinterpret that information.

19
20 **MR. PERRET:** Thank you, Bonnie, and just relative to egg
21 production and two-year-old and five-year-old and ten-year-old
22 and so on and so forth and frequency of spawning, what about the
23 viability of the eggs of a ten-year-old versus a two-year-old
24 and that sort of thing? What percentage are viable on these
25 older fish?

26
27 **DR. PONWITH:** So it's not only the raw numbers, but you have hit
28 on a good point and that is the general case, the quality of the
29 eggs in the older fish is higher. They have a higher
30 survivability than in the younger fish and I don't have the
31 statistics off the top of my head. It's actually not -- It's
32 not constrained just to red snapper, but it's a common
33 biological feature of many stocks of fish, is that the younger
34 ones do produce eggs, but the survivability of those into older
35 stages isn't quite as high as the larger fish.

36
37 **MR. ANSON:** Thank you, Dr. Ponwith, for providing the summary
38 and thank you to your staff for putting it together and I think
39 Southeast Regional Office staff also had a hand in it and I
40 appreciate the clarity in the information and I don't see her in
41 the audience, but Ms. Thompson, I appreciate her request in the
42 data, because it does put it in a little bit different light and
43 helps to kind of address these issues or their concerns, but I
44 will have some other comments after Dr. Barbieri speaks to this
45 issue. Thank you.

46
47 **MR. DAVID WALKER:** I am not on your Reef Fish Committee, but I
48 have a question. Bonnie, where you do think that the removal --

1 You talk about the removal rate is just under 10 percent and
2 what do you think is optimum as far as the removal of the
3 abundance, total abundance?
4

5 **DR. PONWITH:** So the removal rate right now is determined by the
6 rebuilding plan and the rebuilding plan has set some goals for
7 where we want to see that stock to be rebuilt to and it is -- I
8 mean if you think about it as a bank account, it's -- By
9 protecting the principle, we are generating more interest and
10 that's kind of the same concept.
11

12 The rebuilding rate we have or the removal rate right now is the
13 rate that is going to generate growth in that biomass that will
14 bring us to the target that we've set as our definition of
15 success in terms of the biomass of this stock and in terms of 10
16 percent, that is not an uncommon removal rate for stocks with
17 this life history.
18

19 If this fish only lived to be ten years old, 10 percent would be
20 a very conservative removal rate, but with an age structure like
21 this fish has, 10 percent is pretty in the ballpark in terms if
22 you look across other rebuilding plans for stocks with a similar
23 life history.
24

25 **MS. LEANN BOSARGE:** I am not on your committee either, but the
26 Slide Number 5 that you had, Bonnie, really stood out to me in
27 the change in the slope of that rebuilding of the stock prior to
28 when we revised the rebuilding plan and then thereafter.
29

30 It's quite a dramatic increase, which is wonderful, and I just
31 wanted to note that there was something else that was
32 implemented right around that timeframe and that was a change in
33 management of the commercial sector of that fishery, which
34 essentially brought half of the red snapper fishery into an
35 accountable fishery. I think that's that probably noted in that
36 slope as well.
37

38 **MR. HARTIG:** Just one thing on the egg production. I would like
39 to see that, if you could, in a future slide for us
40 particularly, is to carry that out into some of the older ages.
41 What happens at twenty and what happens at thirty? I mean I'm
42 sure there is a point of diminishing returns and as your stock
43 reaches some sort of equilibrium, they don't spawn themselves
44 out of existence. There are dispensation that occurs and
45 spawning doesn't go on unabated.
46

47 **DR. PONWITH:** Yes, that is absolutely something that we can talk
48 about. For red snapper, when I talk to the people who are life

1 history experts, getting those fishes twelve and older is a --
2 It's sort of an inflexion point in the gains that you get in
3 terms of egg quality and egg production, but that's absolutely
4 something we can talk about in more detail.

5
6 **CHAIRMAN RIECHERS:** Any other questions? If not, we will move
7 on to Luiz and then after Luiz, just so everyone knows, we're
8 going to take a ten-minute break.

9
10 **SSC COMMENTS**

11
12 **DR. BARBIERI:** Thank you, Mr. Chairman. I don't actually have
13 any slides for this. I mean, basically, Dr. Ponwith has already
14 covered the main components of that presentation and all the
15 discussion points that were revisited during the SSC meeting and
16 so just in terms of giving you a report on how the SSC reacted
17 to this presentation, it was really reinforcement of those
18 principles that Dr. Ponwith mentioned during her presentation.

19
20 Red snapper presents some challenges. It's due to the biology
21 of the species, the life history pattern and the longevity of
22 the species and the need to rebuild the age composition and the
23 fact that when you look at the graph that Ms. Thompson
24 presented, you really have a distorted view of the success of
25 the rebuilding plan and when the plan actually started working
26 towards rebuilding the population.

27
28 There's not much else that I can say, Mr. Chairman, and I am
29 available for questions, but, in general, the SSC was very much
30 in agreement with the content of the presentation and we
31 basically -- We had Ms. Thompson there at the meeting as well
32 and so we tried to use that opportunity to reinforce and revisit
33 some of those biological and population dynamics principles that
34 we wanted to communicate to her.

35
36 **DR. PAMELA DANA:** Thank you, Luiz. I was at that SSC meeting
37 and one of the questions that we had as a council when that
38 presentation or when Melissa Thompson had presented that graph
39 during the public testimony, and then later in full council, we
40 wanted to be assured that Bonnie had the opportunity to review
41 that data and then we wanted also the assurance that the SSC had
42 gotten that same information over time, or even recently, and
43 had the opportunity to evaluate it.

44
45 So I guess my question for you is, in response to our concern,
46 is had the SSC always had this information or that data or was
47 this new data for you and if it was new, then did that change
48 anything?

1
2 **DR. BARBIERI:** No, the information was not new. I mean
3 basically the information that the Center provided to Ms.
4 Thompson is either inputs or outputs of the stock assessment
5 that several of us have participated in during this last
6 benchmark assessment and then the SSC reviews the entire
7 assessment document and so we were aware of this.

8
9 I think the difference is that the SSC is a dedicated body of
10 people to look into the weeds and to go into that level of
11 detail. It's more likely for us to be aware of those technical
12 details and it was, to some extent, understandable that Ms.
13 Thompson, with all the best intentions, really didn't have the
14 right perspective, given the fact that she's not a scientist
15 trained to look into those issues.

16
17 To the SSC, that presentation was sort of obvious, in a way,
18 because those are the principles that we already work with and
19 are familiar with and so the data we are already familiar with
20 and the principles as well and so it wasn't anything new.

21
22 **MR. ANSON:** Thank you, Dr. Barbieri. One point, I guess, Ryan,
23 relative to making any changes to the terms of reference on the
24 red snapper update, is that possible at this point in time?

25
26 **MR. RYAN RINDONE:** No, sir, it's not. Those have already been
27 approved and it's underway.

28
29 **MR. ANSON:** All right. Thank you. Dr. Barbieri, Dr. Ponwith
30 had talked about sort of the bank account terminology, I guess,
31 and looking at your bank account and you have a goal of X number
32 of dollars and you're down here and so, over time, your
33 contributions, whether it be through interests or deposits or
34 whatever, will affect the rate at which you reach your final
35 endpoint, your goal.

36
37 Some of the information that was presented here talked about SPR
38 and showed SPR on that trend line and when the new management
39 took effect in 2007, it really tightened up on the harvests and
40 here lately, as we've set buffers, it could provide even more
41 benefits as far as the stock and improvements in reaching that
42 final goal, but we've seen, in the last four to five years, I
43 mean the SPR has almost doubled relative to what it was in 2007
44 and so in terms of that bank account status, where we have the
45 end goal of 2032 currently pegged, and there was some discussion
46 at the last meeting with Dr. Patterson about whether it could be
47 termed as rebuilt now and he said maybe, but not --
48 Statistically, maybe, on one hand you could, but not in reality.

1
2 I mean could we -- Is the SSC at a point where there is some
3 more confidence in looking at the SPR issue? The council had
4 asked you all to look at it a year or so ago, a year or two ago,
5 and there wasn't, but, again, we get more data as we go through
6 time and more information about the stock and such and so what
7 I'm thinking is that, based on looking at where we've been here
8 in the last four to five years, considering that management
9 would probably continue on that same track -- Again, we have
10 buffers in place now and so that trajectory will put us hitting
11 the target well before 2032 and SPR, setting that SPR, kind of
12 defines how much we take out or we can take away from the
13 account.

14
15 Can we come off of 26 a little bit during the next assessment
16 and talk about that, do you think? Do you think there's some
17 room in there, from your perspective? I know you can't speak
18 for the SSC, but is that something that, based on this
19 information and everything and where the stock is, that that
20 could be readdressed?

21
22 **DR. BARBIERI:** Well, I mean the SSC has provided some official
23 recommendation to the council on that topic and it has to do
24 with the biology of red snapper and it's one thing that is
25 troubling, really, to speak about this from a scientific
26 perspective, because we are really not focused on the outcome,
27 how much fish are we going to get or whether -- There are
28 problems, management problems, now that need to be resolved.

29
30 I mean we apply to red snapper the same scientific principles
31 that we apply across the board, from Spanish mackerel and cobia,
32 which are shorter lived and have a higher turnover rate and
33 shorter generation times, to something like red snapper or some
34 of the deepwater groupers.

35
36 The principles are the same and therein lies the problem with
37 red snapper. It's a species that has a fairly high
38 catchability. They bite the hook really well and therefore, you
39 get a hyper stable type of index of abundance. At the same
40 time, they are -- When you look at their whole evolutionary
41 history, there is a reason why the species was selected over
42 evolutionary time to have fifty years out there of spawning
43 biomass.

44
45 It's not that really -- We are trying to rebuild the age
46 composition to the virgin stock, but we know, we expect, that
47 stock is going to be juvenessed, to some extent, due to fishing,
48 but there is a biological reason to have a number of age classes

1 out there and that's what is going to provide you with the most
2 resilient type of population structure for a fishery that's
3 sustainable over time and economically stable.

4
5 So this is just my general introduction to say that that
6 discussion between 20 and 26 percent is really a matter of
7 short-term versus long-term stability and I don't intend to step
8 into your shoes and provide management advice. From our
9 perspective, it's for a species that lives that long and has
10 that many age classes into the reproductive life span, something
11 less than 26 is really too little to prevent you from having
12 high variability in year class.

13
14 Now, in the short term, given the fact that the population is
15 rebuilding, if you want to assume that risk and use a lower bar
16 there in terms of a reference point, I mean that's possible and
17 I don't think there would be any short-term major issue that
18 would impact that population.

19
20 I don't know if I addressed your question exactly on that point
21 that you were asking, but you know looking at the reference
22 points, 20 versus 26, it's really a matter of the biology of the
23 species and the global principles on fish population dynamics
24 and fisheries management and, two, short-term versus long-term
25 stability of the fishery.

26
27 **MR. ANSON:** Thank you. You did and I think this will just be
28 something that we'll address in the future, as we get to the
29 next assessment for this species. Thank you.

30
31 **DR. STUNZ:** I am not on the committee, but, Luiz, I've sort of
32 got a question for you. When you look at the data like that was
33 presented kind of in a new light, from someone that's not an
34 assessment type, and it kind of makes me wonder, are we just --
35 Are we missing something?

36
37 You know a lot of the discussions that I've had with you and the
38 SSC, there is not a clear relationship between the stock recruit
39 relationship and that's kind of something we've talked about a
40 lot.

41
42 So then I begin to wonder, when I look at filling out these age
43 classes, and in one of the graphs, we're lumping ten-plus
44 together and so saying that there's not a big difference between
45 a fifty-year-old fish or a ten-year-old fish, sort of. In other
46 words, how important is it to fill out all those other age
47 classes? That's part of my question.

48

1 Then another question that I get a lot, which I can't seem to
2 provide a good answer, is just the sheer abundance of two-year-
3 old fish, and I know the egg quality and production, but how are
4 -- Can they just overwhelm the production of these bigger fish
5 and so, in other words, it's still a net positive benefit?
6

7 **DR. BARBIERI:** Well, the short answer is no, they cannot and not
8 to toot my own horn, but I have a couple of papers and I will
9 send you reprints of those. One is application of an individual
10 base model that looked at that exact question.
11

12 If you look at the difference in age composition and you
13 integrate into that the lifetime egg production of species, what
14 kind of age structure brings you the stability -- This is for a
15 Mid-Atlantic species that I worked a long time ago, in my
16 previous life, but that model really explores that principle of
17 if we have a whole lot of two-year-olds, does that compensate,
18 because of the sheer numbers, for the older ones?
19

20 The answer there, and that has been demonstrated in a number of
21 other papers, is that no, it doesn't, and the reason for that is
22 that invariably, when you think about fish swimming out there,
23 you are looking, and I used that example during the SSC to
24 explain to Ms. Thompson, you are looking at like dollar bills
25 out there of different denominations.
26

27 The number of bills is important, of course, but one one-
28 hundred-dollar bill is worth a hundred times that one-dollar
29 bill and so when we look at numbers only, we are missing the
30 qualitative component of why the population over evolutionary
31 time has been selected.
32

33 I mean if we just look at the biology of the species, we have
34 species that live to be five and some live to be ten and some
35 live to be thirty. There is a reason why red snapper live to be
36 over fifty and so do we need to rebuild the age composition to
37 that version stock age structure? No. The stock is going to be
38 juvenessed, but there is a balance there of how much of those
39 older classes you have there versus the younger ones.
40

41 In terms of SPR, and this was last year, I published with
42 colleagues at the Institute another paper and I will send you a
43 PDF as well that applies a general additive model and then we
44 applied an age-structured model to look at the contributions of
45 different age classes, from a reproductive stance, into that
46 estimation of SPR.
47

48 The paper actually explicitly provides a measure of how much the

1 juvenescence of the stock impacts your estimates of SPR and so
2 we don't have that work done explicitly for red snapper, but if
3 we look at the general global literature and some examples here
4 in U.S. fisheries that we have had a chance to work specifically
5 on, the answer is some balance of those older fish, to some
6 extent, is definitely needed to provide the level of population
7 stability that is needed.

8
9 **MR. JOHNNY GREENE:** Dr. Barbieri, in a long-lived fish like red
10 snapper or any other type of fish that you know of, and I guess
11 I'm just an ignorant boat captain in the room here, but when I
12 look at 2010 in the SPR scale to 2014, we basically have doubled
13 the SPR in five years and is that uncommon? Am I missing
14 something here? It seems like what's the risk? If in five
15 years we can double it, am I missing something? Maybe we need
16 to talk afterwards, but I just don't see the -- Kind of
17 following on what Kevin was talking about, it seems like there
18 is something there to be accounted for.

19
20 Obviously we reduced effort and everything else after catching a
21 whole bunch of two-year-olds for a long time and now all of a
22 sudden we've doubled it and I'm a little lost with that.

23
24 **DR. BARBIERI:** I am sorry, Mr. Greene, but I missed the
25 question.

26
27 **MR. GREENE:** Is it uncommon for a long-lived fish like red
28 snapper to double the SPR in five years?

29
30 **DR. BARBIERI:** I don't think I can answer that question, because
31 it really depends on what the management strategy is. I mean in
32 this case, it's like a response of what the rebuilding plan was
33 explicitly set up to do and so it's one of those things. I mean
34 you build a rebuilding plan that has an expected progression and
35 productivity of red snapper has been good enough that actually
36 it seems to be moving forward ahead of schedule and rebuilding
37 faster than we had originally intended and so all of this is
38 good news.

39
40 So, again, when you look at fish population dynamics, you have
41 to think about short-term dynamic processes in the population
42 versus long-term population build-up and long-term stability.
43 It's kind of like when you talk about the stock market and if we
44 talk daily or weekly or annually, it could have ups and downs
45 that are very difficult to explain, but when you look over your
46 entire retirement fund period of twenty to thirty years, you
47 have a positive rebuilding of that principle and you have
48 collection of a lot more interest over time.

1
2 Balancing that long-term perspective with the short-term
3 dynamics is going to be difficult, but that's really the
4 principle behind it.

5
6 **CHAIRMAN RIECHERS:** I think I have three folks on the list now
7 and then I think if we reach that point, we're going to take a
8 quick break.

9
10 **DR. STUNZ:** Luiz, I just have a quick follow-up and I know we're
11 going on here, but what I'm wondering about the Mid-Atlantic
12 studies you were saying and the strength of those stock-recruit
13 relationships and so, in other words, how confident are we,
14 given that there's no that strong relationship here and maybe
15 we're missing something on the productivity of red snapper, that
16 as we rebuild this many decades down the line, are we still
17 going to get that spawning rate of return that we wanted in
18 terms of recruitment? I don't know the answer to that, but I am
19 just wondering.

20
21 **DR. BARBIERI:** No and there is no guarantee. I mean basically,
22 we're just looking at Mother Nature and saying, okay, instead of
23 us trying to -- You think about a completely unfished
24 population, a virgin population out there, that's responding to
25 natural mortality only and the fish live to be fifty and there
26 is a reason why that many age classes were selected over
27 evolutionary time to be there.

28
29 Now, add to that the impact of fishing mortality and removals
30 and now we are saying that we need to have a lot less of the age
31 composition and to me, that's really nonsensical, because
32 there's a biological principle here in terms of production,
33 replacement, and removals that needs to be stabilized and
34 brought up. To me, how many age classes we need out there, it's
35 arguable and I don't know that answer, but in this case, it's
36 not necessarily a matter of -- The stock recruitment
37 relationship is not about quantity, but it's about quality and
38 stability over time. Then we can discuss this some off --

39
40 **DR. PONWITH:** Just a couple of points on a point Dr. Stunz
41 brought up, the question about the ten-plus, and inferred from
42 that that we were treating everything that was ten and older
43 sort of equivalently and in fact, that's kind of a convention
44 for depicting the age class series of these longer-lived
45 species.

46
47 If you put fifty-four columns on the graph, the graph gets
48 really long and skinny and it gets really hard to read and

1 because a lot of the action is happening right now on the left-
2 hand side of that graph, we show the graph so that the left-hand
3 side of the graph is big enough to see and then just bin
4 everything that's older than that into a bin.

5
6 The reason is even in a perfectly healthy stock, with the exact
7 age contribution, the numbers of animals you see in those
8 progressively older bins get smaller and smaller and so that's
9 just a convention of the graphing as opposed to inferring sort
10 of a value of a thirty-year-old fish relative to a ten-year-old
11 fish.

12
13 In terms of is it common to rebuild an SPR to see that sharp of
14 an increase in such a short amount of time, a lot of people have
15 asked, gosh, you know back when the SPR was around five, how
16 could we even have a fishery? How could it sustain that?

17
18 The answer is one of the interesting things about the way red
19 snapper behave is that they aren't a steady-as-you-go kind of
20 fish. They have years where they just don't produce that many
21 young and they have years where everything falls into place and
22 you get these really strong year classes.

23
24 I bet you could count on both hands the times you've heard this
25 from the stock assessment scientists, is we have a really strong
26 year class this year and that's why you're seeing these unusual
27 patterns.

28
29 Well, the trick is that the way we were fishing that fishery is
30 a year class, a very strong year class, would come and we would
31 ride that year class, basically fish very heavily on that, until
32 ultimately it was trimmed off and then we're back to that kind
33 of plodding along low level of fishing.

34
35 Well, in our rebuilding, those really, really strong year
36 classes, instead of getting cropped off, they are living. Those
37 huge pulses of fish are living to reproduce and create, if
38 conditions allow it, large pulses and so, in that scenario, you
39 wouldn't be surprised by sharp increases in the SPR, basically
40 achieving your goals to the rebuilding.

41
42 You can still have year class failures in a large population,
43 just like you can in a small population, but it's just that if
44 you have a year class failure in a population with lots of age
45 classes, that population is resilient to surviving that a little
46 more than a population that's been trimmed down to a very low
47 level.

48

1 **CHAIRMAN RIECHERS:** With that, Mr. Anson. Mr. Anson passes. We
2 will take a ten-minute break, getting us back here at about
3 10:45.

4
5 (Whereupon, a brief recess was taken.)
6

7 **CHAIRMAN RIECHERS:** I am going to ask you to take your seats
8 again or if you want to continue that conversation you are
9 having, could you maybe take it outside, please? For those who
10 are trying to keep up with tabs, and certainly we always have
11 lots of them in the B tab, but we are on -- I think we're moving
12 next to a discussion of Amendment 39 and Dr. Lasseter is going
13 to walk us through that and that will be included in Tabs B,
14 Number 5(a) and (b).
15

16 **DR. LASSETER:** Shall I begin or should I give everybody a couple
17 of minutes?
18

19 **CHAIRMAN RIECHERS:** Let me make sure I have a quorum around the
20 table and if we have a quorum, we will begin. We've got Florida
21 and we've got Louisiana and Mississippi and we've got Dr.
22 Crabtree and myself and let's go ahead and start and, again,
23 we'll ask if you're going to continue your conversation to move
24 it outside and we're going to start back up again. Thank you.
25

26 **DISCUSSION OF AMENDMENT 39 - RED SNAPPER REGIONAL MANAGEMENT**
27

28 **DR. LASSETER:** Thank you, Mr. Chair. As Robin just mentioned,
29 this is Reef Fish Amendment 39, Regional Management of
30 Recreational Red Snapper, and the presentation that will be up
31 includes all of the alternatives and actions and so we can just
32 use that, but the other tab number is for the entire document.
33

34 I see the presentation is coming up and the top of this slide
35 should say "Amendment History" and because we haven't looked at
36 this document since February, I wanted to go ahead and do a
37 little recap.
38

39 The idea of regional management was first discussed at an AP
40 meeting back in October of 2008. In August of 2012, the council
41 requested that staff go ahead and begin developing the scoping
42 document and we held the scoping workshops in January of 2013
43 and public hearings in August of 2013 and then we had the
44 document on the agenda for final action until February of 2014,
45 when the committee advised postponement of the document and put
46 off further work on it until the allocation decision for Action
47 3 was made and so we will need to discuss a potential timeline.
48

1 I think we should probably come back to this, but I will point
2 out, to go forward on this, the DEIS has not been filed and so
3 this will not be able to be in place for next year, but we could
4 talk about having this in place for 2016.

5
6 Again, the top of the slide should say "Purpose and Need" and
7 this is taken straight from the document and it addresses
8 flexibility in the management of the red snapper recreational
9 component by reorganizing the federal fishery management
10 strategy and it's referencing the different actions in the
11 document.

12
13 The purpose and need will need to be updated, as it includes the
14 phrase "developing AMs for recreational overages" and since we
15 have last looked at this, we have had the framework action go
16 final with the recreational accountability measures and so we
17 will have to update the purpose and need to reflect region-
18 specific accountability measures.

19
20 These are the actions in the document, just an overview of the
21 whole document again. Action 1 looks at the structure, the
22 structure of the program, and we had two alternatives in there,
23 the council implemented or delegation. Action 2 is defining the
24 regions. Action 3 is apportioning the quota and both the red
25 highlighted actions are ones where we're going to have to update
26 the no action as well.

27
28 Action 4 are the management measures to delegate and this action
29 pertains to delegation only and Action 5 is addressing what is
30 the 30B, what we call the 30B permit provision. Action 6 are
31 accountability measures and Action 7 would be the default
32 regulations put in place, applied, should a region opt out or
33 have its delegation suspended. Again, that one also is for
34 delegation only.

35
36 Action 1 is regional management and so our no action alternative
37 was to retain the current federal regulations for red snapper
38 Gulf-wide. Your current preferred alternative is to establish a
39 regional management program that delegates authority to a state
40 or states to establish their management measures and there are
41 some options underneath that which we'll come to on the next
42 slide. We will come back to that.

43
44 Then, finally, you have Alternative 3, which would --
45 Technically the council has the authority to go ahead and do
46 this now, but if you selected Alternative 3, this would indicate
47 the council's intent to pursue regional management and I believe
48 I want to stop here for a moment and see if -- Dr. Crabtree and

1 I spoke earlier about the summer flounder option and could you
2 discuss that potential additional alternative?

3
4 **DR. CRABTREE:** Well, it would be some sort of variant, I guess,
5 on Alternative 3, but I know there have been concerns about the
6 delegation path and I know that there was a letter about the
7 requirement for a super majority and those types of things, but
8 there are ways and there are precedents for getting to some type
9 of regional management without delegation and set up processes
10 that allow states to regulate the fisheries in their waters.

11
12 It may be more complicated to go that way, but it can be done
13 and there are precedents in the Mid-Atlantic area with summer
14 flounder and I think with a couple of other species, in fact,
15 but most notably summer flounder.

16
17 I think what you need to do at this meeting, because this has
18 been, and I don't think we've talked about this since February
19 or so, is decide are we going to continue working on this and
20 which direction do you sort of want to go to do it, but any way
21 you go with this and any variant of it still has what's been the
22 most difficult issue to decide, which is how are you going to
23 allocate fish?

24
25 But there that path that models after summer flounder that does
26 not involve delegation and so it only involves a majority vote
27 on the council to get to that and I think we could expand that
28 Alternative 3 or potentially add another alternative to it to
29 look at how that might work.

30
31 **DR. LASSETER:** Thank you and I will also add that we had
32 originally explored the idea of summer flounder. The IPT was
33 looking at that and a key distinction between their region and
34 ours is that their commission is managing or has the regulatory
35 authority, whereas the Gulf States Commission does not have that
36 comparable authority.

37
38 So it would be a modification of how they do it and try to -- We
39 would have to create different actions to work that form of
40 management into it, but we could address that if the council is
41 interested in pursuing this.

42
43 **CHAIRMAN RIECHERS:** I think we have two questions over there
44 from Myron and then Mr. Pearce.

45
46 **MR. MYRON FISCHER:** Ava, you want to go through this document
47 first and then we will come back and see what modifications we
48 want to make and would that be correct? Okay.

1
2 **MR. PEARCE:** My comments is some of the same. I want to know
3 where we put that extra alternative. Is it in Action 1 or 2 or
4 3 or 4? I am looking for some guidance, because I like the
5 alternative that you just talked about, Roy.
6

7 **CHAIRMAN RIECHERS:** Let's get Martha's question and then I think
8 we'll figure -- If you are through, Harlon. Let's get Martha's
9 question and make sure we are through there and then we'll try
10 to figure out procedurally the best way for us to march ahead
11 here.
12

13 **MS. MARTHA BADEMAN:** I guess I will hold off until we actually
14 get to modifying this.
15

16 **CHAIRMAN RIECHERS:** Unless the committee objects, I think maybe,
17 since this is -- We have brought this up and we haven't talked
18 about it in a little bit and we will walk through the whole
19 presentation and then we may want to pivot to the document, so
20 that people can see the alternatives as they are expressed in
21 the document and then have that further discussion about how we
22 might add that.
23

24 **DR. LASSETER:** Very good. Thank you, Mr. Chairman. We put
25 together this slide and this is comparing the preferred
26 alternative to the delegation option and Alternative 3, council
27 implemented, in terms of the actions and what would have to be
28 updated if the council did change its preferred alternative and,
29 of course, if we selected a new alternative to model the summer
30 flounder program and did not work it into Alternative 3, there
31 would be a different effect on the different actions as well.
32

33 I will skip this one too and come back, but basically it just
34 compares what effect would -- The work that staff is going to
35 need to do to modify the document if you select a different
36 preferred alternative.
37

38 This is the slide that shows the sunset options under Action 1
39 and so your current preferred alternative is Alternative 2 and
40 Preferred Option a, which would allow delegation to sunset after
41 five years. This is the same table from the document that just
42 shows if the council later wanted to modify and/or continue on
43 with delegation, whether or not the sunset option is in place,
44 what would be required.
45

46 Action 2 is -- If you are using your document, it starts on page
47 14 and the alternatives are provided here. Action 2 is to
48 establish the regions and your current preferred alternative is

1 3, establish the five regions representing each Gulf state.

2
3 Action 3 is apportion the quota among the regions and this is
4 the action that we do not have a preferred alternative for yet
5 and I have highlighted in red the no action.

6
7 Since you have looked at this document, we will need to update
8 the alternatives and options through 2013, including the
9 landings. In February of 2014, this alternative was just to
10 retain a Gulf-wide recreational quota. Since we now have the
11 ACT in place, the new Alternative 1 will reflect that there is a
12 buffer in place and so that's something to keep in mind as well.

13
14 Going back to the alternatives, you have Alternative 2, provide
15 several different year ranges to base the allocation on.
16 Alternative 3 provides you two years that you may wish to
17 exclude from those historical landing averages for the time
18 series and Alternative 4 -- Since the February meeting, I
19 believe we've even consulted with the Science Center since in
20 trying to establish if it's possible to create two separate ABCs
21 for the eastern and western Gulf and we have not had a
22 successful answer on that.

23
24 Finally, Alternative 5 is one of our council Boyle laws, which
25 is basing the allocation half on the longest time series and
26 half from a more recent time series and excluding the year of
27 the oil spill. May I turn this over to the council and see if
28 there is any discussion on apportioning the quota?

29
30 **CHAIRMAN RIECHERS:** I think what we're going to do is walk on
31 through the presentation and then we'll just -- I think we need
32 to pivot back to the document after that. I appreciate -- I
33 mean what you're doing is giving us the high level and then we
34 will come back and then see if there's changes that people --
35 Any changes anyone would want to make or that.

36
37 **DR. LASSETER:** Thank you and you just told me that and I forgot.
38 Okay and so moving on to Action 4, these are the management
39 measures that the council had selected preferred alternatives
40 for what the states could modify at the regional level.

41
42 This action does only apply if delegation remains the preferred
43 alternative, because if you selected the council-implemented
44 form of regional management, the council would be making these
45 decisions in a separate action and currently, all but the no
46 action, Alternative 1, are selected as preferred.

47
48 Action 5 is the for-hire permit provision and your current

1 preferred alternative is Preferred Alternative 2, to exclude the
2 provision requiring that vessels with the charter headboat reef
3 fish permit to comply with the more restrictive federal
4 regulations when fishing in state waters.

5
6 Action 6 are the post-season accountability measures adjusting
7 for regional overages and so if there are five regions with five
8 allocations, this addresses what to do when the quota -- If the
9 quota should be met or exceeded, how to handle the overage.

10
11 Alternative 1, again in red, is going to have to be updated to
12 reflect that we now have an overage adjustment that will be
13 implemented shortly. You took final action at the last meeting
14 and so your current Preferred Alternative 3 is if a region
15 exceeds the apportioned regional quota, then NMFS will reduce
16 the regional quota in the following year by the amount of the
17 regional quota overage in the prior fishing year.

18
19 Now our Alternative 1, no action, is that the whole -- 100
20 percent of the overage will be taken off of the following year's
21 quota and that was your preferred alternative in the framework
22 action. We're going to have to modify that Alternative 1 and
23 adjust the alternatives. The general sense will be whether or
24 not to apply the overage Gulf-wide or regionally specific.

25
26 There is also options that may be selected alongside
27 Alternatives 2 through 4 and your current preferred is Option b,
28 to apply the quota adjustment beginning two years after the
29 implementation of the plan. We would need to go back and rework
30 this one as well, because that is not in line with the
31 recreational AM framework action.

32
33 So here is Action 6, again. The adjustment, I wanted to point
34 out, only applies if the recreational red snapper quota is
35 exceeded and so there would be no post-season AM should the
36 quota not be met and so there would be no overage adjustment
37 unless the quota is exceeded.

38
39 We also will need to update the alternatives to reflect these
40 new AMs, as I have mentioned, and there I have provided the
41 language of what the new updated Alternative 1 would look like.
42 Also -- This is actually in an earlier part of the document and
43 the state boundaries that you have, in a previous meeting,
44 agreed on that would extend into federal waters for the purpose
45 of having regional accountability measures apply.

46
47 Finally, Action 7 are the default regulations and, again, this
48 is the other action, along with Action 4, that only applies if

1 delegation remains your preferred alternative. We would need to
2 modify or add additional action if you select the Alternative 3,
3 council-implemented regional management, or if we go towards the
4 summer flounder model. That is the end of the document and I
5 will turn it back over to Mr. Chair.

6
7 **CHAIRMAN RIECHERS:** Now I would say that we, just that you've
8 given that high-level overview with those provisions and
9 indicated some of which may have to change, based on either past
10 actions or just a desire to change them if we go with the summer
11 flounder model.

12
13 I would suggest we go to page -- It's actually page 11 where we
14 start action items, management alternatives, and then, that way,
15 we can walk through each set of management alternatives, Ava,
16 and see if someone has something they would like to do to any of
17 those.

18
19 **DR. LASSETER:** Yes and thank you, Mr. Chair. Charlotte, could
20 you put the document up?

21
22 **CHAIRMAN RIECHERS:** Certainly any questions of Ava, based on the
23 presentation, before we get into this, I will entertain any, if
24 anyone has any, before we get into the actual document and as
25 we're waiting to get the document up.

26
27 **MS. BADEMAN:** Just so that we're thinking about this as we're
28 going through the document, Ava, you had a lot of changes that
29 were suggested or changes that we have to make and are you
30 looking for motions for those kinds of things or are you ready
31 to make those changes, based on what happens? Are you in the
32 process of making those changes now?

33
34 **DR. LASSETER:** Most of them we can do on our own and the only
35 changes we would really need to discuss will be the Action 3 and
36 Action 6, the accountability measures, and then also we will
37 need to discuss if you are interested in exploring the summer
38 flounder. Primarily, we will modify the purpose and need to
39 reflect that part. We will update all of the landings going
40 through 2013 and so we don't need motions for that part.

41
42 **CHAIRMAN RIECHERS:** Okay. We now have it up on the board and so
43 the first alternative there -- Mr. Fischer.

44
45 **MR. FISCHER:** Are you looking at this time for members to submit
46 motions for Action 1?

47
48 **CHAIRMAN RIECHERS:** Yes, I think we just now went to the

1 document to make sure that we can see the full suite of options
2 or alternatives in each action and if there are any changes that
3 anyone would want to make, this would be the time, yes.

4
5 **MR. FISCHER:** Okay and I do have a motion prepared, of course
6 with assistance from staff, based on some of Roy's comments, and
7 this is new water. We are definitely starting to walk across
8 the ice right here and I don't know if staff has it prepared to
9 go on the board.

10
11 **The motion would be in Action 1 to add an Alternative 4 which**
12 **would establish a regional management program in which regions**
13 **submit proposals to NMFS describing the conservation equivalent**
14 **measures each region will adopt for the management of its**
15 **portion of the red snapper quota.**

16
17 I just want to make certain that this would follow along -- I
18 think we are having difficulty at the keyboard, but if this
19 would open the document up to where staff could get some of this
20 summer flounder equivalency language in and proceed from that
21 point.

22
23 **MR. PEARCE:** If you need a second, I will second it.

24
25 **MR. FISCHER:** Just to pause while we get it up on the board,
26 asking Ava and asking staff if this gets us in this direction
27 and I believe that was a lot of our original intent a couple of
28 years ago, because this -- Five years ago, this was modeled off
29 of summer flounder and I am just trying to take it from a
30 commission, such as the Atlantic Commission, to a council, the
31 Gulf Council, and trying to figure the differences.

32
33 **CHAIRMAN RIECHERS:** Could you read the motion again, Myron? I'm
34 sorry.

35
36 **MR. FISCHER:** In Action 1 to add an Alternative 4 which would be
37 to establish a regional management program in which regions
38 submit proposals to National Marine Fisheries Service describing
39 the conservation equivalent measures each region will adopt for
40 the management of its portion of the red snapper quota.

41
42 **CHAIRMAN RIECHERS:** Myron, let's go back to the top and go very
43 slow, please. Sorry.

44
45 **MR. FISCHER:** I am sorry too, but they might be able to cut and
46 paste it off the email.

47
48 **DR. CARRIE SIMMONS:** Okay and she can't get to her email.

1 That's the problem. I am sorry.
2
3 **MR. FISCHER:** Okay and so will --
4
5 **CHAIRMAN RIECHERS:** Myron, if you can double check that and make
6 sure it reads as you have tried to word it there.
7
8 **MR. FISCHER:** My change would be, after "measures" that "each
9 region" and not "the regions", but I think that's just grammar.
10 Moe would be proud of me, but each region. It would be "each
11 region".
12
13 **CHAIRMAN RIECHERS:** Yes, he would be proud of you. Any other --
14 Is there a second to the motion? Mr. Pearce seconds and Mr.
15 Perret had a question and Ms. Bademan had a question.
16
17 **MR. PERRET:** Myron, I may be the only one in this room, but what
18 does "conservation equivalent measures" mean?
19
20 **MR. FISCHER:** In summer flounder, and Roy could probably weigh
21 in on this, but in summer flounder, it was not only the gross
22 weight of the fish, but it had to do with the age class, if
23 different states had different size limits.
24
25 I think if we went to a unified size limit that we would still
26 have flexibility in seasons, but it may constrict a lot of the
27 discussion and calculations that would have to be gathered, but
28 it had to do with an agreed-to season based on the individual
29 parameters of season length, opening season, whether before or
30 after spawning, and size limits.
31
32 **CHAIRMAN RIECHERS:** I had Martha next, but you've got a response
33 to this? Go ahead, Roy.
34
35 **DR. CRABTREE:** Sort of the way it works with summer flounder is
36 there's a whole process set out and if this is how you want to
37 go, there will have to be a whole series of actions set up to
38 lay out the process, but essentially the states -- States can
39 combine to form a bigger region, but they, at some preset time
40 of the year, submit a plan for their proposed regulations for
41 the recreational fishery to NMFS and it goes through various
42 committees and things.
43
44 We could have it reviewed by the SSC or whatever, but at the end
45 of the day, the Fisheries Service certifies that their plan will
46 achieve the same constraint on harvest that the default season -
47 - For example, last year we had a nine-day federal season and so
48 I guess you could think of that as the default season.

1
2 Then a state -- We would have allocations and each state would
3 get a number of pounds and then the state would go in and do an
4 analysis and decide, okay, our season will be this long and our
5 bag limit will be that and here's our analysis that shows how
6 that will keep us within our allocation.

7
8 The Fisheries Service certifies all of those and then the
9 recreational vessels that are fishing are exempted from the
10 default federal regulations and are subject to the regulations
11 in the state where they are landing in, but there is a whole lot
12 of details in there that aren't in this document now, because we
13 chose the preferred of delegation and so it went down that
14 approach.

15
16 Now, if we're going to go down this approach, it will be a whole
17 series of actions that will have to come in there or some way to
18 structure the document that will flesh that out, but that's
19 essentially what the concept of conservation equivalency boils
20 down to, I think.

21
22 **CHAIRMAN RIECHERS:** I have Mr. Perret trying to follow up here,
23 Martha, and I will get to you next.

24
25 **MR. PERRET:** So basically each region would have to submit its
26 plan for opening and closing date of season and bag limit and
27 size limit and that sort of thing? Management measures by
28 region.

29
30 **DR. CRABTREE:** Yes and I think you as a council would have to
31 decide -- I mean Myron talked about the size limit and that does
32 complicate a lot of things, but you would have to decide what
33 things can the state propose, but essentially, yes, it would be
34 our season will start on this date and end on this date and this
35 will be our bag limit.

36
37 **CHAIRMAN RIECHERS:** I am going to let Martha go, because she was
38 there first, but I just saw hands from Kevin, Ava, and Harlon.
39 Did I get them all? Okay, Martha.

40
41 **MS. BADEMAN:** So my question about this is whether we're talking
42 EEZ regions or if this is EEZ and state waters? I mean in the
43 Atlantic States, it's a different ballgame, because Atlantic
44 States is a state waters thing, but I am trying to figure out
45 how this is going to work.

46
47 **DR. CRABTREE:** So we don't have all the tools that they have in
48 the Mid-Atlantic, but then they're dealing with a fishery that's

1 largely coastal, to some extent, unlike red snapper, but I think
2 when the state came in with their plan, it would be the plan
3 that would apply to all of the recreational vessels landing in
4 that state, regardless of whether they were fishing in the EEZ
5 or in state waters. In that sense, it encompasses the whole
6 thing.

7
8 The bigger complexity of this becomes what if a state decides
9 that they're not going to submit a conservation equivalency plan
10 or what if their conservation equivalency plan is rejected and
11 so I guess then they fish under some default federal season that
12 would apply to the vessels landing in that state, but you're
13 going to have to figure out what if that state then is going to
14 harvest way in excess of their allocation, because of what
15 they're doing. That would then have to come off the top of
16 everybody else's catches.

17
18 In the ASMFC, if a state did that, I think they have the
19 authority to shut down state waters, but we don't have that
20 authority with the Gulf States Commission and so presumably that
21 makes it more complicated and with some problems and hurdles to
22 overcome that they probably don't have.

23
24 **CHAIRMAN RIECHERS:** Just before I hit the other people who have
25 comments here, let's do remember that some of those provisions
26 that we've talked about here are in other actions, such as the
27 default regulations if a state was -- I mean I think they could
28 be woven in here, because they are already in here for those
29 kinds of circumstances, but with that, I turn to Kevin next.

30
31 **MR. ANSON:** I have two questions or a clarification. Going back
32 to the process, Dr. Crabtree, you were talking about and so what
33 I am taking from your discussion is that the more complex a
34 state or region may have in their plan regarding size limits,
35 bag limits, changes to what has historically been happening in
36 that state, the more potential there is for double checking the
37 numbers and having some discussion about that relative to
38 meeting the conservation goals. That could lengthen the time,
39 if will, from when they submit to when it gets approved. That's
40 my first question and is that how you see that?

41
42 **DR. CRABTREE:** Well, I think we have to set up some pretty hard
43 deadlines. States must submit their plan by such and such a
44 date and then this is how the process worked and the decision is
45 made. I think the Fisheries Service would have to probably go
46 through a rulemaking as a part of that and so we would have to
47 lay all of that out.

48

1 I mean I think you're right if a state went way outside of
2 anything that's been done in recent years that it would be
3 difficult to know how to estimate the catches and then you are
4 going to get into discussions about how much precautionary and
5 buffers and all those kinds of things, but I don't know how to
6 respond to that exactly right now, but it's just part of a lot
7 of work that will have to go into figuring all that out.
8

9 **MR. ANSON:** Then my second question is do you know, Dr.
10 Crabtree, how the summer flounder works on the Atlantic -- I
11 know you said that the Commission has the authority to shut the
12 waters down and so do they have any other triggers or buffers or
13 such for paybacks? I am just trying to think, complexity-wise,
14 if that's a good example that people could refer to or if there
15 are still some things in there that don't match up to what we've
16 discussed here in the document relative to paybacks Gulf-wide
17 that may apply to regions and such.
18

19 **DR. CRABTREE:** Well, I am fuzzy on the details of this, because
20 I haven't looked at all this in quite a while, but I think they
21 have a board, an ASMFC board, and they can find a state out of
22 compliance and when they find a state out of compliance, they
23 then write a letter to the Secretary requesting that the
24 Secretary shut down state waters, but I don't think we have that
25 recourse available.
26

27 I would suggest to you that if this is the path you want to go
28 down that you consider having someone from ASMFC, who is a
29 specialist on that management plan, come to our next council
30 meeting and lay out how it works and do a lot of background work
31 with our staff, but they can answer the questions and probably
32 tell you what has worked well and what hasn't.
33

34 **CHAIRMAN RIECHERS:** Do you want to try to clarify a point about
35 how that works, Ava?
36

37 **DR. LASSETER:** Thank you and actually, Dr. Crabtree provided
38 most of the information. Corky has asked about all states
39 having to propose a plan and that is something that I think we
40 could talk about. Are all states required to participate in
41 this or could this just be something for a state that wants to
42 participate and then otherwise there would be Gulf-wide default
43 regulations? The summer flounder model refers to them as coast-
44 wide measures and that is an action that we could possible --
45 Mara is shaking her head telling me no.
46

47 **MS. MARA LEVY:** I hesitate to get into the details of the summer
48 flounder plan, because it just sort of came up all of a sudden

1 and I don't think anybody has really looked at it, but they have
2 different things that they do and they either require all the
3 states to comply with the coast-wide measures and everyone is
4 the same or they allow these conservation equivalencies for each
5 state or region to submit them and it goes through a process
6 with technical committees and commissions and the framework
7 action that put this in place lays out the timeline for when
8 everything needs to be done and when it gets approved and when
9 it gets submitted and then within those conservation equivalency
10 options there are the default provisions that apply if a state's
11 conservation equivalency plan does not get approved.

12
13 So it's sort of similar to the delegation thing that we were
14 talking about, where everyone has the authority to do it, but if
15 someone doesn't submit a plan that's consistent with the FMP or
16 doesn't want to submit a plan, then we have these default
17 measures that we fall back on.

18
19 I think you could definitely develop a process to do this, but
20 it would be a much more rigid process that requires planning in
21 advance and the agency would have to publish a rule implementing
22 all these conservation equivalency things, but it's clearly
23 doable. The Mid-Atlantic region does do it and it would just
24 require more details.

25
26 **CHAIRMAN RIECHERS:** At least the list I have now, and I may have
27 missed someone, is Harlon next and then Martha and then Mr.
28 Brand.

29
30 **MR. PEARCE:** Thank you, Mr. Chairman. I really like this
31 option, because if we look at where we started this whole
32 process, Louisiana was looking to do something on its own,
33 whether it be a pilot or an EFP or whatever, to show how they
34 could better manage their fishery.

35
36 If we go with this option, as Mara has said and Ava, it's that
37 each state can do it or not do it, either way. You have an
38 option of the states wanting to be a part of this process or not
39 being a part of this process and so it gives Louisiana, my
40 state, a chance to step in and do what it wants to do, as it
41 wants to do it, for its fishermen. I think that this goes right
42 along the lines of how we started this whole process and I
43 really like the option.

44
45 **CHAIRMAN RIECHERS:** Corky, I think you had something you wanted
46 to say and then we're to Martha.

47
48 **MR. PERRET:** Just as a courtesy, I would like to introduce a

1 former council member, Ms. Jane Black, in the back of the room.
2 She served in the early 1990s, late 1980s and early 1990s.
3 Thank you, Robin.

4
5 **MR. PEARCE:** I guess Corky is going to want to make sure we
6 recognize him, since he won't be here next year. I think that's
7 what that is all about.

8
9 **CHAIRMAN RIECHERS:** Next we have Martha. Welcome, by the way,
10 Jane.

11
12 **MS. BADEMAN:** So in regards to this motion, a couple of people
13 around the table have mentioned Gulf States having a role in
14 this and I guess my question would be for Myron. Is that part
15 of your vision here? It's not really expressed in the motion,
16 but that's clearly how Atlantic States works, but they're the
17 ones that are running the show. That's my first question.

18
19 **MR. FISCHER:** The motion was very broad, just to get another
20 alternative on the board. I think it would take all further
21 discussion of whether it's Gulf States involved or who is the
22 governing authority, but it's just -- The motion is
23 accomplishing its goal. It's to get conversation started and
24 see what direction we're going to go into as a council as a
25 whole.

26
27 **CHAIRMAN RIECHERS:** Ava has a response to that.

28
29 **DR. LASSETER:** Again, the difference between the Atlantic States
30 Commission and the Gulf States Commission is that the Gulf
31 States doesn't have the regulatory authority and so I believe --
32 Of course, we will have to work out the details within the IPT
33 process, but that it would be the regions providing their
34 proposals to NMFS and NMFS will be reviewing them for approval
35 and if they meet the conservation equivalency standards. That's
36 all.

37
38 **CHAIRMAN RIECHERS:** Martha, a follow-up?

39
40 **MS. BADEMAN:** Just a quick one. Ava, do you know, with Atlantic
41 States, are they doing this with summer flounder annually or is
42 this an exercise they go through every couple of years?

43
44 **DR. LASSETER:** I am going to have to -- We really looked into
45 the summer flounder model right when we started this and so I
46 did know that at some time and I think Mara may be able to
47 speak.

48

1 **MS. LEVY:** I believe that it's annually and so each year they
2 decide what they're going to do, the coast-wide or the
3 conservation equivalency, and then each year they submit their
4 conservation equivalency plans, if they're going to go that
5 route.

6
7 **MR. FISCHER:** To answer Martha, Gulf States might be a very good
8 platform to work out the equivalencies and then make the
9 presentation, because the states participating -- I would
10 imagine the presentation should almost be as a whole and so once
11 it's worked out, working through Dave may be a better platform,
12 although they don't have the enforcement or the regulatory
13 authority, but to forward it to the agency for submission. I am
14 not into the details of those this motion would work, but let's
15 see if this is the direction we want to go into.

16
17 **CHAIRMAN RIECHERS:** Okay. I've got two more people on the list
18 and then we may vote this up or down. Jason.

19
20 **LCDR JASON BRAND:** I just wanted to clarify the enforcement,
21 because it's been a while since we've talked about this, if an
22 enforcement plan would be included in this plan and, if so, then
23 we would have different enforcement plans for each region or are
24 we going to go back to default to a landing-based enforcement,
25 where we only enforce it at the landing?

26
27 So if the Coast Guard comes across a rec reef fish boat, do we
28 ignore the snapper onboard, because it's a landing-based, or are
29 we going to be enforcing, in federal waters, different
30 conservation enforcement plans in each different region that the
31 Coast Guard isn't used to doing that?

32
33 **DR. LASSETER:** I actually think Dr. Crabtree can speak to this.
34 We talked about the lines and whether or not it would be
35 landings-based on the region.

36
37 **DR. CRABTREE:** I think most of it would be landings-based, but
38 we certainly could ask the state to give an enforcement plan,
39 but I think with summer flounder, because what you're allowed to
40 bring in is based on where you land, I think it's largely
41 landings-based, but I think if you're in a system where you
42 don't have inconsistent regulations in federal and state waters,
43 most of the enforcement is going to be at the dock and so I
44 don't know how big of a problem that is, but at least my vision
45 of this is it would be landings-based and so it would have to be
46 something that can be checked at the dock.

47
48 **MR. ROY WILLIAMS:** A question about this motion, Myron. Do you

1 mean this as a substitute for sector separation for Amendment 40
2 or is this how you would manage the rest of the private boats
3 and the state-licensed guideboats if Amendment 40 is approved?
4

5 **MR. FISCHER:** I think that's -- Your final statement was if
6 Amendment 40 is approved. I want to take all the amendments one
7 at a time on the merits of that one amendment and see what's in
8 it and not -- The cross discussion of one based on the other is
9 good if those either pass or fail that you're counting on, but
10 as long as we're on Amendment 39, I want to move forward with
11 Amendment 39 first, because that's the one we're working on.
12

13 **MR. WILLIAMS:** So this would apply to everybody? This would
14 apply to the charter boats as well?
15

16 **MR. FISCHER:** This would apply to the charter boats and this
17 would apply to the entire recreational fishery.
18

19 **MR. WILLIAMS:** So this would in fact be in lieu of Amendment 40
20 then?
21

22 **MR. FISCHER:** Well, yes, if it passes, but, then again, possibly
23 not. We don't know what Amendment 40 is going to do. It's two
24 different discussions.
25

26 **CHAIRMAN RIECHERS:** To that point, but let's not get too far
27 down the road of that point, because I want to either vote the
28 motion up or down.
29

30 **DR. CRABTREE:** I don't think inserting this motion into this
31 amendment implies anything about what we're going to do with
32 Amendment 40. Obviously if we do Amendment 40, it's going to
33 change this whole amendment, because it's scheduled -- If we
34 take final action on Amendment 40, that's going to change
35 things, but I don't think just adding this in as a motion should
36 be read as meaning anything about what we're next going to do
37 with Amendment 40.
38

39 **MR. GREENE:** All this sounds pretty good, but what I think we
40 need to concentrate a little bit more on here is who is going to
41 enforce this? In other words, if a region comes together and
42 submits a plan and they don't follow it, who is going to go in
43 and make them shut down and -- Who is going to be the bad guy
44 here?
45

46 If Gulf States doesn't have the authority, is that going to be
47 National Marine Fisheries? Are you going to step in and shut
48 them down and make it happen?

1
2 **DR. CRABTREE:** I mean I think the answer to that is yes and I
3 think the plan will have to have contingencies that if a state -
4 - I guess what you're saying is if a state submits the plan and
5 it's approved and then the state doesn't follow their own plan,
6 then there would have to be contingencies in there for what
7 would have to happen, but it would, in all likelihood, not
8 involve just shutting down that state. It might involve
9 shutting down on other states too in order to deal with it.

10
11 Then, at least the way we have structured all of our
12 accountability measures at this point, there are payback
13 provisions that are in there that would affect the next year's
14 quota. If a state did something like that and went over, they
15 would presumably have to pay it back, but I think all those
16 details remain to be worked out.

17
18 **MR. ANSON:** So to Johnny's question, the way I see it is that
19 there would be kind of two points or filters where you would
20 reduce the chances of that happening and one is through the plan
21 submission and all the analysis that the states would provide or
22 the regions would provide based on their size limits and bag
23 limits and length of season and such and so that could not pass
24 at that time and they would have to go back to the drawing board
25 or default to the Gulf-wide regions.

26
27 Then the second is through the paybacks that we have identified
28 at least in the action items here in this document. That could
29 be a further penalty and between those two, I would like to
30 think that there wouldn't be a chance where a region would just
31 go two times over what their allocation is. I think there would
32 be enough checks and balances in that system to try to minimize
33 that. That's my opinion.

34
35 **CHAIRMAN RIECHERS:** All right. Let's either vote this up --
36 This is just an addition to a suite of alternatives at this
37 point. All those in favor of adding this in Action 1, add an
38 Alternative 4 -- I will read it, since we were having trouble
39 putting it up, but it's to establish a regional management
40 program in which regions submit proposals to National Marine
41 Fisheries Service describing the conservation equivalent
42 measures each region will adopt for the management of its
43 portion of the red snapper quota. **All those in favor say aye;**
44 **all those opposed same sign. The motion carries.** Now we have
45 Ms. Bademan.

46
47 **MS. BADEMAN:** Well, I was just going to say if we have someone
48 from Atlantic States come and talk about they do this with

1 summer flounder, I think it would be helpful for us to
2 understand the parameters that they are working under, like
3 ACFCMA and things that we don't have, that we don't operate
4 under here at the council, so that we can understand things that
5 we, the council, would have to do or doesn't have the ability to
6 do.

7
8 **MR. FISCHER:** I would basically echo what Martha just said, is I
9 think before they come, before the meeting actually, is have the
10 staff work with the Atlantic Commission to work out the
11 differences between a commission doing it and National Marine
12 Fisheries doing it and it might be easier to present the
13 alternatives at that time, with this pre worked out.

14
15 **CHAIRMAN RIECHERS:** Thank you. I am going to turn to Kevin.
16 Kevin, how do you want to proceed? Do you want to try to work a
17 little further in this document or through this document before
18 lunch or -- We are about at the time we were set to break.

19
20 **MR. ANSON:** I think we might want to maybe take some time for
21 lunch. We did Mackerel yesterday and so theoretically we've got
22 an hour maybe tomorrow and so I think that would probably be
23 good, to go ahead as scheduled with our break.

24
25 **CHAIRMAN RIECHERS:** Okay. Then I think the break is scheduled
26 from 11:30 and so I assume we can still keep that one o'clock
27 time for re-adjournment.

28
29 **MR. ANSON:** If you agree with that.

30
31 (Whereupon, the meeting recessed at 11:35 a.m., October 21,
32 2014.)

33
34 - - -

35
36 October 21, 2014

37
38 TUESDAY AFTERNOON SESSION

39
40 - - -

41
42 The Reef Fish Management Committee of the Gulf of Mexico Fishery
43 Management Council reconvened at the Battle House Renaissance
44 Mobile, Mobile, Alabama, Tuesday afternoon, October 21, 2014,
45 and was called to order at 1:00 p.m. by Chairman Robin Riechers.

46
47 **CHAIRMAN RIECHERS:** We will reconvene the Reef Fish Committee
48 meeting and bring us out of recess. We have people scurrying to

1 their chairs. Will conversations in the back of the room -- We
2 are fixing to resume. All right, Ms. Lasseter, we're going to
3 take up, again in Action 1 -- We basically added an action
4 alternative and I am going to look to the committee to see if
5 there's anything else we need to do or would like to do in this
6 section.

7
8 **MS. BADEMAN:** Before we leave this action, I wanted to make a
9 motion, which is now on the board. For Action 1, adding an
10 alternative -- In Alternative 2 of Action 1, add two new
11 options, Option c would allow delegation to sunset after two
12 calendar years of the program and Option d would allow
13 delegation to sunset after three years and then also to make the
14 preferred alternative in this action Alternative 2, Option d,
15 the three-year sunset. If I get a second, I can explain where
16 this is coming from.

17
18 **MR. GREENE:** Second.

19
20 **MS. BADEMAN:** Okay and so this -- The five states have been
21 talking about this whole amendment and there, I guess, is some
22 discomfort, maybe, with -- I guess people would be a little more
23 comfortable with maybe the allocations that we're going to talk
24 about later if we could review those a little more frequently
25 than five years. Two years might be too soon and so I am
26 thinking maybe a preferred alternative of three years for the
27 sunset.

28
29 **CHAIRMAN RIECHERS:** Any other discussion in that regard? These
30 are fairly self-explanatory. It's just an addition of two other
31 yearly -- Different year options of review or sunset. Any other
32 discussions? Hearing none and I assume everyone has had a
33 chance to read those on the board and make sure all committee
34 members have had a chance to read those as we discussed them.
35 All right. **All those in favor of adding these and selecting the
36 new Alternative 2, Option d, which is three calendar years, as
37 the preferred say aye; all those opposed same sign. The motion
38 passes.**

39
40 I think, if there's no further actions under this section, that
41 would take us to the next action section and I'm scrolling.
42 Ava, if you know where you are already, just tell us.

43
44 **DR. LASSETER:** We would skip Action 2, I believe. We are all --
45 Everybody is comfortable with the preferred alternative of
46 establishing five regions and so picking up with Action 3, it
47 begins on page 17.

48

1 **CHAIRMAN RIECHERS:** Okay. Action 3 is the discussions regarding
2 various allocation options.

3
4 **MR. FISCHER:** This is the area that the states have struggled
5 with throughout the document and some resolution has come to the
6 surface and it's sort of a marriage of Alternative 2 and 3. It
7 could be found on Table 2.3.5, Option d, on page 20. To that, I
8 am just giving everyone a reference point where to look. Under
9 Action 3, I am prepared to make a motion, unless you want to go
10 in a different direction, sir.

11
12 **CHAIRMAN RIECHERS:** If you have a motion, we will accept it now.

13
14 **MR. FISCHER:** Okay and so we could get something on the table to
15 discuss. **To add under 2.3, Action 3, which is apportioning the**
16 **recreational red snapper quota among regions, it would be based**
17 **on Table 2.3.5, Option d. The state allocation would be the**
18 **50/50 model of 1986 to 2012 and 2006 to 2012 with omitting the**
19 **years of 2006 and 2010.**

20
21 Of course, 2010 is the oil spill and we have omitted it in many
22 of our discussions and omitting 2006 -- If you recall, this was
23 brought up earlier and it was the year after Katrina, when the
24 entire northern Gulf was devastated and marinas were nonexistent
25 and people were working out of back canals and those numbers
26 didn't fit in and as a group of -- You know we come together and
27 decided that this could be the avenue. I could read the
28 percents off. They are in the Table 2.3.5, Option d, if you
29 need the exact percents for the record.

30
31 **CHAIRMAN RIECHERS:** I think -- Ava, go ahead.

32
33 **DR. LASSETER:** I just wanted to point out that we will need to
34 update the document to reflect 2013 landings in and so the
35 proportions will be changing slightly, I would assume.

36
37 **MR. STEVEN ATRAN:** In which alternative?

38
39 **CHAIRMAN RIECHERS:** It was -- Well, I think it's Option d that
40 is shown in Table 2.3.5 and is that correct, Mr. Fischer, as I
41 understand that?

42
43 **MR. FISCHER:** Right. It's 2.3.5 and my understanding is this
44 table only went up to 2012. I don't know if going up to 2013 is
45 germane at this time.

46
47 **CHAIRMAN RIECHERS:** I think what we may need to do -- I don't
48 know whether we need to do it now, Mara, and you may address

1 this, is figure out that fits in, because obviously it's
2 Alternative 3, Option a and b and some other alternative that's
3 here that I am trying to also work through here.

4

5 **MR. FISCHER:** As Ava pointed out, it's the same thing as
6 choosing Alternative 2, Option d, with Alternative 3, Option a
7 and b. It would be the exact same motion.

8

9 **CHAIRMAN RIECHERS:** So the motion -- You can say it's as shown
10 in Table 2.3.5, but it's -- Go ahead and state what your
11 preferreds are then, Myron, so that we can --

12

13 **MR. FISCHER:** Sure and being that they are written this way, it
14 will be a handful of preferreds. It would be Preferred
15 Alternative 2, Option d, and Preferred Alternative 3, Option a
16 and b.

17

18 **CHAIRMAN RIECHERS:** It's moved and seconded. Mara, does that
19 answer your concern, as I heard you expressing it down there?

20

21 **MS. LEVY:** Yes and I think just selecting the preferreds that
22 are reflected in that table, but we need to get the motion
23 right, I think, before we move on.

24

25 **MR. FISCHER:** Right and therefore, it wouldn't be to add. These
26 are already in the document and so it's under Action 3 and it
27 would be selecting Alternative 2d and Alternative 3a and b as
28 preferreds, which is the same language.

29

30 **CHAIRMAN RIECHERS:** I will entertain -- Let's get it up on the
31 board correctly, but if there's any discussion or rationale
32 someone wants to help with here as well that already understands
33 the percentages or the motion and doesn't need it on the board,
34 necessarily. I think we're about to get there. Myron, let's
35 double check and make sure it is right on the board. I think
36 Ava is trying to work to make sure it's right as well. Any
37 other discussion regarding this? Everybody ate too much and
38 needs a nap? All right. No further discussion then? **All those**
39 **in favor of the motion say aye; all those opposed same sign.**
40 **The motion passes.**

41

42 Any other thing to do in this section? Any other motions from
43 the committee? Okay. Let's move to the next section then and,
44 Ava, you can help us.

45

46 **DR. LASSETER:** Of course, sure. Action 4, because you're
47 considering a different alternative in Action 1 -- This action
48 pertains only if you're remaining with delegation as your

1 preferred alternative and so if there's no changes -- If you're
2 not thinking of -- Mara has got her hand up.

3
4 **MS. LEVY:** Well, I don't know that that's true. I think we have
5 to think about how the new alternative that you added in Action
6 1 would play into the rest of the document, because conceivably
7 you could allow this whole conservation equivalency thing to go
8 forward and select the things that you're going to let the
9 states manage, which would fall into this list.

10
11 I don't know that it's not relevant unless you pick delegation,
12 but I think we sort of have to flesh out what that new
13 alternative means to the rest of the document.

14
15 **CHAIRMAN RIECHERS:** Well and I don't disagree with that. I
16 think part of the notion was that as Ava works with National
17 Marine Fisheries Service and discusses that new alternative that
18 at the next possible time to look at this, that's when you might
19 -- Because right now, we still have the other preferred
20 alternative, but that's when you might change some of the notion
21 of what's in here or at least that's the way I understood it,
22 but go ahead, Mara.

23
24 **MS. LEVY:** Right and I just didn't want it to be on the record
25 that this is only relevant for the delegation alternative. I
26 think it could be relevant for the other one, but I don't think
27 you necessarily have to go change anything at this point.

28
29 **MR. FISCHER:** Would it be appropriate to create an alternative
30 that's just a place mark for the issues that Ava is going to
31 come up with in the future regarding if the equivalency method
32 is going through?

33
34 **CHAIRMAN RIECHERS:** I don't know exactly. I believe in my mind
35 that most of that would be covered in these suites of
36 alternatives of things that you can change now, but certainly
37 other committee members can weigh in.

38
39 **MS. BADEMAN:** Well that's kind of what I was going to say. I
40 mean if we go down this other road with the conservation
41 equivalency, is there anyone on the committee -- Are there other
42 things that we would need to consider here or could we just give
43 Ava latitude to develop these alternatives to apply to the
44 conservation equivalency also or do a similar suite of
45 alternatives? Do you know what I'm saying? Okay.

46
47 **CHAIRMAN RIECHERS:** Well, yes, and, Ava, go ahead.

48

1 **DR. LASSETER:** I really think -- Like what Mara said, until the
2 IPT gets together and we really flesh out what actions are going
3 to be needed -- Then we will come back to this and see if
4 anything needs to be modified. I would suggest that.

5
6 **CHAIRMAN RIECHERS:** Yes and it seems that we may either reduce
7 or expand this suite of tools and that's really what we're
8 talking about and I don't know that -- It seems to me that it
9 would probably be a reduction, if anything.

10
11 **DR. CRABTREE:** I would strongly urge you to reduce what you're
12 trying to do here, particularly Alternative 6, which is the
13 closed areas, and 7, which are the sub-allocations. I regard
14 these as simply unworkable.

15
16 It's not clear to me how a NEPA analysis would be done on these
17 and I think ultimately that will prevent this thing from getting
18 done and so I just don't think that can be done in this way and
19 you are best to focus on setting the season and the bag limit,
20 really.

21
22 Size limit is straightforward enough, but it's going to create a
23 lot of problems for the stock assessments and things, but to try
24 to get into closed areas and sub-allocations -- It's not clear
25 to me where is the analysis in the NEPA document done when a
26 state goes through that process and we normally, with
27 allocations, would do an environmental impact statement and so I
28 just think that goes far beyond what we're able to do here and
29 would urge you to reconsider those.

30
31 **CHAIRMAN RIECHERS:** Any further discussion there? Hearing none,
32 Ava.

33
34 **DR. LASSETER:** Okay. Thank you. So the next action is Action
35 5, which starts on page 30. Page 30, Action 5, and this is the
36 for-hire vessels' federal permit restrictions. Your current
37 preferred alternative is Alternative 2, to exclude the provision
38 requiring that vessels with the Gulf charter headboat permits
39 comply with the federal regulations that are more restrictive.
40 Is there any discussion?

41
42 **MR. PERRET:** I am not on your committee, but 30B goes away with
43 the preferred alternative for state waters and what happens to
44 those vessels that have the federal permit if, if, a region or
45 regions decides that they want more restrictive regulations in
46 the EEZ in their region? Does 30B still apply in the EEZ?

47
48 **DR. LASSETER:** In the EEZ? 30B is only about that they cannot

1 fish in state waters.

2
3 **MR. PERRET:** More restrictive regulations. If a region places
4 more restrictive regulations in the EEZ, what happens to those
5 permit holders with 30B?

6
7 **DR. CRABTREE:** The state is more restrictive? They would have
8 to comply with the more restrictive state rule, I would think,
9 but I will tell you, frankly, I don't think this part of this
10 amendment is doable and I don't -- I mean what happens if two
11 states pull out of this decide -- So we go down the summer
12 flounder route and two states decide we don't want to submit
13 conservation plans and we're going to open our state waters up
14 year-round.

15
16 I don't see how we can then make a change that allows the
17 charter boats in those states to fish year-round in those state
18 waters, because that's going to make the harvest levels go up
19 and we're going to have to come in and take those pounds of fish
20 away from the other states that do have -- We could find
21 ourselves in a position where we're unable to constrain the
22 harvest and stay within the quota and so I think this one is
23 going to have to be relooked at in the context of how we exactly
24 do this.

25
26 If all of the states are onboard and that's what we do, then 30B
27 is moot anyway, because there is no disparity between the state
28 and federal regulations, but if we have states that don't want
29 to do this, then it seems to me you need the 30B rule in place
30 and I am afraid we run afoul with weakening our accountability
31 measures.

32
33 Last time we talked about this was before the court had ruled
34 and we had revised these things, but I think we're going to have
35 to rethink this one.

36
37 **MR. PERRET:** But if we get to this regional management and we
38 have five or four or whatever number of regions, what happens if
39 a region decides that they are going to be more restrictive in
40 the EEZ off their region? Will 30B apply to those permitted
41 vessels?

42
43 **DR. CRABTREE:** They're going to be -- They're going to have a
44 different season that's going to apply to any vessel landing
45 there and any charter boat landing there would have to comply
46 with that management regime if it was approved as a conservation
47 equivalent.

48

1 **MR. PERRET:** Well and, again, I'm not on your committee, but I
2 would certainly feel a lot more comfortable about the preferred
3 alternative if it did not only state state waters. I mean if
4 we're going to do away with 30B, we should say state and EEZ
5 waters and, again, I am not on the committee, but I think that's
6 something that needs to be discussed.

7
8 **MR. ANSON:** I was just going to add that the way I envision this
9 -- You know it goes back to the landing thing and then if states
10 are doing more restrictive in one body of water versus the
11 other. I mean we had some comments from Lieutenant Commander
12 Brand about the enforcement and such and so that potentially
13 could create some enforcement issues if you have those types of
14 things going on, but that's -- You know it goes -- If we go back
15 to this notion of if a state or region doesn't want to go
16 through with submitting a plan, then they go default back to the
17 current regulations. The current regulations are 30B.

18
19 **MR. FISCHER:** Mr. Chairman, I don't know if we have to clean up
20 any language and so I will just put it for discussion and not as
21 a motion, but on Preferred Alternative 2, if we would say
22 exclude the provision for participating states, the provision
23 requiring, would that make any difference or would that assist?

24
25 **CHAIRMAN RIECHERS:** Well, I think that would solve the issue of
26 what Dr. Crabtree spoke to. I am thinking there may not be an
27 issue here, because I think it's covered later on in the
28 document, where a state basically -- If you don't go into this
29 plan, it reverts back to the other plan and then you would still
30 have this provision, but this is -- I mean the way the whole
31 document is written, this is assuming that you're in a regional
32 management plan or you're in one of those regions. Any other
33 comments? Hearing none, we will move to the next item.

34
35 **DR. LASSETER:** Thank you, Mr. Chairman. Action 6 starts on page
36 32 and these are the post-season accountability measures
37 adjusting for regional overages and as I noted in the
38 presentation, our Alternative 1 needs to be updated to reflect
39 that there is now a Gulf-wide overage in place or there will be
40 implemented shortly from the framework action that you took
41 final action on at the last meeting.

42
43 Our no action now is -- I have it on the presentation slide. No
44 action will be while red snapper is under a rebuilding plan, if
45 the recreational red snapper quota is exceeded, deduct the full
46 amount of the overage from the recreational quota in the
47 following season.

1 The recreational ACT will be adjusted to reflect the previously
2 established percent buffer and so our no action will be Gulf-
3 wide overage adjustment and so you have, at your discretion, to
4 modify the alternatives.

5
6 I guess the real difference between them is are you going to
7 apply the overage adjustment to the regions or keeping it Gulf-
8 wide? That's the main difference between 2 and 3. Alternative
9 2 would apply Gulf-wide and 3 is the regional-specific.

10
11 **CHAIRMAN RIECHERS:** Right and so the only thing that has changed
12 is really what now is currently the status quo.

13
14 **DR. LASSETER:** Right. That changes and so as a result of that,
15 your Preferred Alternative 3 -- We would need to reword the
16 alternative. The intent is to apply the overage adjustment to
17 the region that exceeded their portion of the quota and that
18 would maintain the original intent, but it follows that the
19 overage adjustment is going to be in place as no action.

20
21 **DR. CRABTREE:** One thing that also needs to be cleared up in
22 here is now we have an annual catch target and so we would
23 deduct the -- Would we deduct the amount of the overage from
24 their annual catch target the next year?

25
26 **DR. LASSETER:** The way I understood it, and I believe I spoke
27 with Mara about this, it's on the presentation, the Action 6
28 slide. I had provided some updated Alternative 1 language that
29 does reflect the ACT and so I'm going to read it one more time.

30
31 While red snapper is under a rebuilding plan, if the
32 recreational red snapper quota is exceeded, deduct the full
33 amount of the overage from the recreational quota in the
34 following season and the recreational ACT will be adjusted to
35 reflect the previously established percent buffer and so the
36 status quo is now both that there is the overage adjustment and
37 the ACT.

38
39 **DR. CRABTREE:** So that needs to be reflected here and also, I
40 guess, Mr. Chairman, we could come back to it, but I think back
41 in the allocations that we just talked about that we're actually
42 not allocating the quotas to the state, but we're allocating the
43 annual catch target, which is a lesser amount. That's what the
44 states are managing for catch and so that language in the -- In
45 all these alternatives will have to be modified to reflect that,
46 I think.

47
48 **DR. LASSETER:** To continue on that, also on the presentation you

1 had the updated Alternative 1 provided for the allocation Action
2 3, which would be no action, retain a Gulf-wide recreational
3 quota and apply a 20 percent buffer. The 2015 ACT would be
4 4.312 million pounds.
5

6 **MR. GREENE:** So assuming that all the states are going to
7 participate is one thing, but if you have a state or two states
8 that decide not to, will their overage come off the top and then
9 the regions have to deal with it or how would that be played
10 out?
11

12 **DR. CRABTREE:** You mean so if we had a couple of states that
13 didn't participate and they opened state waters year-round and
14 so they were over, I think that what we thought -- What they
15 went over would have to come off the top the next year, because
16 I am not sure how else to work it.
17

18 **DR. LASSETER:** I believe in the recreational AM framework action
19 that that is the way that the two AMs work together, that the
20 overage adjustment comes off first and then the ACT is applied,
21 the buffer is applied.
22

23 **CHAIRMAN RIECHERS:** Any other discussion?
24

25 **MR. DALE DIAZ:** I might be missing something here, but the way I
26 am thinking about this is that there's a 20 percent buffer that
27 we have in place now and if a region was to go over, as long as
28 they didn't exceed that 20 percent buffer, they still would not
29 be in a position where they would be penalized and am I correct
30 in the way I'm thinking on that? Okay. That clears it up for
31 me a little bit.
32

33 **MR. FISCHER:** I am just seeking clarification and so if a region
34 opts out and they exceed the quota, then it comes off the top
35 and all the other regions have to sacrifice the following year?
36

37 **CHAIRMAN RIECHERS:** Well, I think that's what Roy just
38 suggested, but I don't know that that's the way it has to be.
39 It seems that's a default region by itself at that point, in
40 some respects, and based on what we just passed previously, each
41 region -- We are doing it regionally, but --
42

43 **MR. FISCHER:** Because I mean we've discussed this for a few
44 years and I think this is the first time we've heard it this
45 way, that it's always been the region that exceeds catch and it
46 comes off of their share and that was always the gist of why
47 we're doing this.
48

1 **MS. LEVY:** We would have to modify this to reflect the ACT and
2 such, but right now, the preferred alternative says that if a
3 region exceeds the regional quota that NMFS would file a
4 notification to reduce the regional quota in the following year
5 by the amount of the regional overage and that would only apply
6 if the total harvest exceeds the Gulf-wide ACL and so if one
7 region happened to go over a little, but the Gulf-wide ACL was
8 not exceeded or quota, then we wouldn't have any type of
9 payback. It's if the region goes over and that results in the
10 total going over, then that region would pay it back. That's
11 how I understand the current preferred alternative sets it up.

12
13 **MR. FISCHER:** Thank you, but, Mara, that's not what I'm
14 questioning. If it's a state opts out and blatantly goes over,
15 they don't pay that back and they are just paying their share
16 back. The other four states receive the burden and they are
17 just getting that small percentage -- Would that be correct,
18 that small percentage deducted?

19
20 **MS. LEVY:** So the region opts out and then the whole Gulf-wide
21 quota is exceeded and what would happen then? I mean I think
22 the same thing would happen. That region would get a deduction
23 on their quota and if that resulted in no federal season, then I
24 assume there would be no federal season, but beyond having no
25 federal season, I don't know what other authority there is.

26
27 **CHAIRMAN RIECHERS:** Any other discussion in this section?

28
29 **MR. DIAZ:** I believe what we need to do is I would like to see
30 us leave the preferred alternative as Alternative 3 as we have
31 it now, but not to have Option b as preferred anymore, to take
32 that off. **My motion would be to no longer consider Option b as**
33 **the preferred option.**

34
35 **CHAIRMAN RIECHERS:** It may be helpful if you -- Just for
36 readability, if you maybe stop it after "Preferred Alternative
37 3" and if you want to just push that down, just for readability
38 purposes, because what we're really doing is removing the
39 preferred off of Option b. Do I hear a second to that motion?
40 It's seconded. Dale, do you want to provide a little rationale
41 there?

42
43 **MR. DIAZ:** I believe, since the court ruling last year, that we
44 probably -- We would not have an opportunity to not act on any
45 overages in the same year. I think we're obligated at this
46 point to provide a payback if there's an overage and so it's
47 responding to the court ruling from this year.

48

1 **MR. ANSON:** To help clean up the document, could I offer a
2 substitute motion that would eliminate both Option a and Option
3 b, since they no longer apply, just eliminate them from the
4 document itself entirely?
5

6 **CHAIRMAN RIECHERS:** Do you want to make that as a substitute or
7 a friendly amendment or how do you want to do that?
8

9 **MR. ANSON:** A friendly amendment, possibly.
10

11 **CHAIRMAN RIECHERS:** Okay. Not that there truly are friendly
12 amendments, but we allow them here. The motion not is to remove
13 Options a and b in Alternative 2, 3, and 4 and you can say put
14 them in Considered but Rejected.
15

16 Any further discussion? As Dale indicated, he's doing this
17 basically because of the recent court decision and that you have
18 to go ahead and take immediate action and there's not a phase-in
19 time here to do that, as had previously been contemplated.
20

21 With no further discussion, the motion is on the board,
22 basically removing Options a and b in Alternatives 2, 3, and 4
23 and putting them in the Considered but Rejected section. It's
24 under Action 6.
25

26 **MR. ACTION:** Possibly put "In Action 6, remove --"
27

28 **CHAIRMAN RIECHERS:** All right. We've had some discussion
29 regarding this and is there any more discussion? **All those in**
30 **favor of the motion say aye; all those opposed same sign. The**
31 **motion carries.** Ava.
32

33 **DR. LASSETER:** Thank you, Mr. Chairman. Okay and moving on to -
34 - Well, one more word on Action 6. So the IPT will be updating
35 the language in these alternatives and this section accordingly.
36

37 Action 7 begins on page 36 and this establishes the default
38 regulations. It was developed to be applicable only if
39 delegation is selected and as Mara raised earlier, the IPT will
40 get together and work through the applicability of this, given
41 the new alternative and what needs to be modified, but
42 basically, this is what happens if a region opts out or has its
43 delegation suspended and we could modify it around this new
44 summer flounder model, where it would be what happens if a
45 proposal is returned and needs to be modified accordingly and so
46 I'm not sure how much work there is for the committee to do with
47 this. I think the IPT needs to get into this and bring you back
48 some new alternatives.

1
2 **CHAIRMAN RIECHERS:** Any committee discussion regarding this?
3 All right.
4
5 **DR. LASSETER:** That is the final action in the document. Going
6 forward, the IPT, again, will meet and discuss the added
7 alternative in Action 1 and see what additional actions would be
8 required for this document.
9
10 **CHAIRMAN RIECHERS:** Any other business in this document?
11
12 **DR. CRABTREE:** So we would bring this back in January to review
13 and I assume we will do another round of public hearings on
14 this, because we are fundamentally changing the whole program
15 and everything, and then I guess we will proceed from there.
16
17 **CHAIRMAN RIECHERS:** The only way I would think it fundamentally
18 changes, and this is just me and I am just talking, but the only
19 thing that fundamentally changes is if we actually attempt to
20 use the different delegation option, because it's within the
21 constructs of the other items that we used, but it's just a
22 different way to achieve those items.
23
24 **DR. CRABTREE:** Okay, but if we get to the point where we decide
25 that's how we're going to do it and make the preferred, then we
26 would presumably do more public hearings?
27
28 **CHAIRMAN RIECHERS:** I don't know. I mean that's more of a legal
29 question than is mine, Roy, but I mean I don't know that it
30 changes the suite of alternatives that we've looked at, but it's
31 just a way of getting there, in some respects, but it may
32 ultimately change it when we get other options there that I am
33 not aware of at this point.
34
35 **DR. LASSETER:** I really feel the IPT needs to meet and discuss a
36 lot of this and figure it out, but we did address, at the
37 beginning, talking about the timeline at the end and so I think
38 that it's appropriate to bring up that we could bring the
39 document to you in January. It's going to take a lot of work,
40 but, again, it would not be able to be implemented until the
41 2016 year.
42
43 **CHAIRMAN RIECHERS:** Any other questions? All right. Hearing
44 none, then I guess we move on to the next item on the agenda,
45 which is Final Action Amendment 40, Recreational Red Snapper
46 Regional Management. Hopefully everybody has found it and is
47 ready to go. A little nod of the head. It looks like it,
48 Assane, and go ahead.

1
2 **FINAL ACTION - AMENDMENT 40 - RECREATIONAL RED SNAPPER SECTOR**
3 **SEPARATION**
4 **OVERVIEW OF AMENDMENT**
5

6 **DR. ASSANE DIAGNE:** Thank you, Mr. Riechers. We are going to
7 summarize Reef Fish Amendment 40 and so we can start with the
8 first action in the tab and it starts on page 19. This first
9 action would consider the establishment of a private angling
10 component and a federal for-hire component, essentially change
11 the structure that we currently have and so the no action
12 alternative, or the status quo, would maintain the recreational
13 sector as one and we have the preferred alternative that you
14 have selected in the past, which would establish two separate
15 and distinct components within the recreational sector.

16
17 One of the components would be the private angling component and
18 the other component would be the federally-permitted for-hire
19 component. The private angling component, we have to note that
20 it would include private anglers as well as non-federally-
21 permitted for-hire operators, if you would, those that are state
22 permitted.

23
24 We also have, in the document, alternatives that would consider
25 voluntary establishment of those components, but you indicated,
26 by your preferred selection, that you would create these two
27 components for all for-hire operators. That's the first action.

28
29 **CHAIRMAN RIECHERS:** Any discussion in the first action? Seeing
30 none, go ahead and move on, Assane.

31
32 **DR. DIAGNE:** Thank you. The second action would start on page
33 23. This action considers alternative allocations of the
34 recreational quota between the two components. We have a series
35 of alternatives, a total of nine, I believe, but if we could, we
36 could just go to the Table 2.3, which is on page 27.

37
38 That gives a quick summary of the percentages that would be
39 allocated to each component as well as the equivalent in pounds,
40 based on the eleven-million-pound quota that we have right now,
41 status quo, eleven-million pounds total. We have all of the
42 alternatives here, including the preferred alternative that you
43 selected last time, and that is indicated here in bold. That is
44 the second action, Mr. Chair.

45
46 **CHAIRMAN RIECHERS:** Any discussion regarding this action?

47
48 **MS. BADEMAN:** Didn't we get an email with a different table in

1 it?

2

3 **CHAIRMAN RIECHERS:** Can you say that again?

4

5 **MS. BADEMAN:** Maybe I am looking at the wrong thing, but I
6 thought we got an email that had a different table in it.

7

8 **DR. DIAGNE:** Yes, that table -- Earlier today, when Mr.
9 Strelcheck gave his presentation, he indicated that these
10 numbers will be changing based on the calibration work and he
11 provided you with a range and so hopefully he would want to add
12 to it and explain to you a bit what's on that table.

13

14 **MR. STRELCHECK:** Can we go ahead and bring up that slide and I
15 will just walk through it real quick? As mentioned earlier this
16 morning during the MRIP calibration presentation, we have
17 results available and we don't have a preferred option selected
18 in terms of the calibration approach.

19

20 This slide summarizes the allocations in Amendment 40 if the
21 years 2004 through 2012 are not calibrated and so those should
22 be consistent with your amendment, with the exception of
23 Alternative 9, the last option, which Assane and I have
24 discussed and determined there was an error in the calculations
25 as presented in the amendment.

26

27 The third and fourth columns of this table represent the
28 calibrated allocations based on the maximum amount that the
29 allocations could change and so not knowing what the preferred
30 option is for calibration, what I wanted to give you is an idea
31 of the magnitude of change, so that you would have some sense of
32 what impact the calibration has on your allocation estimates and
33 the last column obviously shows the difference.

34

35 All of the changes would reduce the allocation for the charter
36 sector and increase the allocation for the private sector with
37 varying magnitudes, but keep in mind that this is the absolutely
38 maximum change, given the current calibration methods.

39

40 There could be some method selected that's between the values
41 presented here and the preferred or existing alternatives with
42 no calibration at this stage and so there's about a 10 percent
43 difference, roughly, in the estimates. Are there questions?

44

45 **CHAIRMAN RIECHERS:** So given that there's this uncertainty and
46 given that you're just showing us the range of uncertainty, how
47 does that impact the decision, if it were to be made, on a
48 particular preferred alternative here?

1
2 **MR. STRELCHECK:** Based on the record you've built I think at
3 this stage with previous meetings, you've focused on the
4 rationale behind the years being selected to choose your
5 preferred alternative and that would form the basis, obviously,
6 of your preferred alternative.

7
8 Obviously you are interested in what's the outcome of those
9 results and the ultimate allocations that result from that, but
10 this gives you at least an indication that once the dust settles
11 on the calibration that the results will be somewhere within
12 this bracketed range of values.

13
14 **CHAIRMAN RIECHERS:** If I am remembering right, the dust is going
15 to settle on red snapper in the next two to three weeks?

16
17 **MR. STRELCHECK:** Or sooner, yes.

18
19 **MR. FISCHER:** I think this solves one of the issues and I am
20 going to talk my way through it and tell me where I'm incorrect,
21 but so we were planning the document based on un-calibrated
22 numbers, but once implemented, the harvest will be on the new
23 MRIP protocols and so it would be the new numbers. What this
24 does is it adjusts the numbers in the document up to reflect
25 what the harvest would be in the future that we have to work
26 within.

27
28 **MR. STRELCHECK:** This is taking your time series that you had
29 looked at, 1986 through 2013, and replacing the values for 2004
30 to 2012, because that's what's been calibrated, and re-computing
31 your allocations and the calibration scales your landings during
32 that 2004 through 2012 time period up.

33
34 That will all ultimately be included in a stock assessment and
35 reflected in changes in the status of the stock and yield
36 estimates that come out of the stock assessment. In terms of
37 allocations, because you are looking at the proportional
38 difference between private and charter, we are just simply
39 looking at what's the direction of the change and how does the
40 calibration affect the amount that will be allocated between one
41 sector and another.

42
43 With the calibration, what it's indicating is that there's a
44 disproportional effect with the landings for the private sector
45 going up more so than the landings for the charter sector and
46 that's why you see the reduction in charter allocation and the
47 increase in private allocation.

1 **MR. FISCHER:** You have these as estimates and when could we
2 expect some hard numbers?
3

4 **MR. STRELCHECK:** Our expectation is a preferred approach would
5 be within the next several weeks. It could be sooner than that.
6 The consultants are reviewing the calibration results to make a
7 determination of what's the preferred method.
8

9 **MR. FISCHER:** So the numbers are calculated and you're just
10 trying to figure out what method is to be used.
11

12 **MR. STRELCHECK:** Right, yes, and that's why I presented the
13 maximum change. There is two methods, two different iterations
14 of the methods, and so there's essentially four calibrated
15 streams of landings that we've looked at and from that, I took
16 the one that had the greatest change, to give you an idea of
17 what the difference are. As I said, it could very well fall
18 somewhere in the middle of all that, but I don't know what the
19 preferred option is. That is yet to be determined.
20

21 **MR. PERRET:** So, Andy, if my mental math is right and roughly a
22 max of about 3 percent, 3 percent of that quota is 150,000
23 pounds and is that -- We're talking roughly 150,000 pounds of
24 fish one way or the other.
25

26 **DR. CRABTREE:** Andy, we expect to have these numbers finalized
27 what, in the next few weeks? So presumably, if we take final
28 action on this, staff would update these landings numbers in the
29 amendment before they submit it to us and we would use the
30 calibrated numbers here in the amendment and that's what the
31 actual percentages would be in the rule that implements it. At
32 least that's my read on what we're talking about doing.
33

34 **MR. GREENE:** If you will remember at the last meeting when I
35 changed the preferred, I kind of cautioned everybody that this
36 was coming and emphasized the fact that we look at the years and
37 not necessarily the percentages and the percentages would be
38 just whatever they were and if this is the worst case, I mean I
39 see no problem it.
40

41 I mean it's in line with what we're trying to do in Amendment 39
42 as far as the same timeframes that the states used to develop
43 their allocation and I think it also covers the allocation
44 policy set forth that the council uses and so you can bicker
45 about a few percentages here or there, but I think the overall
46 thing is that we look at the years that we've chosen and we move
47 forward with it.
48

1 **CHAIRMAN RIECHERS:** Any further discussion of either the table
2 that Andy has presented or this option as a whole?
3

4 **MR. FISCHER:** In the document, we discussed the years, but we
5 have the old percentages and should we update the percentages in
6 the document to reflect the new calculations?
7

8 **CHAIRMAN RIECHERS:** I think Dr. Crabtree just said that if we
9 adopt it that he would do that prior to publication. At least
10 that's what I thought I heard him say.
11

12 **DR. CRABTREE:** Yes and I believe your staff will do that before
13 they submit it to us. We will provide them the final numbers
14 and they will update it and then submit it to us.
15

16 **MR. FISCHER:** Thank you and so we don't need any type of motion
17 is what it appears.
18

19 **DR. PAMELA DANA:** Andy, I was under the impression from the MRIP
20 folks, over recent presentations, that their calibration method
21 wouldn't be determined for the course of -- I mean they were
22 still determining it and it wouldn't be -- It may be up to a
23 year before they had a calibration method and was I hearing them
24 wrong or --
25

26 **MR. STRELCHECK:** The reason we scheduled the calibration
27 workshop for early September was so that it would be able to
28 influence the upcoming red snapper stock assessment. They have
29 delivered the results as of October 14 and the consultants are
30 reviewing it, but the intent is to have a determination made by
31 the first of November, so that the stock assessment scientists
32 can begin using that data for the red snapper stock assessment.
33

34 In terms of calibrating all of the species, that will take a
35 little bit longer and I expect that will roll into early next
36 year, but we aren't looking at a year or two down the road for
37 this. Now, there are other methods that I discussed this
38 morning that will take longer, but in terms of this shorter-term
39 approach, we can address it within the next few weeks.
40

41 **CHAIRMAN RIECHERS:** Any other items for discussion? All right,
42 Assane, go ahead.
43

44 **DR. DIAGNE:** Thank you, Mr. Riechers. The third and final
45 action in this amendment, Action 3, is on page 31. It considers
46 separate closure provisions for these two components that would
47 be created by Reef Fish Amendment 40 and you have already
48 selected a preferred and that is Preferred Alternative 2 and

1 that is the third action.
2
3 **CHAIRMAN RIECHERS:** Any discussion of Action 3? I don't see any
4 hands and all right, Dr. Diagne.
5
6 **DR. DIAGNE:** Thank you and if there are no questions on the
7 actions, I think I am going to take a couple of minutes to talk
8 about the economic analysis in Amendment 40.
9
10 **CHAIRMAN RIECHERS:** We've got a question now and hold on.
11 Myron.
12
13 **MR. FISCHER:** I think before we go there that I would like to
14 add another action item or let me say I have heard conversation
15 of people who would like to add an action item. I don't want to
16 speak for everyone, but before we get into economic analysis, I
17 think there was some talk of a sunset provision and if this
18 would be the appropriate time. Others can make the motion or I
19 can stumble through it.
20
21 **CHAIRMAN RIECHERS:** Sure, go ahead.
22
23 **MR. FISCHER:** It's on the board, wow. Did we vote on it? Okay.
24 I will read it. Well, who made it?
25
26 **MS. BADEMAN:** I sent it to them.
27
28 **MR. FISCHER:** Okay. Martha made the motion and I will let her
29 take over.
30
31 **CHAIRMAN RIECHERS:** Go ahead, guys, one of you. If you want to
32 put a motion on the board, let's get it on the board to discuss.
33
34 **MS. BADEMAN:** Sure. I will make it. I emailed it. **My motion**
35 **is to add a new action to create a sunset provision on sector**
36 **separation with options for sunset after two, three, and five**
37 **years of the program.**
38
39 **CHAIRMAN RIECHERS:** Do I hear a second? Okay. It's seconded
40 and now Mr. Pearce.
41
42 **MR. PEARCE:** Thank you, Mr. Chairman. Would this mean we would
43 have to send this back to public hearings or this doesn't have
44 to go out to public hearings if we do this, because right now,
45 we're looking at final action at this meeting. If we pass this
46 motion, will we have to go back to the public?
47
48 **CHAIRMAN RIECHERS:** I would look to Mara regarding that. I

1 don't know. Much as I said in the last one, I am not the legal
2 counsel.

3
4 **MS. LEVY:** I will have to think about that. I mean the issue
5 also is with the NEPA document and whether we would have to
6 supplement that piece of it and so I don't have a concrete
7 answer for you right now. I mean you are adding a new action
8 that hasn't been contemplated, but it doesn't really change
9 anything other than ending the program and so I am not sure, but
10 I will look into it and get back to you.

11
12 **EXECUTIVE DIRECTOR GREGORY:** Mara, my understanding is we are
13 having public testimony this week on this and that might suffice
14 for the Magnuson Act. I mean it's up to the council's
15 discretion if they want to go out to another round of public
16 hearings, but clearly the NEPA process is different.

17
18 **MR. PEARCE:** I am in favor of this motion as long as we don't
19 have to go back out and try and finish this amendment this
20 meeting. As long as we don't have to go out, Mara, I am fine
21 with this, but if we do, I will have to worry about that.

22
23 **CHAIRMAN RIECHERS:** Maybe by full council we will have at least
24 some advice in that regard. Any other discussions? This is a
25 fairly straightforward motion regarding a sunset of the document
26 of two, three, and five years, options of two, three, and five
27 years.

28
29 **MR. FISCHER:** I think to let people comment at the podium,
30 during public testimony, I would rather see it as reworded,
31 where the two, three, and five is an a, b, and c and we choose
32 one as a preferred to stir some conversation up or we leave it
33 as it is. We've got nine other people on this committee.

34
35 **CHAIRMAN RIECHERS:** Well, you bring up a good point. If we are
36 going to not go back out for public comment, but include this in
37 the document, there will have to be a preferred that would have
38 to be chosen, either now or at full council. So certainly
39 that's true, Myron, if that's the way this would work. We can
40 wait on that advice and then make that decision, but we would
41 have to do that. Corky.

42
43 **MR. PERRET:** Obviously Myron had great training. That's exactly
44 what I wanted to say. It seems to me there should be an a, b,
45 and c and one of them should be a preferred.

46
47 **CHAIRMAN RIECHERS:** Just for simplicity, can we leave it like it
48 is, but when we bring it back up in full council, we will have

1 it as an a, b, and c? Does that matter to you guys?
2
3 **MR. DIAZ:** We will have had public testimony at that point and
4 that will have passed and so the public may not have an
5 opportunity to speak to it. That would be my concern about
6 waiting until full council.
7
8 **CHAIRMAN RIECHERS:** Can we -- Does anyone have a preferred or do
9 they just want to see if we add it first and then do that?
10 Let's do it that way. Let's add it first and then see if
11 someone wants to select a preferred.
12
13 **MR. PEARCE:** I would go with the preferred being five years, to
14 start it off, if I can get a second.
15
16 **CHAIRMAN RIECHERS:** Let's vote it in first, Harlon, and then I
17 will recognize you for that motion, if that's okay. Okay.
18 We've got Options a, b, and c, two, three, and five years,
19 basically a sunset provision. I hesitate to ask, but any
20 further discussion? **Hearing no further discussion, all those in
21 favor of adding this as an alternative say aye; all those
22 opposed same sign. The motion passes and now, Mr. Pearce, I
23 will recognize you.**
24
25 **MR. PEARCE:** Thank you, Mr. Chairman. I would make a motion
26 that the preferred be the five-year option.
27
28 **CHAIRMAN RIECHERS:** Do I hear a second? The motion fails for
29 lack of a second.
30
31 **MR. FISCHER:** I will take a shot. **Three years, which I guess
32 would be Option b, if anyone supports it.**
33
34 **CHAIRMAN RIECHERS:** That one failed and so it's off the board
35 now and so it's a motion again and it's a motion for a three-
36 year preferred option, Option b, made by Mr. Fischer and is
37 there a second?
38
39 **MR. DIAZ:** Second.
40
41 **CHAIRMAN RIECHERS:** Mr. Diaz seconds. Any further discussion
42 regarding the preferred option motion? **Hearing none, all those
43 in favor of the preferred option being three years, Option b,
44 say aye; all those opposed same sign. The motion passes.**
45
46 **MR. PEARCE:** Do we need to add a no action alternative to this
47 too or do we not?
48

1 **CHAIRMAN RIECHERS:** I'm sorry. Can you say that again, Mr.
2 Pearce?

3
4 **MR. PEARCE:** Do we need to add a no action alternative to the
5 head of this one, just to have it, or not?

6
7 **CHAIRMAN RIECHERS:** Yes, in the construct of an alternative,
8 there would have to be a no action alternative as well. Yes and
9 thank you. Any further discussion now? Now we are going to
10 turn to Assane and, Assane, what were you going to try to cover?
11 I am sorry.

12
13 **DR. DIAGNE:** I am just covering still this amendment. I am
14 going to discuss in specifics Actions 1 and 2. For those two
15 actions, as part of the usual process, we did provide detailed
16 analysis in Section 4 for all of the environment, if you would,
17 physical, administrative, social, and economics, but I guess for
18 a variety of reasons, it seems that a segment, if you would, of
19 our constituency or members do not understand the economic
20 analysis in this document and that is why I am taking just a
21 couple of minutes.

22
23 The first action essentially will do what -- It would create two
24 new components within the recreational sector and so any
25 numbers, economic numbers, in terms of impacts, as we usually
26 measure them, or economic effects, if you would, would be
27 hypothetical and would be a stretch.

28
29 We are creating two new components and so the best one could do
30 there is to discuss what could be in the future, essentially,
31 and I think the document clearly states that potential effects
32 would, for the large part, depend on the subsequent management
33 measures that would be implemented in this amendment. So for
34 Action 1, I will just leave it at that and I think the bulk of
35 the discussion or the questions have to do with the allocation
36 itself.

37
38 Since we have started this work, new research has been completed
39 and published, namely two what I consider important papers by --
40 One is Holzer and McConnell and the second one is by Dr. Abbott,
41 who spoke here before you.

42
43 Essentially, the gist of it is basing potential efficiency gains
44 on looking at the equimarginal principle, which is those two
45 curves that are typically shown to us. It does not make any
46 sense if you cannot sort out the anglers. It sounds complicated
47 like that, but essentially what they are saying is if you don't
48 have a way of attributing each resource to the one that wants to

1 pay the highest value, these benefits are highly hypothetical
2 and actually do not mean anything.

3
4 For that reason, in this allocation part of the amendment, we
5 decided to offer you reference to those papers and discuss the
6 implications and offer an extensive qualitative discussion.
7 That is one thing.

8
9 The second thing is because we are creating two new components,
10 you don't even have a baseline or a status quo allocation to
11 speak of. It doesn't exist. Right now, all we have is the
12 level of harvest by the recreational sector. We don't have a
13 status quo allocation in sector separation. We are going to
14 create an allocation for the first time.

15
16 For this and other reasons, there are no numbers, if you would,
17 as you usually see them in terms of consumer surplus and
18 producer surplus. I will take questions and maybe explain
19 further, if need be. Thank you.

20
21 **CHAIRMAN RIECHERS:** We thank you for that explanation. I guess
22 I am at least going to make one comment in that regard. I think
23 certainly within the context of us choosing these preferred
24 allocations -- That at least provides you a baseline allocation
25 where that further analysis could have been completed and
26 compared.

27
28 I understand you are suggesting that you can't tease out the
29 individuals, but I don't know that you couldn't go ahead and
30 have some dialogue about the charter sector at this level as
31 compared to the status quo level and have those comparisons as
32 well as the private recreational at this level as compared to
33 the status quo level. That's just a thought in that regard.

34
35 **DR. DIAGNE:** If I may about that thought, let's say, for
36 example, you have two fish and you have a hundred anglers.
37 Between those hundred anglers, you have one who is willing to
38 pay five-dollars per fish and you have another one who is
39 willing to pay four-dollars per fish and that's a total of nine-
40 dollars, if they are the two anglers who get the fish, but what
41 if the other ninety-eight anglers that you have remaining are
42 willing to pay fifty-cents or zero? What would be then the
43 benefit that you would realize if you throw the fish in the
44 water and release, all hundred anglers?

45
46 When you have open access, that is precisely what you have. You
47 have a hundred anglers, but you have no idea or no system by
48 which you can sort them out and go to the highest bidder and to

1 the second and to the third and fourth and the economic analysis
2 that offers benefits, an underlying assumption rests on that, on
3 the fact that you have the ability to separate the anglers by
4 willingness to pay. In short, a sorting mechanism.

5
6 The quickest way of doing that is a market. For example, when
7 you auction properties, that is what you do. The highest bidder
8 gets it and the second gets the second and so forth. What Mr.
9 Riechers is suggesting would not be also feasible, because the
10 numbers themselves have no meaning at this point.

11
12 **CHAIRMAN RIECHERS:** Any other comments for Assane? Okay. Let's
13 move on to Tab B-7(a) and (b). Mr. Greene.

14
15 **MR. GREENE:** At this point, would we need a motion to send this
16 to the Secretary of Commerce or will that happen at some other
17 time?

18
19 **CHAIRMAN RIECHERS:** You can do it now if you would like, sir.

20
21 **MR. GREENE:** I would like to make a motion, whenever you're
22 ready.

23
24 **CHAIRMAN RIECHERS:** Mr. Greene, hold on. I'm sorry. Other
25 folks down the way here are suggesting we should look at the
26 comments and maybe even the codified regs before we do that.
27 Sorry.

28
29 **COMMENTS RECEIVED**

30
31 **MS. EMILY MUEHLSTEIN:** Okay. Perfect. So the first thing that
32 I would like to do is John is going to pull up a tool that we
33 have been working on. I would like to show you it because we
34 recognize that those online comments, especially for these
35 issues like Amendment 40, where we get 2,000 comments or so,
36 it's sort of difficult to be able to read through those
37 directly.

38
39 What we've done is John created a georeferenced map of the
40 comments and so you will see it in just a minute and I just
41 wanted to show it to you guys.

42
43 Basically what we have here is a map of the United States and
44 each comment that we received between December of 2013 and
45 Tuesday of last week -- If they provided a zip code, then those
46 comments are on here by zip code and what you do, as John is
47 showing, is you would go and click on one of those dots and it
48 will bring up, in a text box, all of the comments that we got

1 from the zip code.
2
3 You can see this one is in Oklahoma and the guy even writes that
4 he lives in Oklahoma and so this is a tool that you as council
5 members and also the general public -- We are beta testing it
6 right now, but we plan, in the future, for it to be something
7 that you can use to have better access to the online comments
8 beyond just like an Excel list of what people are saying. I
9 just wanted to show you guys that. Martha, go ahead.
10
11 **MS. BADEMAN:** I just wanted to ask how -- I guess what
12 proportion of people do not give their zip code?
13
14 **MS. MUEHLSTEIN:** I think about 10 percent, but we're only beta
15 testing this right now. Moving forward, on that comment form,
16 we plan to make the zip code one of those fields that's
17 required. It hasn't been in this, which is why we don't have it
18 up on the website yet, but I just wanted to sort of show you
19 where we are with what we're doing with the comments to make it
20 easier.
21
22 **MS. BADEMAN:** Cool. I think this is a cool idea.
23
24 **MS. MUEHLSTEIN:** Thank you. Okay. So I guess I will just get
25 down to it then and if you guys are interested in looking at
26 this for Amendment 40, we can send you the link so that you can
27 play with this tool before you take your final action this week,
28 but right now, it's not up on the website. We've got a link
29 that we can give you. It's up there and it's actually at the
30 top bar. If you look on the screen, it's just:
31 "portal.gulfcouncil.org" and if you write that down, that's all
32 the comments for Amendment 40, like I mentioned, that we've
33 received since December of 2013 and all georeferenced for you.
34
35 So moving on, what I would like to do is give you a summary of
36 the written comments that we've received since the August
37 council meeting. We didn't do any other in-person hearings and
38 so all I have is those written comments.
39
40 We received both comments that were in support of the amendment
41 and also comments that were opposed to the amendment. I will
42 start by summarizing the comments that were in support of
43 Amendment 40 and so first, sector separation provides
44 accountability for 75 percent of the red snapper fishery.
45
46 Passing this amendment will allow both sectors to design data
47 programs that do a better job of counting fish. More accurate
48 data will further improve management. Amendment 40 will promote

1 fairness between those recreational fishermen who own their own
2 boats and those who don't.

3
4 Currently, individual anglers benefit from longer state seasons,
5 while charter captains and their customers are stuck at the
6 dock. With their own management plan, charter captains can plan
7 their business and their trips accordingly.

8
9 Sector separation could provide more access to recreational
10 fishermen who don't own their own boats. This is the best of a
11 bunch of bad ideas. It is fair and equitable to all. Amendment
12 40 is the first step in devising management strategies tailored
13 to each component of the red snapper fishery to address chronic
14 quota overages that threaten the rebuilding plan and status quo
15 recreational red snapper management is failing. The for-hire
16 sector is fundamentally different than the private angler sector
17 and accountability is necessary.

18
19 Moving on to the comments that we received that were in
20 opposition to Amendment 40, sector separation will lead to catch
21 shares, effectively taking publicly-owned resource away from the
22 public and giving exclusive rights to that resource to a select
23 few who will profit from it.

24
25 A recreational angler is a recreational angler regardless of how
26 they access the fishery. Sector separation will force the
27 states to adopt inconsistent regulations and so choose regional
28 management instead.

29
30 Amendment 40 would hurt tourism. This management approach would
31 reduce the possibility. Eliminate the red snapper recreational
32 season in federal waters for the private angler. This amendment
33 will not provide any accountability for anyone. Amendment 40
34 goes against the intent of the Magnuson-Stevens Act.

35
36 Without any reasonable social and economic impact study,
37 approving this amendment is arbitrary and capricious and not
38 based on the best available scientific information and this
39 action exceeds the council's statutory authority and does not
40 assess the impacts on the recreational sector.

41
42 We also received a number of other comments that were not
43 specifically for or against the amendment and I will list those
44 here. The for-hire component should be part of the commercial
45 sector. Economic impact to recreational-fishing-dependent
46 businesses would be irreparable.

47
48 Red snapper should be a game fish. Put more limits on the

1 commercial sector. Increase artificial reefs and other
2 structures. Stop the removal of rigs from the Gulf. Improve
3 upon the stock assessment process. Increase the size and bag
4 limit to eighteen-inches and four fish, to create two sixty-day
5 seasons.

6
7 Split the allocation into thirds, one-third for each sector.
8 Eliminate Section 407(d) and the council will have more
9 management options. Need better data before making such drastic
10 decisions. The problem is allocation and not sector separation.

11
12 Spend more money on data collection and stock assessments.
13 States should be made to comply and more restrictions placed on
14 the commercial sector. Incompatible state regulations have all
15 but eliminated stakeholder access to federal waters. A major
16 overhaul of red snapper management is necessary. Implement a
17 tag system and eliminate seasons.

18
19 Adopt a federal season from April through October, Friday
20 through Sunday only. Sector separation is not needed for
21 accountability in the for-hire industry. Electronic logbooks
22 can be required without it. Hail-in and hail-out requirements
23 can be put in place without it as well.

24
25 After approving Amendment 40, the council should consider new
26 management approaches that would provide year-round fishing
27 opportunities, integrate recreational fishing into management of
28 shared resources in a way that jointly promotes net benefits and
29 accountability.

30
31 Should produce credible response to the federal court reprimand
32 of illegal recreational red snapper management and be consistent
33 with advice from the council's SESSC. That concludes my summary
34 of the comments that we received since the August meeting,
35 online and both sent-in written comment.

36
37 **CHAIRMAN RIECHERS:** Thank you. Any questions of Emily? Okay.
38 Next we turn to the Codified Regulations. I don't know who is
39 going to go over them here. It just has "NMFS".

40 41 **CODIFIED REGULATIONS**

42
43 **MS. LEVY:** You have some codified text, Tab, Number 8. There
44 are just a couple of things I wanted to point out. It has the
45 overall recreational quota and then it has each component's
46 quota. It has the numbers in there based on the preferred
47 alternative and the percentages. That is going to have to be
48 modified to reflect -- Eventually, when we get the new

1 calibration numbers that Andy put up there. Those hard numbers
2 that are in there as the quotas will be changed to reflect what
3 the actual percentages ended up being, because we don't codify
4 the percentages or the years. We actually just codify the
5 quotas or the ACLs and ACTs.

6
7 Then for the accountability measure section, we are just going
8 to have to clean up the numbering a bit. When we were drafting
9 this, we made some edits and our numbering is off and so we will
10 clean that up and we're going to need to add to what's there now
11 the annual catch limits and so right now, we have what the
12 annual catch targets are, but we did not put in what the actual
13 annual catch limits are, which are the quotas, but we need to
14 indicate that in the codified text and all of that will be done
15 and cleaned up for you at full council, as well as we'll add
16 some language about the sunset provisions after three years.

17
18 Basically the component quotas will be good for a three-year
19 period and so you have a draft there, but it's going to change
20 based on what you did today and what we heard about the MRIP
21 calibration and then just some cleaning up of the numbers and
22 the adding of the actual ACL language.

23
24 **CHAIRMAN RIECHERS:** Mara, and it's going to change before full
25 council? Help me out here.

26
27 **MS. LEVY:** The numbers that are the quotas won't change before
28 full council, because what we need is the final calibration
29 workshop results and then what those final percentages, based on
30 the year sequence you chose, are going to be. It will
31 ultimately change when we publish the proposed rule. We will
32 have the right numbers in there when we publish the proposed
33 rule, but we won't know that for however long. I guess Andy
34 indicated a couple of weeks until they come up with what the
35 actual final calibration is going to be.

36
37 **CHAIRMAN RIECHERS:** Roy and I had one more question down that
38 road, but I will let you --

39
40 **DR. CRABTREE:** By full council, we will put in the language
41 addressing the sunset.

42
43 **CHAIRMAN RIECHERS:** Okay and so we're going to put in the
44 language addressing the sunset and I guess my question, Mara,
45 was, and forgive me, but I thought the whole reason we review
46 these codified regs, based on some past history, is that we see
47 the actual text as it goes. I know it wasn't us who did that
48 back when, but we've been reviewing them in order to see the

1 actual text before it goes and I don't know for how many years
2 now, but talk to us about how that's not going to be what we see
3 here.

4
5 **MS. LEVY:** Well, it will be what you see here, other than the
6 actual quotas. Generally when you deem the codified text in the
7 amendment, you give staff editorial license to make the
8 necessary changes to the document and the codified text and the
9 Chairman can re-deem the codified text as amended.

10
11 In this case, staff is going to have to amend the document
12 itself to reflect the MRIP calibration, which is going to change
13 some of those tables and the percentages and the values, and
14 staff is going to have to edit the codified text to reflect that
15 same thing.

16
17 You are looking at what the regulations are going to say. This
18 is the language that's going to be in there and when you get to
19 full council, you will have the sunset provision language, but
20 the actual hard numbers are not going to be what's in here,
21 because they are going to change in the document before you
22 submit it.

23
24 **MR. ATRAN:** If this goes through, there will be a proposed rule
25 published something like ninety days before final action is
26 taken and so there would be an opportunity for the council to
27 review what the proposed regulations, including the changes, are
28 before any final action is taken.

29
30 **MS. LEVY:** I'm not clear what you mean, because the council is
31 going to take final action and NMFS -- The document will get
32 cleaned up to reflect the current status of whatever the MRIP
33 calibration shows and the council will submit that document for
34 implementation and NMFS will then publish a proposed rule,
35 normally with the thirty-day comment period, and then NMFS will
36 publish a final rule. The proposed rule will have what the
37 quotas are going to be. We're not going to propose a quota and
38 then change it midstream. We are going to propose what the
39 actual quotas are going to be.

40
41 **MR. ATRAN:** That was all I was really getting at. The reason
42 why we review the codified regulations is to make sure they're
43 consistent with what the intent of the council was in the
44 amendment and right now, there's a few things that need to be
45 cleaned up. The proposed rule will have that cleaned-up
46 language and that will be an opportunity to make sure that it
47 does in fact reflect the council's intent. That's all I wanted
48 to say.

1
2 **CHAIRMAN RIECHERS:** Any other comments? All right, Mr. Greene.
3 I think it turns to you.

4
5 **COMMITTEE RECOMMENDATIONS**
6

7 **MR. GREENE:** I was just going to put the motion up to send it to
8 the Secretary. I think she had it ready and I believe that
9 would be it.

10
11 **CHAIRMAN RIECHERS:** I think it's -- Somehow we are a little bit
12 -- Is it to be forwarded? Are we missing something there? You
13 need to state what the amendment is, I believe. It's Amendment
14 40. Do I hear a second? Dr. Dana seconded. Any discussion?
15 **Hearing no discussion, all those in favor say aye; all those**
16 **opposed same sign. Let's have a show of hands. All those in**
17 **favor, four; all those opposed, five. The motion fails.** I
18 think that takes us to Item Number VII, IFQ Program Review, and
19 Dr. Lasseter.

20
21 **IFQ PROGRAM REVIEW**
22

23 **DR. LASSETER:** Thank you, Mr. Chairman. This is Tab B, Number 9
24 and the document is Modifications to the Red Snapper IFQ Program
25 and this a scoping document we are bringing you for Amendment
26 36. If we can begin on page 1, I will just go through the
27 document.

28
29 Introduction, bring out Amendment 26 again, which is the
30 document that established the original red snapper IFQ program
31 in the Gulf in 2007. We had discussed what is scoping, address
32 what is scoping, to help the public provide constructive
33 commentary on this.

34
35 The next section, move to the next down, there we go. A section
36 on the background of establishing the program, including the
37 problems that were identified and the range of alternatives that
38 were considered and then the conclusions from the five-year
39 review that was recently completed.

40
41 Here, we start with the original purpose and need that was
42 defined in the amendment and it reads as follows: The purpose
43 of the IFQ program proposed in this amendment is to reduce
44 overcapacity in the commercial fishery and to eliminate, to the
45 extent possible, the problems associated with derby fishing, in
46 order to assist the council in achieving OY.

47
48 We generally refer to the goals and objectives of the program as

1 that reducing overcapacity and the problems with the derby
2 fishing. Following the purpose and need are the conclusions
3 from the five-year review concerning participant consolidation
4 and overcapacity, achievement of OY, mitigating the race to
5 fish, the derby fishery and the safety at sea. There are
6 biological outcomes, social impacts, and conclusions on
7 enforcement and program administration.
8

9 Then we provide some IFQ terminology basics. In anything that
10 you wish to consider in modifying this program it is, and we
11 have Andy here to help us, very formal and the terms are used in
12 very specific and deliberate ways, which I have to remind myself
13 of continually.
14

15 Appendix A provides a more complete glossary of IFQ program
16 terms and so whenever we're -- As we're discussing this document
17 and moving forward with the IFQ program modifications, whatever
18 action you wish to take, we need to think about how it would fit
19 into the program as it exists now.
20

21 So let's go to the next page and scope of potential actions.
22 The council reviewed a list of items recently and we received
23 approval from GC that we did not need a referendum to begin
24 consideration of these modifications and so the first topic of
25 potential actions is under program eligibility requirements and
26 there were two kind of inverted suggestions.
27

28 One would further expand who could participate in the program
29 and then another one would put us back before 2012, when you
30 were required to possess a commercial reef fish permit to buy
31 shares. I have compared the two of those and so if we take a
32 look on page 8, Table 4, let's talk about that first.
33

34 So there were two suggestions and one would be Option a, to
35 restrict the future transfer of shares to only shareholder
36 accounts that hold a valid commercial reef fish permit and
37 another one, and I've just called it Option b, would be to allow
38 accounts with shares, but without a commercial reef fish permit,
39 to harvest the allocation associated with those shares. Then I
40 have just compared what the action would be for each of those
41 options in Table 4 that's provided.
42

43 Also going back to the -- This whole section, there is also an
44 analysis of public participation that was provided by Andy's
45 team, just so that you can consider and evaluate the magnitude
46 of this as an issue, if this is something that you wish to
47 address. That's the first kind of subject, is who gets to
48 participate and in what capacity they participate. What are the

1 requirements, reef fish permit requirements, for participation?

2
3 The next section, 2, begins on page 9 and it addresses inactive
4 accounts, discards, and redistribution of IFQ shares, kind of as
5 a catchall. There were several potential changes that were
6 included on the list, such as to allow closure of accounts and
7 redistribute the shares in accounts that have not been
8 activated.

9
10 In response to that, Dr. Stephen recently provided me some
11 information on the number of remaining accounts that have never
12 been activated and that's provided in Table 5. You can see now,
13 as of 2013, there remained ninety-six inactive accounts with
14 almost 80,000 pounds of total quota and so this has been
15 decreasing year by year.

16
17 We included some of this information just to provide some
18 context on some of these potential changes, these items that you
19 have discussed.

20
21 The next one was to redistribute shares from inactive accounts
22 to those with no or small shares or to new entrants and this was
23 suggested to reduce regulatory discards. Another potential
24 change suggested was to redistribute shares from inactive
25 accounts to address reduction of regulatory discards through
26 permit banks or NMFS administration and so this is just a
27 different mechanism that you may wish to consider for that
28 redistribution.

29
30 Then, finally, it was suggested that with future increases in
31 the quota consider taking some part of that and using it to
32 redistribute to new entrants and small shareholders and also I
33 didn't point out for each of these we have included a scoping
34 question guideline, to get the discussion going at scoping
35 meetings for each of these topics.

36
37 Moving on, the next section begins on page 11, Number 3, and
38 this put together from the list those items that dealt with IFQ
39 share allocation and/or vessel caps and the potential changes
40 suggested have been to establish a cap on the amount of IFQ
41 allocation that could be held by either an entity or that could
42 be landed by a vessel and the final one was to limit the amount
43 of shares or allocation that non-permitted entities could
44 possess.

45
46 Again, we have provided some background information on the
47 number of accounts by shareholding size. That's provided in
48 that section as well.

1
2 Moving on, the next section starts on page 13, Section 4, and
3 these are potential changes that address restrictions on the use
4 of shares and/or allocation, such as to establish use-it-or-
5 lose-it provisions or placing some other restrictions on the
6 sale of IFQ allocations and shares and that's very broadly
7 written with some scoping questions.
8

9 Number 5 is on the same page, at the bottom, and that would
10 address a full-retention fishery for regulatory discards,
11 addressing regulatory discards, and suggested changes were to
12 eliminate the minimum size limit for the commercial sector
13 entirely and to consider the full retention of commercially-
14 caught red snapper.
15

16 Section 6 starts on page 14 and this was suggested by Dr.
17 Crabtree I believe at the last meeting or the meeting before, a
18 potential change to withhold distribution of some portion of
19 shareholders' allocation at the beginning of the year, in the
20 event a mid-year quota reduction is expected, if the results of
21 a stock assessment are expected or something along those lines,
22 and some scoping questions for that.
23

24 The next page, we have our final list of suggested changes and
25 this pertains to enforcement for all reef fish landings and so
26 this is really looking at the negative space outside. Rather
27 than those participants in the IFQ program, the potential change
28 would be to require all vessels with a commercial reef fish
29 permit to hail in prior to landing, even if they are not in
30 possession of IFQ species.
31

32 Finally, if there is any other additional issues to address, we
33 have provided in the document space and scoping questions for
34 the public to provide feedback and additional suggestions.
35

36 Those are the topics that we have pulled together for sending
37 out to scoping. I mentioned Appendix A has the glossary of
38 terms and Appendix B, we have provided the red snapper IFQ AP
39 summary from their meeting last year in November and their
40 motions, their suggestions, have been incorporated into that
41 list that we've just reviewed.
42

43 So it's quite a short scoping document, but the next stage would
44 be if you had any additional suggestions or comments or
45 additions to the document. I will turn it back over to the
46 Chairman.
47

48 **CHAIRMAN RIECHERS:** Anybody have any comments or any additions

1 they would like to make or questions regarding any particular
2 item?

3
4 **MR. PHIL STEELE:** Andy, we've discussed -- What's the
5 possibility of expanding the scope of this document to include
6 all our IFQ programs and not just red snapper?

7
8 **CHAIRMAN RIECHERS:** Who wants to attempt to address that? It
9 looks like Kevin will take a shot.

10
11 **MR. ANSON:** Just for clarification, but do you mean all of the
12 existing IFQ programs that are currently underway?

13
14 **MR. STEELE:** Right, red snapper and our grouper tilefish.

15
16 **CHAIRMAN RIECHERS:** Where do we stand on the review time of the
17 grouper tilefish? Ava is going to be able to answer that.

18
19 **DR. LASSETER:** Andy has just created the group and we're going
20 to meet for the first time in early November to begin the five-
21 year review for the grouper tilefish IFQ program.

22
23 **CHAIRMAN RIECHERS:** So depending on when you might want to do
24 scoping, there might be a chance to include some of those
25 elements? Who are you pointing to, Ava?

26
27 **DR. LASSETER:** I'm sorry, but maybe if we let Andy comment.

28
29 **CHAIRMAN RIECHERS:** Okay, Andy. I'm sorry.

30
31 **MR. STRELCHECK:** There is certainly going to be some differences
32 between the programs, but many of the provisions that you're
33 considering, they're the same provisions, whether you're talking
34 red snapper or grouper tilefish. My concern is if you're too
35 narrow in scope and you're only revising red snapper, then we're
36 going to have to come back in and deal with grouper tilefish
37 later and hopefully as you develop this amendment, we can factor
38 in the review that's ongoing, but there's going to be
39 provisions, I think, that will need to be addressed one way or
40 another regardless of the review and to keep it open-ended to
41 include all IFQ programs would be beneficial.

42
43 **CHAIRMAN RIECHERS:** The only thing is I think there might be
44 some concern for those who have been pushing for this review to
45 have some fear about holding it up and the movement on it in
46 regards to that other stuff kind of getting pushed into it.

47
48 I think there's a way they can probably move on a simultaneous

1 track and maybe we can even, at the scoping meetings, open it up
2 for comments regarding grouper and make people aware that this
3 isn't only red snapper, but it's also grouper tilefish and you
4 might then kind of -- For those things that might be subtly
5 different, people will be aware and try to get them included
6 there and does that hold any promise?

7
8 **MR. STRELCHECK:** Yes and my main concern is we manage it under
9 one reporting system and with the exception of public
10 participation, which is a different five-year timeframe for the
11 two programs, pretty much all of the regulations mirror one
12 another with the two programs and so if you're going to make a
13 change to one program, let's make it to both programs.

14
15 **CHAIRMAN RIECHERS:** I think, David, you had your hand up and
16 then Ava or however you all want to work it out down there.

17
18 **DR. LASSETER:** In responding to Andy, actually we can add to the
19 end of the document and open it up for -- Add scoping questions
20 so that people can be contributing comments that would apply to
21 the grouper tilefish program as well.

22
23 **MR. WALKER:** I think I would like to keep the red snapper
24 separate from the grouper program if they're two different --
25 There's different parts of Magnuson that addressed red snapper
26 differently than it does the other program and so I would just
27 hate to see it delayed. I would like to see it move on out to
28 scoping just like it is and get some comment. We may get some
29 comment about the grouper IFQ, but I just don't see the need to
30 put them together at this time.

31
32 **MR. WILLIAMS:** I have a slightly different topic and has this
33 reached its --

34
35 **CHAIRMAN RIECHERS:** Let me make sure. Any other comments there?
36 I mean obviously some reservation, but maybe a way to do it
37 where it doesn't slow it up, unless we feel -- Kevin.

38
39 **MR. ANSON:** Well, kind of going on your comments, it didn't
40 sound like necessarily it would be slowed up, but it would just
41 be the council staff would explain that it is more encompassing
42 than just red snapper and that there would be some specific
43 comments to grouper tilefish and that those could be
44 incorporated in this document.

45
46 I kind of agree with Mr. Walker that we don't necessarily need
47 to slow this down, because it has been a little bit delayed in
48 my mind, as far as the red snapper IFQ review, but there are

1 lots of parallels between those two programs and certainly it
2 would be a good time to try to get as much information on both
3 at the same time.

4
5 **MR. WALKER:** I was just going to say that if we could get a
6 little time to communicate with the industry about this and when
7 it comes back up in full council, we can address it again then.

8
9 **CHAIRMAN RIECHERS:** Okay and so I think then that concludes that
10 -- Ava, were you looking for scoping locations and a possible
11 time and date or Roy -- I think this may be where Roy was going
12 to come in.

13
14 **MR. WILLIAMS:** Well, I have a topic I wanted to briefly bring
15 up, if I might, but it's in line with this. A question for Ava.
16 Have you guys given any -- Personally, I have a concern about
17 being able to get allocation into the hands of people that need
18 it and has there ever been any discussion of when somebody rents
19 a portion of the red snapper allocation that he or she be given
20 a portion of that?

21
22 In other words, if they rented 10,000 pounds, that some portion
23 of that would go to that person and that they would get to keep
24 a piece of it in perpetuity? Has there been any discussion of
25 that?

26
27 **DR. LASSETER:** I have not heard that, although I could add that
28 as a potential change within the section that does talk about
29 the cap. It would either be under the caps or the -- There are
30 a couple of places where I could pop that in.

31
32 **MR. WILLIAMS:** If I may continue, Mr. Chairman, and I don't want
33 to take up too much time here, but I will tell you that years
34 ago, in another life, I used to go to the South Atlantic Fishery
35 Management Council and we were trying to implement an ITQ
36 program for wreckfish, the deepwater sort of grouper-looking
37 thing that actually lives east of the Gulfstream in the
38 Atlantic.

39
40 A couple of us were working real hard to get John Floyd, who was
41 a member of that council, to support our wreckfish ITQ program
42 and he just kept refusing and John was the -- He was the half-
43 brother of Carroll Campbell, who was the Governor of South
44 Carolina at the time.

45
46 John said, no, and he said it's going to end up just like
47 tobacco allotments, where a South Carolina farmer has to go to
48 Chicago, Illinois to get an allocation for a tobacco allotment

1 and he said, that's just not right and I don't think he ever
2 supported the IFQ, even though we finally approved it.

3
4 I, in my lack of wisdom, said, no, that just wasn't realistic
5 and that would never happen and blah, blah, blah and I truly
6 didn't believe that it would, but it seems like it has happened
7 in red snapper now and I have a concern with the allocation
8 being separated from the fishermen.

9
10 I tend to think that if not all of it, at least most of it ought
11 to lie with the fishermen and I am interested in some way to try
12 to work some of that allocation back into the hands of the
13 fishermen, because it's going other places and it's going there
14 to my chagrin. I don't like it and so that's what I have and
15 thank you.

16
17 **DR. CRABTREE:** Part of that came about because we allow people
18 to own shares without having to own a permit and a vessel,
19 right? So if there was interest, we could add, into the scoping
20 document -- Do we have one in there that would reinstate a -- I
21 see the motion on the board, but it's for future shares and do
22 we have one that would require every shareholder to have a
23 permit and a vessel?

24
25 **DR. LASSETER:** Yes.

26
27 **DR. CRABTREE:** Would that kind of address some of your concerns,
28 Roy, because that would --

29
30 **MR. WILLIAMS:** Yes, I think that would help, but truly, I am
31 kind of thinking that some small fisherman that has to go out
32 and rent some allocation, maybe he ought to be able to keep a
33 little piece of it for himself in perpetuity, until he gets to
34 the point where he doesn't want to fish anymore and then he's
35 going to have to rent it and he's going to have to start losing
36 it.

37
38 **DR. CRABTREE:** I think you could do that. I mean you could say
39 to rent, to lease, so much allocation that you have to also sell
40 that person a share, but it would drive up the cost of leasing.
41 Of course, they would get some shares out of it, but I think if
42 you're interested --

43
44 **MR. WILLIAMS:** I don't think it would affect the cost of leasing
45 at all. I think the market determines the cost of leasing.
46 Admittedly, it would be a burden, but I would defer to what the
47 economists say on that, but I think the market controls that.

48

1 **DR. CRABTREE:** This is a scoping document and so you could add
2 something like that in it or just look for more input on how to
3 address the general problem that you raise.

4
5 **DR. LASSETER:** I will jump in and add there is a section on use-
6 it-or-lose-it and I think that would be the appropriate place
7 and, again, what I mentioned in the beginning, the idea of the
8 problems that we want to fix, that we may want to fix, we will
9 have to figure out a way to do it given the structure of the
10 program and Dr. Jessica Stephen can definitely talk to us more
11 about that at another meeting.

12
13 It's difficult to track allocation and where it goes and so
14 people may sell their allocation and then that allocation may
15 actually transfer through several different people's accounts.
16 Whose allocation was it and how much -- Maybe that one person
17 buys from two different people and whose allocation are they
18 actually fishing on a given day? This is way on down the line,
19 but we will have to make that bridge between what we want to do
20 and figuring out how to implement it.

21
22 **CHAIRMAN RIECHERS:** Okay. Any other discussion on this topic?

23
24 **MS. BOSARGE:** Ava, I just had a quick question. You had talked
25 about some of those inactive accounts and right before that, you
26 had been speaking to the issue of accounts that had never been
27 activated, but when we look at Table 5, just for clarification,
28 the inactive accounts listed there, those are accounts that were
29 not used in that twelve-month or calendar year prior, right?
30 It's not accounts that have never been activated, right?

31
32 **DR. LASSETER:** I believe that those ninety-six accounts, as of
33 2013, have not ever been activated and there is a very small
34 amount of quota in each one of them and it's also my
35 understanding -- Up until recently, NMFS has been very active in
36 trying to track down the owners of these accounts and resolve
37 it.

38
39 I have heard recently that the commercial fishermen have taken
40 an initiative to track down some of these people and negotiate
41 buying the shares and so the number has been decreasing. We
42 have gone from 173 in the first year of the program down to
43 ninety-six, but those are accounts that have never been
44 activated and Andy can correct me if I'm wrong.

45
46 **MR. WALKER:** I was going to say a lot of these things, some of
47 the things are being complained about, was the original Red
48 Snapper Ad Hoc Committee had asked for the use-it-or-lose-it and

1 also had asked for not open to the public and after five years,
2 it was open to the public and that created some problems and
3 also, the fishermen can -- They can buy or lease right now and
4 that's what I was wanting to get at about that, is
5 substantially-dependent fishermen. They were part of this panel
6 to help develop this and it was industry and so I just think a
7 lot of the things the original ad hoc committee had asked for,
8 those are some of that are -- When you get back out to scoping,
9 maybe that can be addressed.

10
11 **CHAIRMAN RIECHERS:** All right, Ava, what was your end result
12 here? Do you have a suggested timeframe for these scoping
13 meetings and do you want us to choose locations or what's the
14 plan?

15
16 **DR. LASSETER:** If you feel it's appropriate, you could go ahead
17 and select locations and have us send it out. We are getting
18 into the holiday season and we will have to get back to on
19 timeline. I don't know if it could be feasible before the
20 January meeting. Maybe we can give you more feedback on that at
21 full council. Let me talk with Dr. Simmons.

22
23 **CHAIRMAN RIECHERS:** Do we want to try to select locations here
24 now or do you all want to get feedback from individuals on where
25 those locations would be or what's the pleasure of the state
26 folks who typically try to give locations here? Dale is ready
27 and let's go with Mississippi.

28
29 **MR. DIAZ:** Ava, I believe, to my knowledge, most of the
30 commercial fishermen in Mississippi operate out of Pascagoula
31 and so if you could have it in Pascagoula. Thank you.

32
33 **CHAIRMAN RIECHERS:** Kevin.

34
35 **MR. ANSON:** I was going to suggest Mobile, but that's just a hop
36 and skip away from Pascagoula, but I will say Mobile for now.

37
38 **CHAIRMAN RIECHERS:** We've got Mobile. Louisiana?

39
40 **MR. FISCHER:** Mobile, Louisiana?

41
42 **CHAIRMAN RIECHERS:** We've got Mobile from Alabama and what would
43 Louisiana like to do? I'm sorry.

44
45 **MR. FISCHER:** Kenner/St. Rose, in the airport area.

46
47 **CHAIRMAN RIECHERS:** Florida?

48

1 **MS. BADEMAN:** Panama City and then we're thinking maybe St.
2 Petersburg. That way it's kind of central to folks in Madeira
3 Beach and Cortez.

4
5 **CHAIRMAN RIECHERS:** If Buddy wouldn't mind -- Buddy, where
6 should we hold them in Texas? Do you want to go on the island
7 or do you want to come off the island?

8
9 **MR. BUDDY GUINDON:** On the island. That's where most of the
10 commercial fishermen are.

11
12 **CHAIRMAN RIECHERS:** Well, right. So something on Galveston and
13 we probably need to go down the coast somewhere and where would
14 you --

15
16 **MR. GUINDON:** Port Aransas.

17
18 **CHAIRMAN RIECHERS:** Port Aransas and so Galveston and Port
19 Aransas. **Basically that's the motion to hold scoping meetings**
20 **in those locations and so we will go ahead and I will make that**
21 **motion and Dale will second, to ensure that we have it as a**
22 **committee motion.** Any discussions regarding that? Obviously if
23 we need to make any changes to locations at full council, we can
24 do that. **We probably don't need much discussion on this and so**
25 **all those in favor of that motion say aye; all those opposed**
26 **same sign. The motion carries.**

27
28 Ava, if you could, just think about the possibility of timing
29 and not that you have to have that completely solidified, but at
30 least the thought about when it might occur. Do you have
31 another item?

32
33 **DR. LASSETER:** Thank you, Mr. Chairman. Yes, I will get back
34 with you for full council on the timing and then the last item
35 for this was -- This also goes back to the program
36 participation. With the red snapper program, as of January 1,
37 2012, all shares are available to the public for purchase.

38
39 However, a control rule was put in place notifying the public
40 that their future participation was not guaranteed and we just
41 wanted to get some guidance whether you wanted to address the
42 public sale of the grouper tilefish IFQ shares as well, because
43 they go open for public sale on January 1, 2015.

44
45 **CHAIRMAN RIECHERS:** Any other discussion here? All right. It
46 sounds and looks as if we might need a ten-minute break here and
47 so let's take a ten-minute break or close to that and try to be
48 back in here by 3:10.

1
2 (Whereupon, a brief recess was taken.)

3
4 **CHAIRMAN RIECHERS:** If we could, could we start taking our
5 seats? We are going to pick back up with Item Number VIII, Tab
6 B, Number 16 and B-17(a) and (b) and then eventually we will get
7 to B-18.

8
9 I believe Dr. Barbieri will be leading this charge here and
10 we're actually -- If the committee will indulge me, after this
11 we're going to go ahead and assuming Luiz can stand that long
12 and be battered by questions that long, we are going to move on
13 and also move up his hogfish presentation and then he also has
14 the last item before Other Business and we will probably do that
15 as well. He has a plane to catch tomorrow morning and just -- I
16 think we're going to finish everything this afternoon, but just
17 to make sure that we get all of his stuff covered before we
18 adjourn. If the committee indulges me, I will make that happen
19 for him and so with that, Luiz, if you will, get us started.

20
21 **DR. BARBIERI:** Thank you, Mr. Chairman. I don't know where our
22 first presentation is and, Charlotte, are you going to be
23 advancing from there? Mr. Chairman, you want to start with the
24 gag projections then?

25
26 **CHAIRMAN RIECHERS:** Yes, that was our next item on the agenda.
27 Yes, sir.

28
29 **GAG OFL AND ABC SSC RECOMMENDATIONS**

30
31 **DR. BARBIERI:** To refresh your memories about where we are with
32 this process, we had a benchmark stock assessment of Gulf gag
33 that was completed very early this year and the assessment was
34 reviewed by the CIE and reviewed by the SSC, but at our March
35 meeting, SSC meeting, we did not have at that time the PDFs, the
36 probability density functions, to estimate what the OFL and ABC
37 was going to be for gag, given the fact that we didn't have our
38 P* method applied.

39
40 After the March meeting, we requested the Center to put together
41 those PDFs and bring us those projections, which we reviewed, I
42 think it was back in July, if I remember correctly. Then at
43 that point, we realized that the West Florida Shelf was being
44 bombarded with a massive, very large and intense, red tide event
45 that seemed to have similar characteristics to what we had seen
46 a few years back in 2005.

47
48 The SSC at that point decided that the best course of action was

1 to ask for an additional set of projections to be produced that
2 would take into account different scenarios for this red tide
3 event, for the impact of mortality of this red tide event.

4
5 What I am going to present today are these last set of
6 projections and walk you through the whole process of how that
7 integrated some scenarios of red tide mortality and then
8 present, finally, what recommendations came out of the SSC
9 meeting regarding OFL and ABC for gag.

10
11 This is really just the little introduction that I just gave you
12 that you have in writing of what the situation was and then the
13 fact that we evaluated a red tide mortality in the past that was
14 a 2005 event that was very strong as well and the episodic red
15 tide mortality rate for that event and that we associated with
16 that assessment update was an instantaneous mortality rate of
17 0.68. That would be a natural mortality episodic for that year
18 that was associated with the gag population.

19
20 We evaluated a range then of episodic instantaneous mortality
21 rates for 2014 that represent these multipliers of the 2005
22 event and so the event started sometime in June, to become this
23 intense, and it has progressed over time.

24
25 It's not over yet and it has broken up, encompassing vast,
26 massive areas of the West Florida Shelf and fairly intense in
27 nature and because the event is not complete and we don't have
28 really any way to measure what impact would be in terms of
29 mortality, what these projections are doing is providing them
30 these multipliers and whether there was no mortality at all
31 versus a quarter, half, three-quarters, one and so on of that
32 level of mortality that was estimated in 2005 and so basically,
33 the question is are we having, in 2014, a mortality event that
34 is as intense as the 2005 year, the one multiplier, more, or
35 less?

36
37 The projections were developed according to that scheme there
38 and so the projection methods -- I don't need to go into too
39 much detail here and these are primarily technical in nature,
40 but we made some assumptions about selectivity patterns and
41 retention patterns and the relative fishing intensity among
42 fleets and all of those decisions had been already made by the
43 SSC back in July and chosen as the scenarios that are going to
44 be used to project forward.

45
46 Then we had the range of episodic mortality rates that I just
47 went over with you and then a PDF, a probability density
48 function, of the overfishing limit, which in this case for gag

1 is yield at Fmax was created for each of those mortality
2 scenarios by combining the two projections from those two
3 scenarios that were produced in terms of retention and
4 selectivity patterns.

5
6 This was done with a P* of 0.41, which was when the SSC applied
7 their ABC control rule and we came up with a P* of 0.41 to set
8 up the buffer between OFL and ABC. Right?

9
10 The Center also produced, besides the OFL and ABC yield streams,
11 they also provided optimum yield yield streams and those are
12 equal to the yield at 75 percent of Fmax. There you have, in
13 front of you, a number of plots, the curves, that represent the
14 trajectory of spawning stock biomass, SSB, and yields from 2000
15 forward, as estimated by the assessment, and then projecting
16 into the future, from 2014 onwards, depending on a variable
17 level of red tide mortality intensity.

18
19 I trust that you have those plots there, that figure in front of
20 you, so you can actually follow the colors and see what the
21 different scenarios are, but that just goes into more detail to
22 look at some of the -- Also the different retention and the
23 other selectivity functions that were used as well.

24
25 Then eventually a projection, a set of projections, using the
26 two scenarios that had been selected by the SSC was put together
27 and combined into a single PDF, a single probability density
28 function, for them to apply -- For us to apply the ABC control
29 rule, that P* value. You can see then what the trajectory of
30 yields have been, as estimated by the assessment, from 2000
31 onward and then the different scenarios that incorporate those
32 different levels of red tide mortality.

33
34 The multiplier of one, which I think is orange or red, is giving
35 you the impact of what would be expected if the red tide in 2014
36 is assumed to be of the same magnitude as the mortality that we
37 suffered, gag suffered, back in 2005 and then the other
38 multipliers are fractions of that or slight increases.

39
40 Then we get to this other table here, which you don't have to
41 concern yourselves about too much, other than to look at this
42 Table E, red tide mortality equals one times the 2005 natural
43 mortality event impact.

44
45 Basically, the SSC discussed this issue in detail and I actually
46 gave a short presentation to the SSC and I approached our FWC
47 Research Institute Red Tide Program, which has a very extensive
48 sampling program over the West Florida Shelf and works in

1 combination with the USF College of Marine Science, using
2 satellite imagery to actually measure the size and intensity of
3 this event and after all those discussions, we actually
4 concluded that the most likely scenario for the impact of the
5 2014 mortality event is that it was of similar magnitude and
6 perhaps not yet, but when you consider that it's not finished
7 yet and it's going to continue happening over the next few
8 months, that most likely is going to turn out to be of equal or
9 slightly higher intensity than what happened in 2005 and with
10 that in mind, we used the one multiplier and the SSC recommended
11 then an estimate of OFL and ABC for gag just for 2015 and this
12 is very important.

13
14 Given all the uncertainties that we have now about the magnitude
15 of the event and about the age composition of the fish that were
16 impacted by the red tide event, we decided that we would not
17 provide you with a longer -- Usually we provide you with three
18 to five years of projections, yield streams, to give you OFL and
19 ABC for the different stocks after assessments for multiple
20 years.

21
22 In this case, we are requesting that you accept our projection
23 just for 2015 and that we come back next year, after we have
24 more information about the impact of this event, and we
25 recalculate what the impacts were and how they impacted then the
26 projections and give you updated projections next year, for
27 2016.

28
29 With that, the recommendation of the SSC was a yield of 3.31
30 million pounds for OFL and 3.07 for ABC for the year 2015 and we
31 are going to continue monitoring this event and we're going to
32 do some additional analysis next year and bring you back a fresh
33 set of projections after we have more information and that, Mr.
34 Chairman, I think completes my presentation on gag. All of this
35 is pretty much what I had already presented or discussed and I
36 am available for questions.

37
38 **CHAIRMAN RIECHERS:** Thank you, Luiz. Any questions regarding
39 the OFL yield streams and any of the other parts of that
40 presentation?

41
42 **DR. CRABTREE:** Luiz, I am still struggling to understand the
43 scientific analysis that you used to get to the one times
44 multiplier and all I really see in the report that's solid is
45 that it was 50 to 75 percent of the 2005 event, yet you didn't
46 go with a multiplier of 0.5 or 0.75 or something in the middle
47 and so I heard you say you looked at a few things and then you
48 just decided one times, but it seems to me that's pretty weak

1 and so can you explain to us more about the actual science that
2 indicated to you that the 1.0 was the actual multiplier?

3
4 **DR. BARBIERI:** Yes and the science behind it, to tell the truth,
5 is not really something that I have here to put in front of you,
6 but if you go to the FWC website and you Google or you search
7 there for "red tide events", we have a center for monitoring and
8 forecast of red tides in cooperation with the University of
9 South Florida and we have a number of products there that are
10 produced in terms of satellite imagery and plots that show the
11 size, the intensity, and the duration of the events.

12
13 Since I am not a red tide expert myself and since we don't have,
14 in the SSC, any red tide experts, I actually decided to consult
15 with Dr. Alina Corcoran, who heads our Red Tide Research Program
16 for the Institute and works with that center for prediction of
17 red tides and I asked her to exercise her best scientific
18 judgment based on what she knows about red tide impact based on
19 what she learned from the 2005 event and compare the size, the
20 magnitude, and the duration of the event with that event and
21 give me her best scientific judgment on what this event most
22 likely, since we don't know what it is -- You know it's really
23 based on likelihoods and what's the likelihood that it's going
24 to be the same, less, or higher.

25
26 Given all this level of uncertainty, we did not feel that we
27 would be prepared to give you long-term projections and so we
28 are giving just one year, for 2014, with the idea that if there
29 is any course correction that's needed that we can address that
30 next spring and provide you with a better informed set of
31 projections.

32
33 **DR. CRABTREE:** I get that and I'm not questioning the number of
34 years you gave us, but I see here, and it's in the report, that
35 you did consult with Dr. Alina Corcoran, but it says that what
36 she gave you was that it was 50 to 75 percent of the 2005 level.

37
38 Somehow the SSC went from 50 to 75 to 100 percent and I don't
39 see any science, anything in here, that explains how you go to
40 that and that's my problem with it. Not the number of years,
41 but how did you go from science advice of 50 to 75 to it became
42 100 percent?

43
44 **DR. BARBIERI:** Right and the discussion was based on the actual
45 duration of the event and that Alina did not feel comfortable
46 providing any future prognosis on the event into, for example,
47 these next few months.

48

1 She said up until now, if I were to measure this up to now, I
2 would measure those in terms of 0.5 to 0.75 of the 2005 event,
3 but let me remind you that the event is not over and that
4 oceanographic conditions a little south of Tampa Bay were
5 actually indicating -- Shaping up for the event to be continuing
6 and so she didn't feel comfortable providing any hard number,
7 but the SSC, based on that discussion, decided to go with the
8 assumption that it would be equal to the 2005 event.

9
10 **DR. CRABTREE:** Okay and I won't belabor the point, but it seems
11 to me at that point there was a lot of uncertainty and you just
12 didn't know and it seems to me at that point you essentially
13 made a policy call, which I think is really beyond your role and
14 so I don't know what the council will want to do with it, but it
15 does concern me a little bit that in the face of this kind of
16 uncertainty, I think really how to deal with that is more
17 appropriately decided by the council. That's just my feelings
18 on it.

19
20 **CHAIRMAN RIECHERS:** We've got Dr. Dana and then I will pivot to
21 Steve. Do you have something about this particular item before
22 Dr. Dana has a question?

23
24 **MR. ATRAN:** One other thing I think Luiz didn't mention was that
25 the SSC had enough uncertainty that they considered not making
26 any new ABC recommendation. There is on the books right now a
27 scheduled increase in ABC or ACL to go up to 3.12 million pounds
28 next year and so there would be a change if nothing is done and
29 the SSC thought about maybe letting that go through and not
30 making any recommendation until more information is known about
31 the red tide event next year, but they felt uncomfortable
32 leaving it at that point, because that would be de facto making
33 a recommendation based upon an old stock assessment.

34
35 What they ended up doing was looking at the various projections.
36 This projection, which assumed the red tide event this year is
37 equal to the 2005 event, resulted in ABCs and OFLs which were
38 the closest to what the previous assessment had recommended and
39 that was part of the reason why the SSC chose that particular
40 ABC.

41
42 **DR. CRABTREE:** I get all of that and I understand, I think, what
43 they did. My point is I think that is a decision that the
44 council should have made. I don't disagree and I think they
45 came to the right place and I don't really have a problem with
46 that catch level recommendation, but I think we got into some
47 gray areas here between science and policy and I think, by and
48 large, these were decisions that were better left to the

1 council.

2
3 **DR. BARBIERI:** To that point, if I may, Mr. Riechers. To that
4 point, Dr. Crabtree, I -- There is something about risk and
5 there is something about trying to account for the amount of
6 scientific uncertainty, which in this case -- I mean, to me, it
7 would be different if the SSC had made a judgment call based on
8 a precautionary approach versus a judgment call based on the
9 amount of scientific information we do not have in front of us
10 now.

11
12 I think the question for the committee to face was do we have
13 smaller uncertainty, and therefore need a smaller buffer, or do
14 we have larger uncertainty, and therefore need a larger buffer?
15 Just philosophically, that was the guiding principle that the
16 SSC --

17
18 **DR. CRABTREE:** Well, I understand that and had you somehow
19 incorporated this and quantified the uncertainty and then
20 applied the council's risk decisions, that would be one thing,
21 but I don't see that that's what was done here, because I don't
22 see that anybody really quantified the uncertainty in any way
23 and so it seems to me it was largely a decision about how
24 conservative to be, which I think are decisions that are more
25 appropriately made by the council.

26
27 **CHAIRMAN RIECHERS:** All right and if we may proceed, Dr. Dana
28 and then Kevin.

29
30 **DR. DANA:** Obviously I am not a scientist, but I appreciated Dr.
31 Crabtree bringing up that point, because I did attend the SSC
32 meeting and followed the discussion on this and I know Kevin was
33 -- I think you were on the line at that time and there was --
34 The SSC very much, I thought, was very scientific about how it
35 approached the 0.5 and 0.75 with where they wanted to go, given
36 the red tide incident, but then over just a long discussion and
37 input and based on the report from the gal on the red tide, it
38 slowly evolved into the one point and it seemed -- Again, I am
39 not a scientist, but it seemed a little bit random how it just
40 all of a sudden got to the one point and so I appreciate you
41 bringing it up, because it did seem, just going from what was
42 purely science-based to something that was more conservative-
43 based on top of the science.

44
45 **MR. ANSON:** I may have missed it and I was part of that webinar
46 listening in for certain parts and certainly I spent more time
47 listening to the red snapper discussion and not the gag, but
48 when I was on the webinar, I thought there was some discussion

1 on some field observations for mortality and trying to, again,
2 look at the two different events and compare what was actually
3 observed in the field as far as observed mortalities during the
4 2005 event as well as the 2014 in those similar areas where
5 there was those concentrations that were documented and such.
6 Was there not some of that information that may have helped you
7 all down the rationale that you ended up with?
8

9 **DR. BARBIERI:** Yes, it would. That would have helped us a lot,
10 but remember that -- This is just a technical methodological
11 approach, but the idea of going out there, in an area as large
12 as the West Florida Shelf and trying to actually quantify the
13 number of bodies that are out there that belong to whatever
14 species and the age composition of those and when you consider
15 the animals are dead and fish are preyed upon and they sink and
16 you name it and so basically the science around measuring these
17 types of episodic events has evolved over time to be focused on
18 looking at monitoring indices of abundance.
19

20 For the 2009 gag update, we actually had the indices before and
21 after the event to measure how much there was a decrease in
22 abundance and we used that decrease in abundance as the scaler
23 then to measure what the impact of the event had been. In this
24 case, we really won't have that data until probably the next two
25 or three years that actually evaluates what level was the stock
26 before and after, in terms of indices of abundance.
27

28 So it's really more of the committee applying its best
29 scientific judgment in a case that it cannot really be properly
30 quantified and there will be discussions about whether
31 scientific information needs to be always quantifiable or not,
32 because there is different types of advice. Some are
33 quantitative and some are not that can provide guidance and so
34 the committee actually had to use that, because it didn't have
35 those measures.
36

37 **DR. PONWITH:** To the issue of whether this is science or policy,
38 what I'm hearing from the report is that there is a red tide
39 event expert opinion that was sought on the scale of this event,
40 the geographic and the intensity of scale of this event relative
41 to the 2005 event and that the feedback was that it's, at this
42 point, at 50 to 75 percent of the intensity and geographic
43 scope, but then there's that "but" and the "but" is it's not
44 over yet.
45

46 So what I am interpreting, based on the presentation here, is
47 not that this is a policy call on managing risk, but it is, at
48 this point in time, it scales to 50 to 75 percent and it's not

1 over and the real question is how much longer is this going to
2 last and is it going to grow or is it going to shrink?

3
4 To me, that's the question that's being answered by the SSC in
5 their recommendation of scaling this from 75 to a 1.0, as
6 opposed to asking a question about what our tolerance for risk
7 is. That's just my perception of the presentation thus far.

8
9 If we knew when this was going to end and whether it would grow
10 before it ends or shrinks before it ends, we would be in a
11 better position to make a quantitative assessment of how this
12 scales, in its entirety, against the 2005, but, unfortunately,
13 we don't have that luxury.

14
15 **CHAIRMAN RIECHERS:** I think, just from a practical standpoint, I
16 think what we need to do here is decide whether we want to move
17 forward with a framework action and if we then want to think
18 about some scalars that are different than the 1.0 that were
19 used here, we actually have that information available to us and
20 those can be options in the document and then we can -- That's
21 part of that policy call that, Roy, you're suggesting, is if we
22 do believe that, based on the current information that we have
23 at this time, that it should be a different scalar than that,
24 that could be our preferred option. I think, at least as I'm
25 understanding where we need to head, but you're thinking it's
26 different and so help us out.

27
28 **DR. CRABTREE:** They have given you a catch level recommendation,
29 which you cannot exceed. If you disagree with what they did,
30 you've got to go back to the SSC and ask for them to revisit
31 this issue.

32
33 **CHAIRMAN RIECHERS:** So they didn't go further in the analysis
34 they did, which we have in front of us on the board, but what
35 they did is in their motion they went to a point where we have
36 to go back to them.

37
38 **DR. BARBIERI:** Mr. Chairman, Dr. Crabtree is correct. Although
39 we do have here the table, all these different options, the
40 table right there with different options, the SSC made that
41 recommendation there associated with the one times the 2005
42 event and so if you want to go with something over here, that
43 the event was less than 2005 and therefore would supersede that
44 recommendation, that's going to have to go back to the SSC, but
45 I think it would be instructive for the committee to have that
46 input from you, if you feel that that's a matter of risk.

47
48 **MS. BADEMAN:** Let me throw an idea out here and I don't know how

1 feasible this is and so we have an SSC meeting again in January,
2 right? The next time the council would see any kind of
3 framework action would be at our January/February council
4 meeting, whenever that is. Is it possible to have the SSC look
5 at this again in January and see what's changed and potentially
6 at least have the possibility of recommending a new OFL or ABC,
7 if it's warranted?
8

9 **CHAIRMAN RIECHERS:** It certainly makes some sense to me. I
10 don't know who is managing that SSC agenda at this point, but,
11 Steve, do we think we would have room for that discussion?
12

13 **MR. ATRAN:** We could make room. We are looking at several
14 reviews of stock assessments in January, but I mean we can just
15 add a day to the meeting if necessary. We can cover whatever
16 you want covered at the January meeting.
17

18 **CHAIRMAN RIECHERS:** So it seems to me that what we might could
19 do is make a motion from this group to begin the framework
20 action, but also realizing that it's going to be supplemented or
21 it may change associated with, again, review of the extent and
22 the length of that event, as compared to the previous event.
23

24 You can review that again to give you some notion of where it
25 stands now as compared to the last time you reviewed it and then
26 either bring us back options, if there is some question there,
27 or, again, your recommendation can come forward, but that seems
28 to me, that way, that we would have another chance to look at
29 the extent of that and make your best determination based on
30 that.
31

32 **DR. BARBIERI:** Right, Mr. Chairman, and I mean in that case,
33 what we would do is use the data -- I think in this case we used
34 the data through late September, right, because we met October 1
35 and 2, and we use those same assessments, the satellite imagery,
36 the point sampling of water samples for cell counts, and all the
37 other measures of red tide intensity between October and
38 December to see if there is any expansion of the event or any
39 difference in the perception that we have thus far and bring it
40 back to you in January or February, yes.
41

42 **CHAIRMAN RIECHERS:** I think if we can -- I mean they will put it
43 on their agenda and so I think the only other thing we may need
44 is if we want to begin that framework action, so that we see a
45 draft of that at our January meeting. Would someone like to put
46 that in the form of a motion?
47

48 **MR. ANSON:** I will make a motion that we instruct staff to

1 develop a framework action that looks at setting the ACL based
2 on the table that's provided in the SSC report, Table E, for
3 2015. This would be for 2015.

4
5 **CHAIRMAN RIECHERS:** I am going to suggest, Kevin, that in order
6 not to get into the issue that Dr. Crabtree was raising and
7 since they're going to review it again, setting the ACL based on
8 a review by the SSC of the current extent of the event at their
9 next meeting, something like that. Does that --

10
11 **MR. ANSON:** I just thought that it would be interchangeable.
12 Once they came back, then it would just simply -- We would bring
13 it back up and then we would replace, based on the SSC's current
14 recommendation at that time. I thought everything would be
15 relatively done and then all you could do is reinsert the new
16 language, if in fact it changed, but I could be wrong.

17
18 **CHAIRMAN RIECHERS:** I will let Roy see if he can help us here.

19
20 **DR. CRABTREE:** Well, I mean the trouble we have now is so we get
21 an ABC recommendation for 2015 and I don't see how we can get it
22 in place in 2015. We are going to release quota to the IFQ
23 fishery by the end of the year and I don't know how to take it
24 back and so it seems to me, barring something we would have to
25 figure out, we're looking at setting the TAC for 2016 here,
26 which ought to be factored into it, and now we have an ABC
27 that's lower than our catch level for next year and so somehow
28 this needs to be better reconciled in terms of what we can do
29 and what's possible and I guess the SSC could help us with that,
30 but it's not clear to me exactly how that's going to work out.

31
32 I think one thing that everybody needs to bear in mind as we
33 manage these IFQ fisheries is that if we're going to make catch
34 level reductions, we've got to get them done before the calendar
35 year starts. Otherwise, it's hard to do.

36
37 **MR. ANSON:** I may be wrong, but I thought previously, when we've
38 talked about these IFQ fisheries and talking about releasing
39 quota, that we could release a partial at the beginning of the
40 year and then with the assumption that by the middle of the
41 year, six months, we could release whatever was the balance,
42 depending upon whatever we had to do and whatever action was
43 needed.

44
45 **DR. CRABTREE:** Well, you recall that in the scoping document we
46 put some language in there to allow us to deal with these kinds
47 of situations, but unless Mara tells me we have something on the
48 books that lets us do that, I'm not sure and we do interim rules

1 sometimes for this kind of thing, but, as best I can tell,
2 there's no overfishing here and so we can't do an interim rule
3 and I'm not particularly comfortable with an emergency rule here
4 and so I don't know, unless Mara has something to add to that.

5
6 Now, my understanding, and Steve or Luiz, the difference we're
7 talking about is 3.19 is the quota for next year if we do
8 nothing and they have recommended 3.07 and is that correct,
9 Steve?

10
11 **MR. ATRAN:** I think it's 3.12, but it is slightly lower. The
12 ABC recommendation is slightly lower than what --

13
14 **DR. CRABTREE:** Okay and so we're talking 3.12 or 3.07. From a
15 practical standpoint, given the uncertainties of the
16 recreational fishery, I think that has no real significance to
17 us, but it's just when we go back to them, I think we're really
18 talking about what do we set this for for 2016 on.

19
20 **MR. ANSON:** Then based on that, I will change my motion to say
21 "2016".

22
23 **CHAIRMAN RIECHERS:** I'm sorry, but go ahead and -- It's for
24 FY16?

25
26 **MR. ANSON:** Yes, for calendar year 2016, yes.

27
28 **CHAIRMAN RIECHERS:** Yes and actually, this really seems more of
29 a timing issue than it does what they did issue, because, either
30 way, we wouldn't have been able to make an adjustment by
31 January, by the end of the year.

32
33 **DR. CRABTREE:** Right, but if we're not going to make an
34 adjustment until 2016 and we're going to leave 2015 on the
35 books, they've got a lot more time to figure out what this red
36 tide does and then revisit this whole thing and perhaps give us
37 a much stronger scientific record to support the decision.

38
39 **CHAIRMAN RIECHERS:** Sure, for 2016, but, like I said, still,
40 from this standpoint about whether we should have done policy or
41 not for 2015, it doesn't matter at this point. Not in October.
42 I mean we wouldn't have had time, no matter what.

43
44 **MR. ANSON:** So based on Dr. Crabtree's comments, I will go ahead
45 and I will withdraw my motion, because we've got time to set
46 this up for 2016. It's when we come back to January from the
47 SSC's comments that potentially we could alter or do something
48 for 2015 or need to do something for 2015 and so I will withdraw

1 my motion.

2
3 **MR. GREENE:** It seems like this would be -- I know that there
4 was talk -- In the past, we've used emergency rules to do
5 different things and I know we were warned against that, but I
6 think this is exactly what an emergency rule is set in place to
7 do.

8
9 When you have a fishery that's going down and I know you're
10 going to cringe when I say it, but I don't know how else to do
11 anything before 2015 and I don't know if anybody wants to take a
12 stab at it, but it seems like it's the only option we have
13 before us.

14
15 **MR. DIAZ:** My comments also is directed to what Dr. Crabtree
16 said a minute ago. He said he wouldn't feel comfortable with an
17 emergency rule and I'm not sure that's the right thing in this
18 situation, but, in my mind, when we lost the court case on the
19 emergency rule before, the judge basically didn't like the idea
20 that there was a set of circumstances that she thought we could
21 foresee.

22
23 This, to me, is a whole different thing. I don't think we can
24 predict red tides and I don't think we knew the extent or the
25 magnitude or the duration of this red tide, to the point where I
26 don't think that applies. In my mind, an emergency rule is
27 something that I believe I would feel comfortable with, from
28 what I know about it at this point. So do you have any comments
29 on that, Dr. Crabtree?

30
31 **DR. CRABTREE:** Well, a couple. I mean we're talking I think
32 50,000 pounds here and so the -- We have some awkward situations
33 in the construct of the statute. So we get a new catch level
34 recommendation at the end of the year and we can't surely, under
35 any reasonable construct of the statute, be expected to
36 instantly implement those management measures.

37
38 When you look at the statute, when you're notified that a stock
39 is undergoing overfishing, you have two years to take some
40 action on it. Now, in this case, we're not undergoing
41 overfishing, but there's a need to adjust the catch levels, but
42 surely there has to be some recognized period of time it takes
43 us to do that.

44
45 The other thing, with respect to an emergency rule, is I don't
46 think we can get an emergency rule done before the end of the
47 year and so I am not sure even that solves the problem and so I
48 wouldn't go down that path.

1
2 I would rather go back to the SSC and ask them to better
3 evaluate this and ask them, in light of all of this, to reassess
4 the ABC for 2015, just to keep the record clear for next year,
5 and then what do you recommend we do in 2016, but given that
6 it's a very small amount of fish and there is no evidence of
7 overfishing or anything, I don't think we need to go down that
8 emergency rule path, because this isn't enough, it seems to me,
9 that it raises us to that level of concern.

10
11 **MR. ATRAN:** One possibility might be to convene the SSC via
12 webinar sometime before the end of the year just to review their
13 ABC recommendations for 2015 and see if they want to change
14 that.

15
16 My understanding is right now the quandary is that the ABC
17 recommendation is less than what the commercial quota and IFQ
18 distribution is going to be. There is no guarantee that they
19 would go back to the 3.12 million or higher ABC that's currently
20 on the books, but if they were to do that, that would solve the
21 problem of trying to figure out how much IFQ to release.

22
23 **CHAIRMAN RIECHERS:** We had a motion and we've withdrawn the
24 motion. As I understand it, it's going to be -- It can be
25 placed back for review and I don't know that we need a motion to
26 do that, but we can have the SSC review this again.

27
28 **MR. ANSON:** So I wonder, do we need a motion to ask the SSC to
29 review the 2015 ABC recommendation based on the -- Do we need to
30 make that motion?

31
32 **CHAIRMAN RIECHERS:** It seems it certainly wouldn't hurt to go
33 ahead and make a motion with it that they review 2015 and
34 subsequent years, based on the extent -- You don't have to say
35 all that, but so that they go ahead and review that, but it
36 seems to me that right now what we have though is their current
37 recommendation that we still have to do a framework action for
38 and am I wrong about that, Steve?

39
40 **MR. ATRAN:** With the current recommendation, we would have to do
41 a framework action. If they were to withdraw this ABC
42 recommendation and just say go with what's currently on the
43 books, we wouldn't have to do anything.

44
45 **CHAIRMAN RIECHERS:** Martha, help us.

46
47 **MS. BADEMAN:** I mean in my mind, let's see what happens when the
48 SSC meets again and then we can go from there. If we need to do

1 a framework and we need to do it in a hurry, we can do it then.
2 If we have a little more time and we're not looking at changing
3 anything until 2016, then we have a little more time, but that's
4 just me.

5
6 **CHAIRMAN RIECHERS:** It sounds like that apparently is about the
7 will of the committee at this moment in time, from what I'm able
8 to tell. So we do have a motion on the board and let me make
9 sure I get a second. Do I have a second for that? It's moving
10 around a little bit here and let's make sure we get it. Do you
11 want to try to help there?

12
13 **MR. ANSON:** This is the motion. **The motion is to have the SSC**
14 **review the 2015 through --** Does it go through 2019, Dr.
15 Barbieri, the projections, or 2018?

16
17 **DR. BARBIERI:** No and right now, we only made a recommendation
18 for 2015.

19
20 **MR. ANSON:** Okay and so then just to review the 2015 ABC again,
21 using or with the latest red tide information for the January
22 SSC meeting.

23
24 **CHAIRMAN RIECHERS:** Do I have a second? I've got a second.

25
26 **MS. BADEMAN:** So if it's appropriate when the SSC meets, if the
27 red tide is done and you guys feel comfortable, I think it would
28 be appropriate to project further past 2015 and then we can get
29 rolling there for 2016 also. I don't know if that needs to be
30 part of this motion or not, but --

31
32 **DR. CRABTREE:** We need to be clear to them that from a practical
33 standpoint we need an ABC for 2016, because 2015 is already here
34 and we don't have a way to change it for that. What they gave
35 us is fundamentally not any different than where we are now, but
36 I think it's just a matter of recognizing the practical
37 realities of what we can do. Dr. Barbieri will convey these
38 concerns back to them.

39
40 **DR. BARBIERI:** I sure will, Dr. Crabtree, but just to explain
41 the SSC's thought process about providing just 2015 and perhaps
42 we are not aware of the timing issues on when our catch level
43 recommendations come to the council and when they become
44 effective, really implementation of catch levels for the
45 industry, but the idea was if we waited until sometime spring of
46 2015 to have the data in place to evaluate all of this in more
47 detail, we could actually just request a new set of projections
48 for 2016 and beyond next summer. That we would come back to you

1 in June and provide you with a fresh set of projections.

2
3 **DR. CRABTREE:** Well that's pushing us pretty hard, because you
4 give these in June and then we only have two meetings and it's
5 going to be a rush to get through the whole rulemaking and why
6 do we need new projections? The whole question seems to be
7 about the magnitude of the red tide event and you already have
8 the projections and so it's just is this multiplier appropriate
9 and I'm not sure why we would need the Center to rerun the
10 projections.

11
12 **DR. BARBIERI:** Right, but there are a lot of components there, I
13 mean keeping in mind that stock assessments, which we already
14 have, have a fairly high amount of uncertainty. It's
15 retrospective in nature and so you're looking at data from the
16 past that of course we know about.

17
18 When you talk about projections, you are talking about the
19 future, right, and so uncertainty is increased quite a bit,
20 because it's like if we ask for the weather pattern next month,
21 most weather forecast places will not provide that to you and
22 it's just impossible.

23
24 Now, tomorrow or the next day is much easier, right, because you
25 have information to basically inform that advice and so here the
26 idea was what we had in front of us at our early October meeting
27 really did not give us the sense to provide long term. You know
28 each year that we add to that yield stream, in terms of a
29 projection forecast, increases the uncertainty that that number
30 is going to prevent overfishing and so we felt that it would be
31 best for us to provide just 2015 and come back next year, after
32 we have more information about the true impact of the red tide,
33 and update that.

34
35 **DR. CRABTREE:** That's all fine, but it would be good to have
36 that done before June and try to get that before the council a
37 meeting ahead of that, so we have time to get this all done,
38 because it's hard for us to get even frameworks done and we
39 would end up essentially voting this up in August, which puts us
40 in a rush. I suppose we could do it, if that was the best we
41 could timing-wise, but --

42
43 **CHAIRMAN RIECHERS:** For the sake of moving us on, I am going to
44 get a vote on this motion and I would suggest that this whole
45 timing issue is something that we need to work out between the
46 Southeast Center and Doug and our staff, Steve and you guys.
47 You all figure out the appropriate timing for that to get to the
48 SSC and for it to get to us, so that we have enough time to take

1 those actions. Any discussion on the motion? **All those in**
2 **favor of the motion say aye; all those opposed same sign. The**
3 **motion carries.** I think the next thing on the agenda, as I am
4 whispering to Steve, are ACL and ACT control rule
5 recommendations.

6
7 **ACL/ACT CONTROL RULE RECOMMENDATIONS**
8

9 **MR. ATRAN:** I had prepared some recommendations for ACTs based
10 upon our ACL/ACT control rule and I could go through those if
11 you want, but given that you are returning the ABC
12 recommendation to the SSC for further revisions, or at least
13 revisit it, it may not be worthwhile going through those at this
14 time. I will leave it up to the committee what you want me to
15 do.

16
17 **CHAIRMAN RIECHERS:** I will, as Committee Chair, assume the role
18 of assuming the committee doesn't want to go through those right
19 now, since we're sending it back, and we can go through those at
20 the next time that we get together regarding this.

21
22 All right. So with that that, I believe that then takes us to
23 Item Number X and that would be the Hogfish Benchmark Assessment
24 and Dr. Barbieri.

25
26 **HOGFISH BENCHMARK ASSESSMENT OFL AND ABC**
27 **SSC RECOMMENDATIONS**
28

29 **DR. BARBIERI:** Thank you, Mr. Chairman. We have another short
30 PowerPoint to present you with the SSC review and comments
31 regarding the stock assessment of hogfish in the Southeastern
32 U.S. This was conducted under the SEDAR process, but with the
33 analytical leadership coming out of the FWC, given our interest
34 in this fishery, which is primarily a Florida Keys fishery and
35 southwest Florida.

36
37 This assessment was conducted over the entire distributional
38 range of hogfish and that would include areas from the Gulf and
39 the South Atlantic and there you have a map of the Southeast
40 U.S., where you can see the distributional range of hogfish and
41 the fact that genetic analysis has supported identification of
42 three separate genetic stocks of hogfish. That was very
43 surprising to all of us, given the proximity of the stock and
44 the fact that they spawn pelagic eggs and they get transported
45 by currents and settle in different areas, but one way or the
46 other, we have a genetic stock here along the West Florida
47 Shelf, which we're going to call the west Florida stock.

1 We have another stock that goes from the Florida Keys through
2 southeast Florida that we are calling the Keys/Southeast Florida
3 stock and then we have a portion of the stock that has its own
4 complete genetic signature up there in Georgia and North
5 Carolina and has been disjunct from this other stock here for
6 long enough to be considered a different population.

7
8 The majority of the fishery is actually off the coast of
9 Florida, but we integrated landings from this entire
10 distributional range and for the purposes of this presentation
11 here, I am going to be focused only on this Cluster 1, which is
12 the west Florida stock, which is under the Gulf Council's
13 management of responsibility.

14
15 The SSC, the Gulf SSC, after discussion, decided to delegate
16 this portion of the southeast Florida and Keys and southeast
17 Florida mainland to the South Atlantic Council and so the South
18 Atlantic Council's SSC is going to review the other part of the
19 stock assessment at the end of this month and so we're going to
20 be focused right there on the west Florida portion of the stock.

21
22 In terms of the data, just to position you, this is a much
23 abbreviated version of the assessment that gives you just a
24 general overview. We have a full report hopefully in your
25 briefing book if you want to look into more details about the
26 assessment, but the assessment period was really using data just
27 from 1986 through 2012 and data coming from before 1986 was
28 deemed unreliable and too much noise and not enough signal there
29 to support a quantitative stock assessment and so we did not
30 include the earlier data into the assessment. By the way, there
31 you can see the relative size of the different landings of
32 hogfish from those three different areas.

33
34 Commercial landings and you have here the catch distribution of
35 commercial landings over time for the different areas. The west
36 Florida stock is in yellow there and keep in mind that although
37 we have this data here from the earlier time period, that was
38 not integrated really into the assessment and then here, you can
39 see a distribution of landings by the different types of gear
40 used by the commercial fishery.

41
42 In terms of recreational landings, you can see for the West
43 Florida Shelf here very noisy recreational landings information
44 on hogfish and there are two gears that are used, hook and line
45 and spearfishing, and just to give you a measure of scale, the
46 West Florida Shelf recreational fishery is at a level of
47 magnitude that is much, much smaller than the Florida Keys and
48 the east Florida fisheries for hogfish.

1
2 That's why I put here the 30,000 in terms of number of
3 individuals for the West Florida Shelf versus 500,000 there from
4 the Florida Keys, just to give you an idea of the magnitude of
5 those recreational fisheries for hogfish.

6
7 The assessment had a very positive outcome for the west Florida
8 stock and a summary here of the indices of abundance for
9 commercial and recreational fleets as well as some of the
10 fishery-independent indices of abundance and all of them,
11 despite some noise, show a general tendency of a positive trend
12 in direction of the stock that has been increasing over time and
13 so not surprisingly, the assessment for the West Florida Shelf
14 portion of the stock turned out to be very positive, with a not
15 overfished and not undergoing overfishing stock status
16 determination.

17
18 A few points to inform you about, that the SSC rejected the MSY
19 estimate that had been provided by the assessment. This was in
20 concurrence with the CIE reviewers, the three panel of
21 international reviewers that also reviewed this assessment, and
22 the fact that the stock recruitment relationship was not really
23 informative enough to allow direct estimation of MSY and we are
24 then adopting SPR-based reference points in accordance with your
25 fishery management plan.

26
27 For hogfish, we are using an SPR of 30 percent reference point
28 and we requested a three-year OFL and ABC yield stream
29 projections, just like what we discussed for gag. You know
30 those projections were not ready at the time the SSC reviewed
31 this assessment and so we applied our ABC control rule and came
32 up with a P* value of 0.4, of 40 percent, for ABC and we are
33 going to then receive, at our next meeting, projections of ABC
34 at that level and projections of OFL at a 50 percent probability
35 there of 0.5, a P*.

36
37 We actually identified a value of CV for that PDF that allows
38 what we consider to be a more realistic shape for the
39 probability density function that would give us better
40 accounting of the uncertainty associated with the assessment and
41 provide us more realistic yield streams.

42
43 That's the outcome, Mr. Chairman, of the assessment. We will
44 return after our January meeting with recommendations on OFL and
45 ABC and I am available for questions.

46
47 **MR. PERRET:** Luiz, there was quite a bit of discussion and you
48 had an excellent presentation on the red tide and the potential

1 impact or influence on the gag population. The geography of
2 hogfish seems to be in the same area, but I hear absolutely
3 nothing mentioned about red tide on this species. Did red tide
4 not impact the hogfish population?
5

6 **DR. BARBIERI:** That is an excellent question, because the short
7 answer is no, we don't know. We do find some bodies of hogfish
8 out there and some of the surveys of reefs out there where you
9 normally find hogfish don't seem to have them there and so it is
10 quite possible that they are being impacted by the red tide
11 event as well.
12

13 We did not see, when you look back at the indices of abundance,
14 we did not see a very pronounced decline in abundance, both in
15 commercial and in recreational indices, and the fishery-
16 independent indices of abundance says as well as a result of
17 that 2005 event and so the assumption is that they were not as
18 impacted back then as some of the groupers were and so this is
19 not something that we have been very concerned about, but I do
20 agree it's a good point.
21

22 **CHAIRMAN RIECHERS:** Any other comments or questions?
23

24 **MR. ANSON:** I don't know if this is necessarily to Luiz, but in
25 our action guide for Reef Fish, it says if the committee has any
26 special instructions to the SSC, such as requesting a constant
27 catch ABC, they can be made at this time, but then it says, on
28 the last slide of Dr. Barbieri's presentation, the SSC requested
29 that three-year OFL and ABC yield stream projections be
30 developed and so is that something that we've already requested
31 that you were just passing on to that or is that something that
32 came from the SSC that was requested to FWRI staff or --
33

34 **DR. BARBIERI:** No and I mean we assumed that you would need
35 those projections and we are going to be putting those together
36 for you. I mean if you have a specific timeframe that you would
37 like to see those projections take, how many years you would
38 like to see them, please let us know, but the idea is to come up
39 with those three-year projections at this point and using a P*
40 of 0.4.
41

42 **CHAIRMAN RIECHERS:** Any other comments or questions?
43

44 **MS. BADEMAN:** This isn't necessarily a Luiz question, but we do
45 have this other stock that occurs partly in our jurisdiction and
46 is shared with the South Atlantic Council and when are we going
47 to see that? I know the SSC on the South Atlantic still needs
48 to review that and I think -- At least my understanding is

1 someone is going to have to take some action based on what
2 happened in that assessment, or that part of the assessment, and
3 so I am just curious about if there is a plan and what is it for
4 dealing with that part of the stock?

5

6 **CHAIRMAN RIECHERS:** Luiz, have you got some info there?

7

8 **DR. BARBIERI:** Yes, Martha. The South Atlantic SSC, and I'm a
9 member of that committee as well, is going to be meeting next
10 week and of course we have this assessment as part of our agenda
11 as well and the idea is that given the fact that that is a
12 separate stock that we can provide an independent set of stock
13 status determination and yield streams, catch level
14 recommendations, of OFL and ABC just for the other area that
15 will be handled by the South Atlantic Council. Does that answer
16 your question?

17

18 There is no need to reconcile the two. It's basically what our
19 recommendation has been and that would be good to have your
20 input and discussion as well, that the SSC basically, after we
21 saw that genetic distinction of the population groups, we
22 thought to leave the Keys and southeast Florida to the South
23 Atlantic Council and we would provide you with catch level
24 recommendations for the West Florida Shelf portion of the stock.

25

26 **MS. BADEMAN:** Yes and I understand that you guys are going to do
27 that, but when it comes time to make the management decisions,
28 it will be, I presume, both councils that are at least taking
29 part in it, because it is a joint stock, but maybe I'm wrong.

30

31 **CHAIRMAN RIECHERS:** Anyone have comments in that regard,
32 regarding the joint stock, the other cluster that has been
33 discussed here, and how to proceed or -- It seems like the SSC
34 is going to meet there as well and so I assume, maybe when we
35 get the report back on this, we would have some level of
36 reporting back on that and the South Atlantic Council will be
37 receiving that as well, I would assume. I think obviously some
38 of that discussion may occur at the next meeting. That's kind
39 of what I'm hearing.

40

41 I don't think we have any necessarily action items here. This
42 was the briefing and the projections will be coming back and you
43 guys will be looking at it at your next meeting. Luiz, you've
44 been up there for quite a while now and we could go ahead and
45 take the next report or we can go ahead and finish you up, based
46 on Item Number XIV. That just concluded the other Reef Fish SSC
47 summary.

48

1 **DR. BARBIERI:** That report, Mr. Chairman, is extremely brief.
2 It's not going to take even five minutes. Even with me up here
3 and my tendency to be a little verbose, it's not going to go
4 that way, or so I've been told.

5
6 **CHAIRMAN RIECHERS:** If you feel okay, we'll let you finish. I
7 just wanted to give you the option. You've been up there for
8 quite a while now.

9
10 **DR. BARBIERI:** I feel okay and thank you, sir. I had a brownie
11 and a cup of coffee during the break to sort of replenish my
12 energy and be ready for this undertaking.

13
14 **CHAIRMAN RIECHERS:** We will turn to B-16, for those trying to
15 find that.

16
17 **OTHER REEF FISH SSC SUMMARY**

18
19 **DR. BARBIERI:** Basically this is just a very brief update on the
20 ABC control rule discussions of potential modifications for our
21 ABC control rule and an update on what's going to be happening
22 in terms of the next National SSC Meeting, which is scheduled
23 for February of 2015.

24
25 ABC Control Rule Next Steps, this is just to update you. You
26 may remember that the SSC Chair, Dr. Patterson, was here at your
27 last meeting and gave a presentation on the SSC report and that
28 encompassed some discussions, a report on the discussions that
29 the SSC has been having over the last year or so in evaluating
30 refinements to our existing ABC control rule or your ABC control
31 rule and evaluating different methods that could be used to
32 perhaps take better account of the full set of uncertainties
33 that we see in these assessments.

34
35 The three methods that we have been discussing is application of
36 the Ralston et al. 2011 method that has been used the Pacific
37 Council and I think the North Pacific uses a variable
38 implementation of that same method and that assigns a level, a
39 coefficient of variation, to your PDF and assumes some different
40 scenarios there.

41
42 Another one is basically instead of going with an ABC buffer
43 between OFL and ABC, we would be going for an ACT-type catch
44 level recommendation that would be based on optimum yield and
45 then the third one is what we have in place right now and we
46 discussed the fact that your discussion of this issue last time
47 considered it premature to begin developing an options paper and
48 that more discussion of this issue is necessary that can flesh

1 out some of the discussion and provide a more thorough set of
2 options that we can put in front of you and the SSC then took in
3 this recommendation that we're going to start putting together.

4
5 Working with Chairman Patterson, we are going to start putting
6 together a white paper, a document, that summarizes these three
7 methods, the pros and cons, and provides you some more detail on
8 those evaluations and bring it back to you sometime next year,
9 hopefully by summer.

10
11 Then the next slide is that quick update on the agenda topics
12 that are being discussed for the National SSC Meeting, which is
13 now planned for February 23 through 25 in Honolulu, Hawaii. We
14 have been very fortunate to not really find a lot of problems
15 getting volunteers to attend this meeting. We have plenty of
16 interest from the committee in participating.

17
18 The themes being considered are climate change and how can we
19 integrate climate change and ecosystem conditions into ABC
20 considerations and this is still a process in place.

21
22 We haven't really completely finalized what the agenda will be,
23 but that's basically what most of the other SSCs seem to be
24 going with and our SSC wasn't very excited about this, because
25 the effects of climate change here have not been very pronounced
26 and we still have some challenges with our ABC control rule that
27 perhaps application of this more climatic factors may not be as
28 easily accomplished here as they would be further north, but the
29 red tide event and those ecosystem-level impacts are interesting
30 and I think that this will be a productive meeting. There is
31 just those two quick updates, Mr. Chairman, and I will be glad
32 to address any questions, if any.

33
34 **CHAIRMAN RIECHERS:** Thank you for those updates. Does anyone
35 have any questions? The only thing I'm hearing in my ear is
36 Gregg is trying to volunteer to go to the Honolulu meeting,
37 Kevin. Any questions? Hearing none, thank you very much for
38 all of that and I'm glad we could get you finished up today.
39 With that, that now moves us to, I believe, Tab B, Number 10 and
40 Mr. Atran.

41
42 **FINAL ACTION - RED GROUPEr BAG LIMIT AND ACCOUNTABILITY MEASURES**
43 **FRAMEWORK ACTION**

44
45 **MR. ATRAN:** This is actually Agenda Item Number IX, but in the
46 briefing book, it's Tab Number B-10 and this is the Red Grouper
47 Recreational Management Measures Framework Action. Just as a
48 reminder, the council asked staff to develop a framework action

1 as a result of accountability measures being triggered on red
2 grouper, on the recreational fishery for red grouper, because of
3 the ACL having been exceeded last year, or in 2012.

4
5 As a result, in 2013, there was an automatic reduction in the
6 bag limit from four fish to three red grouper within the four-
7 fish aggregate and there was a closure originally projected for
8 this year of September 16. It was more recently extended to
9 October 4 when some of the catch data for 2014 became available.

10
11 However, what we were asked was to come up with some options to
12 allow the season to be extended. We tried to put together a
13 framework action that was ready for you to take final action on
14 at this meeting, so that if you did take final action that we
15 could get it implemented early next year, in time to have an
16 effect on next year's season, but just to let you know, some of
17 the discussion -- Although we believe all the information is in
18 here that you need, some of the discussion is a little rough and
19 we may need editorial license to clean it up.

20
21 There are three actions in here and they're all related to each
22 other. One has to do with adjusting the bag limit for red
23 grouper and another one has to do with modifying or eliminating
24 that automatic provision that reduces the bag limit if the ACL
25 is exceeded and then the third one has to do with having a fixed
26 closed season or modifying the fixed closed season sometime in
27 the middle of the year, in order to try to get more fishing days
28 toward the end of the year.

29
30 That third one also has a couple of tables that show the results
31 of combining bag limits with various closed seasons and so
32 Action 1 is on page 16 of the document and that's red grouper
33 bag limits. The alternatives are very simple.

34
35 Since we have an aggregate bag limit of four fish, we can't go
36 with a red grouper bag limit higher than four fish, unless we
37 remove it from the aggregate. The alternatives are either to
38 have four fish, three fish, two fish, or one fish for the red
39 grouper bag limit. As I said, that's fairly simple and at
40 various times, we've had all of those bag limits in place for
41 red grouper. There is a table in there that shows the dates
42 when the bag limit was changed and I won't go through it. It's
43 been jumping around quite a bit.

44
45 The next action, Action 2, which is on the next page, page 17,
46 deals with this automatic closure, which was an accountability
47 measure. What we have right now is if the ACL is exceeded, the
48 following year the closure will be based upon when the ACT is

1 reached and the bag limit will be reduced by one fish. If you
2 stay within the ACL, then we go back to using the closure based
3 upon when the ACL is reached and the bag limit would go back up
4 to four fish.

5
6 Because of this bouncing around and because the bag limit
7 reduction did not get implemented until May of this year,
8 because of the delay in getting the final landings data from the
9 previous year, the bag limit reduction has had only a limited
10 impact, that automatic reduction, and so the council asked that
11 we add an alternative to the options paper that you looked at
12 before that would eliminate that automatic reduction
13 accountability measure.

14
15 We have now four alternatives. We previously had three.
16 Alternative 1 is no action and we leave that automatic reduction
17 in place. If the ACL is exceeded, there is a temporary
18 reduction the following year from four fish to three fish. If
19 it's exceeded a consecutive second time, then we go to two fish,
20 but we won't go below two fish. Then if the ACL is not
21 exceeded, we would revert back to four fish the following year.

22
23 Alternative 2 retains that automatic reduction, but it extends
24 it to allow the bag limit to go down to as low as one fish.
25 Other than that, it's still that automatic and it's still
26 temporary for one year.

27
28 Alternative 3 addresses whether that bag limit reduction should
29 be temporary or permanent. In my mind, when Amendment 32 was
30 put together, that automatic bag limit, I was thinking, should
31 have been permanent or until the council decides to change it,
32 but it got interpreted to be a temporary measure and so the
33 question is if there is an automatic bag limit reduction
34 triggered as a result of the ACL being exceeded, should it be
35 temporary or should it be permanent?

36
37 If you don't adopt Alternative 3 at all, it continues to be
38 temporary. If you adopt Alternative 3, Option a, it would still
39 be temporary, but when the bag limit goes back up as a result of
40 staying within the ACL, it wouldn't go all the way back up to
41 four fish or whatever the default is. It would go up by one bag
42 limit at a time.

43
44 If we had say two years of exceeding the ACL and we went from
45 four fish to three fish and then three fish to two fish and then
46 we stayed within the ACL, status quo is that we would go back to
47 four fish.

48

1 Alternative 3, Option a, we would only go back up from two fish
2 to three fish and then we would have to wait a year to go up to
3 four fish. Option b would make that permanent. We would stay
4 at whatever bag limit the reduction implemented unless the
5 council requested a framework action to go back.

6
7 Then Alternative 4 would just eliminate this bag limit
8 accountability measure altogether. I think the feeling of the
9 council was that it was a rather complicated system and it
10 didn't seem to be having the effect that was intended and so
11 perhaps it wasn't worth leaving on the books.

12
13 Action 3 is the closed seasons and we began with a series of
14 options or alternatives that would have modified the red grouper
15 closed season to basically revolve around the peak red grouper
16 spawning season, which is March through May.

17
18 When the Reef Fish AP reviewed this, they selected a bag limit
19 and closed season combination that would give the most fishing
20 days, but they also asked that rather than look at a spawning
21 season closure that we look at a time of the year closure when
22 the highest catches were going on for red grouper, in order to
23 get a little bit more bang for the buck. Have a shorter closed
24 season in order to get more fishing days.

25
26 In the case of red grouper, a spawning season closure is not
27 going to provide very much protection relative to some other
28 time of the year. Unlike gag, which forms spawning aggregations
29 that can be targeted by the fishermen so they can increase their
30 fishing pressure on the stock, red grouper don't form those
31 spawning aggregations and so there is no increase in CPUE during
32 spawning season and so it makes sense to have the season closure
33 when you can get the most effective results in terms of reducing
34 the catch rates.

35
36 We have Alternative 1 is no action and it would leave the red
37 grouper in with the current shallow-water grouper closed season
38 of February and March, which was based upon the gag peak
39 spawning season, and it would only apply it in waters beyond the
40 twenty-fathom depth contour or beyond a boundary line, a point-
41 to-point boundary line, that approximates that twenty-fathom
42 depth contour.

43
44 Alternative 2 would also leave this February/March closed season
45 in effect, but, for red grouper, it would apply the closed
46 season to all waters, regardless of depth, and so it would be a
47 little bit more constraining than the no action.

48

1 The remaining alternatives would remove red grouper from the
2 shallow-water grouper closed season and would establish a
3 completely separate closed season for red grouper.

4
5 Alternative 3 would close it from February through April, which
6 catches the tail-end of gag and about two-thirds of the peak
7 season for red grouper spawning. Alternative 4 would be March
8 through April, which, as I said before, is the peak spawning
9 season for red grouper, and then Alternative 5 is the new one.
10 It would close the season for the month of July, which is a
11 period when the highest catch rates are occurring for red
12 grouper.

13
14 All three of these also have two options. You can either apply
15 that closed season only beyond twenty fathoms, which, as I said,
16 is what we currently apply to shallow-water grouper, or you
17 could apply it to all federal waters, which would give you a
18 little bit more effect on trying to reduce the catch rates.

19
20 Alternative 6 would eliminate any fixed closed season for red
21 grouper and just allow the season to go from January 1 until the
22 ACL or ACT is projected to be reached.

23
24 The next two pages, on page 20 and page 21, are a set of tables
25 that try to estimate how long the season would be open under
26 various combinations of bag limits and closed seasons. We cover
27 each of the bag limit alternatives that are being considered as
28 well as each of these alternatives and the suboptions within
29 each alternative.

30
31 If you would go down to a one-fish bag limit, you wouldn't have
32 to worry about having a closure. There would not be either an
33 ACL or an ACT closure, but what we've heard from our Reef Fish
34 AP and from most of the fishermen who have commented on this, is
35 that they don't want to go to a one-fish bag limit.

36
37 Under a two-fish bag limit, if you look at the first table,
38 which estimates how long it would take to reach the ACT, you can
39 see that there are some combinations that will get you into
40 December with the potential of not having any closure at all.
41 The one that's highlighted, which is the Reef Fish AP's
42 recommendation, but they made it before we added the July closed
43 season, estimates that the ACT closure would occur sometime
44 between December 11 or not at all and it would give 283 to 304
45 fishing days.

46
47 By the way, the reason why we've got a range is because the
48 Regional Office folks used three different methods to try to

1 estimate how long the season would be and each method gave a
2 little bit different result and so we just gave the range of
3 results here.

4
5 If you look at the other highlighted option, below the yellow
6 one -- It's green and it doesn't show up very well on the
7 screen, but this is the July closed season effective in all
8 waters and this would be projected to allow the ACT to go to
9 December 28 or not at all and would give 330 to 334 days of
10 fishing. That, with the options that are currently in the
11 alternatives, would give some of the longest seasons of any of
12 these alternatives.

13
14 If you look at the next table, which is very similar to the one
15 we just looked at, only it looks at how long it would take to
16 reach the ACL, you can see that we have some additional options
17 where we could potentially go the full season without reaching
18 our ACL, even if we had a three-fish bag limit.

19
20 All of the three-fish bag limit options that would potentially
21 allow us to go the full year would involve having the fixed
22 closed season that applies in all water depths instead of just
23 beyond twenty fathoms.

24
25 One issue, however, if you go with a season that has a high
26 probability that you will not get an ACL closure, you also have
27 a fairly high likelihood that you are not going to fill the
28 recreational ACL and so you would have to make a decision on how
29 you want to balance giving the fishermen as much fish as you can
30 to catch versus trying to make sure that the ACL does not get
31 reached. Because if it gets exceeded, then you have the more
32 restrictive ACT closure the following year rather than the ACL.

33
34 Basically that's it and I would suggest that for Actions 1 and
35 3, which are the bag limit and closed seasons, that you refer to
36 these tables for what combination of bag limit and closed season
37 you want and then for Action 2, decide whether you want to keep
38 the accountability measure for the automatic bag limit reduction
39 or eliminate it and if you want to keep it, do you want to make
40 modifications to it? I just went very quickly through this and
41 so if anybody has any questions, I will try to answer them.

42
43 **CHAIRMAN RIECHERS:** Any questions of Steve regarding the
44 alternatives at this point? I think before we think about
45 selecting preferreds or anything like that that we want to hear
46 the public testimony that we have coming up here. Mr. Boyd.

47
48 **MR. DOUG BOYD:** Thank you, Mr. Chairman, and I am not on your

1 committee, but, Steve, when is the spawning period for these
2 fish?

3
4 **MR. ATRAN:** For red grouper, the peak is March, April, and May.
5 I am not sure what the full spawning season is, but that's when
6 the peak occurs.

7
8 **CHAIRMAN RIECHERS:** Okay. Emily, I think we have you up next
9 for public comments.

10
11 **COMMENTS RECEIVED**
12

13 **MS. MUEHLSTEIN:** Thank you, Mr. Chair. Despite our best
14 efforts, we really didn't get very many comments on this
15 amendment at all. We produced a video and a guide like we
16 usually do with framework actions and we had 151 views of that
17 video, but we only got about three comments and none of them
18 were online comments. They were sent in via email.

19
20 Those comments suggested that we reduce the bag limit or enact a
21 slot limit during spawning season and they also suggested that
22 closed seasons hurt tourism and increase fishing pressure on
23 other species and there was a suggestion that we maintain a
24 three-grouper bag limit and a year-round season, if possible.

25
26 We decided to also hold a webinar public hearing, since we don't
27 usually do in-person public hearings for framework actions. We
28 decided to go ahead and do this because we recognized that it
29 was an issue that would affect people pretty directly and only
30 three members of the public attended that webinar public hearing
31 and one person commented and that person's main point -- She was
32 from southern Florida and she said that she represented a group
33 of boaters in her local area and she mentioned that she would
34 rather have a lower bag limit than a shorter season, but warned
35 that any bag limit below two would not be economically feasible
36 for her fishing trips and so sort of overall, the comment that
37 we received was that they would rather have open seasons and a
38 small bag limit, if there had to be some sort of tradeoff.
39 That's it.

40
41 **CHAIRMAN RIECHERS:** Okay. I am a little confused, because we
42 have Codified Regulations in here as well, without having
43 preferred options and so I don't know if that's a --

44
45 **MS. LEVY:** So they were drafted to show you the potential
46 sections that would need to be changed if you pick preferreds
47 here and we go to full council and if you do pick preferreds, I
48 can talk about those sections and what the implications would

1 be.

2
3 **CHAIRMAN RIECHERS:** Okay and so that takes us back to the
4 different actions in the document. There is the three actions
5 and the first one is the red grouper bag limit, Action 1, 2.1.
6 I think that's on page 16 of the document and so I would
7 entertain any discussion regarding preferred alternatives.
8

9 **MS. BADEMAN:** I will start the party here. **I will make a**
10 **motion, to get us started, to select Alternative 3 as the**
11 **preferred alternative.**
12

13 **CHAIRMAN RIECHERS:** Mr. Greene seconds it sounds like or it
14 looked like. Any discussion regarding that, Martha?
15

16 **MS. BADEMAN:** I know the council hasn't heard much about this,
17 but I've been contacted by a lot of folks in southwest Florida
18 and in other areas of Florida that support a two-fish bag limit
19 and the idea really is to get more days.
20

21 **DR. DANA:** I will probably end up voting for this; however, it's
22 going to be important to me to hear public testimony tomorrow as
23 to what people feel about going to two rather than three.
24

25 **CHAIRMAN RIECHERS:** No and certainly obviously because this is a
26 document that we might be picking preferreds and hearing public
27 testimony and then possibly finalizing, I think public
28 testimony, as you suggest, will be very important to this and
29 that's assuming we want to go forward with that. We don't have
30 to go on that timetable though. Our guide suggests that if we
31 don't go on that timetable that anything we do in January won't
32 have much impact for the current 2015 season and so any other
33 discussion regarding the preferred alternative? **Hearing none,**
34 **all those in favor of the preferred alternative being the two**
35 **fish per person per day, say aye; all those opposed same sign.**
36 **The motion passes.**
37

38 That takes us on now to the bag limit reductions, the
39 accountability measure portion of this. Are there any
40 suggestions as opposed to the status quo?
41

42 **MS. BADEMAN:** **I will offer another motion for Action 2, to**
43 **select Alternative 4 as the preferred alternative.**
44

45 **CHAIRMAN RIECHERS:** It's been moved and seconded that
46 Alternative 4 be the preferred alternative, basically
47 eliminating the bag limit reduction. A little rationale, Ms.
48 Bademan?

1
2 **MS. BADEMAN:** Sure. If we go down to two, as is preferred in
3 the previous option, then the part in Alternative 1 here, where
4 the minimum red grouper bag limit is two fish anyway, and so
5 that would kind of be moot.

6
7 The other thing is this bag limit reduction is really confusing
8 to people, especially since it goes up and down the way that
9 rule is written now. From a state perspective, it's difficult
10 for our commission to change our state limit in a timely fashion
11 to match up with this and so it just adds to the confusion and
12 so if we go with a two-fish bag limit across the board,
13 hopefully that will solve some of these issues.

14
15 **CHAIRMAN RIECHERS:** Any other discussion? It's fairly
16 straightforward in what we're trying to do and certainly
17 justification regarding that with a two-fish bag limit and less
18 of a need, as well as the difficulty in this and the confusion
19 that it has caused. **Hearing no further discussion then, all**
20 **those in favor say aye; all those opposed same sign. The motion**
21 **passes.** That takes us to the next item, the closed season. Any
22 suggestions here? Ms. Bademan?

23
24 **MS. BADEMAN:** I don't know if I'm ready to make a motion on this
25 one. I'm interested in hearing what people have to say. I have
26 heard from some folks that may be interested in a spawning
27 season closure, but I haven't really heard from all that many
28 people, to be honest, about if they want a closure and when it
29 should be and so this is definitely something I'm interested in
30 hearing about in public comment and from other folks around the
31 table, if anybody has anything to say on this one.

32
33 **CHAIRMAN RIECHERS:** If I am reading the tables right below, with
34 the two-fish bag limit, we are in the neighborhood of 267 to 306
35 days and is that right, on the second table?

36
37 **MR. ATRAN:** If you leave the current closed season.

38
39 **CHAIRMAN RIECHERS:** Right, if we leave the current closed
40 season.

41
42 **MR. ATRAN:** That's correct. If you don't change the current
43 closed season, we are looking at a projected ACL being reached
44 sometime between November 23 and the end of the year and you
45 would get 267 to 306 fishing days. I also want to emphasize
46 that these are estimates and any actual projections would have
47 to be redone at the time that the season is determined.

1 **CHAIRMAN RIECHERS:** So it sounds like there isn't any movement,
2 unless I see someone else wanting to proffer a different motion.
3 Right now, a status quo closure would stay in place. Okay.
4 With no further action then on this document, do you want to --
5 Should we wait, Mara, to just go over the codified regulations?
6

7 **MS. LEVY:** Yes and since you haven't picked preferreds and
8 you're not going to recommend submission, you can wait and we
9 can go over the codified regulations at full council.

10
11 They are in the briefing book and they indicate the sections
12 that would be modified based on different selections here and
13 there are notes that explain that and so if you want to look at
14 it before full council, I encourage you to do that.

15
16 **CHAIRMAN RIECHERS:** I assume before we want to make motions to
17 send to the Secretary and decide whether we want to do final
18 that we want to hear public testimony. I am seeing nodding of
19 heads in that regard and so okay. I think that concludes the
20 business under this section, unless you have anything else, Mr.
21 Atran.

22
23 **MR. ATRAN:** I meant to point something out on the catch rates
24 for red grouper. I don't think it's going to change anything on
25 your decisions right now, but in the beginning of the document,
26 if I can find it, on page 7 -- I really didn't realize this
27 until I put this table together, Table 1.1 on page 7. It shows,
28 for the past four years, what the catch levels have been and
29 what they've been in terms of percentage of the catch level.

30
31 If you look in 2010 and 2011, we were catching around 600,000
32 pounds on the recreational side and then in 2012, it nearly
33 tripled and then it stayed high in 2013, when we exceeded the
34 ACL.

35
36 That's pretty strongly correlated with when we put in the very
37 restrictive gag measures in order to get the gag rebuilding plan
38 into effect and so, in all likelihood, this increase that we've
39 seen the last couple of years in red grouper is due to effort
40 shifting from people who could no longer fish for gag, because
41 of the short season.

42
43 **CHAIRMAN RIECHERS:** It could be part of that substitution
44 effect, yes. Absolutely. I think that takes us to Item Number
45 XI, Options Paper - Greater Amberjack ACL/ACT, and Dr.
46 Froeschke. It's Tab B, Number 13 and 13(a) and (b).

47
48 **OPTIONS PAPER - GREATER AMBERJACK ACL/ACT**

1
2 **DR. JOHN FROESCHKE:** I have prepared a short presentation that
3 I'm hoping will facilitate the discussion of the document. I
4 realize it's late and so I hope you all have the energy for
5 something new. It was emailed out earlier today.

6
7 While that's getting pulled up, to refresh your memory, this --
8 You all first saw this options paper last time. The genesis of
9 this paper is the most recent stock assessment on greater
10 amberjack, which indicated that the stock is overfished and
11 experiencing overfishing and so we're going to need to revise
12 the ABC and ACLs and consider some management options to
13 constrain catch.

14
15 I will just kind of give you a brief update on what we've done
16 since last time. Andy Strelcheck and his group have created the
17 decision tools that you remember from Amendment 35, which enable
18 exploration of different season lengths, closed seasons, minimum
19 size limits, and the various management tools that you are
20 working with and the impact on the season length.

21
22 They have updated those and expanded them and they are bigger
23 and better than ever and I have provided some of the analysis in
24 the document. The decision tools are available in Tab B-13(a)
25 and (b). There is one for the recreational and one for the
26 commercial. If there are specific questions about that, then I
27 will drag Andy up here, but we are working on those.

28
29 I am just going to run you through the three actions in this and
30 kind of give you a heads-up about where we're at. The current
31 ABC is the 1.78 million pounds and the SSC recommendation is the
32 1.72 million pounds for 2015 and that's the reason that we have
33 to revise it.

34
35 The document considers options to revise the ABCs, sector ACLs
36 and ACTs for both the commercial and the recreational sectors.
37 Where we're at right now, we have a minimum size limit of thirty
38 inches fork length and we considered changing that in Amendment
39 35, but didn't. We implemented a closed season of June 1
40 through July 31 and in Amendment 35, we implemented this 2,000-
41 pound commercial trip limit.

42
43 Just what I kind of just went over, what's new, we have some
44 additional management options for your consideration and we have
45 the analysis of the season lengths and we've updated the SPR and
46 yield per recruit analyses and we have the decision tools, both
47 on the recreational and commercial data.

1 Just a little bit of history here, but the first action is to
2 revise the ABC, ACL, and ACTs. Option 1 here in the status quo.
3 Obviously that's where we're at 2014 and, again, that's over.
4 The ABC exceeds the current SSC recommendation of 1.72 million
5 pounds and the chart on the bottom kind of gives you the brief
6 history of the historical stock biomass, indicating that we've
7 been below or fairly low relative to historical levels and quite
8 stable for a long period of time and so we haven't been
9 particularly successful in rebuilding this stock.

10
11 We have three options with some sub-options. Option 2 is to
12 adopt the ABC schedule recommended by the SSC and that includes
13 recommendations through 2018 and it's essentially a small step-
14 down in 2015 and then increases in 2016, 2017, and 2018 and
15 that's based on the projected rebuilding of the stock.

16
17 In terms of the ACT, three sub-options and you will see these
18 for the next ones as well. The no ACT buffer and so essentially
19 the ACT would be equal to the ACL and, alternatively, we could
20 apply the ACL/ACT control rule, which results in a commercial
21 buffer of 15 percent and a recreational of 13 and,
22 alternatively, just a static 20 percent buffer between the ACL
23 and ACT for 2015 through 2018.

24
25 Just a little bit of history and we talked about this last time,
26 but I think it's important. This is a complicated graph, but I
27 will try and go briefly through this. What this shows is the
28 projected yields through time, based on previous stock
29 assessments, along with the realized landings, to help kind of
30 frame this.

31
32 So one of the earliest stock assessments, this green, showed we
33 were near this two-million pounds, perhaps, and that we were
34 projected to rebuild to nearly eight-million pounds of yield by
35 2011 and we obviously didn't achieve that.

36
37 This purple is kind of similar trajectory, although the slope is
38 a little flatter. Again, we are right around this two-million
39 pounds and below here, the slope flattens and then this blue,
40 dashed line is the most recent stock assessment. This Y-
41 intercept around two-million pounds, very stable, indicates that
42 we're about the same spot, but our estimates of the productivity
43 of the stock have decreased with each subsequent stock
44 assessment, although this is the first stock assessment based on
45 SS3 and they do feel more confident about that.

46
47 The black line here is the realized landings and so you will
48 notice that none of these landings really achieved what the

1 stock assessments projected we had caught and so there is some
2 concern that it might be overly optimistic and given the failure
3 to rebuild the stock, that maybe some other options, perhaps
4 more conservative, should be considered and so the IPT has
5 developed some of those for your consideration.

6
7 Option 3, it first looks, for 2015, identical to Option 2. The
8 difference is the increases in 2016, 2017, and 2018 would not
9 occur and it would be a static, steady catch for those periods
10 and so for 2015, it would be identical and then these three same
11 sub-options for your consideration.

12
13 Option 4 was added to the amendment based on the failure to meet
14 the ten-year rebuilding plan and essentially would set the
15 sector ACLs at zero, based on the stock is overfished and
16 experiencing overfishing. This would obviously provide the
17 greatest likelihood of rebuilding.

18
19 Action 2 considers recreational management measures. There are
20 two of them for your consideration. One is changing the
21 recreational minimum size limit. If you recall, we considered
22 this in Amendment 35 as well. We are currently at thirty inches
23 here.

24
25 The concern, perhaps, is that most of the females don't achieve
26 reproductive maturity until somewhere greater than thirty-three
27 inches or something. I have a chart I will show you in just a
28 moment. This would do two things. It would allow a greater
29 proportion of the stock to reproduce at least once before being
30 recruited to the fishery and it would also likely reduce catch,
31 because fewer of them would be, obviously, retained. The caveat
32 is that some additional animals would be lost to dead discards.

33
34 I am going to skip ahead one slide. There was a mis-order and
35 so this chart on the left, what you will see on the X-axis along
36 here is the fork length of the females, in inches. The black
37 dots are the individual animals, based on work from Debra Murie
38 at the University of Florida. The black dots -- So it's either
39 one is it was reproductively mature or zero, it wasn't.

40
41 This blue-shaded line here represents the logistic fit and so,
42 on the Y-axis here, what this represents is a probability to the
43 individual animals reproductively mature at a given length and
44 so a good benchmark is a 50 percent probability of an animal
45 being mature. At thirty inches, we're here and then I've put
46 the probabilities corresponding to the management alternatives
47 in the table on the right.

48

1 An estimate here is this is the best fit, the lower confidence
2 limit of zero and upper confidence of 0.23 and so where we are
3 now, it's a high proportion of reproductively-immature animals
4 are subject to harvest.

5
6 This sort of 50 percent would be somewhere between this thirty-
7 two to thirty-four-inch range. The thirty-six inch is the
8 commercial limit right now, if you wanted to do something more
9 consistently, which would also allow almost all of the females
10 to attain reproductive maturity before subject to harvest.

11
12 The second action, Action 2, is modifying the recreational
13 closed season. We currently have a fixed closed season between
14 June 1 and July 31 and there is some alternatives. We have
15 three other -- January 1 until the ACT is harvested.
16 Alternative 3 is March 1 to May 31, which would be consistent
17 with the commercial closure, and then the Option 4 would be a
18 split season of a closure between January 1 and May 31 and
19 November 1 and December 31.

20
21 The question is what will this combination of measures have on
22 season length and that's where the decision tool is useful and
23 it's an Excel spreadsheet and you can use it and interact with
24 it. It's in the briefing book and it explores lots of different
25 options.

26
27 I put this summary table up here for your consideration and what
28 it does is on the top, it has the various ACT options from
29 Action 1 and the column on the left has the various management
30 measures from Action 2, including the closed seasons and the
31 size limits, and then the tables, the coloration, corresponds to
32 the greener values of the longer estimated season and the reds
33 are the shorter.

34
35 You can kind of pick what management season length you're
36 targeting and you can gravitate to these. The general patterns
37 are somewhat intuitive, but the larger size limits get you more
38 days and the closed season, the current one of June 1 to July
39 31, that's the highest peak intensity and so having a closed
40 season during that period is going to get you the longest
41 projected season length. If there are specific ways -- We can
42 manipulate this lots of different ways, but that's the general
43 idea.

44
45 Action 3 deals with the commercial trip limits. If you recall
46 in Amendment 35, we implemented a 2,000-pound trip limit as one
47 way to slow the harvest and extend the season and the options
48 before you are four. One is to maintain the current and two is

1 to reduce that to a 1,500 and three is 1,000 and four is 500
2 pounds.

3
4 One thing that's complicated in the current stock assessment is
5 the management measures that were implemented in Amendment 35,
6 namely the trip limit and the season length, those data are not
7 included in the current amberjack assessment and so the effect
8 of those, if any, isn't being realized and so it's sort of a
9 difficult situation to understand what we have, although looking
10 at the data that's in the document from these, the 2,000-pound
11 trip limit does work.

12
13 The intended effect was to remove a small number of trips
14 catching very large poundages of amberjack and so if you were to
15 do that further, you would obviously constrain the catch and
16 extend the season.

17
18 There is a second decision tool, if you will, based on the
19 commercial. This is a little simpler than the recreational. It
20 essentially has your various ACT options on the top, just like
21 before, and then the various trip limits that you might consider
22 and then the corresponding effect on season length, going from a
23 yellow-shaded to the longer seasons in green, and so obviously
24 the smallest trip limits gives you the longest season, at the
25 effect of it may change the way the fishery is prosecuted.

26
27 Sort of the timeline, where we're at here is the draft options
28 paper stage. What we're looking from from you all is if the
29 range of alternatives or options is reasonable or if there are
30 additional options you would like to see modified, changed,
31 added, or deleted. We would love to have that input.

32
33 The plan is by the January meeting to have a draft document for
34 your review. You could select preferred alternatives at that
35 time, with final action occurring in the April meeting. Are
36 there questions?

37
38 **MR. PEARCE:** John, thank you and when you come back to the
39 commercial management measures and the trip limit, one of the
40 discussions we were having is a lot of the boats land gutted
41 weight and I would love to be able to see us put that into the
42 document, if we could, as a way to manage it as gutted weight
43 rather than whole weight, but that's some questions I've been
44 asked by the fishermen.

45
46 **DR. FROESCHKE:** Okay. When we had a meeting recently, this
47 actually came up and we realized that there was a problem with
48 that and so there is a conversion and we can see if we can make

1 that more clear to the anglers and so I'm going to have to talk
2 with you about what's the best way to do that.

3
4 **CHAIRMAN RIECHERS:** Mr. Anson or, Mr. Atran, do you have a
5 clarification or some help there?

6
7 **MR. ATRAN:** Yes and on the gutted weight, it's -- This actually
8 started with the grouper and I'm not sure why it extended to
9 greater amberjack, but with grouper, there were two different
10 conversion factors being used by NMFS. The people who monitored
11 the commercial landings were using a conversion factor of 1.18
12 and the Science Center, for the stock assessments, were using a
13 conversion factor of 1.05.

14
15 Since the commercial landings were in gutted weight, it got
16 confusing to convert them to whole weight and not know which
17 conversion factor was being used and so with the groupers at
18 least, we decided to stick to gutted weight. I'm not sure if
19 the same thing happened with greater amberjack or not, but
20 that's what happened with grouper.

21
22 **DR. FROESCHKE:** With greater amberjack, the problem was that the
23 commercial fishermen land it in pounds of gutted weight and the
24 trip limit is in pounds of whole weight and so it was very
25 difficult to know when they were at or over the trip limit and
26 so you actually get about 1,900 pounds of gutted weight, which
27 would be equivalent to a 2,000-pound whole weight. We have
28 clarified that. The Regional Office put out a notice to
29 hopefully clear this up, but it is a good point and we probably
30 could put the conversion in here and make that in both units, if
31 that was helpful.

32
33 **MR. ANSON:** I don't have necessarily anything else to add to the
34 document. Again, the decision tools that the Southeast Regional
35 Office staff had created are very helpful and just one thing I
36 would like for you to check on, Dr. Froeschke, is on Table
37 1.5.2, which is a summary of recent annual recreational landings
38 relative to management targets. Your ACT and ACL might need to
39 be swapped for 2011. The ACT is larger than the ACL and so just
40 check on that. Thank you.

41
42 **DR. FROESCHKE:** No problem. Happy to do it.

43
44 **MS. BOSARGE:** Just a technical question on the commercial side.
45 We don't target amberjack and so on the reporting, how are these
46 commercial landings reported? I don't know who this question
47 should go to. Maybe somebody around the table can answer it.

48

1 Trip tickets on a monthly basis, is this part of the electronic
2 dealer reporting that's going to go up weekly to NOAA or NMFS or
3 whoever? I am wondering that because I'm wondering, is there
4 any way that we can monitor this better? Trip limits are one
5 option, but how are we monitoring it and is there a more
6 efficient way to cut it off before we get -- Because we've had
7 some significant overages on the commercial side and so I would
8 like to hear a little more about that.

9
10 **CHAIRMAN RIECHERS:** It looks like Bonnie is going to try to
11 answer that.

12
13 **DR. PONWITH:** As of the 6th of August, the regulation went into
14 effect that federal dealers are required to report their
15 landings on a weekly basis and so that information gets put
16 right into the commercial landings system and enables us to do
17 exactly what you said, to not only monitor what has been caught
18 already, but to use that really timely data to generate the
19 projections going forward of when we think we're going to hit
20 it. It puts us in the best shape so far in being able to be
21 more precise in estimating when those ACLs are going to be hit.

22
23 **MR. PERRET:** I think, John, didn't the 2,000-pound limit get
24 implemented at the end of 2013 and so it's only been in for one
25 full year now and they went over by 11 percent or something like
26 that? I still think any fishery that goes over should be made
27 to pay back the following year. I don't care what type of
28 fishery it is, but I do hope that will what Bonnie says and with
29 this 2,000-pound limit or whatever the limit turns out to be,
30 that we will have a much -- Even though we're over by 10 or 11
31 percent, it's a lot closer than we've been in a lot of fisheries
32 that still we need to improve upon it.

33
34 **CHAIRMAN RIECHERS:** Leann has another question for you, Bonnie,
35 I believe.

36
37 **MS. BOSARGE:** I think Corky just touched on it. What I was
38 hoping to hear from Bonnie, and I think this is what you were
39 trying to say, is hopefully for this next season we will be able
40 to do some more precise in-season monitoring with the type of
41 data collection we're going to have now and hopefully that may
42 remedy part of the situation as well, at least on the commercial
43 side.

44
45 **CHAIRMAN RIECHERS:** Could you either repeat that or -- She shook
46 her head? Okay. All right. Again, let's -- I will just do one
47 more call here for any changes or additional options in these
48 suites of options or things that might not be included in here

1 as an option that you've heard something about or want to have
2 included in here for them to analyze.

3
4 **DR. CRABTREE:** After discussing the ABCs and catch levels in
5 alternatives in Action 1, Mara has convinced me that we probably
6 ought to make sure that we have projections for each of these
7 and I think at least for one of the scenarios that holds the
8 catches at the 2015 level, Option 3, I don't think we have
9 projections with those.

10
11 I think this is probably contrary to my opinion at the last
12 meeting, but we have gotten a lot of public comment on these
13 and, based on advice of counsel, I think we probably ought to
14 ask for additional projections, to make sure we have those for
15 all of these, John. I don't think it takes too much effort for
16 the Center to do that, but I think it would strengthen our basis
17 for making selections on these.

18
19 **DR. FROESCHKE:** I agree and I think even for Option 2 that we
20 would need to update it, because I think it assumed that there
21 was not an overage in 2014 and so I think all of that is going
22 to need to be updated, based on the current landings.

23
24 **DR. CRABTREE:** All right. I would suggest we go ahead and ask
25 for that.

26
27 **DR. FROESCHKE:** Do we need a motion or something to make that
28 happen?

29
30 **CHAIRMAN RIECHERS:** Go ahead, Bonnie.

31
32 **DR. PONWITH:** At the very least, it would be good to get some
33 written direction so that there is just very precise
34 understanding of what you need, so that we don't spin our
35 wheels.

36
37 **DR. CRABTREE:** If I could, Mr. Chairman, I would make a motion
38 that we direct staff to request updated projections from the
39 Science Center for the options in Action 1. How is that, John?

40
41 **DR. FROESCHKE:** Are you talking probability of rebuilding kind
42 of projections?

43
44 **DR. CRABTREE:** I am talking mostly just projections to show how
45 long it would take us to rebuild under these scenarios, so that
46 we can compare one option with the other and how much quicker
47 would this get us there.

48

1 **DR. FROESCHKE:** Right. That's what I thought you meant.
2

3 **CHAIRMAN RIECHERS:** Do I have a second, please? I will second
4 it, if no one else will. Okay. Any other discussion? We had a
5 little bit of discussion leading into the motion here. **Seeing**
6 **no hands, all those in favor of the motion say aye; all those**
7 **opposed same sign. The motion carries.** Any other business, Dr.
8 Froeschke?
9

10 **DR. FROESCHKE:** Any thoughts on the size limit? If you just
11 look at the table, maybe one option -- I mean the thirty-three
12 would be kind of the closest to the 50th percentile, but we don't
13 have that in there.
14

15 **MR. FISCHER:** I do think, and I've always stated that we should
16 be increasing the size limit. I would like to see the size
17 limit going possibly as far as thirty-four inches, but possibly
18 doing it in a stepped approach and I don't think we have a
19 stepped approach in the discussion, where we go to thirty-two
20 for a year or two and step up.
21

22 However, with all that said, with that caveat, I might change my
23 entire view on this down the road if data indicates differently
24 and in a couple of years, there may be different data coming
25 out, but I've always believed that we're harvesting immature
26 fish and therefore, we will never get out of the box. We could
27 create all the seasonal closures and everything we want and as
28 long as we let the anglers harvest immature fish, we will be in
29 this situation.
30

31 **CHAIRMAN RIECHERS:** The only thing I will -- Do you want to make
32 a motion that you look at a stepped option of an increased
33 minimum size limit?
34

35 **MR. FISCHER:** Sure. **I move that we look at that approach of a**
36 **stepped increase from thirty-two and then up thirty-four.** They
37 are very fast-growing fish and we might only have to stay at
38 thirty-two for one season.
39

40 **CHAIRMAN RIECHERS:** Do I hear a second for that, to explore that
41 option?
42

43 **MR. ANSON:** Second for discussion, yes.
44

45 **CHAIRMAN RIECHERS:** Mr. Anson seconds for discussion. We had a
46 little bit of the discussion and rationale before and anyone
47 else want to add to that?
48

1 **DR. FROESCHKE:** One thing to think about, given the rate of
2 growth of this fish, is you could almost achieve this same thing
3 by just manipulating the time of year the closed season
4 occurred, because they may grow two inches in two months in the
5 summer.

6
7 **MS. LEVY:** Just to clarify, what this would do would add an
8 alternative, when we come back with a draft document, that would
9 have a minimum size limit of thirty-two inches for one year and
10 then an increase to thirty-four inches indefinitely, just so
11 that staff knows what to write in terms of the alternative?

12
13 **CHAIRMAN RIECHERS:** David, I had you and I'm sorry and I don't
14 know if it was on this or you had another item when you had your
15 hand up earlier, but --

16
17 **MR. WALKER:** Thank you, Mr. Chairman. I thought that the Reef
18 Fish AP was pretty broad variety of experts from all over the
19 Gulf Coast and they voted in support of a sixteen to four to go
20 to a thirty-four inch. Go from thirty inches to thirty-four
21 inches and it was to give them a year-round season and give the
22 chance for the fish, the sexually-mature fish, to spawn.

23
24 We discussed that, where you increase them from increments of
25 one-inch each year over a period of time. That came up for
26 discussion, but they voted in favor of going on to the thirty-
27 four inch and as far as that, there was also some discussion,
28 kind of on the side, about maybe you ought to have recreational
29 and commercial both at thirty-four inches and it would be easier
30 on enforcement and so I think that the thirty-four inches was a
31 pretty good idea.

32
33 It seems like it would make it a little harder on enforcement to
34 increase it each year like that, but it's just an opinion that
35 they kind of went on with the AP and they all moved in favor of
36 the thirty-four inch, but I definitely think some kind of
37 increase, whether you work it one inch at a time or go to four
38 inches, it will help, in the long run.

39
40 **DR. CRABTREE:** My worry with the steps is going to be that many
41 more regulatory changes we make and that many more times we're
42 going to have to go to the states and ask them to make the same
43 change and we're not doing too great at that right now and my
44 worry is that that just gets us more off sync and then that's
45 going to create all kinds of compliance problems and confusion.

46
47 **MR. FISCHER:** I don't have heartburn either way. I was actually
48 trying to see if it was a south Florida issue. Louisiana has no

1 problem jumping straight to thirty-four and so unless Martha has
2 something to say, I could withdraw or we could just vote it
3 down.

4
5 **MS. BADEMAN:** I'm okay with adding this. If we do have a
6 stepped approach, it would be helpful, I think, if we had a
7 schedule of when it was going to increase. Then we could do,
8 from the state level, one round of rulemaking and say the size
9 limit is going to be X for this year and then X for this year
10 and whatever, but I'm okay with adding it and looking at it. I
11 don't know where I will end up in the end, but right now, I'm
12 okay with this.

13
14 **DR. DANA:** It may change tomorrow in public testimony, but I
15 have heard, in the previous testimonies, the last couple of
16 meetings, a support for an increase in the size to thirty-four
17 from the recreational side, if it's going to allow for a longer
18 season and more ability for the fish to rebound.

19
20 **CHAIRMAN RIECHERS:** I will just remind everyone this is just
21 adding an alternative and this isn't making it a preferred, but
22 obviously we don't want to add things we really don't want to
23 consider.

24
25 **MR. DIAZ:** My comment could be now or after, but I have had a
26 few comments from fishermen that they would be okay in our area
27 to go to thirty-four, but that's only a couple and I would like
28 to hear what happens at public testimony tomorrow, but I would
29 also like to have available to us, at some point in time, the
30 portion of the females that are mature at thirty-three inches.
31 Right now, I agree with Myron that I don't like for us to fish
32 on immature females.

33
34 Thirty-two is 0.45 and thirty-four is 0.85 and so I'm assuming
35 thirty-three is going to fall somewhere close in the middle of
36 that, but I would like to see it as something that maybe we
37 could consider. Thirty-three, I'm sure, would give us over the
38 50 percent mark, which we usually try to hit, and so I'm
39 interested in that.

40
41 **DR. FROESCHKE:** I can have that for you by full council, no
42 problem.

43
44 **CHAIRMAN RIECHERS:** Okay. Let's vote this either up or down.

45
46 **MR. ATRAN:** Just so we're clear on what the motion is, since
47 you've been talking about this and saying this is to add an
48 alternative, that's not what it says. It just says to have

1 staff look at this and so you might want to change that to say
2 "motion to add an alternative to look at a stepped option".

3
4 **CHAIRMAN RIECHERS:** I may have misspoke and do you want -- I
5 assumed it was -- We were asking for alternatives and that's
6 what I assumed it was, but maybe I'm wrong.

7
8 **MR. FISCHER:** That's correct. It would just be to add an
9 alternative, but, like I say, if it doesn't have support, then
10 let's not worry about the analysis. I was just bringing it up
11 and it might help other regions.

12
13 **CHAIRMAN RIECHERS:** We will either have an option here in
14 committee to vote it up here in a moment or at full council and
15 so are we ready to vote on the motion? **All those in favor of**
16 **the motion say aye; all those opposed. The motion carries.**

17
18 You had mentioned thirty-three, John, and I noticed it wasn't in
19 there as well, but we have thirty-two and thirty-four and so we
20 can get there and basically if you bring the info that Dale is
21 talking about, I think we then have the information that we
22 would need, if we wanted to go there.

23
24 With that, I think that concludes the business of this item and
25 I think that takes us to Item Number XII, but we are also past
26 our time, Chairman Anson, and what would you like to do?

27
28 **DISCUSSION - AMENDMENT 28 - ALLOCATION OF RED SNAPPER**

29
30 **MR. ANSON:** I would like to try to maybe finish it. I will give
31 you some background on this. The motion that was made at a
32 previous meeting regarding Amendment 28 wasn't very clear and I
33 don't know if, Doug or Dr. Simmons, if you can provide some more
34 information, but it essentially just said that the council would
35 not look at Amendment 28 again until regional management moved
36 forward and so what does that mean? Regional management kind of
37 got put back on the front burner and so I am sorry. It's sector
38 separation. I am sorry.

39
40 Sector separation was moving forward and on the agenda and being
41 discussed and so, again, without a more clear motion, I just
42 took it to mean that we could bring it up at this time and add
43 it to the other red snapper amendments and so if the council
44 wants to give some other direction, whether it's temporary for
45 this meeting, just to kind of take it off the agenda or give
46 some sort of date certain. I don't know what we would like to
47 do.

1 **CHAIRMAN RIECHERS:** Dale, you had your hand up or wanted to say
2 something?

3
4 **MR. DIAZ:** Well, I mean what I remember from the discussion is
5 we had said that we would postpone it until we had taken some
6 action on Amendment 40, whether we vote it up or vote it down or
7 table it to some date forward. Once we take an action on
8 Amendment 40, then this is something that could be brought up at
9 that time. To me, I really don't think it's appropriate to
10 discuss it until after we clear Amendment 40 on probably
11 Thursday and then at that point, we will have, in my mind, have
12 met the intent of the motion. That's the way I recall it and
13 the way I understand it.

14
15 **CHAIRMAN RIECHERS:** Any other discussion regarding that? It
16 seems like that's the will of the committee then and so at this
17 point, as we near the end of the day here, that leaves us only
18 Other Business. As far as I know, there wasn't anyone who
19 actually said they had other business when we set up the agenda,
20 but is there anything that would come before this committee
21 under Other Business? Mr. Chairman, this committee stands
22 adjourned.

23
24 (Whereupon, the meeting adjourned at 5:35 p.m., October 21,
25 2014.)

26
27 - - -
28

TABLE OF CONTENTS

1
2
3 Call to Order 3
4
5 Adoption of Agenda 3
6
7 Approval of Minutes 4
8
9 Estimates of Red Snapper Abundance on Alabama's Offshore Reefs .. 4
10 Presentation 4
11 SSC Comments 17
12
13 Presentation on MRIP Calibration Workshop Summary 21
14
15 SEFSC Comments on Red Snapper Abundance Graph 29
16 SSC Comments 37
17
18 Discussion of Amendment 39 - Red Snapper Regional Management 45
19
20 Final Action - Amendment 40 - Recreational Red Snapper Sector
21 Separation 75
22 Overview of Amendment 75
23 Comments Received 85
24 Codified Regulations 88
25 Committee Recommendations 91
26
27 IFQ Program Review 91
28
29 Gag OFL and ABC Recommendations 102
30 ACL/ACT Control Rule Recommendations 118
31
32 Hogfish Benchmark Assessment OFL and ABC 118
33 SSC Recommendations 118
34
35 Other Reef Fish SSC Summary 123
36
37 Final Action - Red Grouper Bag Limit and Accountability Measures
38 Framework Action 124
39 Comments Received 130
40
41 Options Paper - Greater Amberjack ACL/ACT 134
42
43 Discussion - Amendment 28 - Allocation of Red Snapper 145
44
45 Adjournment 146
46
47 Table of Contents 147
48

1 Table of Motions 149
2
3 - - -
4

TABLE OF MOTIONS

1
2
3 PAGE 52: Motion in Action 1 to add an Alternative 4 which would
4 establish a regional management program in which regions submit
5 proposals to National Marine Fisheries Service describing the
6 conservation equivalent measures each region will adopt for the
7 management of its portion of the red snapper quota. The motion
8 carried on page 61.
9
10 PAGE 63: Motion in Alternative 2 of Action 1 to add two new
11 options. Option c would allow delegation to sunset after two
12 calendar years of the program and Option d would allow
13 delegation to sunset after three years and then also to make the
14 preferred alternative in Action 1 Alternative 2, Option d, the
15 three-year sunset. The motion carried on page 63.
16
17 PAGE 64: Motion to make Alternative 2, Option d, and
18 Alternative 3, Option a and b the preferred alternative in
19 Action 3. The motion carried on page 65.
20
21 PAGE 72: Motion in Action 6 to remove Options a and b in
22 Alternatives 2, 3, and 4 and put them in the Considered but
23 Rejected section. The motion carried on page 73.
24
25 PAGE 80: Motion to add a new action to create a sunset
26 provision on sector separation with options for sunset after
27 Option a: two; Option b: three; and Option c: five years of the
28 program. The motion carried on page 82.
29
30 PAGE 82: Motion that the preferred option be Option b, three
31 years. The motion carried on page 82.
32
33 PAGE 91: Motion to forward Amendment 40 to the Secretary of
34 Commerce. The motion failed on page 91.
35
36 PAGE 101: Motion to hold scoping meetings on the IFQ Program
37 Review in Pascagoula, Mississippi; Mobile, Alabama; Kenner/St.
38 Rose, Louisiana; Panama City, Florida; St. Petersburg, Florida;
39 Galveston, Texas; and Port Aransas, Texas. The motion carried
40 on page 101.
41
42 PAGE 116: Motion to have the SSC review the 2015 ABC again with
43 the latest red tide information for the January SSC meeting.
44 The motion carried on page 118.
45
46 PAGE 131: Motion in Action 1 to select Alternative 3 as the
47 preferred alternative. The motion carried on page 131.
48

1 PAGE 131: Motion in Action 2 to select Alternative 4 as the
2 preferred alternative. The motion carried on page 132.

3

4 PAGE 141: Motion to direct staff to request updated projections
5 from the Science Center for the options in Action 1. The motion
6 carried on page 142.

7

8 PAGE 142: Motion to look at an approach of a stepped increase
9 from thirty-two and then up thirty-four inches. The motion
10 carried on page 145.

11

12

- - -

Reef Fish Committee: Action Schedule for Tab B

Agenda Item IV: Red Snapper Update Assessment

Timeline Status: Information

Council Input and Next Steps: The SSC representative will review the 2014/15 red snapper update assessment that was prepared by the SEFSC, and the comments of the SSC. OFL and ABC recommendations will be provided to the Council. Staff will provide the ACT recommendations based on both the ACL/ACT control rule and on the 20% buffer adopted in the October 2014 Framework Action – Recreational Accountability Measures for Red Snapper. The Committee should recommend whether to proceed with a framework action to adjust the red snapper ACLs and ACTs, and whether any other management changes should be considered in this framework action.

Agenda Item V: Re-evaluation of Gag OFL and ABC for 2015-2016

Timeline Status: Information

Council Input and Next Steps: The SSC representative will review the SSC’s re-evaluation of ABC recommendations for gag based on the 2014 SEDAR 33 gag benchmark assessment and consideration of possible impacts of the 2014 red tide event. The Council originally requested a constant catch ABC through 2018. However, that request was made prior to the red tide event and its possible impacts. The most recent request from the Council, made at the October 2014 meeting, was for the SSC to provide ABCs for 2015 and 2016. Staff will provide the ACT recommendations based on ACL/ACT control rule. The Committee should recommend whether to proceed with a framework action to adjust the gag ACLs and ACTs, and whether any other management changes should be considered in this framework action.

Agenda Item VI: Draft Framework Action – Greater Amberjack

Timeline Status: Draft Framework Options paper, Draft Framework (April 2015); Final Action (June 2015)

Council Input and Next Steps: The SSC representative will review the SSC comments on the additional analysis presented regarding rebuilding timeline estimates from SEFSC relative to management options under consideration. The Committee will then review the draft Framework Action, and should determine if range of actions and options are appropriate.

Agenda Item VII: Draft Amendment 39 – Red Snapper Recreational Regional Management

Timeline Status: Review and Discussion

Council Input and Next Steps: Staff will present the updated document containing restructured actions and alternatives. These changes incorporate a regional approach modeled after summer flounder management, and updates to current information on red snapper management and landings. Staff from the Mid-Atlantic Council will make a presentation on summer flounder management. The Committee will discuss and provide recommendations on the direction and timeline for regional management.

Agenda Item VIII: Revised Public Hearing Draft Amendment 28 – Red Snapper Allocation

Timeline Status: Review and Discussion

Council Input and Next Steps: The committee will review a revised public hearing draft. Based on the review, the committee may suggest changes and recommend to Council a timeline for final action.

Agenda Item IX: Report of the Ad Hoc For-hire Red Snapper AP

Timeline Status: Information

Council Input and Next Steps: Staff will present a summary of the recommendations made by the AP at its December 2-3, 2014 meeting. Based on the recommendations, the Council may decide to instruct staff to begin action to address some of the recommendations.

Agenda Item X: Final Action – Framework Action to Adjust Recreational For-hire Red Snapper Management Measures

Timeline Status: Final Action

Council Input and Next Steps: The committee will review a framework action to consider reducing the red snapper bag limit on for-hire vessels in order to extend the for-hire red snapper season. In response to a recommendation made by the Ad Hoc For-hire Red Snapper AP, staff has also prepared additional alternatives in a separate document to consider a split season for the for-hire component. If the Council decides to adopt a split season for 2015, these alternatives can be added to the framework action so that this action can be implemented in time for the current season.

Agenda Item XI: Options Paper – Update Minimum Stock Size Threshold for Reef Fish Stocks with Low Natural Mortality

Timeline Status: Draft Options Paper for a Possible Amendment

Council Input and Next Steps: Staff will review actions to establish or revise the minimum stock size threshold for selected reef fish stocks, and to consider adopting a default minimum stock size threshold for all other reef fish stocks. If the Council chooses to proceed with the action, it does not qualify for implementation under the Generic Framework Procedure and will require a plan amendment.

Agenda Item XII: Red Snapper Poaching by Mexican Lanchas

Timeline Status: Information

Council Input and Next Steps: LCDR Jason Brand will present an update on Coast Guard activities to address illegal fishing by Mexican vessels in U.S. waters. This agenda item is for information only, unless the Council wishes to provide guidance to staff.

Agenda Item XIII: Other Reef Fish SSC Summary

Timeline Status: Information

Council Input and Next Steps: The SSC representative will review items from the SSC report that were not covered in the previous agenda items. This agenda item is for information only, unless the Council wishes to provide guidance to staff. Items include:

- a. Progress report on mutton snapper update assessment
- b. Reorganization of SSC's
- c. Review of SEDAR assessment schedule
- d. Discussion of alternative red snapper MSY proxies

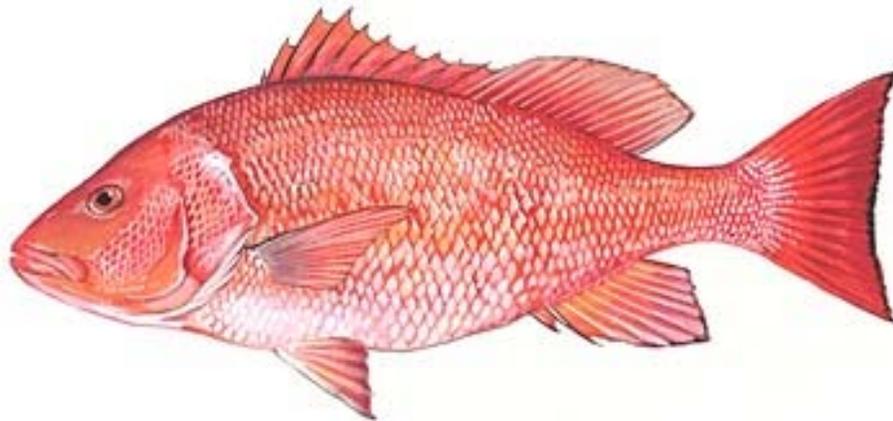


NOAA
FISHERIES

South East
Fisheries
Science Center

2014 Update Gulf of Mexico Red Snapper

Gulf of Mexico Fishery Management Council Meeting



January 26, 2015

Shannon L. Cass-Calay (SEFSC)

Clay E. Porch (SEFSC)

John F. Walter (SEFSC)

Jakob Tetzlaff

Terms of reference

1. Update the SEDAR 31 GOM red snapper assessment with data through 2013
2. Document changes or corrections made to model and input datasets...
 - **use methods from the September 2014 MRIP Calibration workshop, if possible**
3. Update estimates of stock status and management benchmarks, and provide probability of overfishing occurring at specified future harvest and exploitation levels
4. Develop a stock assessment update report to address these TORS and fully document the input data and results of the stock assessment update

Review

Model same as SEDAR 31

- 1872-2013
- 2 regions: East and West of the Mississippi River
- Flexible structure allows key parameters to change through time
 - **Recruitment of young fish to the population** – to accommodate and apparent increase in productivity in recent years (1984-2013)
 - **Selectivity** – to account for implementation of IFQ program and circle hooks
 - **Retention** – to account for changes in size limits and IFQ
 - **Discard mortality** – to account for venting

Review

Data same as SEDAR 31 (but updated through 2013)

Fisheries Dependent Data

Catch, Discards, Effort, CPUE, Age

- Com Handline
- Com Longline
- Rec Private Boat + Charter Boat
- Headboat
- Com Closed Season
- Rec Closed Season
- Shrimp Bycatch

Fisheries Independent Data

CPUE, Age composition

- SEAMAP Video
- SEAMAP Plankton
- SEAMAP Summer Trawl
- SEAMAP Fall Trawl
- NFMS bottom longline
- Artificial Reef ROV

Key Changes:

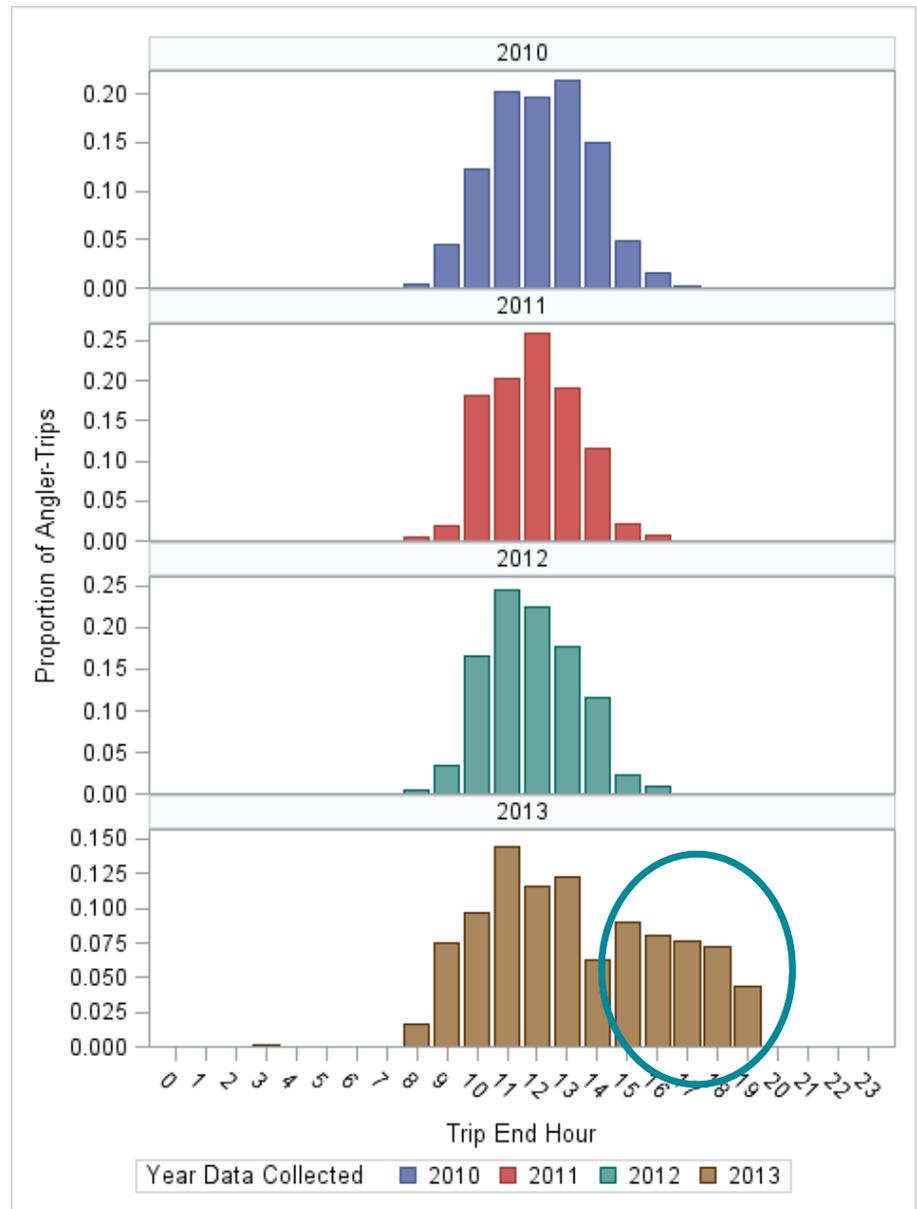
- Used recalibrated MRIP estimates
- Estimated an additional selectivity block (2011-13) for recreational fleets to accommodate recent changes in fishing behavior that appear to have led to a larger average size

“Selectivity” functions are used to model both the vulnerability of fish to the gear as well as the availability of fish. Availability can be related to the spatial distribution of fish by size or age.

MRIP Calibration workshop

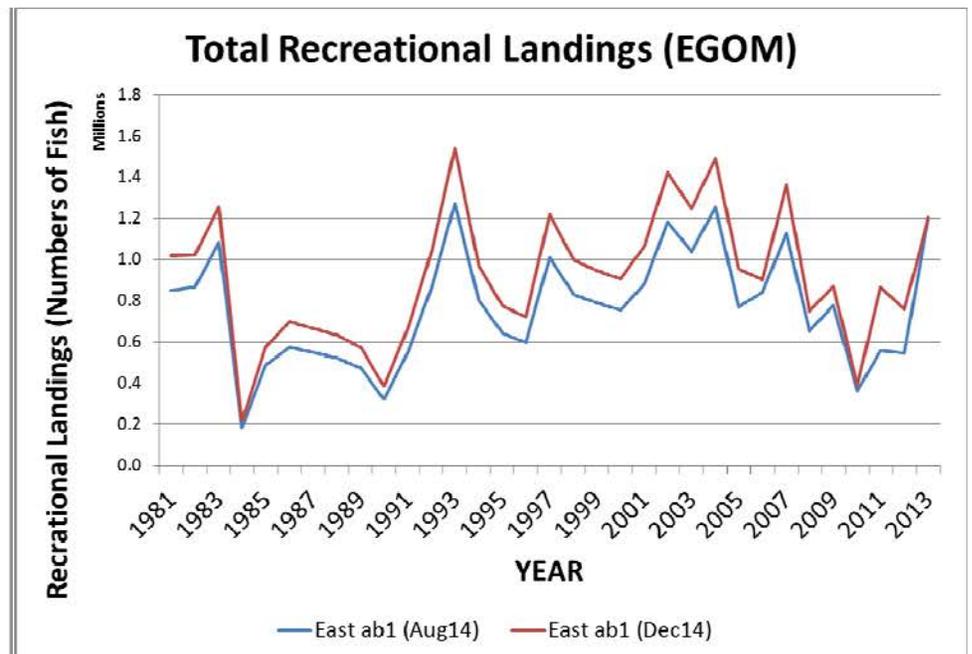
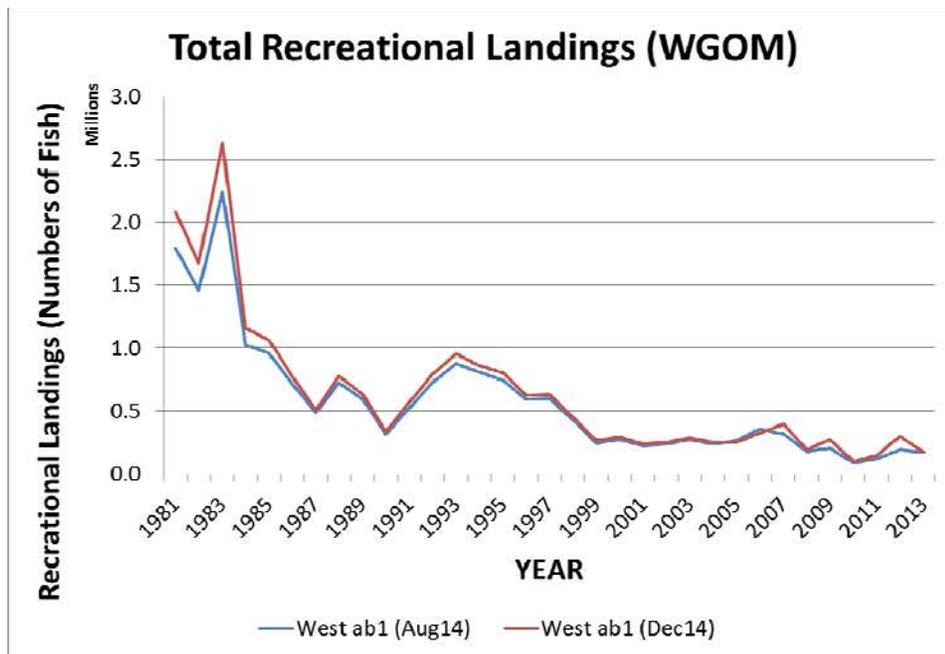
- Changes in design (implemented in 2013) led to changes in proportions of Angler-Trips by Hour
- Estimates were adjusted for possible undersampling of afternoons and evenings

Example: Alabama Private Boat



Effect of Rescaling MRIP Estimates

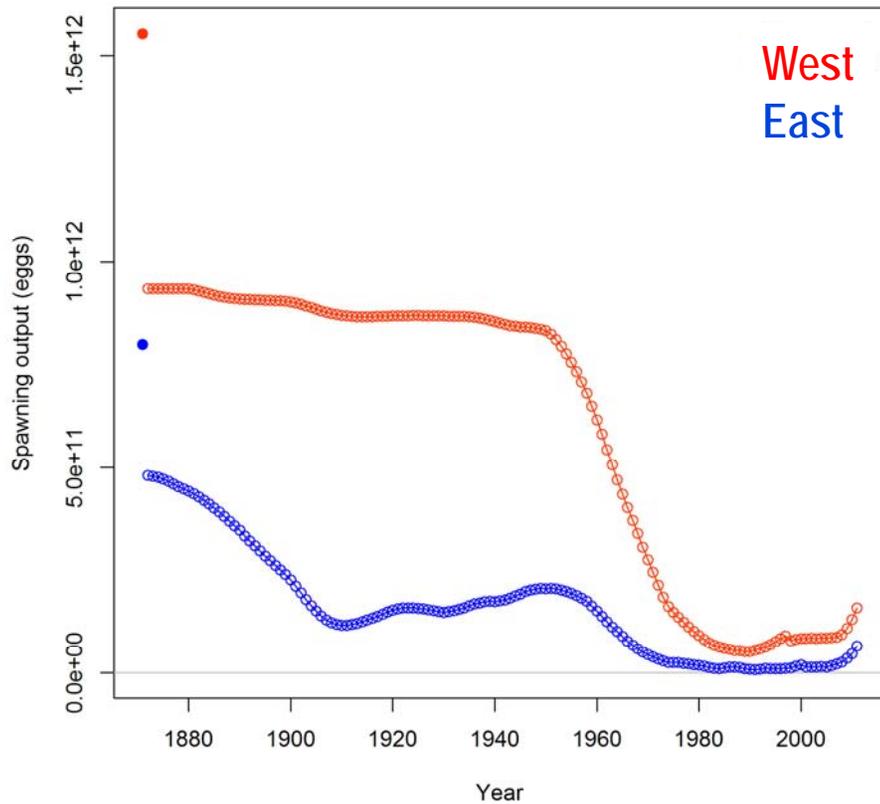
- Recalibrated recreational landings (AB1) are higher throughout time series
- The increase in estimated discards is larger



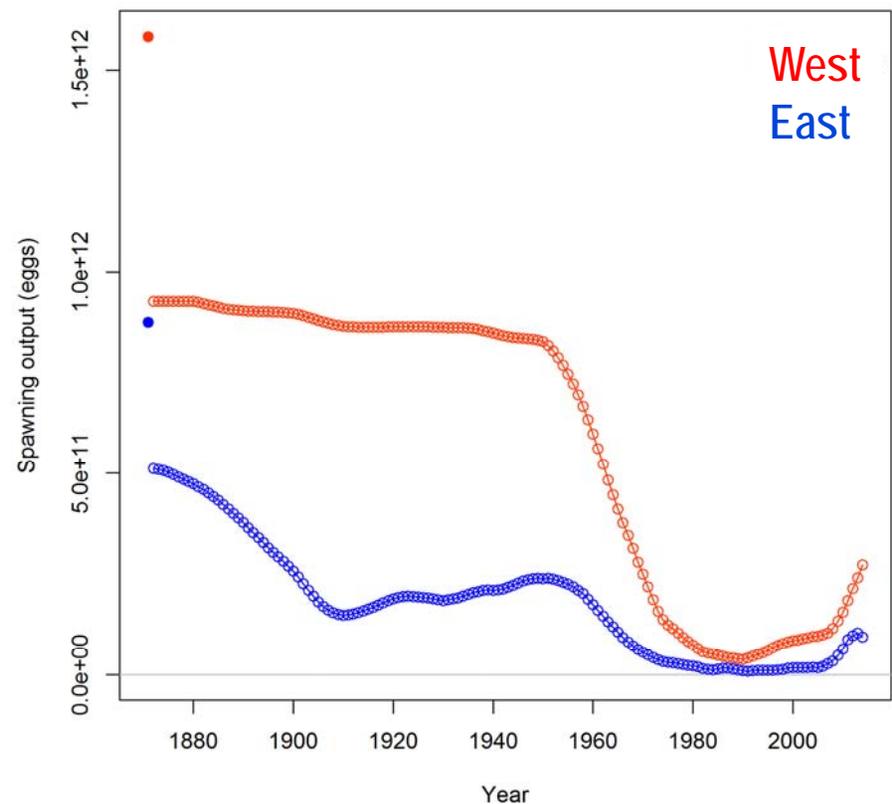
Model Results: Spawning Stock Biomass

- Regional trends in SSB nearly identical to SEDAR 31

SEDAR 31

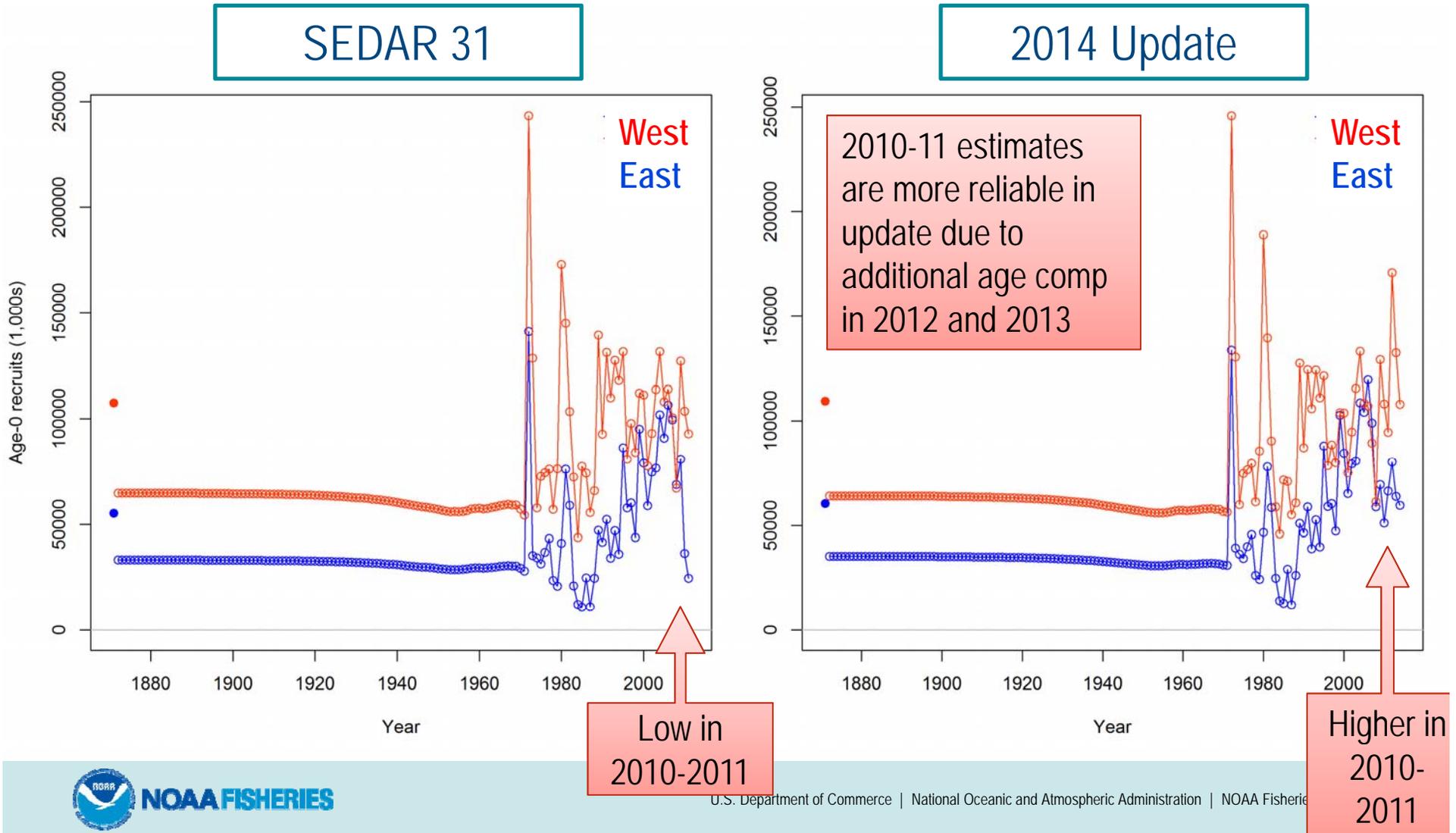


2014 Update



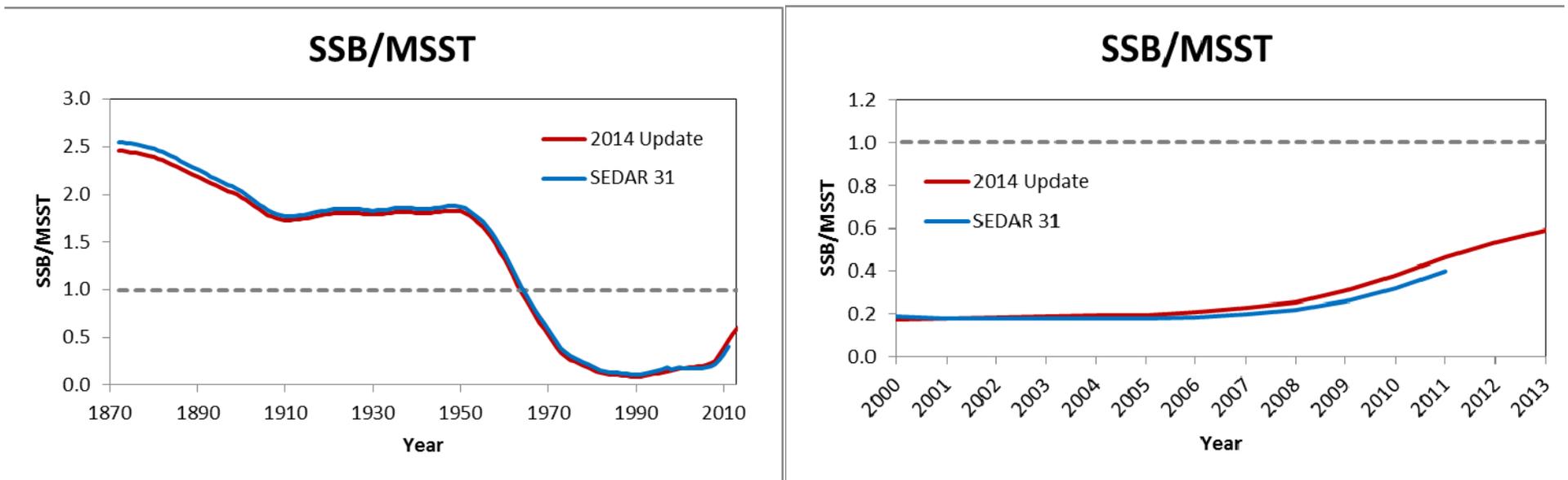
Model Results: Recruitment

- Regional trends in recruitment similar except higher in 2010-11



Spawning Stock Status

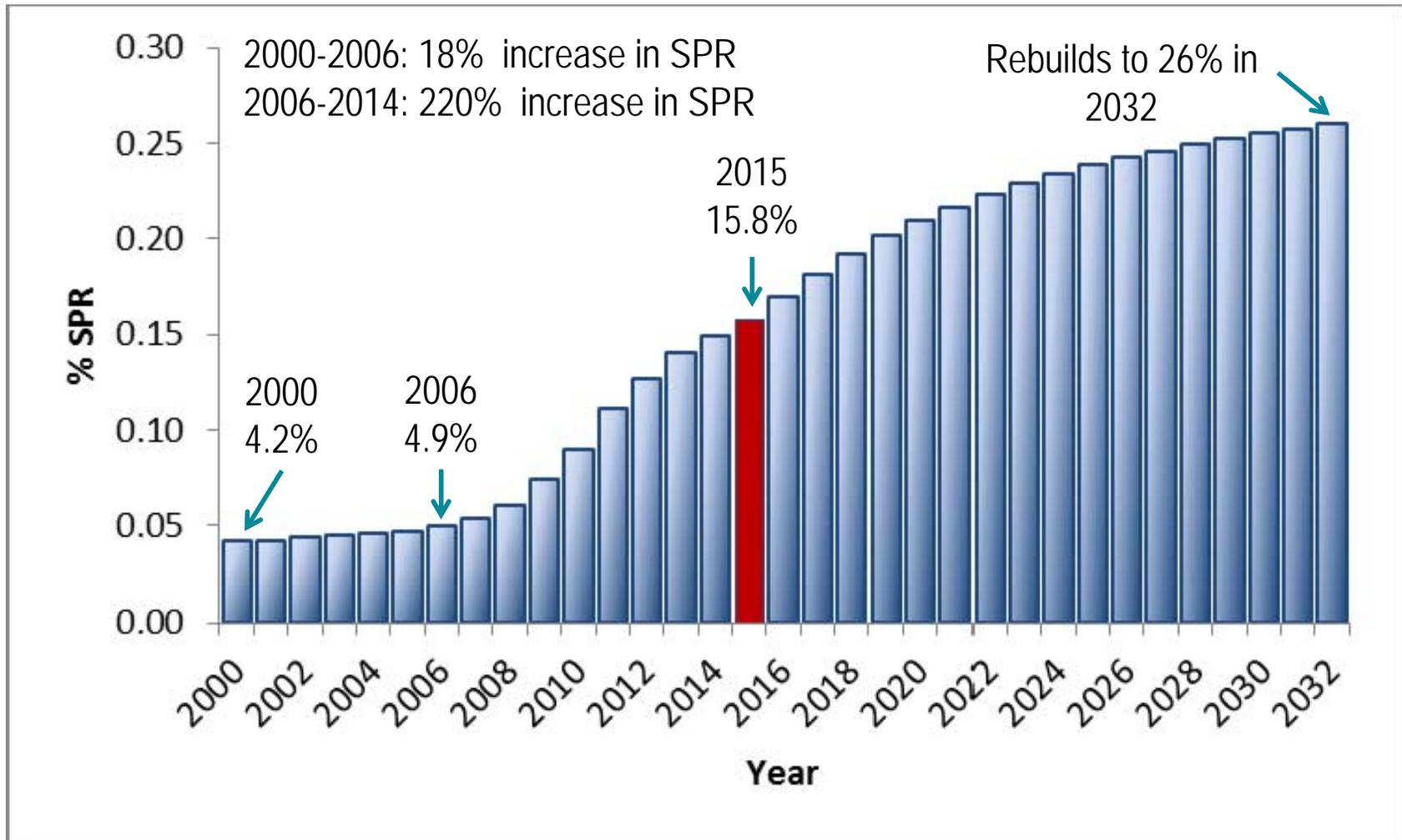
- Nearly identical to SEDAR 31
- $MSST = (1-M) * SSB_SPR26\%$ where $M = 0.086$



Projections

- Projection methods identical to SEDAR 31, except that ***SSC based management advice on base model only***
- Catch allocation between commercial and recreational fleets assumed 51:49 split
- ***2014 directed landings not yet available, therefore assumed identical to 2013 - SSC requested updated projections as soon as possible***

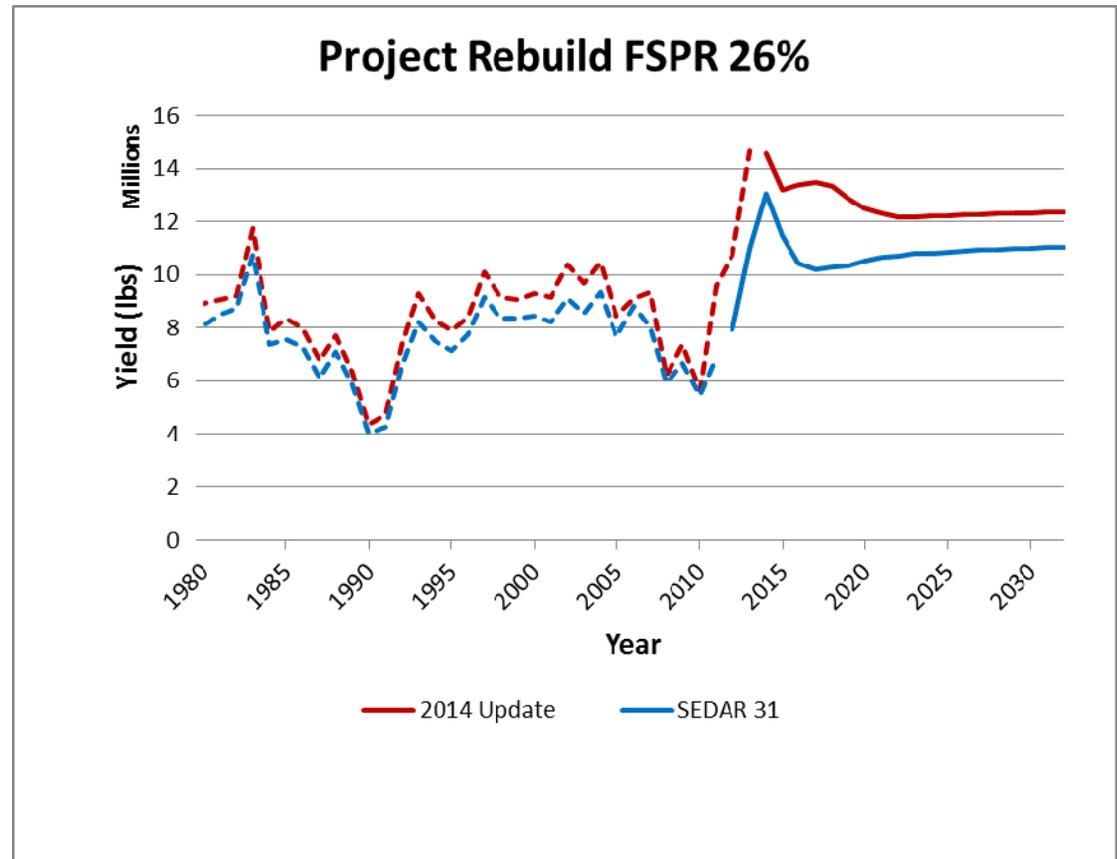
Spawning Potential Ratio: Project F Rebuild



Projected Yield: SEDAR 31 vs. 2014 Update

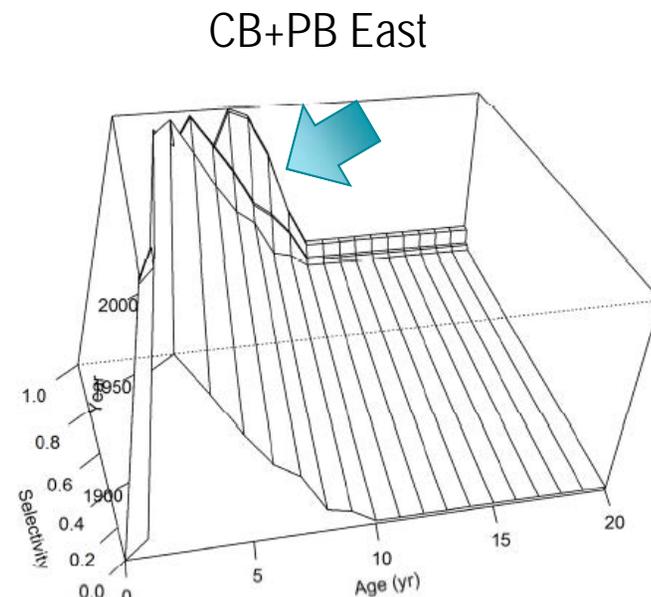
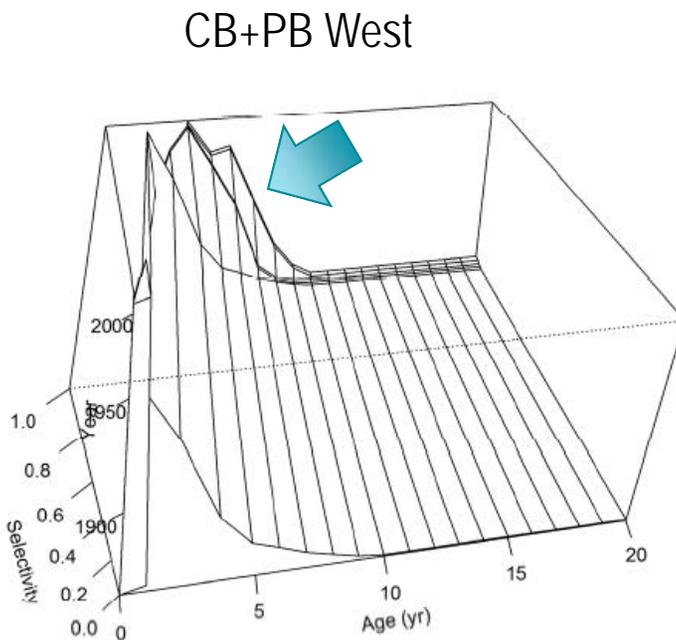
- MSY and retained yield higher for update than for SEDAR 31

Model	MSY
SEDAR 31	11.7
BASE	12.9



Why the increased yield?

- Increase in total removals due to MRIP recalibration
- New selectivity block for recreational fleets indicates that selectivity of those fleets has shifted to older (heavier) fish in recent years
- CB+PB and HB fisheries shows similar changes

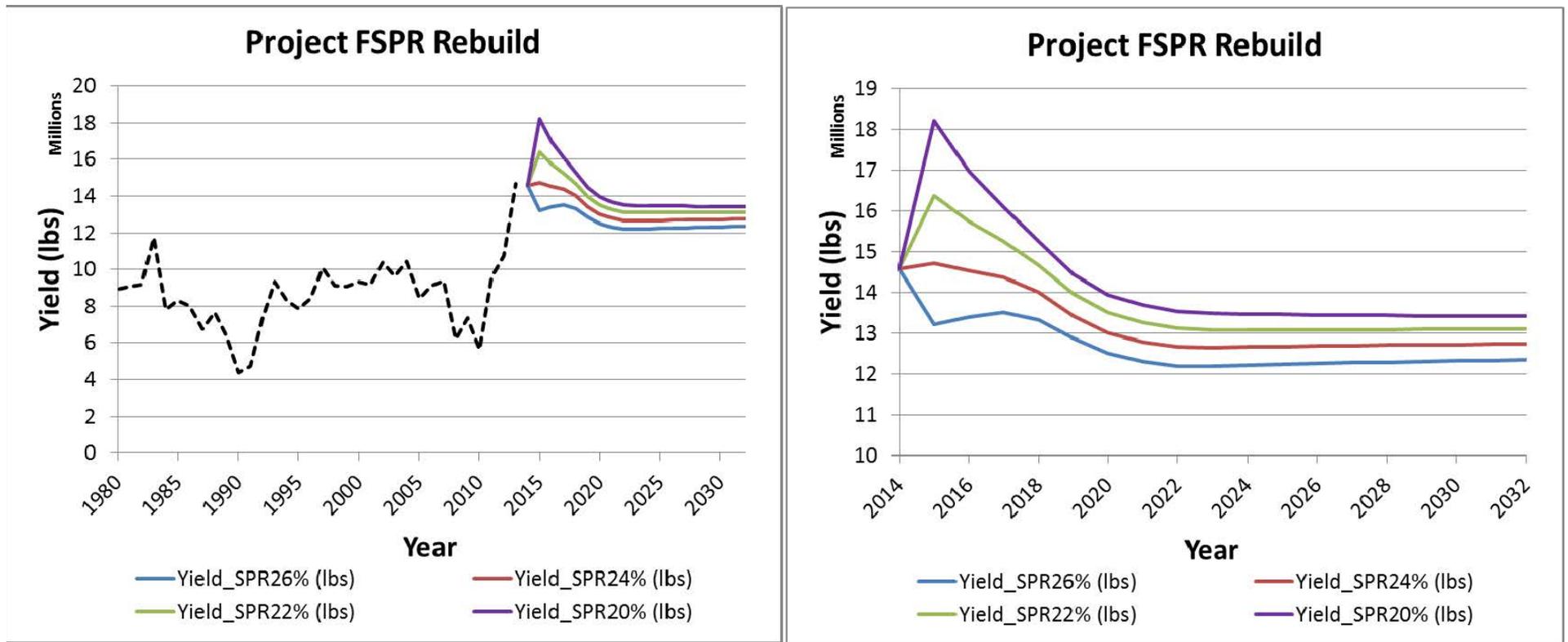


Alternative Reference Points

- At Council request, four proxies for F_{MSY} were considered during projections:
 - $F_{SPR26\%}$
 - $F_{SPR24\%}$
 - $F_{SPR22\%}$
 - F_{MAX} ($\sim F_{SPR20\%}$)

Projected Yield (Retained)

- Projected constant F to achieve Rebuild Target (SSB SPR 26%, 24%, 22%, 20%) in 2032.



OFL at Specified FSPR Reference

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 BASE*** (FSPR 26%)
2015	14.73	16.03	17.42	18.94	12.52
2016	14.56	15.50	16.46	17.44	11.25
2017	14.40	15.08	15.75	16.41	10.88
2018	14.02	14.54	15.03	15.49	10.92
2019	13.44	13.86	14.26	14.63	10.94
2020	13.03	13.42	13.78	14.11	11.10
Equil.	12.87	13.13	13.37	13.57	11.69

*** SEDAR 31 management advice developed using constant catch projections

ABC at Specified FSPR Reference ($P^* = 0.427$)

Assumes Rebuild Year = 2032; Will require revision if recovery plan is adjusted.

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 BASE*** (FSPR 26%)
2015	13.00	14.47	16.11	17.92	11.28
2016	13.21	14.34	15.52	16.74	10.28
2017	13.32	14.19	15.05	15.89	10.04
2018	13.13	13.80	14.44	15.04	10.14
2019	12.67	13.23	13.75	14.23	10.22
2020	12.33	12.84	13.32	13.77	10.41
Equil.	12.51	12.87	13.20	13.48	10.10
Recovery Year F=0	2018	2017	2017	2017	-

*** SEDAR 31 management advice developed from constant catch projections

Choice of F_{MSY} proxy

- Proxies are used when F_{MSY} cannot be estimated
- If there is TRULY no relationship between spawners and recruits (steepness = 1.0) then $F_{MAX} = F_{MSY}$
- However, at some stock size, recruitment is likely to diminish with decreasing stock size (no spawners = no recruits)
- Many scientists (and some SSC members) have proposed a biologically based FSPR proxy. A review of the literature suggests that red snapper life history characteristics are most consistent with FSPR30-40%
- F26% is a compromise which was adopted by the SSC

Choice of F_{MSY} proxy

- Lower FSPR proxies tend to produce higher yield, and “lower the bar” for recovery.
- An FSPR proxy that is too low will not rebuild the stock to the level that produces MSY in the long term.
- Rebuilding plan may need to be shortened to compensate for a lower SPR benchmark



Summary

- This model used new improved estimates of MRIP landings and discards
- 2014 Update and SEDAR 31 model results are quite similar
- Main Differences: Higher MSY and projected yields for update due to:
 - 2011-2013 recreational selectivity shifted toward larger fish
 - Higher recreational removals due to MRIP recalibration

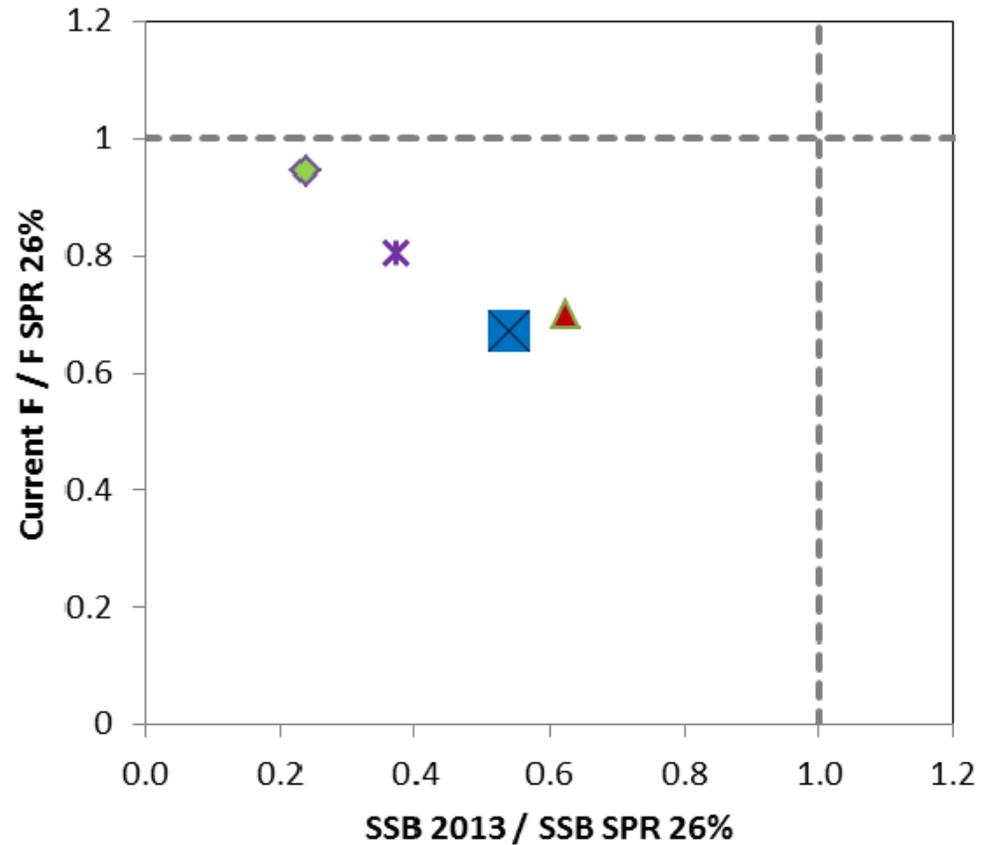
Acknowledgements

- Analytical Team
 - Shannon Cass-Calay
 - Clay Porch
 - Jakob Tetzlaff
 - John Walter
- Data Providers: Too numerous to mention by name:
 - State and Academic Partners
 - NOAA SEFSC: Miami, Panama City, Pascagoula, Galveston
- Thank You!

Supplemental Slides

Control Rule Plot

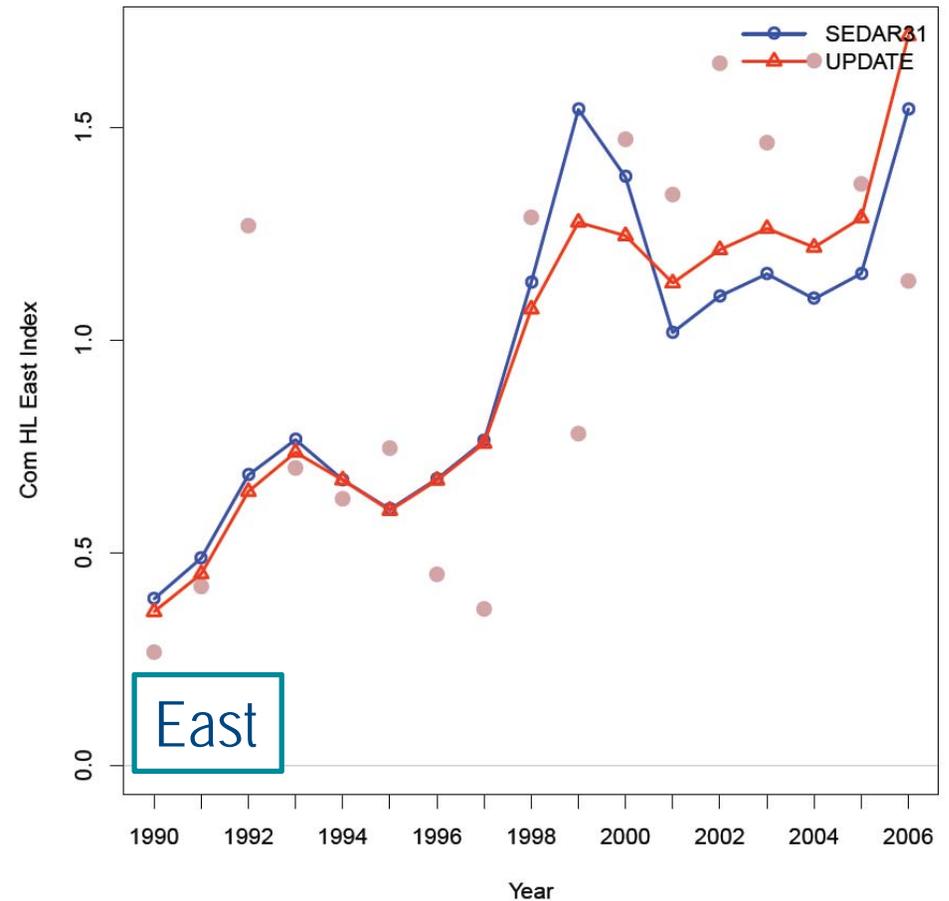
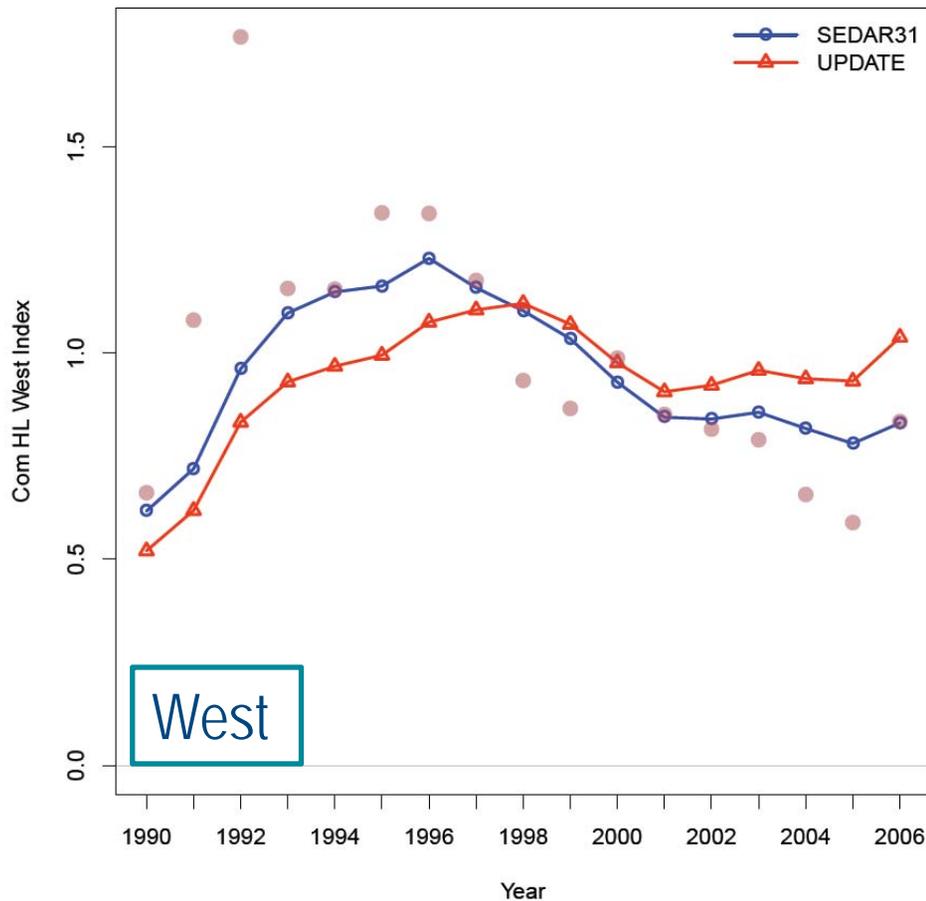
- The base and sensitivity runs examined indicate that the stock remains overfished, but that overfishing is not occurring



■ 2014 Update ▲ HIGH M ◆ LOW M ✖ CV 0.1

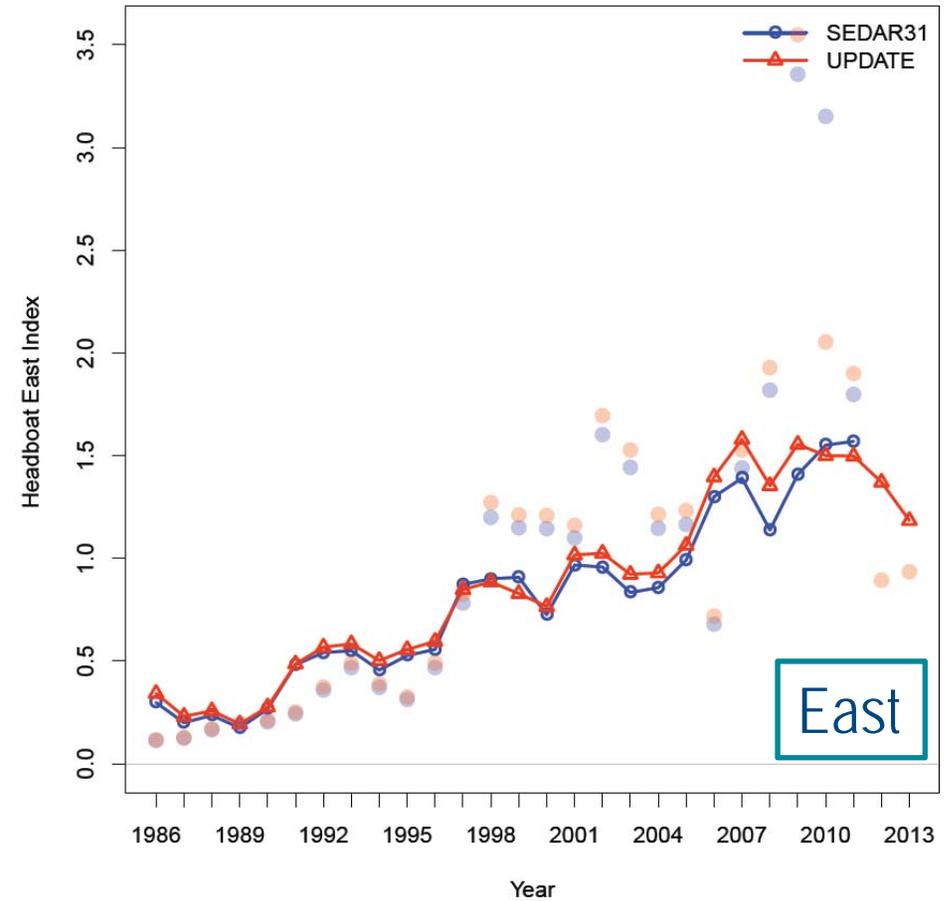
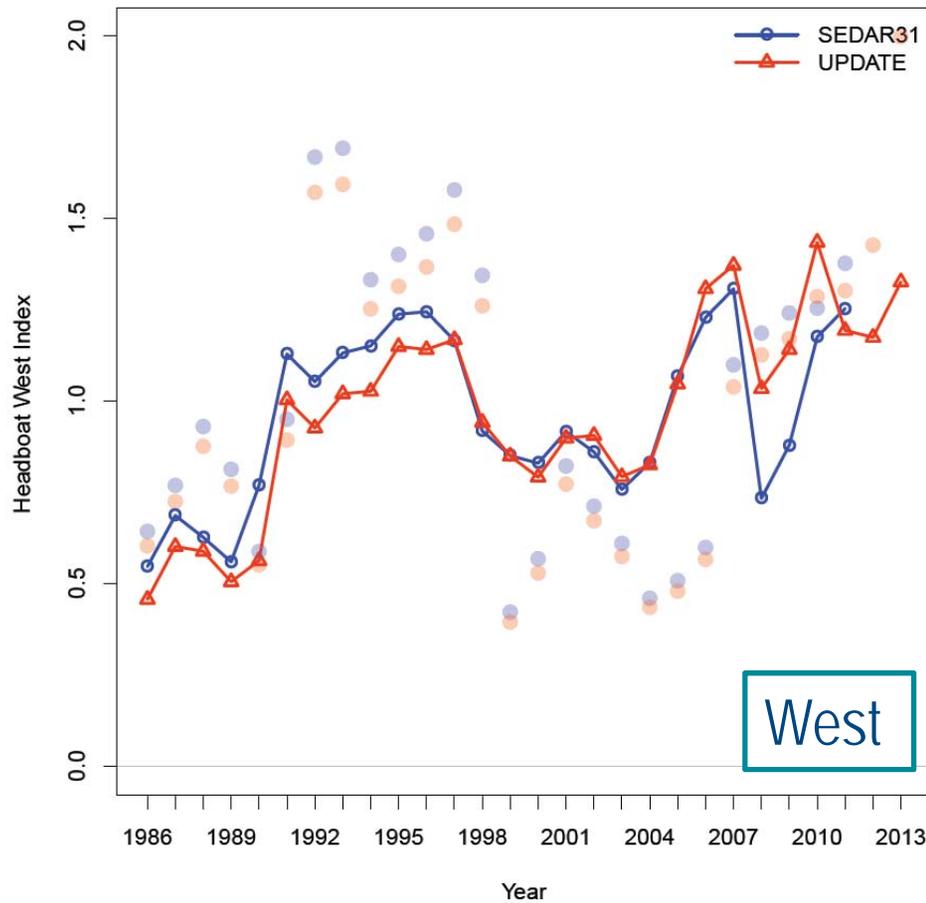
Fishery Dependent Indices of Abundance

- Commercial Handline



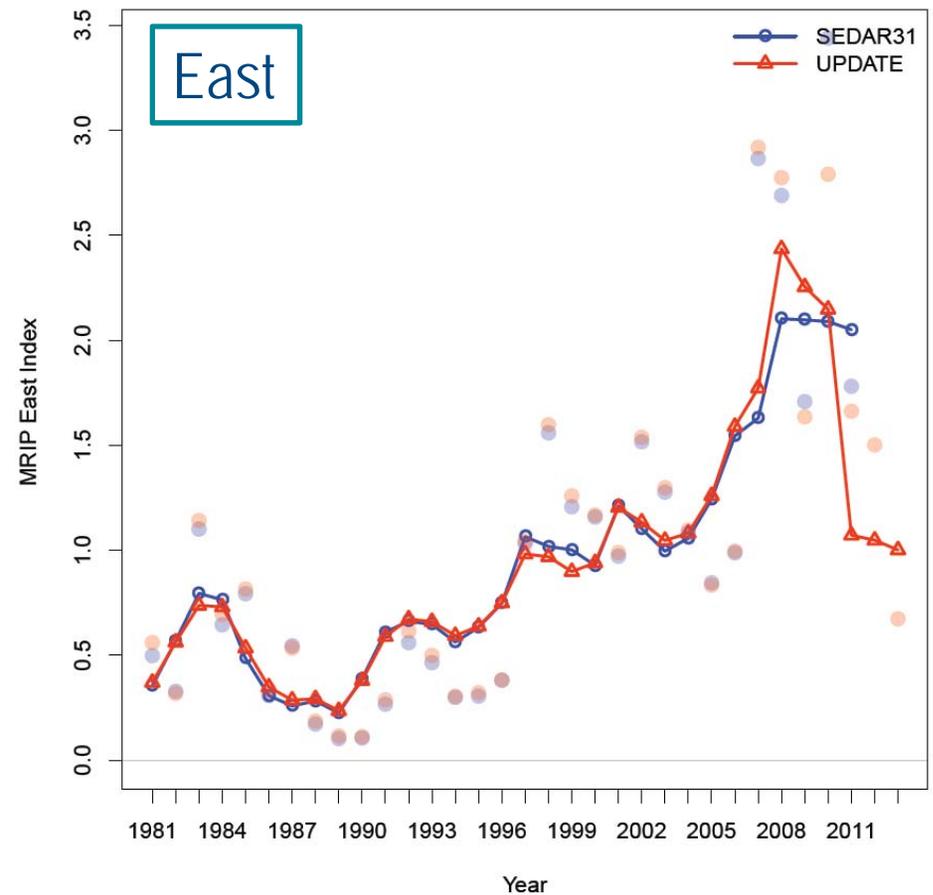
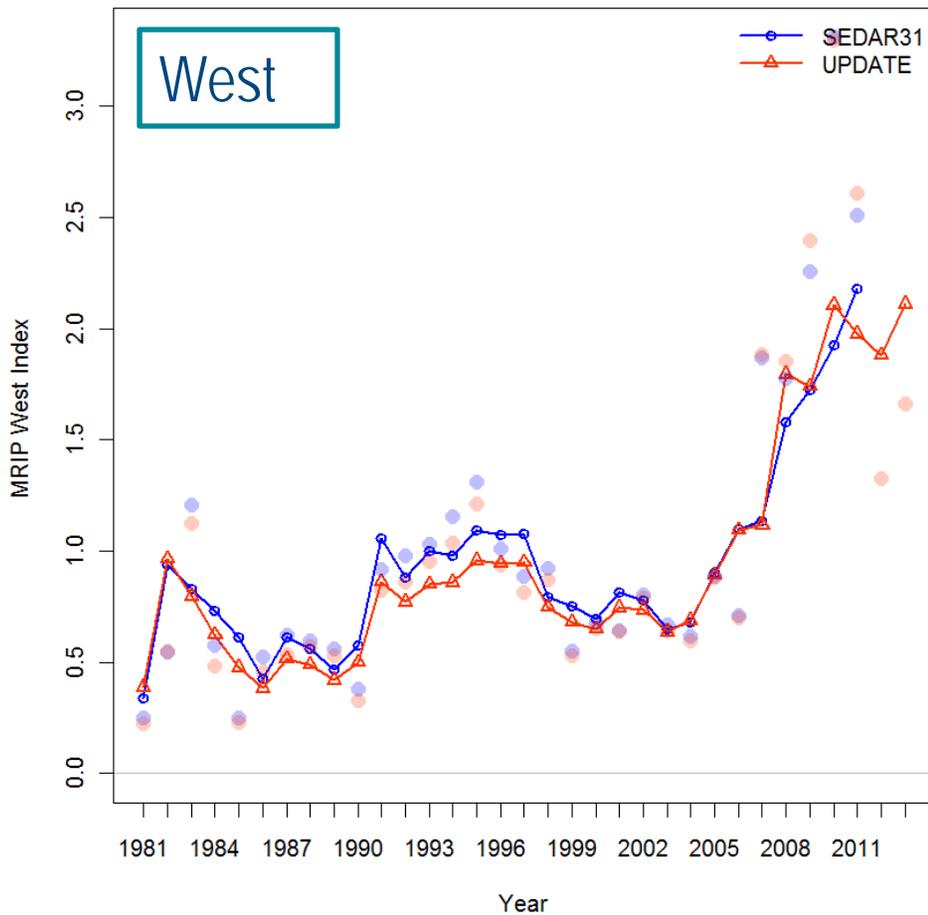
Fishery Dependent Indices of Abundance

- Recreational: Headboat



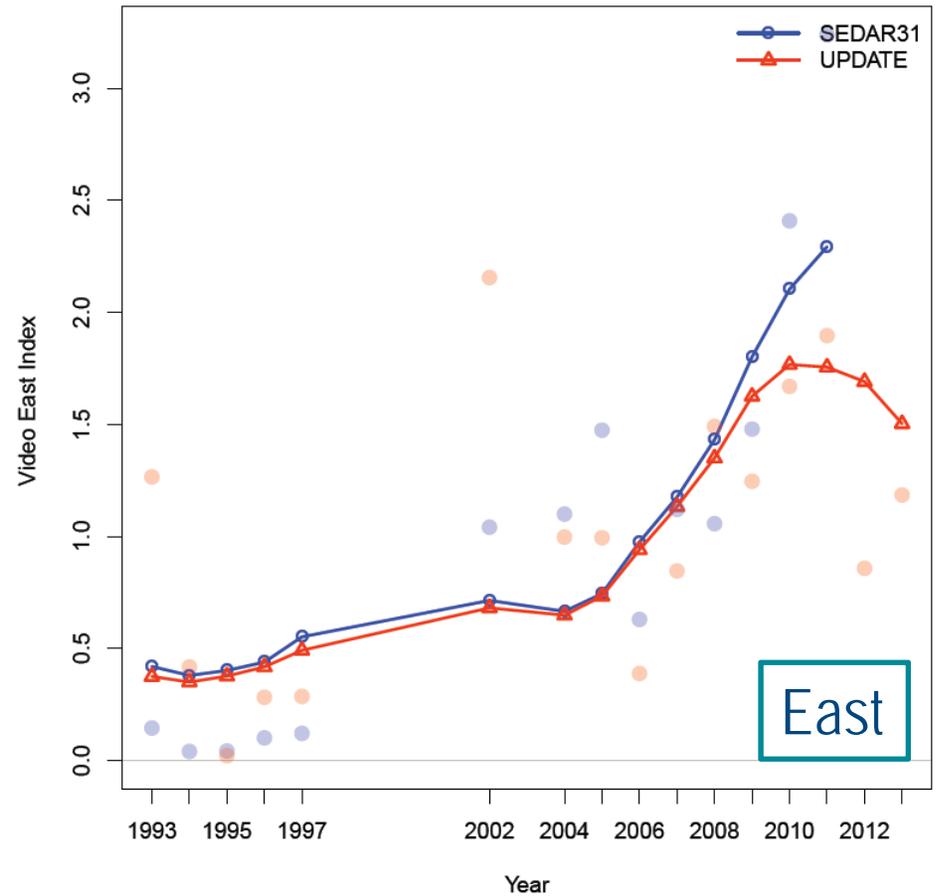
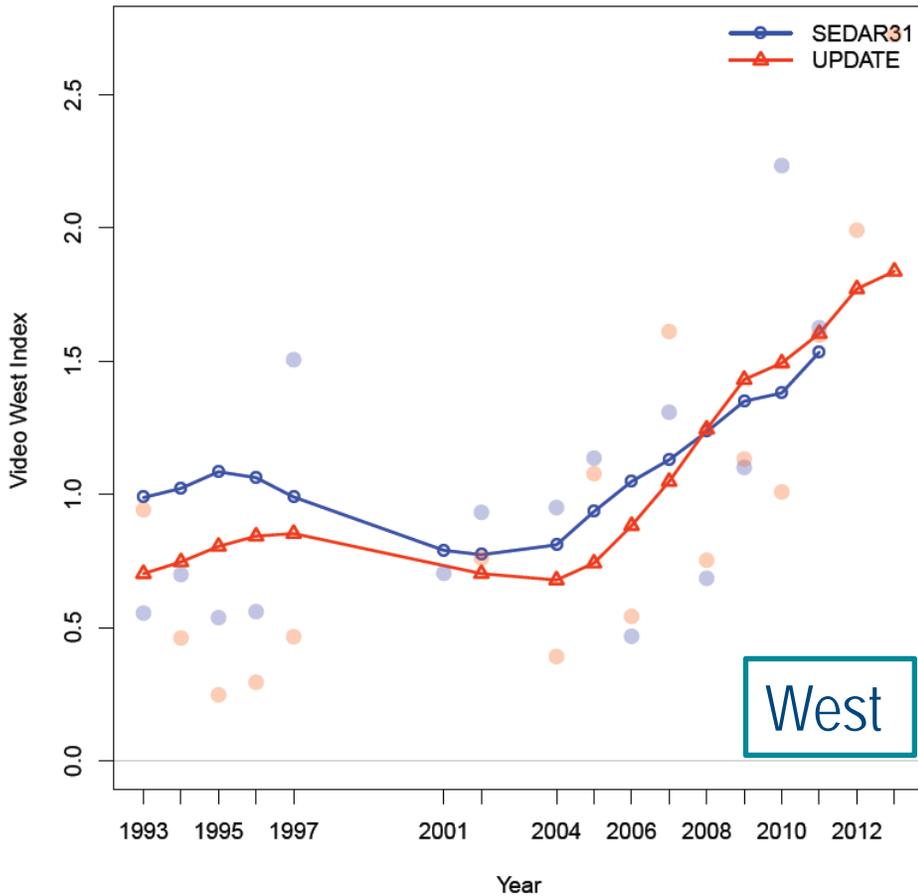
Fishery Dependent Indices of Abundance

- Recreational: MRIP Charter + Private



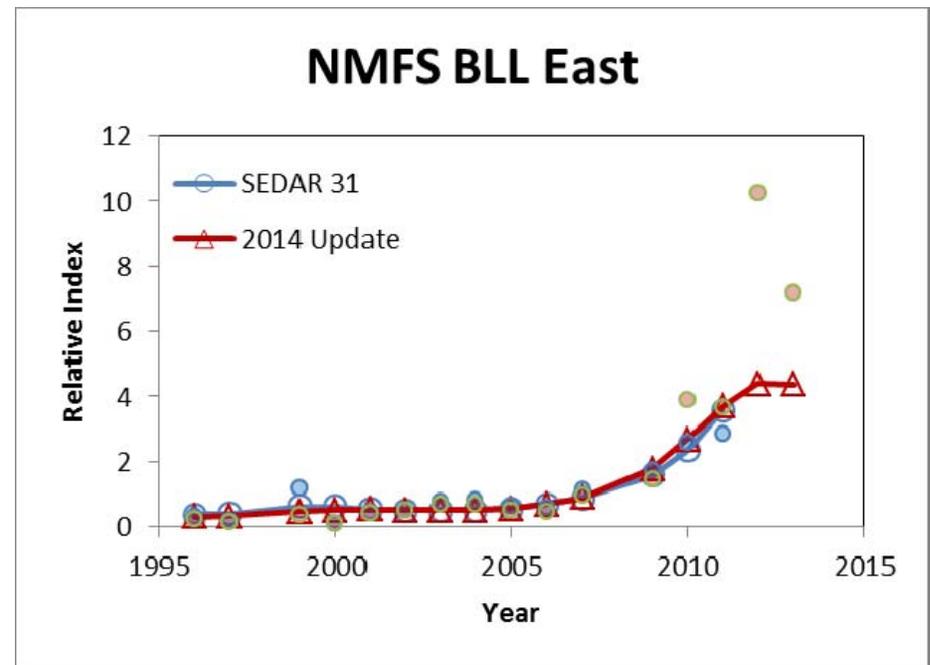
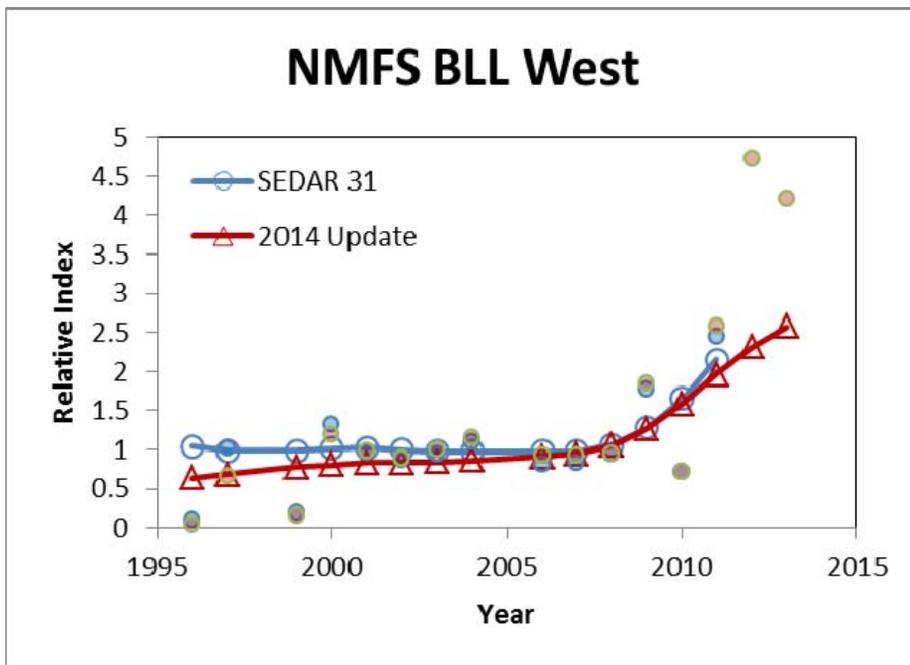
Fishery Independent Indices of Abundance

- SEAMAP Video Survey



Fishery Independent Indices of Abundance

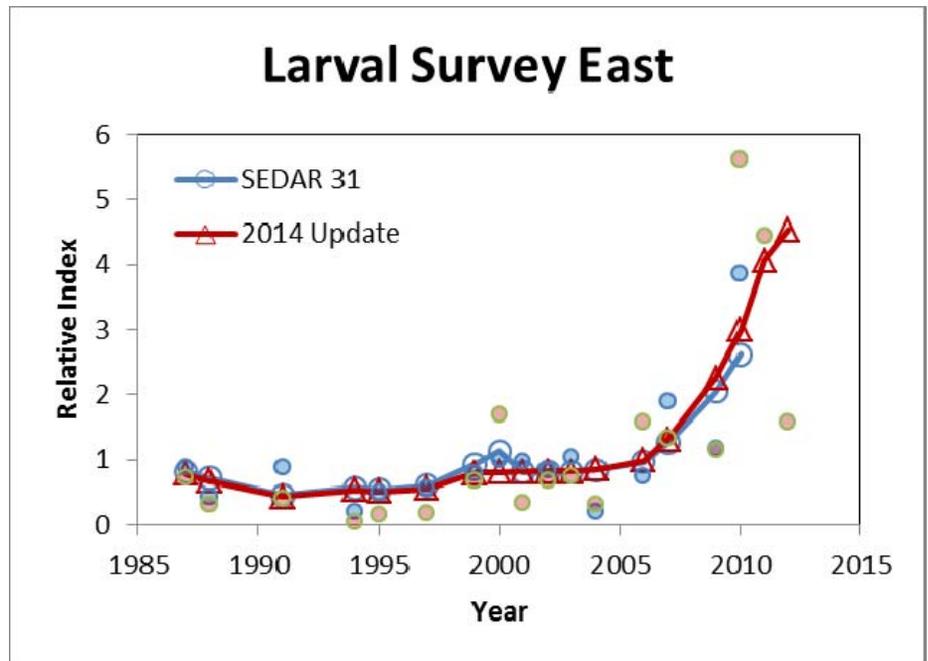
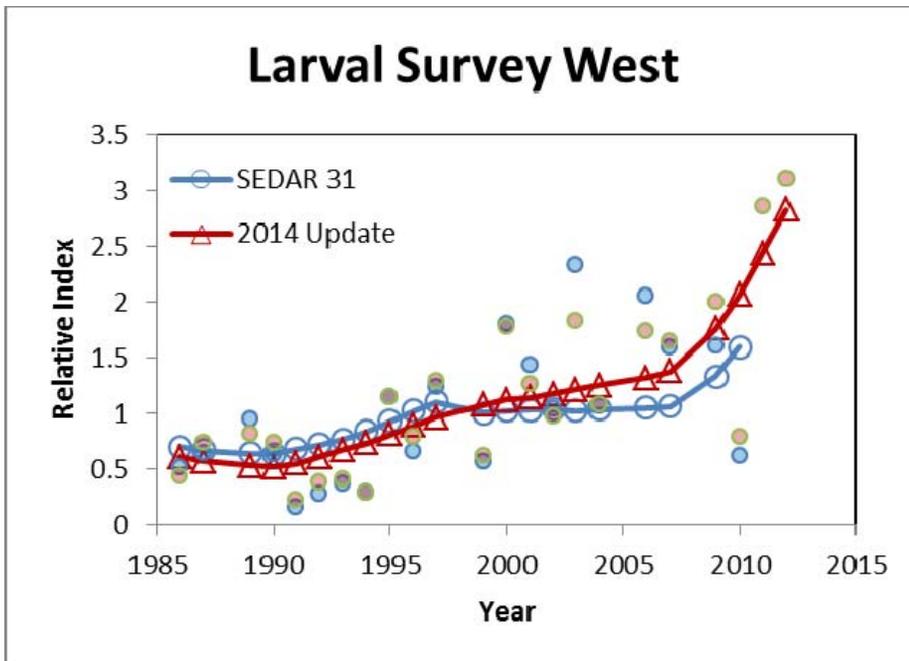
- NMFS Bottom Longline



*Rescaled to mean 1996-2011

Fishery Independent Indices of Abundance

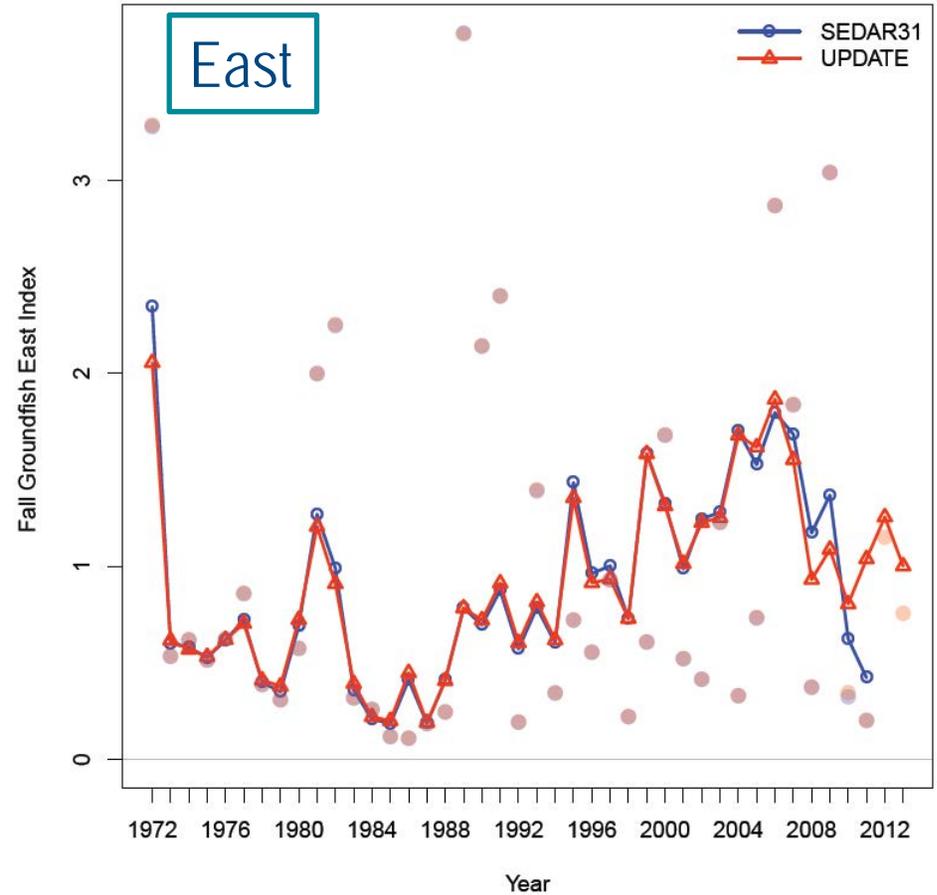
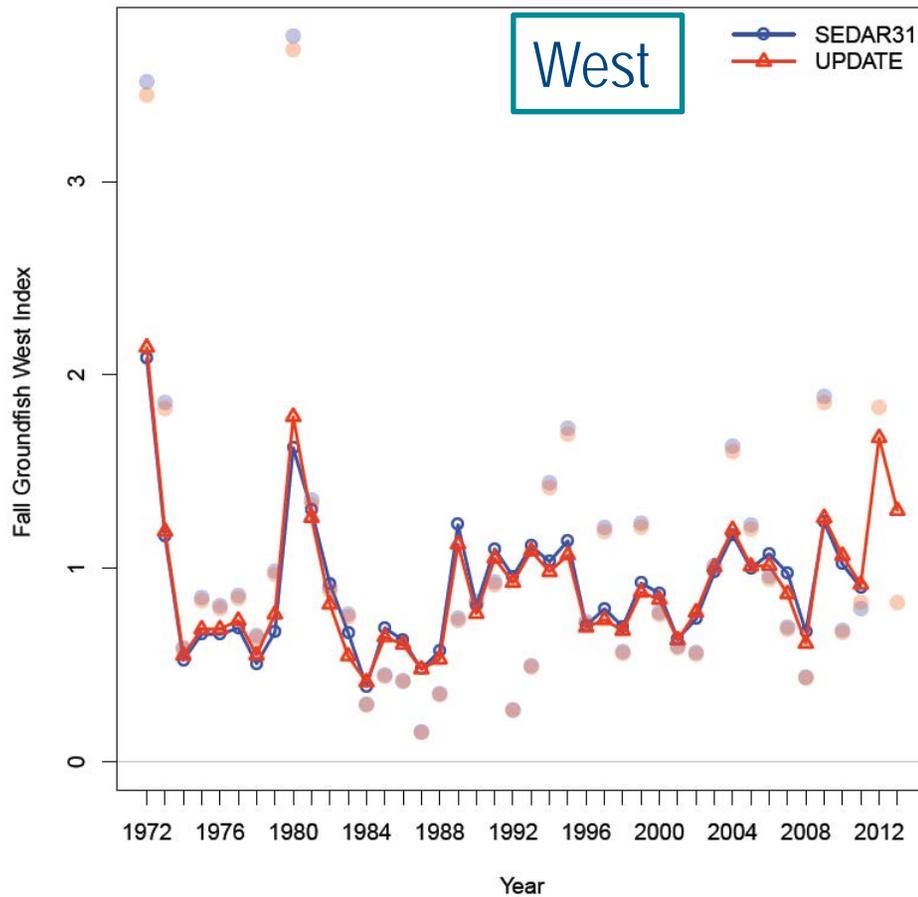
- Larval Survey: Used to Index SSB



*Rescaled to mean 1986-2010

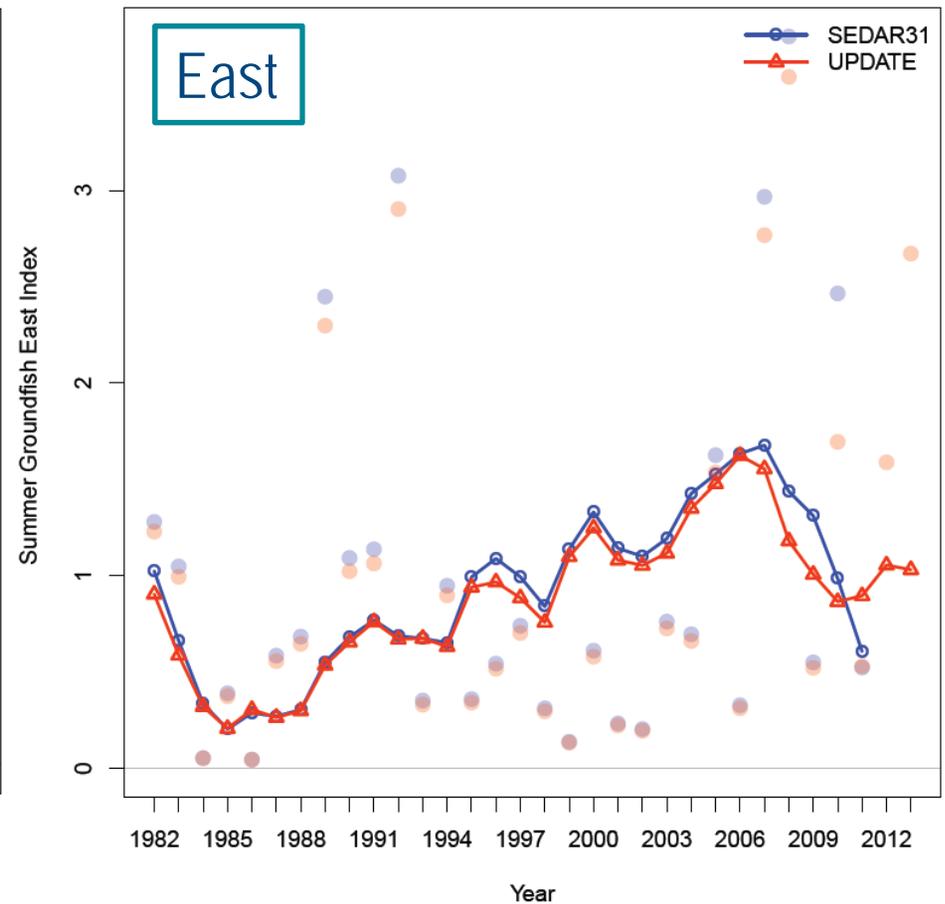
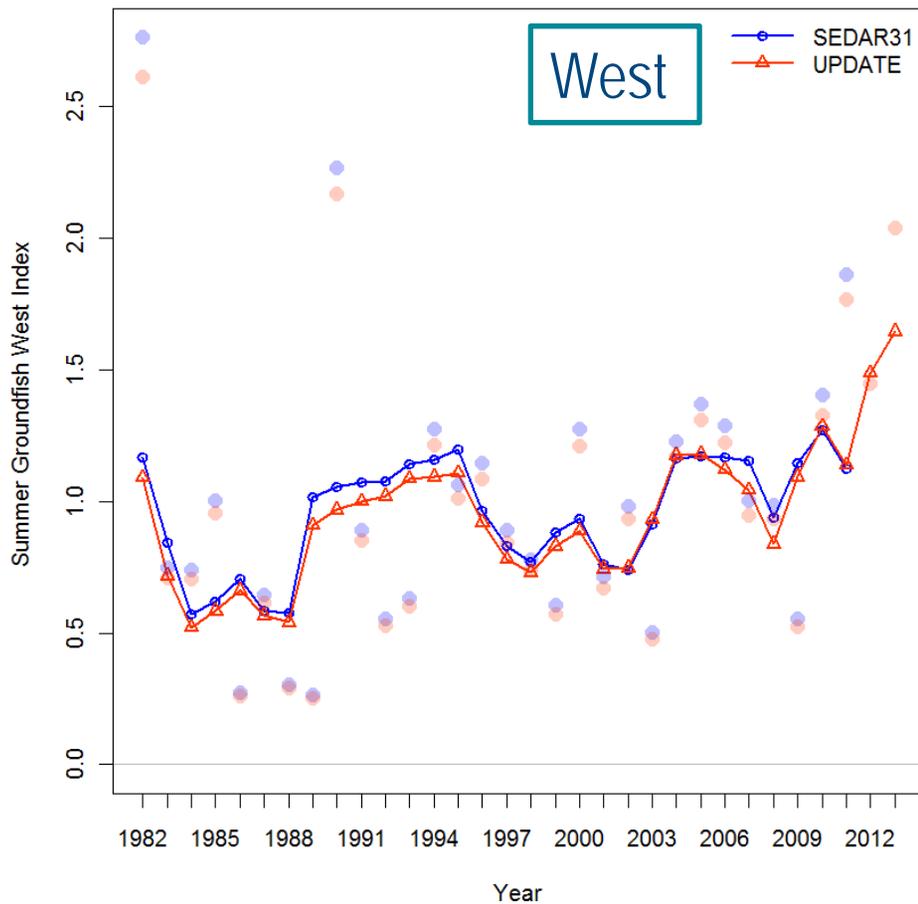
Fishery Independent Indices of Abundance

- Fall Groundfish Survey used to index recruits



Fishery Independent Indices of Abundance

- Summer Groundfish Survey used to index recruits



**Standing, Special Reef Fish and Special Mackerel SSC
Meeting Summary
Tampa, Florida
January 6-8, 2015**

The meeting of the Standing and Special Reef Fish SSC was held January 6-8, 2015. A meeting of the Standing and Special Mackerel SSC was also held on January 7, 2015.

The agenda was accepted with changes to the order of presentations. The following minutes were accepted by acclamation as written.

- August 6, 2013 Standing and Special Mackerel SSC summary minutes
- August 6-7, 2014 Standing and Special Reef Fish SSC summary minutes
- October 1-2, 2014 Standing and Special Reef Fish SSC summary minutes

Will Patterson announced that he would be the SSC representative at the January 26-29, 2015 Council meeting in Point Clear, Alabama.

Red Snapper Update Assessment

Dr. Shannon Cass-Calay presented a NMFS update to the SEDAR 31 red snapper benchmark assessment. The written assessment report was not yet available for review. However, given that this is an update and the methods used were the same as SEDAR 31, except for instances when the assessment team was responding to specific terms of reference from the Council, the Science center staff felt that the PowerPoint presentation to the SSC should suffice for the SSC meeting. The assessment input and output files were provided on the Council's file server in case anyone was interested in the technical specifications.

The SEDAR 31 Stock Synthesis 3 base model plus two alternative models using a low natural mortality rate (M) and a high M were used with landings data updated through 2013. The recreational MRIP landings were adjusted using methods from the September 2014 MRIP Calibration workshop, where possible. A review of the MRIP Calibration workshop results was included in the October 2014 SSC meeting report. In addition, a selectivity block (2011-2013) was used on all recreational fleets to accommodate recent changes in fishing behavior that indicates a shift in selectivity to older (heavier) fish in recent years. The results of the MRIP adjustments on retained landings and on discards are shown below in Figures 1a and b and 2a and b. The east and west portions of the stock were modeled separately.

The revised recreational landings are generally 10% to 20% higher than in SEDAR 31. However, the revised discards show proportionately higher rates than in SEDAR 31. After investigating the reason for this, the NMFS Science Center staff stated that at least part of this was due to an MRIP adjustment to account for landings made outside of peak fishing hours. MRIP made this adjustment by calculating a ratio of total catches to catches made in peak periods. However, these ratios were calculated separately for type A, B1, and B2 catches, resulting in different adjustments for each type of catch.

Figure 1a and 1b. Effect of Rescaling MRIP Estimates - Landings

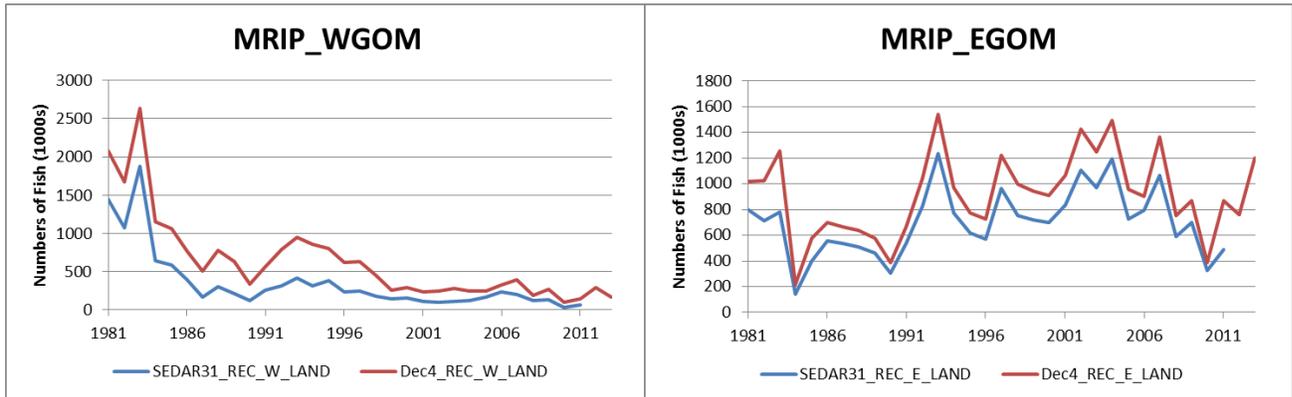
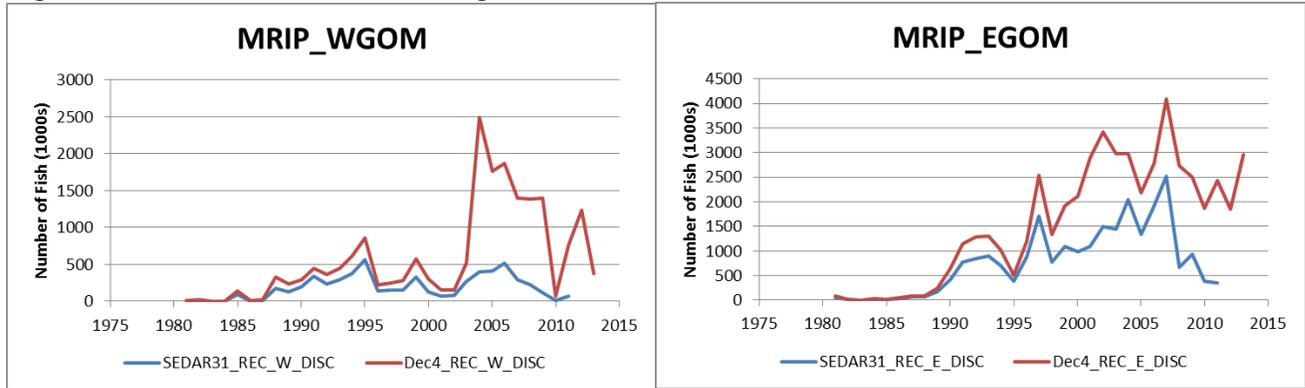


Figure 2a and 2b. Effect of Rescaling MRIP Estimates - Discards



The results of the assessment indicated that stock biomass estimates are continuing to increase in both the east and west, but remain below the management target of 26% SPR (Figure 3). Stock biomass estimates in the east show a slight downtrend in the most recent years, which results from strong year-classes exiting the stock, as well as recent low recruitment estimates.

The combined east and west stock biomass estimates, while increasing, remain below the minimum stock size threshold (Figure 4a), indicating that the stock remains in an overfished condition. However, estimated fishing mortality remains below the maximum fishing mortality threshold (Figure 4b), indicating that overfishing is not occurring.

Figure 3. Estimated red snapper spawning biomass levels relative to management target. Area 1 (red) is west Gulf, and Area 2 (blue) is east Gulf. The management target line indicates a Gulf-wide spawning potential ratio of 26%.

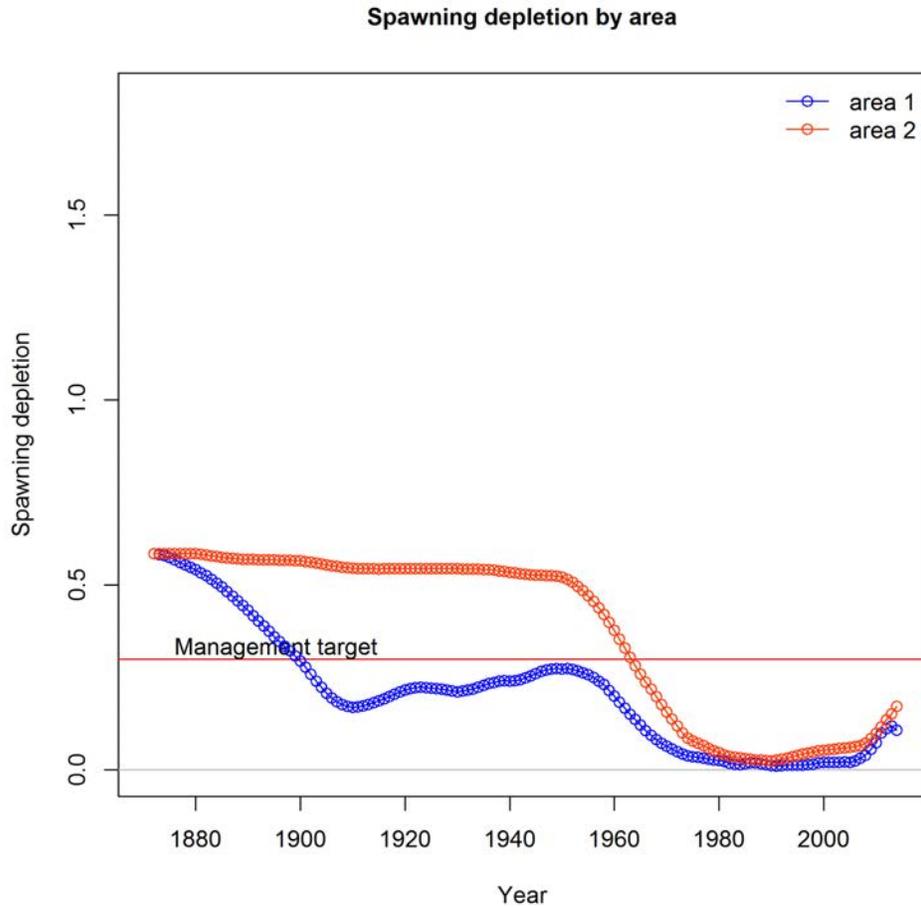
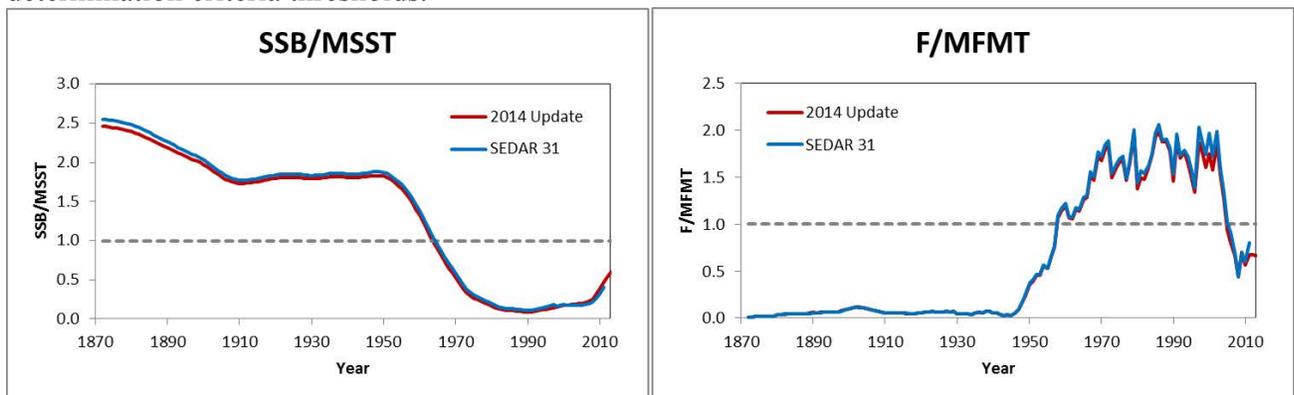


Figure 4a and b. Estimated spawning stock biomass and fishing mortality rate relative to status determination criteria thresholds.



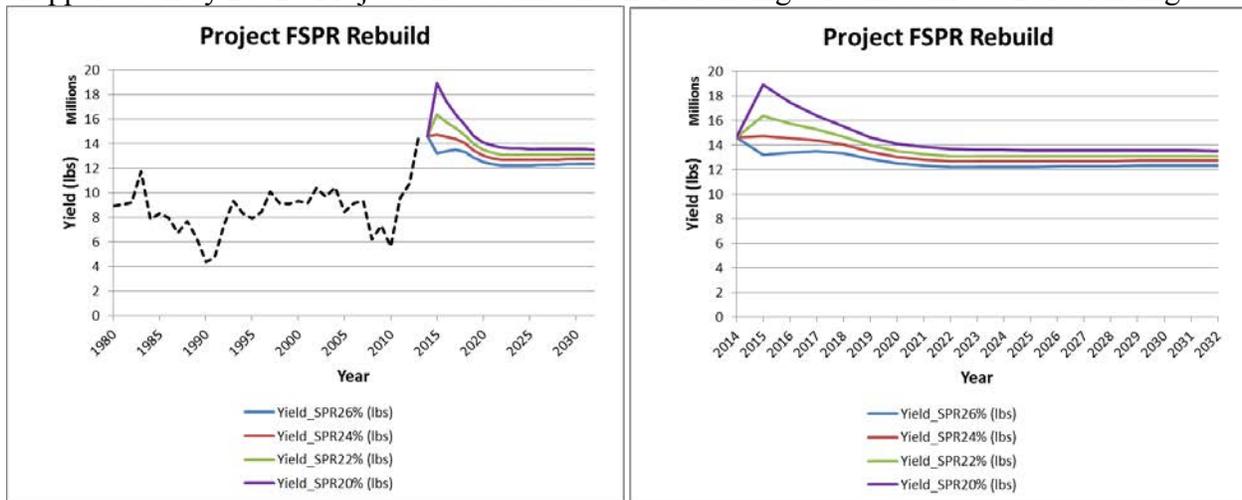
Based on the assessment presentation plus additional sensitivity runs requested by the SSC, the following motion was passed.

The SSC moves that the red snapper update base assessment model is the best scientific information available and is acceptable for management purposes. The stock is estimated to remain overfished, but is not undergoing overfishing.

Motion passed 14-0, with one abstention.

Projections for future landings were made under several alternative levels of fishing mortality, and assuming average recent recruitment levels. The projections for rebuilding yields show a decline to equilibrium levels over time as a result of strong year classes exiting the fishery combined with recent poor recruitment in the eastern Gulf (Figure 5a and b). For lower SPR target levels, greater yield could be taken in the near term under the assumption of rebuilding stock biomass to a given SPR target by 2032. However, the SSC received input from Dr. Roy Crabtree that rebuilding timelines would likely change under different SPR targets given that the Magnuson-Stevens Fishery Conservation and Management Act and the National Standard guidelines require that rebuilding must be accomplished in ten years if possible, or if the stock cannot be rebuilt in ten years or less, one generation time plus the time to rebuild in the absence of fishing mortality.

Figure 5a and b. Historical red snapper yields (Figure 5a) and projected yields to rebuild the red snapper stock by 2032. Projections assume that 2014 landings are the same as 2013 landings.



The SSC reviewed several yields when fishing a different F_{MSY} proxies (Table 1). The proxy specified in the red snapper rebuilding plan is $F_{SPR26\%}$. The yields at other proxies were calculated by NMFS at the request of the Council in order to facilitate a discussion of alternative MSY reference points. That discussion is included later in this report. For purposes of setting the OFL, the current proxy specified in the rebuilding plan was used.

Table 1. Red snapper annual yields for OFL in millions of pounds whole weight when projected for various F_{MSY} proxies.

Projected Yield at FSPR (millions of lbs) (Note: Does not achieve rebuild target by 2032)

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 (FSPR 26%)
2015	14.73	16.03	17.42	18.94	12.52
2016	14.56	15.50	16.46	17.44	11.25
2017	14.40	15.08	15.75	16.41	10.88
2018	14.02	14.54	15.03	15.49	10.92
2019	13.44	13.86	14.26	14.63	10.94
2020	13.03	13.42	13.78	14.11	11.10
Equil.	12.87	13.13	13.37	13.57	11.69



The SSC felt that projections beyond three years are highly uncertain, and therefore established OFL for three years. The red snapper assessment should be updated no later than 2017 in order to establish OFL for subsequent years.

The SSC recommends that the OFL (F_{msy} proxy = $F_{SPR26\%}$) for red snapper be set at:

2015 - 14.73 mp ww

2016 - 14.56 mp ww

2017 - 14.40 mp ww

Motion passed unanimously.

The SSC noted that although fishing at the F_{MSY} proxy is projected to result in the target stock level, being achieved, it will not do so within the time constraint of rebuilding by 2032. In order to rebuild by 2032, the yield stream shown in Table 2 is the maximum at which the stock could be fished.

Table 2. Red snapper annual yields to rebuild the stock by 2032 in millions of pounds whole weight when projected for various F_{MSY} proxies.

Projected Yield at FSPR REBUILD (millions of lbs) (Note: Achieves rebuild target by 2032)

YEAR	FSPR 26%	FSPR 24%	FSPR 22%	FMAX (SPR20%)	SEDAR 31 (FSPR 26%)
2015	13.22	14.71	16.38	18.21	11.44
2016	13.40	14.55	15.74	16.98	10.45
2017	13.51	14.39	15.26	16.10	10.20
2018	13.33	14.01	14.67	15.28	10.29
2019	12.87	13.43	13.97	14.46	10.35
2020	12.51	13.03	13.51	13.96	10.53



To calculate ABC yields, the SSC used a probability distribution function (PDF) on OFL from the base model and a P^* of 0.427. These are the parameters used in SEDAR 31 for setting ABC. However, when applied to the OFL yields, the resulting ABCs exceeded the rebuilding yields in Table 2. In order to avoid exceeding the rebuilding yields, the ABC values were based on reductions from $F_{Rebuild}$. This is consistent with the approach taken after SEDAR 31. The resulting yields are shown in Table 3 along with the associated OFL and $F_{Rebuild}$ yields. Only yield streams for ABC at $F_{SPR26\%}$ were produced, but NMFS staff indicated that they could produce ABC yield streams for other F_{MSY} proxies.

Table 3. ABC yield stream in millions of pounds whole weight based on reduction from F_{Rebuild} yields at $F_{\text{SPR}26\%}$ and $P^* = 0.427$. OFL and F_{Rebuild} yield streams from Tables 1 and 2 are included for comparison.

Year	OFL	F_{Rebuild} Yield by 2032	ABC yield at $F_{\text{SPR}26\%}$ and $P^* = 0.427$
2015	14.73	13.22	13.00
2016	14.56	13.40	13.21
2017	14.40	13.51	13.32
2018	14.02	13.33	13.13
2019	13.44	13.87	12.67
2020	13.03	12.51	12.33

SSC members questioned why the ABC and F_{Rebuild} yield stream increased in the early years while the OFL yield stream decreased. Science Center staff suggested that at lower yields strong year classes from the mid-2000s were projected to persist longer in the population. However, eventually all yield streams would move down under a constant average recruitment projection given recent lower recruitment levels.

Staff reminded the SSC that the Council preferred constant catch ABCs to declining yield streams. However, the SSC, after discussion felt that providing the ABCs based on the control rule provided the Council with the options to set the ACL at either the maximum ABCs for each year or at a constant catch ACL that did not exceed any of the ABCs. As with OFL, the SSC felt that setting ABC beyond three years entailed too much uncertainty.

The SSC recommends that the ABC for red snapper be set using a PDF of yield from the base model projected at F_{Rebuild} to SSB at 26% SPR in 2032 and applying a P^* of 0.427.

2015 - 13.00 mp ww

2016 - 13.21 mp ww

2017 - 13.32 mp ww

Motion passed unanimously.

It was noted that these OFLs and ABCs are based on an assumption that the 2014 recreational landings will be the same as the 2013 landings. Preliminary indications are that the 2014 landings are less than 2013. If so, OFL and ABC for 2015 and beyond could increase once the final 2014 landings are determined and incorporated into the projections.

Greater Amberjack Rebuilding Timelines

Dr. Nancie Cummings gave a presentation to provide updated projections for the ABC options in Action 1 of the draft Framework Action - Modifications to the Greater Amberjack Annual Catch Limits and Annual Catch Targets. These options are:

- Option 1.** Maintain the ABC, ACL, and ACT at the 2014 level until the next assessment.
- Option 2.** Use the ABC schedule recommended by the SSC from 2015 to 2018.
- Option 3.** Set a constant ABC at the level recommended by the SSC for 2015.
- Option 4.** Set the stock ACL at zero. No landings of greater amberjack.

These ABC scenarios are shown in Table 4.

Table 4. Greater amberjack ABC options

Projection Scenarios (Base Model and Alternatives)

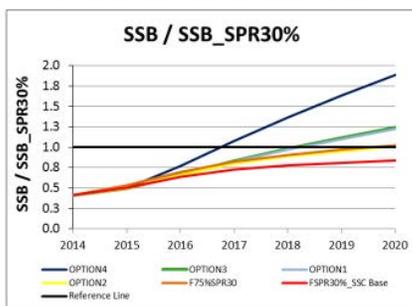
Scenario	Year						Notes
	2014	2015	2016	2017	2018	2019+	
June 2014 SSC Base- SPR30 = OFL's	1.528	2.139	2.687	2.906	2.986	3.068	SS Model Derived values using SSC base model choice @SPR30, 2019+
June 2014 SSC Base- 75%SPR30 = ABC	1.180	1.720	2.230	2.490	2.620	2.730	SS Model Derived values using SSC base model choice at 75%SPR30,
Option1 ABC's	1.780	1.780	1.780	1.780	1.780	1.780	2014 set = Amendment 35 ABC
Option2 ABC's	1.780	1.720	2.230	2.490	2.620	2.620	2014 set = Amendment 35 ABC
Option3 ABC's	1.780	1.720	1.720	1.720	1.720	1.720	2014 set = Amendment 35 ABC
Option4 ABC's	1.780	0.0	0.0	0.0	0.0	0.0	2014 set = Amendment 35 ABC

Alternative projections scenarios defined by GMFMC staff, via email to SEFSC Directorate and SFD Division Chief, 11-November-2014

Under all four options the fishing mortality was projected to be below MFMT and the stock was projected to rebuild to and beyond the spawning stock biomass (SSB) levels at $F_{SPR30\%}$ (Figure 6 and Table 5).

Figure 6/Table 5. Rebuilding times for four greater amberjack rebuilding scenarios.

Results: Overfished Status Reference Point: SSB/SSB_SPR30% 2014-2020



SS Estimated Recovery Year for Gulf of Mexico Greater Amberjack under four Alternative Projection Scenarios

Projection Scenarios (4 Alternatives to June 2014 SSC Base)	Recovery Year (to reach SSB@MSST)	Recovery Year (to reach SSB@SPR_30%)
Option1	2017	2019
Option2	2017	2020
Option3	2017	2019
Option4	2016	2017

Options 1 through 3 all reach MSST in 2017 and $SSB_{SPR30\%}$ in 2019 or 2020. The no fishing scenario has a slightly faster rebuilding time, reaching MSST in 2016 and $SSB_{SPR30\%}$ in 2017.

The SSC was not asked to recommend an option, but to comment on the adequacy of the analysis for management. After reviewing the presentation, the SSC passed the following motion.

The SSC moves that the greater amberjack projections provided by the SEFSC are sufficient to inform management actions by the Gulf Council. Options 1-4 among landing scenarios each are projected to rebuild the greater amberjack stock by 2020.

Motion passed unanimously.

FWC Mutton Snapper Update Assessment

The mutton snapper assessment was not completed in time for the SSC meeting. Joe O'Hop from FWRI gave a progress report on the assessment. However, the report has not yet incorporated recommendations of reviewers from the SEDAR 15a assessment. Since the report is not yet complete, the SSC did not make any recommendations. The SSC will review the assessment and make recommendation when the report is completed, which is expected to be in time for the next SSC meeting in March.

SEDAR 38 King Mackerel Benchmark Assessment

Dr. Michael Schirripa presented the SEDAR 38 king mackerel benchmark assessment. New information for this assessment includes a new definition of the winter mixing zone, which is now defined to be south of the Florida Keys out to the shelf edge from Monroe County, Florida in the east to the Dry Tortugas in the west. Fish caught in this zone during November 1st to March 31st are assigned 50:50 to the Atlantic and Gulf stocks. This resulted in an annual average increase in landings in weight of 6% in the Atlantic and a decrease of 7% in Gulf.

The base assessment model was constructed in Stock Synthesis 3 (SS3). It was initially configured to replicate the earlier VPA assumptions, and then reconfigured according to new data assumptions/best practices. Additional investigative model runs were made to evaluate the effects of length-based selectivity, estimated constant growth from age-at-length data, and the effect of allowing annual deviations in male and female L_{∞} (asymptotic maximum size) and k (growth coefficient). A second model using the VPA-2Box model was constructed for a continuity run. All four SS3 model runs showed similar trends in SSB but with different levels of uncertainty. A plot of the stock-recruit data indicated no discernable stock-recruit relationship and likelihood profiling did not indicate a steepness value different than 0.99. Therefore, steepness was fixed at 0.99 based on the recommendation of the review panel. The implicit assumption under such an approach is that future recruitment projected in the near term will resemble recruitment in the recent past.

The results of a Jitter analysis was not as stable as some other models, which is likely due to error in catch or estimation of historic fishing mortality. A retrospective analysis showed no patterns. Several model runs were made to examine the effect of excluding selected data. All model runs showed that stock biomass estimates remain above B_{MSY} (Figure 7) and fishing mortality estimates remain below F_{MSY} (figure 8), indicating that the Gulf king mackerel stock is neither overfished nor undergoing overfishing.

Figure 7. King mackerel biomass trends.

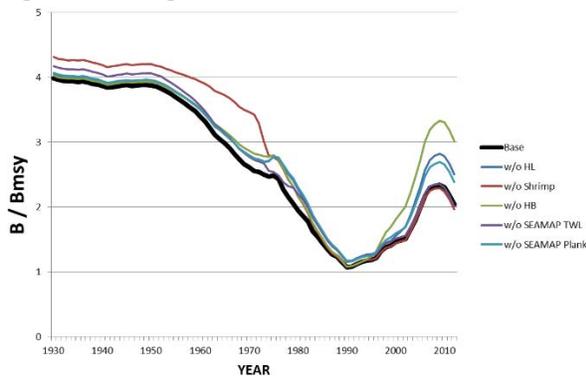
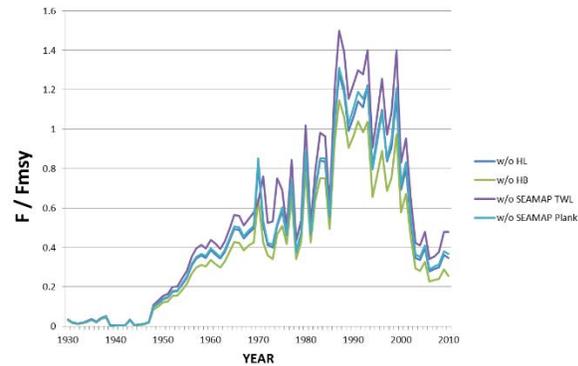


Figure 8. King mackerel fishing mortality trends.



Following the presentation and discussion, the SSC passed the following motion.

The SSC moves that the SEDAR 38 king mackerel base assessment model is the best scientific information available and is acceptable for management purposes. The stock is estimated not to be overfished or undergoing overfishing.

Motion passed 11-1.

The SSC reviewed a PDF table based on an F_{MSY} proxy of $F_{SPR30\%}$. OFL is the yield at which $P^* = 0.50$. For ABC, the SSC employed the ABC control rule Tier 1 spreadsheet to estimate P^* . The result of the Tier 1 spreadsheet analysis was $P^* = 0.434$. The yields for these P^* values are shown in Table 6.

Table 6. Gulf king mackerel yield streams in millions of pounds whole weight at $P^* = 0.50$ and $P^* = 0.43$

P^*	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
0.50	10.11	9.61	9.27	9.11	8.95	8.81	8.68	8.60	8.58	8.60
0.43	9.62	9.21	8.88	8.71	8.55	8.43	8.29	8.20	8.19	8.23

Since this stock is neither overfished nor undergoing overfishing, the SSC felt comfortable making OFL and ABC yield recommendations for a five year period.

The SSC moves that the OFL for king mackerel in the Gulf of Mexico be set as the yield stream at $F_{SPR20\%}$.

2015 - 10.11 mp ww

2016 - 9.61 mp ww

2017 - 9.27 mp ww

2018 - 9.11 mp ww

2019 - 8.95 mp ww

Motion passed unanimously.

The SSC moves that the ABC for king mackerel in the Gulf of Mexico be set at $P^* 0.43$ applied to the PDF.

2015 - 9.62 mp ww

2016 - 9.21 mp ww

2017 - 8.88 mp ww

2018 - 8.71 mp ww

2019 - 8.55 mp ww

Motion passed unanimously.

Council staff noted that the Council has requested a constant catch ABC for other stocks in order to avoid declining catch limits. The SSC discussed this but felt that the Council could choose to set a constant catch ACL within the limits of the ABC yield stream. They noted that the equilibrium yield at $F_{SPR30\%}$ was 8.53 mp, and considered recommending this as a constant catch ACL level. However, most SSC members felt that the ACL was a management decision and that the SSC should not offer management advice, only scientific advice. A motion was made to recommend that, should the Council prefer a constant catch scenario, then the equilibrium yield at $F_{SPR30\%}$ (8.53 mp) is recommended as the ACL. The motion failed by a vote of 4 to 8.

Presentation – Estimation of Red Tide Mortality on Gag

David Chagaris (FWRI) gave a presentation in which he estimated the mortality rate of gag grouper caused by red tides from 2002-2014. The estimates were based on satellite imagery of the red tide spatial extent and duration, severity as measured by cell concentration estimates, species distribution estimates, and mortality estimates using a logistic response function. He noted that cell concentration is not necessarily a good indicator of toxicity of a red tide bloom, and that other factors are involved. Therefore, several models were run with different mortality responses to cell concentration estimates. The results of this modeling exercise were that that 2014 did not appear to be an exceptional year for red tide-induced mortality in gag (Figure 9a,b,c).

Under a range of cell count mortality impacts, Dr. Chagaris estimated that the 2014 red tide event was responsible for 1.8% to 3.5% of the total gag biomass killed (Figure 10 and Table 7). By comparison, the 2005 red tide event was estimated to be responsible for 44.7% to 58.9% of the gag kill. The impact of the 2014 red tide was 4% to 7% of the 2005 event.

Dr. Chagaris felt that with further refinement and incorporation into an Ecospace model, this approach could eventually be used to make near real-time predictions of red tide impacts on fish.

Figure 9a, b, and c. Estimated extent and severity of red tide events off the west Florida coast from 2001-2014 and overlap of severe events with gag habitat. Estimates were derived from the Ecopath modeling approach presented by Dr. Dave Chagaris from FWRI.

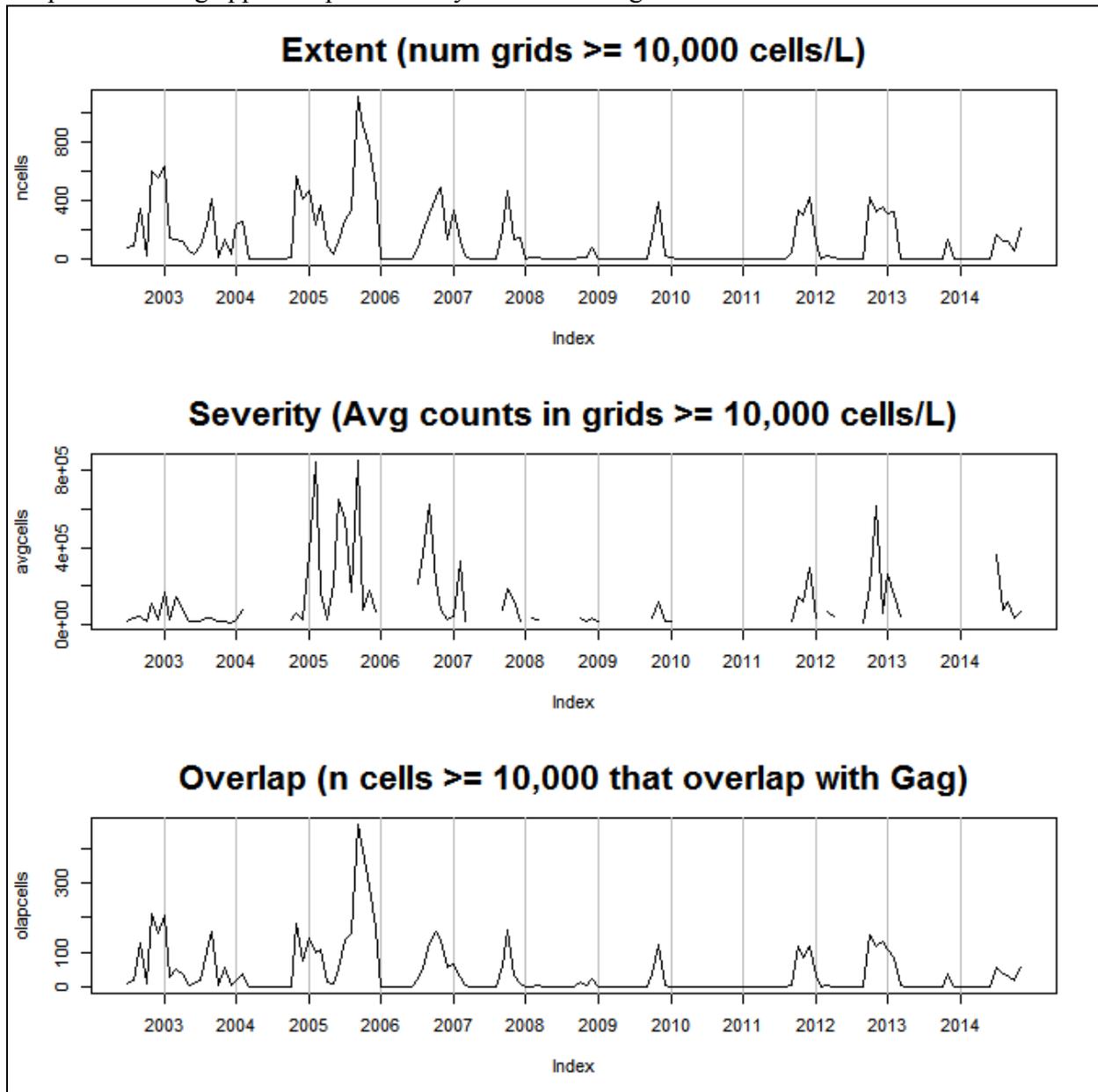
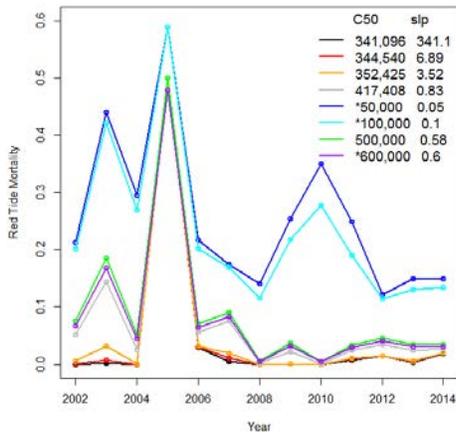


Figure 10 and Table 7. Estimated gag proportional mortality from red tide under several estimates of red tide cell counts.



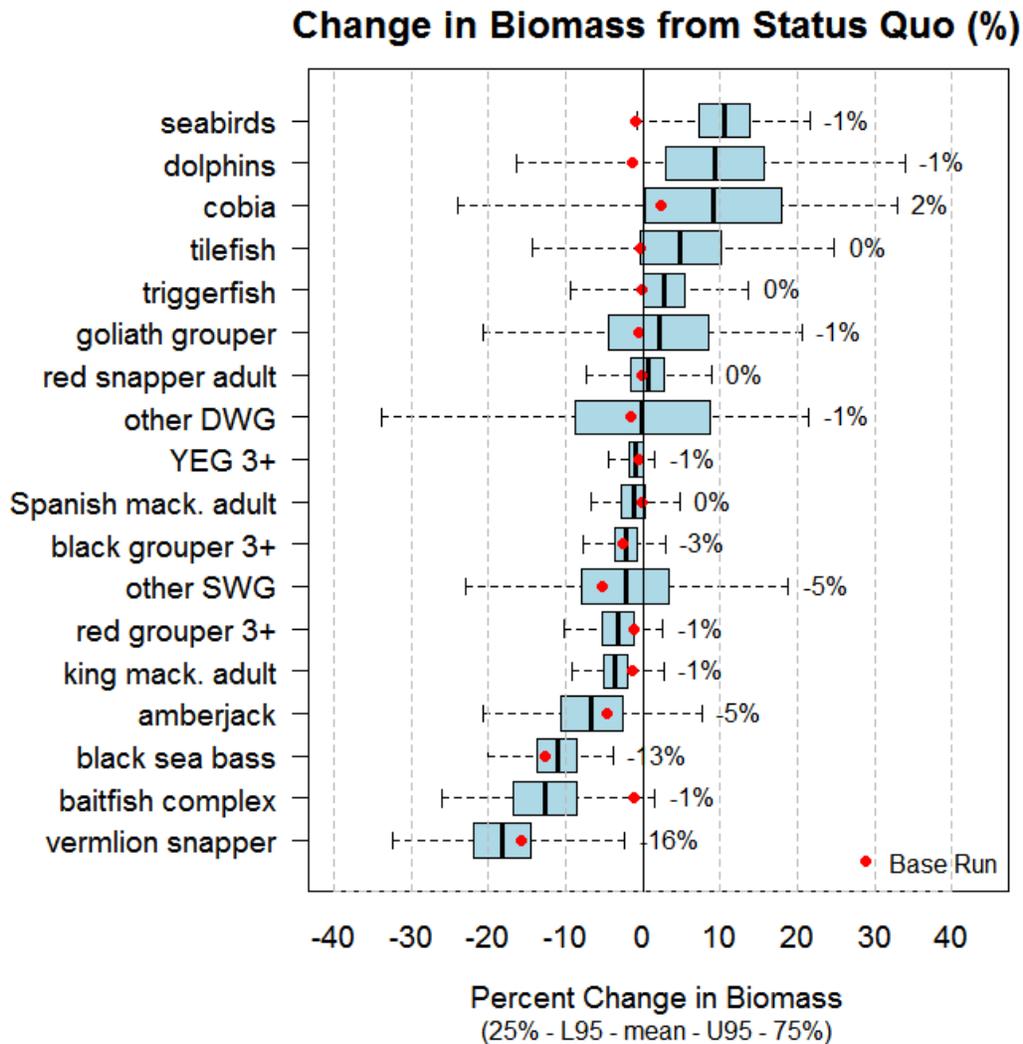
	curve 1	curve 2	curve 3	curve 4	curve 5	curve 6	curve 7	curve 8
2002	0.000	0.001	0.006	0.052	0.213	0.202	0.076	0.050
2003	0.002	0.007	0.032	0.145	0.441	0.422	0.186	0.132
2004	0.000	0.000	0.001	0.026	0.296	0.269	0.052	0.029
2005	0.500	0.500	0.500	0.500	0.589	0.589	0.500	0.447
2006	0.029	0.031	0.032	0.056	0.217	0.202	0.071	0.052
2007	0.004	0.011	0.020	0.076	0.174	0.169	0.091	0.067
2008	0.000	0.000	0.000	0.002	0.140	0.116	0.006	0.003
2009	0.001	0.001	0.001	0.022	0.254	0.218	0.037	0.022
2010	0.000	0.000	0.000	0.001	0.351	0.278	0.005	0.002
2011	0.007	0.009	0.011	0.025	0.249	0.191	0.033	0.024
2012	0.014	0.014	0.015	0.035	0.122	0.114	0.046	0.033
2013	0.003	0.004	0.006	0.025	0.149	0.130	0.035	0.024
2014	0.018	0.020	0.019	0.027	0.149	0.134	0.035	0.025

Presentation – Ecosystem modeling for single-species management

Dr. Chagaris presented a demonstration of how an ecosystem model could be used to evaluate the ecosystem impacts of single-species management and to characterize environmental uncertainty in stock projections. The demonstration applied gag to an Ecopath with Ecosim and Ecospace model that was developed for the Florida west shelf and presented to the Council in March 2013. The model focuses on 11 managed reef fish species plus other species at various life stages, and 14 fishing fleets. It is calibrated to time series from 1950-2009.

To demonstrate an application to gag, projections were considered at six fixed fishing mortality rate management scenarios. Projections were deterministic (no uncertainty), based on Monte-Carlo simulations, or based on MultiSim simulations. For the Monte-Carlo and MultiSim simulations, the probability of overfished ($B < MSST$) or overfishing ($F > MFMT$) could be determined for each projection scenario. Projections from the ecosystem models were similar to those from single species model used in the gag 2009 update assessment. Projected changes in other groups had little impact on gag, suggesting that predation is poorly defined or that competition effects are low at small stock sizes. With respect to impacts on other species, rebuilding of the gag stock has a potential for negative impacts on vermilion snapper, black sea bass, and greater amberjack, plus modest impacts on other species (Figure 11).

Figure 11. Projected changes to biomass of other species under gag rebuilding scenarios.



SSC members were impressed with the model and recommended that Dr. Chagaris coordinate his efforts with the integrated ecosystem assessment team at NMFS. Suggestions were made for various additional biological and geophysical data to include in the model. A suggestion was made to establish a liaison between the ecosystem scientists and the stock assessment scientists.

Reevaluation of Gag OFL/ABC Recommendation

Steven Atran reviewed that the Council in October had not accepted the SSC's ABC recommendation for gag. This recommendation was based on an assumption that the 2014 red tide mortality event would have the same impact as the 2005 red tide event. The Council felt that the SSC had not provided sufficient rationale for making that assumption and asked that the SSC provide additional rationale or reconsider its ABC recommendation.

The SSC reviewed the OFL, ABC, and OY yield streams that had previously been developed by NMFS for the October 2014 SSC meeting under various red tide scenarios (Table 8). Since the 2014 red tide event has since dissipated, and given estimates of the severity of the event provided by Dave Chagaris, SSC members agreed that the previous assumption of having the same impact of the 2005 event was not valid.

Table 8. Projections of gag OFL, ABC, and optimum yield (OY) under several scenarios of red tide impact in 2014. F_{MAX} was used as a proxy for F_{MSY} . ABC yields are based on a $P^* = 0.41$, and $OY = \text{yield at } 75\% \text{ of } F_{MAX}$. Yields are in pounds gutted weight.

Projections – OFL, ABC, and OY yield

A) Assumes no red tide mortality in 2014				E) Red tide mortality = 1.0X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	6,770,000	6,430,000	5,210,000	2015	3,310,000	3,070,000	2,550,000
2016	5,840,000	5,570,000	4,750,000	2016	2,890,000	2,690,000	2,340,000
2017	5,380,000	5,130,000	4,570,000	2017	2,890,000	2,710,000	2,440,000
2018	5,100,000	4,860,000	4,500,000	2018	3,130,000	2,940,000	2,720,000
Equilibrium	4,450,000	4,210,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

B) Red tide mortality = 0.25X(2005) in 2014				F) Red tide mortality = 1.25X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	5,660,000	5,350,000	4,360,000	2015	2,760,000	2,530,000	2,130,000
2016	4,900,000	4,650,000	3,980,000	2016	2,420,000	2,230,000	1,960,000
2017	4,580,000	4,360,000	3,890,000	2017	2,500,000	2,330,000	2,110,000
2018	4,470,000	4,250,000	3,940,000	2018	2,810,000	2,630,000	2,440,000
Equilibrium	4,450,000	4,200,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

C) Red tide mortality = 0.50X(2005) in 2014				G) Red tide mortality = 1.50X(2005) in 2014			
Year	OFL	ABC	OY	Year	OFL	ABC	OY
2015	4,740,000	4,450,000	3,640,000	2015	2,310,000	2,090,000	1,780,000
2016	4,100,000	3,880,000	3,330,000	2016	2,030,000	1,850,000	1,650,000
2017	3,920,000	3,710,000	3,320,000	2017	2,170,000	2,010,000	1,820,000
2018	3,950,000	3,740,000	3,460,000	2018	2,540,000	2,370,000	2,190,000
Equilibrium	4,450,000	4,200,000	4,460,000	Equilibrium	4,450,000	4,200,000	4,460,000

D) Red tide mortality = 0.75X(2005) in 2014			
Year	OFL	ABC	OY
2015	3,960,000	3,700,000	3,050,000
2016	3,440,000	3,230,000	2,790,000
2017	3,360,000	3,170,000	2,840,000
2018	3,500,000	3,310,000	3,060,000
Equilibrium	4,450,000	4,200,000	4,460,000

SSC members initially considered using projection scenario B, which assumes that the 2014 red tide event has 25% of the impact of the 2005 event. However, several SSC members felt that, based on the analysis by Dr. Chagaris, the 2014 red tide impacts were closer to zero than to 25%. After further discussion, SSC members concluded that if 2014 was an average year in terms of red tide impacts as suggested by the analysis, then any red tide based mortality is already accounted for in the natural mortality rate estimates. As a result, the SSC decided to use scenario A, no red tide mortality in 2014, on which to base OFL and ABC advice.

The SSC recommends that the OFL for gag grouper in the Gulf of Mexico be set at 0% of the 2005 red tide mortality event.

2015 - 6.77 mp gw

2016 - 5.84 mp gw

2017 - 5.38 mp gw

Motion passed 14-2.

Council staff again reminded the SSC that the Council prefers a constant catch ABC to a declining yield stream. Most SSC members felt that, for consistency with the king mackerel ABC recommendations, the control rule based ABCs should be based on the control rule. The Council would then have the option of setting a constant catch ACL. However, considering that the gag stock is fully rebuilt, the SSC considered recommending the long-term equilibrium yield as an ABC.

A motion to set ABC for gag grouper in the Gulf of Mexico at the equilibrium OFL of 4.45 mp gutted weight failed by a vote of 2 to 12. A subsequent motion to set the ABC for gag grouper in the Gulf of Mexico set at the equilibrium ABC level from model projections assuming 0 red tide mortality, which is 4.21 mp gw, also failed by a vote of 5 to 10.

The SSC considered setting the annual ABCs at the ABC levels generated by the control rule, but felt that the buffer between ABC and OFL was too small to provide protection against overfishing (exceeding OFL). Therefore, the SSC decided to recommend a yield stream based on the OY yields.

The SSC recommends that the ABC for gag grouper in the Gulf of Mexico be set at the OY level from model projections assuming 0 red tide mortality.

2015 - 5.21 mp gw

2016 - 4.75 mp gw

2017 - 4.57 mp gw

Motion passed unanimously.

Other Business

Reorganization of SSCs

Doug Gregory reviewed a proposed reorganization of the SSC. The Council currently has three standalone SSCs (Standing, Ecosystem, and Socioeconomic) plus several Special SSCs that normally meet in conjunction with the Standing SSC. The total SSC membership is more than 70 which far exceeds the number of members for any other Regional Fishery Management Council SSCs. Mr. Gregory is proposing to combine the three stand-alone SSCs, or at least the Standing and Ecosystem SSCs. The combined SSC would consist of 18 members, including 4 quantitative or assessment scientists, 3 ecosystem scientists, 3 anthropologists, 4 economists, and others. The Special SSCs would be retained. The SSC members would have staggered 3-year terms,

SSC members questioned having only 4 quantitative or assessment scientists given the heavy demand and time requirements for SSC members to serve on SEDAR stock assessment committees. One SSC member suggested that the SSC should include other specialties such as behavioral ecologists. Another SSC member noted that the Gulf SSC deals with more stocks than most other SSCs. He asked if the other SSCs were doing a better job than the Gulf SSC. Mr. Gregory responded that he did not know. An SSC member asked why the appointments would be staggered over three years. Mr. Gregory responded that it was to reduce the workload on staff. Currently, all SSC and AP appointments are reviewed every two years, requiring the Council and Council staff to review a large number of appointees and applicants. One SSC member recommended retaining the Socioeconomic SSC to address non-biological issues. Mr. Gregory suggested that it might be possible to create Special Socioeconomic SSC to address issues such as allocations.

Review of SEDAR Assessment Schedule

The SSC reviewed the SEDAR assessment schedule for 2016 and 2017. One SSC member suggested that triage should be part of the SEDAR workshop process in order to identify species for which assessment data exists.

The SSC discussed the timing and type of assessment for the next red snapper assessment. Benchmark and standard assessments require more time and resources than update assessments, but allow more flexibility in assessment inputs and parameters. A benchmark assessment would be required for major changes, otherwise a standard assessment could be done. Reasons for requesting a new benchmark assessment might include:

- MRIP adjustments may require re-analysis
- The effects of the BP oil spill might be more directly estimated
- New fishery-independent data sources should be available
- If the Council requests separate east and west Gulf stock assessments, the assessment would need to be revised, including developing separate status determination criteria for each regional stock.

It was noted that conducting a new assessment so soon after the current update assessment would only add a small amount of new data and would be unlikely to produce results much different than the current assessment. The SSC attempted to make several motions regarding when the next red snapper assessment should be conducted.

A motion that either a benchmark or standard red snapper assessment be conducted in 2016 utilizing 2015 data failed by a vote of 7 to 8. Another motion to request that a standard red snapper assessment be conducted in 2016 also failed by a vote of 6 to 6 with 2 abstentions. The SSC then passed the following motion.

The SSC recommends that a standard red snapper assessment be conducted in 2017.

Motion passed 11-5.

Discussion of Alternative Red Snapper MSY Proxies

At the request of the Council, the Science Center produced a series of red snapper projected yield streams at alternative F_{MSY} proxies of $F_{SPR26\%}$, $F_{SPR24\%}$, $F_{SPR22\%}$, and F_{MAX} equivalent to $F_{SPR20\%}$. These yields are shown in Tables 1 (for fishing at a constant F_{proxy} level) and Table 2 for fishing at a rate that will rebuild to the B_{proxy} biomass level by 2032. SSC members noted that the spawner-recruit relationship for red snapper is not well-determined, thus steepness was set at 0.99 in the model. Furthermore, the spawner-recruit relationship was not utilized to project future recruitment. As indicated above, the implicit assumption under such an approach is that future recruitment projected in the near term will resemble recruitment in the recent past, and the mean of recent recruitment (with recruitment deviations) is utilized in projections.

The SSC noted that MSY , hence F_{MSY} , could not be estimated directly for red snapper given the lack of a reliable spawner-recruit relationship. When steepness equals 1.0, F_{MSY} equals F_{MAX} . Therefore, the SSC earlier indicated F_{MAX} would be a poor proxy as well. This leaves the question of what is the best proxy to use for F_{MSY} . A proxy of $F_{SPR30\%}$ is commonly used for reef fish and was recommended by the SEDAR 38 review panel for Gulf king mackerel using similar rationale (i.e., no reliable spawner-recruit relationship and steepness of that function set to 0.99). The current F_{MSY} proxy for red snapper is $F_{SPR26\%}$ differs from $F_{SPR30\%}$, which may create some confusion. However, this disparity ($F_{SPR26\%}$ vs. $F_{SPR30\%}$) resulted from analysis done by the SEFSC following SEDAR 7 in 2005 when examining maximum sustainable marginal yield to attempt to reduce effort among the various fisheries and fleets that contribute to the annual red snapper harvest.

If a proxy different than the current proxy of $F_{SPR26\%}$ is adopted by the Council, the time allowed in the rebuilding plan would also likely change because the time to rebuild to the biomass proxy level in the absence of fishing mortality (F_0) would be less. Consequently, the rebuilding timelines for each proxy level would need to be recomputed, and Table 2 would need to be revised. If the time to rebuild under F_0 is less than ten years, then the Magnuson-Stevens Act requires the plan to rebuild the stock in ten years or less. This could potentially result in the need for more restrictive management measures under the rebuilding plan even at lower biomass target levels. NMFS staff will produce revised estimates of the revised time and yields to rebuild to various proxy levels including estimates of the times needed under F_0 .

SSC Meeting Dates and Locations for 2015

The SSC reviewed the tentative schedule of meeting dates in 2015. SSC meetings are generally scheduled three weeks before each Council meeting. A few SSC members indicated possible conflicts with some of the dates. Several SSC members asked if some of the SSC meetings could be held in locations other than Tampa. A suggestion was made to hold a meeting where shrimp issues are discussed somewhere between Galveston and Biloxi. Mr. Gregory stated that staff would look into having some meetings at other locations.

SSC Members Present

Standing SSC

William Patterson, Chair
*Luiz Barbieri, V. Chair
*Harry Blanchet
Benjamin Blount
Shannon Cass-Calay
Bob Gill
Walter Keithly
Kai Lorenzen
Sean Powers
Jim Tolan
John Ward

Special Reef Fish SSC

Jason Adriance
Erik Broussard
Robert Ellis
John Mareska
Brooke Shipley-Lozano

Council Staff

Steven Atran
Charlotte Schiaffo
Doug Gregory
John Froeschke
Ryan Rindone
Assane Diagne

Council Member

Camp Matens

Others Present

David Chagaris-FWC
Roy Crabtree-NMFS
Michael Drexler-OC
Martin Fisher
Claudia Friess
Susan Gerhart -NMFS
Chad Hanson-PEW
Van Hubbard
TJ Marshall-OC
Julie Neer-SEDAR
Dennis O'Hern
Joe O'Hop-FWC
Clay Porch-SEFSC
Andy Strelcheck-NMFS
Ted Switzer

* Present on first two days only

ACL/ACT Buffer Spreadsheet

version 4.1 - April 2011

Red Snapper

Recreational - 2015

sum of points 7
max points 9.0

Buffer between ACL and ACT (or ABC and ACL) Unweighted 15

Min. Buffer	0	min. buffer	User adjustable
Max Unw. Buff	19	max unwt. Buff	
Max Wtd Buff	25	max wtd. buffer	User adjustable

Weighted 19

Component	Element score	Element	Selection	Element result
Stock assemblage	0	This ACL/ACT is for a single stock.	x	0
	1	This ACL/ACT is for a stock assemblage, or an indicator species for a stock assemblage		
Ability to Constrain Catch	0	Catch limit has been exceeded 0 or 1 times in last 4 years		5
	1	Catch limit has been exceeded 2 or more times in last 4 years	x	
		For the year with max. overage, add 0.5 pts. For every 10 percentage points (rounded up) above ACL	4.0	
		Not applicable (there is no catch limit)		
Apply this component to recreational fisheries, not commercial or IFQ fisheries				
Precision of Landings Data Recreational	0	Method of absolute counting		1
	1	MRIP proportional standard error (PSE) <= 20	x	
	2	MRIP proportional standard error (PSE) > 20		
		Not applicable (will not be included in buffer calculation)		
Apply this component to commercial fisheries or any fishery under an IFQ program				
Precision of Landings Data Commercial	0	Landings from IFQ program		not applicable
	1	Landings based on dealer reporting		
	2	Landings based on other		
		Not applicable (will not be included in buffer calculation)	x	
Timeliness	0	In-season accountability measures used or fishery is under an IFQ		1
	1	In-season accountability measures not used	x	
Sum				7

Weighting factor				
	Element weight	Element	Selection	Weighting
Overfished status	0	1. Stock biomass is at or above B _{OY} (or proxy).		0.3
	0.1	2. Stock biomass is below B _{OY} (or proxy) but at or above B _{MSY} (or proxy).		
	0.2	3. Stock biomass is below B _{MSY} (or proxy) but at or above minimum stock size threshold (MSST).		
	0.3	4. Stock is overfished, below MSST.	x	
	0.3	5. Status criterion is unknown.		

Year	Catch	ACL	Over/Under %
2010	2,238,908	3,403,000	-34%
2011	4,602,553	3,870,000	19%
2012	5,803,324	3,959,000	47%
2013	9,575,022	5,390,000	78%

Landings prior to 2013 are un-recalibrated
Greatest percentage overage = 78% = 4 points
ACL exceeded 3 times in last 4 years
Data Source ACL Data set SERO 12 January 2015

Year	PSE
2010	14.4
2011	13.8
2012	11.2
2013	11.4
Average	12.7 Avg PSE < 20

ACL/ACT Buffer Spreadsheet

version 4.1 - April 2011

Red Snapper
Commercial - 2015

sum of points 0
max points 5.0

Buffer between ACL and ACT (or ABC and ACL) Unweighted 0

Min. Buffer	0	min. buffer	User adjustable
Max Unw. Buff	19	max unwt. Buff	
Max Wtd Buff	25	max wtd. buffer	User adjustable

Weighted **0**

Component	Element score	Element	Selection	Element result
Stock assemblage	0	This ACL/ACT is for a single stock.	x	0
	1	This ACL/ACT is for a stock assemblage, or an indicator species for a stock assemblage		
Ability to Constrain Catch	0	Catch limit has been exceeded 0 or 1 times in last 4 years	x	0
	1	Catch limit has been exceeded 2 or more times in last 4 years		
		For the year with max. overage, add 0.5 pts. For every 10 percentage points (rounded up) above ACL	0.0	
		Not applicable (there is no catch limit)		
		Apply this component to recreational fisheries, not commercial or IFQ fisheries		
Precision of Landings Data Recreational	0	Method of absolute counting		not applicable
	1	MRIP proportional standard error (PSE) <= 20		
	2	MRIP proportional standard error (PSE) > 20		
		Not applicable (will not be included in buffer calculation)	x	
		Apply this component to commercial fisheries or any fishery under an IFQ program		
Precision of Landings Data Commercial	0	Landings from IFQ program	x	0
	1	Landings based on dealer reporting		
	2	Landings based on other		
		Not applicable (will not be included in buffer calculation)		
Timeliness	0	In-season accountability measures used or fishery is under an IFQ	x	0
	1	In-season accountability measures not used		
Sum				0

Weighting factor		Element weight	Element	Selection	Weighting
Overfished status	0	1.	Stock biomass is at or above B _{OY} (or proxy).		0.3
	0.1	2.	Stock biomass is below B _{OY} (or proxy) but at or above B _{MSY} (or proxy).		
	0.2	3.	Stock biomass is below B _{MSY} (or proxy) but at or above minimum stock size threshold (MSST).		
	0.3	4.	Stock is overfished, below MSST.	x	
	0.3	5.	Status criterion is unknown.		

Year	Catch	Quota	Over/Under %
2011	3,238,335	3,300,901	-2%
2012	3,636,395	3,712,613	-2%
2013	4,599,001	5,054,054	-9%
2014	5,016,045	5,054,054	-1%

Greatest percentage overage = no overage = 0 points
Quota exceeded 0 times in last 4 years
Data Source ACL Data set SERO 12 January 2015

ACL/ACT Buffer Spreadsheet

version 4.1 - April 2011

Gag

Recreational - 2014

sum of points 2
max points 5.0

Buffer between ACL and ACT (or ABC and ACL) Unweighted 8

Min. Buffer	0	min. buffer	User adjustable
Max Unw. Buff	19	max unwt. Buff	
Max Wtd Buff	25	max wtd. buffer	User adjustable

Weighted 8

Component	Element score	Element	Selection	Element result
Stock assemblage	0	This ACL/ACT is for a single stock.	x	0
	1	This ACL/ACT is for a stock assemblage, or an indicator species for a stock assemblage		
Ability to Constrain Catch	0	Catch limit has been exceeded 0 or 1 times in last 4 years	x	0
	1	Catch limit has been exceeded 2 or more times in last 4 years		
		For the year with max. overage, add 0.5 pts. For every 10 percentage points (rounded up) above ACL	0.0	
		Not applicable (there is no catch limit)		
		Apply this component to recreational fisheries, not commercial or IFQ fisheries		
Precision of Landings Data Recreational	0	Method of absolute counting		1
	1	MRIP proportional standard error (PSE) <= 20	x	
	2	MRIP proportional standard error (PSE) > 20		
		Not applicable (will not be included in buffer calculation)		
		Apply this component to commercial fisheries or any fishery under an IFQ program		
Precision of Landings Data Commercial	0	Landings from IFQ program		not applicable
	1	Landings based on dealer reporting		
	2	Landings based on other		
		Not applicable (will not be included in buffer calculation)	x	
Timeliness	0	In-season accountability measures used or fishery is under an IFQ		1
	1	In-season accountability measures not used	x	
Sum				2

Weighting factor		Element weight	Element	Selection	Weighting
Overfished status	0	1.	Stock biomass is at or above B _{OY} (or proxy).		0.1
	0.1	2.	Stock biomass is below B _{OY} (or proxy) but at or above B _{MSY} (or proxy).	x	
	0.2	3.	Stock biomass is below B _{MSY} (or proxy) but at or above minimum stock size threshold (MSST).		
	0.3	4.	Stock is overfished, below MSST.		
	0.3	5.	Status criterion is unknown.		

Year	Catch	ACL	Over/Under %
2010	1,664,257	2,640,000	-37%
2011	660,287	964,000	-32%
2012	938,547	1,232,000	-24%
2013	1,435,421	1,495,000	-4%

Greatest percentage overage = -no overages = 0 points
ACL exceeded 0 times in last 4 years
Data Source ACL Data set SERO 8 October 2014

Year	PSE
2010	11.4
2011	17.5
2012	15.7
2013	20.4
Average	16.25 Avg PSE < 20

ACL/ACT Buffer Spreadsheet

version 4.1 - April 2011

Gag Commercial - 2014

sum of points 0
max points 5.0

Buffer between ACL and ACT (or ABC and ACL) Unweighted 0

Min. Buffer	0	min. buffer	User adjustable
Max Unw. Buff	19	max unwt. Buff	
Max Wtd Buff	25	max wtd. buffer	User adjustable

Weighted **0**

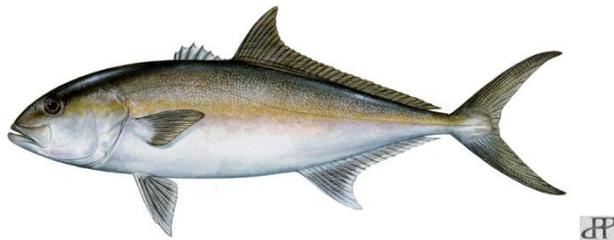
Component	Element score	Element	Selection	Element result
Stock assemblage	0	This ACL/ACT is for a single stock.	x	0
	1	This ACL/ACT is for a stock assemblage, or an indicator species for a stock assemblage		
Ability to Constrain Catch	0	Catch limit has been exceeded 0 or 1 times in last 4 years	x	0
	1	Catch limit has been exceeded 2 or more times in last 4 years		
		For the year with max. overage, add 0.5 pts. For every 10 percentage points (rounded up) above ACL	0.0	
		Not applicable (there is no catch limit)		
Apply this component to recreational fisheries, not commercial or IFQ fisheries				
Precision of Landings Data Recreational	0	Method of absolute counting		not applicable
	1	MRIP proportional standard error (PSE) <= 20		
	2	MRIP proportional standard error (PSE) > 20		
		Not applicable (will not be included in buffer calculation)	x	
Apply this component to commercial fisheries or any fishery under an IFQ program				
Precision of Landings Data Commercial	0	Landings from IFQ program	x	0
	1	Landings based on dealer reporting		
	2	Landings based on other		
		Not applicable (will not be included in buffer calculation)		
Timeliness	0	In-season accountability measures used or fishery is under an IFQ	x	0
	1	In-season accountability measures not used		
Sum				0

Weighting factor		Element weight	Element	Selection	Weighting
Overfished status	0	1.	Stock biomass is at or above B _{OY} (or proxy).		0.1
	0.1	2.	Stock biomass is below B _{OY} (or proxy) but at or above B _{MSY} (or proxy).	x	
	0.2	3.	Stock biomass is below B _{MSY} (or proxy) but at or above minimum stock size threshold (MSST).		
	0.3	4.	Stock is overfished, below MSST.		
	0.3	5.	Status criterion is unknown.		

Year	Catch	ACL	Over/Under %
2010	796,826	1,410,000	-43%
2011	318,663	430,000	-26%
2012	523,138	567,000	-8%
2013	575,203	708,000	-19%

Greatest percent overage = no overages = 0 points
 ACL exceeded 0 times in last 4 years
 Data source: SERO provide 8 October 2014

Options Paper: Modifications to Greater Amberjack Allowable Harvest and Management Measures



January 2015



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.

This page intentionally blank

ENVIRONMENTAL ASSESSMENT COVER SHEET

Name of Action

Modifications to Greater Amberjack Allowable Harvest and Management Measures

Responsible Agencies and Contact Persons

Gulf of Mexico Fishery Management Council (Council) 813-348-1630
2203 North Lois Avenue, Suite 1100 813-348-1711 (fax)
Tampa, Florida 33607 gulfcouncil@gulfcouncil.org
John Froeschke (john.froeschke@gulfcouncil.org) <http://www.gulfcouncil.org>

National Marine Fisheries Service (Lead Agency) 727-824-5305
Southeast Regional Office 727-824-5308 (fax)
263 13th Avenue South <http://sero.nmfs.noaa.gov>
St. Petersburg, Florida 33701
Rich Malinowski (Rich.Malinowski@noaa.gov)

Type of Action

Administrative
 Draft

Legislative
 Final

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	Acceptable biological catch
ACL	Annual catch limit
ACT	Annual catch target
AMs	Accountability measures
ALS	accumulated landings system
B _{MSY}	Stock biomass level capable of producing an equilibrium yield of MSY
Council	Gulf of Mexico Fishery Management Council
CS	consumer surplus
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential fish habitat
EIS	Environmental impact statement
ELMR	Estuarine living marine resources
ESA	Endangered Species Act
FL	fork length
F _{MSY}	Fishing mortality rate corresponding to an equilibrium yield of MSY
F _{30% SPR}	Fishing mortality corresponding to 30% spawning potential ratio
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
HAPC	Habitat area of particular concern
IRFA	Initial regulatory flexibility analysis
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	Maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
mp	million pounds
MRFSS	Marine Recreational Fisheries Survey and Statistics
MRIP	Marine Recreational Information Program
MSST	Minimum stock size threshold
MSY	Maximum sustainable yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	Same as NMFS
NOR	net operating revenues
NOS	National Ocean Service
NS1	National Standard 1 guidelines
OFL	Overfishing level
OY	Optimum yield
PS	Producer surplus
RIR	Regulatory impact review
SAV	Submerged aquatic vegetation
Secretary	Secretary of Commerce
SEDAR	Southeast Data, Assessment and Review
SEFSC	Southeast Fisheries Science Center

SERO	Southeast Regional Office
SSBR	Spawning stock biomass per recruit
SSC	Scientific and Statistical Committee
SPR	Spawning potential ratio
TAC	Total allowable catch
TPWD	Texas Parks and Wildlife Department
ww	whole weight
YPR	Yield per recruit

TABLE OF CONTENTS

Environmental Assessment Cover Sheet	i
Abbreviations Used in this Document	ii
List of Tables	v
List of Figures	vii
Chapter 1. Introduction	1
1.1 Background	1
1.2 Landings Data	2
1.3 Greater Amberjack Reproductive Biology	4
1.4 Purpose and Need	4
1.5 History of Management	5
Chapter 2. Management Options	9
2.1 Action 1 - Modifications to the Greater Amberjack Annual Catch Limits and Annual Catch Targets.....	9
2.2 Action 2 - Recreational Management Measures	14
Action 2.1: Modify the Recreational Minimum Size Limit for Greater Amberjack	14
Action 2.2: Modify the Recreational Closed Seasons for Greater Amberjack	18
2.3 Action 3 - Commercial Management Measures	21
Chapter 3. Affected Environment	23
3.1 Description of the Physical Environment	23
3.1.1 Deepwater Horizon	25
3.2 Description of the Biological Environment	26
3.3 Description of the Economic Environment.....	37
3.3.1 Economic Description of the Commercial Sector	37
3.3.2 Economic Description of the Recreational Sector	41
3.4 Description of the Social Environment	54
3.4.1 Fishing Communities	54
3.4.2 Environmental Justice Considerations	58
3.5 Description of the Administrative Environment	60
3.5.1 Federal Fishery Management.....	60
3.5.2 State Fishery Management.....	61
Chapter 4. List of Preparers	62
Chapter 5. List of Agencies, Organizations and Persons Consulted.....	63
Chapter 6. References	64

LIST OF TABLES

Table 1.2.1. Commercial and recreational landings of greater amberjack (pounds whole weight) from 2002 to 2013. Recreational landings include MRIP, Headboat, and TPWD landings.	2
Table 1.5.1. Summary of recent annual commercial landings relative to management targets (pounds whole weight).....	7
Table 1.5.2. Summary of recent annual recreational landings relative to management targets (pounds whole weight).....	8
Table 2.2.1. Proportion of mature females at selected lengths for greater amberjack in the Gulf of Mexico.....	16
Table 2.2.2 Season length in days under selected closed season and ACT alternatives.....	20
Table 2.3.1. Total greater amberjack commercial landings (2008 - 2013). The commercial ACL was exceeded each year from 2009 to 2013.	22
Table 2.3.2. Estimated commercial season length (i.e., days open) under three management options.....	22
Table 3.2.1. Summary of habitat use by life history stage for species in the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico.....	29
Table 3.2.2. Species of the reef fish FMP grouped by family.....	34
Table 3.3.1.1. Number of vessels, number of trips and landings by year.	37
Table 3.3.1.2. Number of vessels and ex-vessel revenues by year (2013 dollars)*.....	38
Table 3.3.1.3. Number of trips with landings in excess of each trip limit option and number of vessels that took such trips (2009-2013 Average).....	39
Table 3.3.1.4. Average annual business activity (2009 through 2013) associated with the commercial harvest of greater amberjack and the harvest of all species by vessels that landed greater amberjack. All monetary estimates are in 2013 dollars.....	41
Table 3.3.2.1. Recreational landings (lbs ww) and percent distribution of greater amberjack and reef fish, 2009 - 2013.	42
Table 3.3.2.2. Recreational landings (lbs ww) and percent distribution of greater amberjack across all modes, by state, 2009 - 2013.	43
Table 3.3.2.3. Recreational landings (lbs ww) and percent distribution of greater amberjack across all states, by mode, 2009 - 2013.	43
Table 3.3.2.4. Recreational landings (lbs ww) and percent distribution of greater amberjack, by month, 2009-2013.	44
Table 3.3.2.5. Target trips for greater amberjack and reef fish, 2009 -2013.	45
Table 3.3.2.6. Greater amberjack target trips and percent distribution across all modes by state, 2009 - 2013.	46
Table 3.3.2.7. Greater amberjack target trips and percent distribution across all states, 2009 - 2013.....	46
Table 3.3.2.8. Greater amberjack target trips and percent distribution across all modes and states, by month, 2009 - 2013.	47
Table 3.3.2.9. Headboat angler days and percent distribution, by state, 2009 - 2013.	48
Table 3.3.2.10. Headboat angler days and percent distribution, by month, 2009 - 2013.....	49
Table 3.3.2.11. Number of vessels with a Gulf for-hire permit by homeport state, 2009- 2013.	50

Table 3.3.2.12. Summary of greater amberjack target trips (2009-2013 average) and associated business activity (2013 dollars). Output and value added impacts are not additive. 53

Table 3.4.1.1. Top ranking communities based on recreational fishing engagement and reliance, in descending order. 55

Table 3.4.2.1. Each state’s average proportion of minorities and population living in poverty, and the corresponding threshold used to consider an area of potential EJ concern (Census Bureau 2010). 59

LIST OF FIGURES

Figure 1.2.1. Recreational, commercial, and total landings in pounds whole weight of greater amberjack from 2002 through 2013.....	3
Figure 2.2.1. Size frequency distribution of recreational greater amberjack landings in 2012-2013 in the Gulf of Mexico.....	15
Figure 2.2.2. Proportion of mature females by length for greater amberjack in the Gulf of Mexico.....	16
Figure 2.2.3. Gulf of Mexico greater amberjack spawning potential ratio plotted against fishing mortality rates for three different minimum size limits.....	17
Figure 2.2.4. Gulf of Mexico greater amberjack yield-per-recruit plotted against fishing mortality rates for three different minimum size limits.....	18
Figure 3.1.1. Mean annual sea surface temperature derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set	23
Figure 3.1.2. Map of most fishery management closed areas in the Gulf.....	25
Figure 3.4.1.1. Distribution of commercial greater amberjack mean landings (2001 - 2010), based on dealer reports. Source: Accumulated landings system dealer reports.....	56

CHAPTER 1. INTRODUCTION

1.1 Background

The greater amberjack stock assessment was completed and reviewed by the Scientific and Statistical Committee (SSC) at their June 2014 meeting. The SSC accepted the 2014 Southeast Data, Assessment and Review (SEDAR) greater amberjack assessment as the best scientific information available. The SSC determined that greater amberjack was overfished and experiencing overfishing and the stock did not meet the 10-year rebuilding plan that ended in 2012. The National Standard 1 (NS1) guidelines state that when a stock has exceeded its maximum rebuilding time and is not yet rebuilt, the yield should be set at the yield corresponding to $F_{REBUILD}$ or to 75% of maximum fishing mortality threshold (MFMT), whichever is less. A target rebuild date is required to calculate $F_{REBUILD}$ but has not been specified by the Gulf of Mexico Fishery Management Council (Council). Based on this information, the SSC used the Acceptable Biological Catch (ABC) Control Rule to establish the overfishing limit (OFL) and ABC for a time period of four years beginning in 2015 equivalent to 75% of MFMT.

Secretarial Amendment 2 to the Reef Fish Fishery Management Plan (FMP) established a rebuilding plan for greater amberjack based on a stock assessment conducted in 2000. That assessment determined that the greater amberjack stock was overfished and undergoing overfishing as of 1998 (Turner et al. 2000). Management measures to reduce the recreational bag limit from three to one fish were implemented in January 1997 and the commercial seasonal closure from March through May was implemented in January 1998; however, these closures were not incorporated into the assessment. The projected effects of these management measures were expected to eliminate overfishing; therefore, no new management measures were implemented.

In 2003, a greater amberjack rebuilding plan was established through implementation of Secretarial Amendment 2, and its associated rule. In 2006, a stock assessment was completed and determined the greater amberjack stock was not recovering at the rate previously projected. The stock was declared to be overfished and experiencing overfishing (SEDAR 9 2006). The Gulf of Mexico Fisheries Management Council and National Marine Fisheries Service (NMFS) developed and implemented Amendment 30A, on August 4, 2008, to the Reef Fish Fisheries Management Plan (FMP) in response to the stock assessment results to end overfishing and rebuild the stock by 2012 (GMFMC 2008). The minimum reduction required to rebuild the stock by 2012 was 40% of current fish mortality. The total allowable catch (TAC) implemented in Amendment 30A was 1,871,000 pounds whole weight (pounds) for 2008 through 2010 (GMFMC 2008). Amendment 30A also established quotas for the recreational and commercial sector equal to 1,368,000 and 503,000 pounds, respectively. Amendment 30A also implemented sector accountability measures specifying that if either sector exceeds their sector allocation of total allowable catch (TAC), the Regional Administrator can close that sector for the remainder of the year. Additionally, if the sector's landings exceed their share of TAC, the Regional Administrator will reduce the fishing season for the time necessary to recover the overage in the following fishing year. The Greater Amberjack 2010 SEDAR 9 update stock assessment also

determined that the stock remained overfished and continued to experience overfishing. Amendment 35 to the Reef Fish FMP reduced stock's TAC to 1,780,000 pounds in effort to end overfishing and rebuild the stock (Commercial ACL equal to 481,000 pounds, and a recreational ACL equal to 1,299,000 pounds), were also established based on the sector allocation established in Amendment 30A.

1.2 Landings Data

Table 1.2.1. Commercial and recreational landings of greater amberjack (pounds whole weight) from 2002 to 2013. Recreational landings include MRIP, Headboat, and TPWD landings.

Year	Headboat	Charter	Private	Recreational Total	Commercial	Grand Total
2002	160,636	1,114,754	857,969	2,133,359	703,303	2,836,662
2003	199,347	1,072,018	1,630,455	2,901,820	857,125	3,758,945
2004	108,769	1,068,819	1,214,641	2,392,230	871,016	3,263,246
2005	61,281	365,893	1,089,984	1,517,158	662,285	2,179,443
2006	79,892	1,030,943	589,348	1,700,183	566,384	2,266,567
2007	59,436	516,253	291,797	867,485	589,235	1,456,720
2008	54,544	478,614	785,504	1,318,662	439,176	1,757,838
2009	103,191	653,160	723,955	1,480,306	601,446	2,081,752
2010	53,203	460,740	711,279	1,225,222	534,095	1,759,317
2011	62,835	583,813	303,351	949,999	508,489	1,458,488
2012	99,680	546,086	592,952	1,238,719	307,921	1,546,640
2013	73,246	604,626	938,757	1,616,629	457,821	2,074,450

SOURCES: SEFSC Recreational (8/5/2014) and Commercial (7/10/2014) ACL Datasets. Recreational landings exclude Monroe County, Florida.

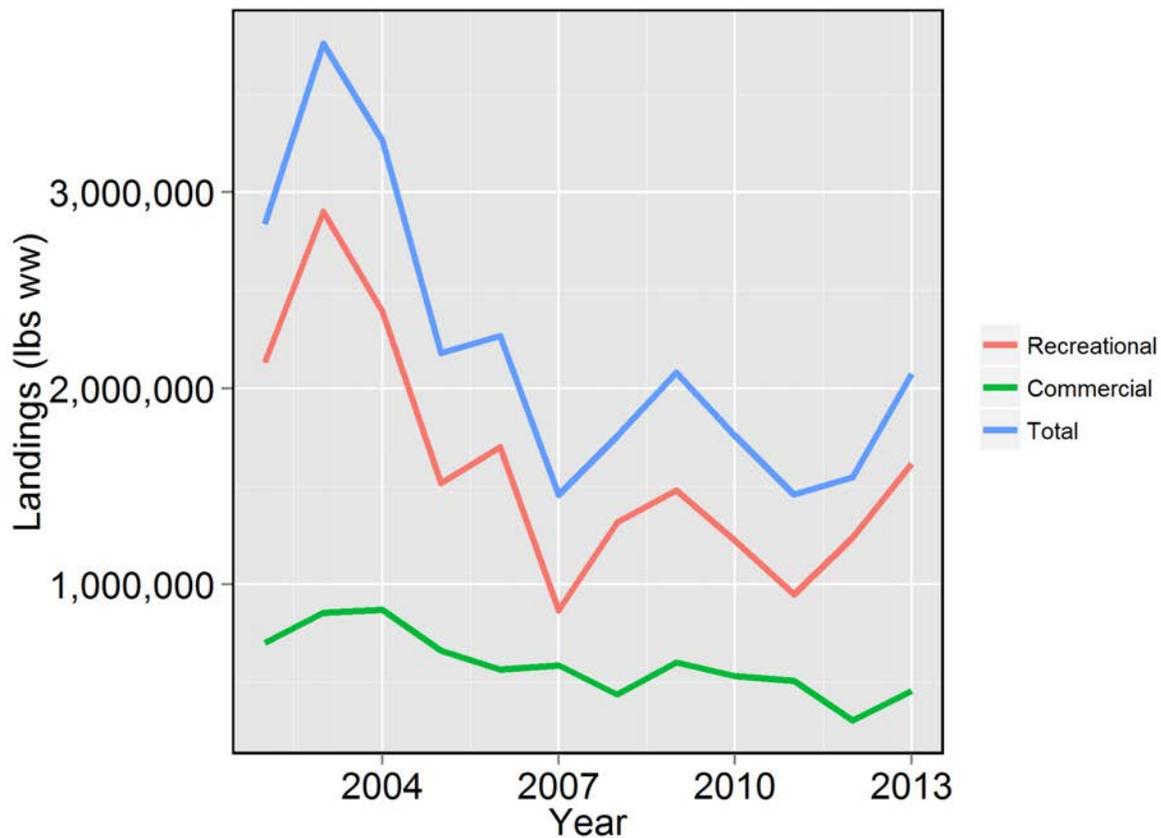


Figure 1.2.1. Recreational, commercial, and total landings in pounds whole weight of greater amberjack from 2002 through 2013. Recreational landings were estimated (AB1) from the MRIP, TPWD, and Headboat Surveys. Commercial data included long line, vertical line and all other applicable gear types (e.g., trolling and diving with a spear). SOURCES: SEFSC Recreational (8/5/2014) and Commercial (7/10/2014) ACL Datasets.

1.3 Greater Amberjack Reproductive Biology

Murie and Parkyn (2008) examined the reproductive biology of greater amberjack throughout the Gulf of Mexico using fishery-dependent and fishery-independent data from 1989 through 2008. They found that females were significantly larger than males and peak spawning occurred during March and April each year. By May, they documented low gonad weights consistent with the end of the seasonal spawning period. Comparatively, studies in the U.S. South Atlantic have estimated that the greater amberjack peak spawning season occurs in April and May (Sedberry et al. 2006; Harris et al. 2007).

Harris et al. (2007) suggest that there are known spawning aggregations of greater amberjack targeted by fishers in the U.S. South Atlantic, but no evidence of this has been presented. Observations in Belize documented greater amberjack in pair courtship when they were in a school of approximately 120 fish (Graham and Castellanos 2003). However, no evidence aggregation or indication of spawning aggregations was presented by Murie and Parkyn (2008) Gulf of Mexico study or other earlier Gulf studies.

1.4 Purpose and Need

The purpose of this amendment is to modify the ACL/ACT and other management measures in order to end the overfishing of greater amberjack stock in the Gulf of Mexico. The need for this amendment is that the current acceptable biological catch (ABC) of 1,780,000 pounds established in Amendment 35 to the Reef Fish FMP exceeds the 1,720,000 pound ABC recommendation for 2015 (GMFMC 2012); and section 600.310(g)(3) of the National Standard 1 ACL and accountability measure (AM) guidelines which states that the system of ACLs and AMs should be re-evaluated, and modified if necessary, if catch exceeds the ACL for a given stock or stock complex more than once in the last four years.

The greater amberjack Stock ACL has been exceeded twice in the last four years; therefore, this document includes a range of draft alternatives for adjusting the Stock ACL, as well as subsequent recreational and commercial management measures to improve effectiveness of the Stock ACL and benefits to greater amberjack in the Gulf of Mexico.

1.5 History of Management

The Reef Fish FMP [with its associated environmental impact statement (EIS)] was implemented in November 1984. The original list of species included in the management unit consisted of snappers, groupers, and sea basses. Gray triggerfish and *Seriola* species, including greater amberjack, were in a second list of species included in the fishery, but not in the management unit. The species in this list were not considered to be target species because they were generally taken incidentally to the directed fishery for species in the management unit. Their inclusion in the Reef Fish FMP was for purposes of data collection, and their take was not regulated.

Amendment 1 [with its associated environmental assessment (EA), regulatory impact review (RIR), and initial regulatory flexibility analysis (IRFA)] to the Reef Fish FMP, implemented in 1990, added greater amberjack and lesser amberjack to the list of species in the management unit. It set a greater amberjack recreational minimum size limit of 28 inches fork length (FL) and a three-fish recreational bag limit, and a commercial minimum size limit of 36 inches FL. This amendment set as a primary objective of the FMP the stabilization of long-term population levels of all reef fish species by establishing a survival rate of biomass into the stock of spawning age to achieve at least 20% spawning stock biomass per recruit (SSBR), relative to the SSBR that would occur with no fishing. A framework procedure for specification of TAC was created to allow for annual management changes. This amendment also established a commercial vessel reef fish permit as a requirement for harvest in excess of the bag limit and for the sale of reef fish.

Amendment 4 (with its associated EA and RIR), implemented in May 1992, added the remaining *Seriola* species (banded rudderfish and Almaco jack) to the management unit, and established a moratorium on the issuance of new commercial reef fish vessel permits for a maximum period of three years.

Amendment 5 (with its associated supplemental EIS, RIR, and IRFA), implemented in February 1994, required that all finfish except for oceanic migratory species be landed with head and fins attached, and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations.

Amendment 12 (with its associated EA and RIR), submitted in December 1995 and implemented in January 1997, reduced the greater amberjack bag limit from three fish to one fish per person, and created an aggregate bag limit of 20 reef fish for all reef fish species not having a bag limit (including lesser amberjack, banded rudderfish, Almaco jack and gray triggerfish). NOAA Fisheries Service disapproved proposed provisions to include lesser amberjack and banded rudderfish along with greater amberjack in an aggregate one-fish bag limit and to establish a 28-inch FL minimum size limit for those species.

Amendment 15 (with its associated EA, RIR, and IRFA), implemented in January 1998, closed the commercial sector for greater amberjack Gulf-wide during the months of March, April, and May. A regulatory amendment in August 1999 (with its associated EA, RIR, and IRFA) closed two areas (i.e., create two marine reserves), 115 and 104 square nautical miles respectively, year-round to all fishing under the jurisdiction of the Council with a four-year sunset closure.

Generic Sustainable Fisheries Act Amendment (with its associated EA, RIR, and IRFA), partially approved and implemented in November 1999, set the MFMT for greater amberjack at $F_{30\% \text{ SPR}}$. Estimates of MSY, MSST, and OY were disapproved because they were based on spawning potential ratio (SPR) proxies rather than biomass-based estimates.

Amendment 16B (with its associated EA, RIR, and IRFA), implemented in November 1999, set a slot limit of 14 to 22 inches FL for banded rudderfish and lesser amberjack for both the commercial and recreational fisheries, and an aggregate recreational bag limit of five fish for banded rudderfish and lesser amberjack.

Secretarial Amendment 2, implemented in July, 2003 for greater amberjack, specified MSY as the yield associated with $F_{30\% \text{ SPR}}$ (proxy for F_{MSY}) when the stock is at equilibrium, OY as the yield associated with an $F_{40\% \text{ SPR}}$ when the stock is at equilibrium, MFMT equal to $F_{30\% \text{ SPR}}$, and MSST equal to $(1-M) \cdot B_{\text{MSY}}$ or 75% of B_{MSY} . It also set a rebuilding plan limiting the harvest to 2.9 mp for 2003-2005, 5.2 mp for 2006-2008, 7,000,000 pounds for 2009-2011, and for 7,900,000 pounds for 2012. This was expected to rebuild the stock in seven years. Regulations implemented in 1997 and 1998 (Amendments 12 and 15 to the Reef Fish FMP) were deemed sufficient to comply with the rebuilding plan so no new regulations were implemented.

Amendment 30A implemented August 2008, was developed to stop overfishing of gray triggerfish and greater amberjack. The amendment established annual catch limits and accountability measures for greater amberjack and gray triggerfish. For greater amberjack, it modified the rebuilding plan, increased the recreational minimum size limit to 30 inches FL, set a zero bag limit for captain and crew of for-hire vessels, and set commercial and recreational quotas.

Temporary Rule implemented in June 2010, specified the greater amberjack accountability measures for annual catch limits for the 2010 fishing season. The accountability measures developed in Amendment 30A required the commercial and recreational quotas for greater amberjack to be reduced to compensate for the harvest being exceeded in 2009. The commercial quota was reduced from 503,000 pounds whole weight to 373,072 pounds, while the recreational harvest was reduced from 1,368,000 pounds to 1,243,184 pounds.

Regulatory Amendment implemented in June 2011, specified the greater amberjack recreational closed season from June 1 – July 31 (76 FR 23904). The intended effect of this final rule is to mitigate the social and economic impacts associated with implementing in-season closures. As well as allowing the recreational sector to have the ability to fish for at least one targeted and prized fish species such as red snapper.

Amendment 35

In response to a 2010 update stock assessment, the Council approved Amendment 35 to the Reef Fish FMP on October 4, 2012. The final rule that became effective on December 13, 2012, implemented a new annual catch limit (ACL) equal to the acceptable biological catch at 1,780,000 pounds, which was less than the current annual catch limit of 1,830,000 pounds. Reducing the stock ACL by 18% from no action was expected to end overfishing; however,

whether overfishing has ended would remain unknown until completion of the next benchmark assessment, in 2013. The rule also established a commercial trip limit of 2,000 pounds ww throughout the fishing year. The commercial trip limit was anticipated to provide a longer fishing season for the commercial sector. The annual commercial closed season will be March 1 through May 31, and re-opens on June 1st, as long as the annual catch target has not been exceeded or is projected to be exceeded. The Council also considered bag limits and closed season management measures for the recreational fishing sector but did not alter any recreational management measures.

Table 1.5.1. Summary of recent annual commercial landings relative to management targets (pounds whole weight). The accountability measures implemented in Reef Fish Amendment 30a (GMFMC 2008) require that annual commercial harvest exceeding the commercial ACL be deducted from the commercial ACL in the subsequent calendar year. In these cases, the adjusted commercial ACL values are indicated in parentheses. Also, these overage adjustments are made on preliminary landings as final landings are not completed by the beginning of the subsequent calendar year. This may result in minor deviations from the final overage (if any) and the overage deduction.

Year	Commercial ACT	Commercial ACL	Stock OFL	Commercial Harvest	Harvest - ACL	Closure date
2008		503,000	MFMT	439,176	-63,824	
2009		503,000	MFMT	601,446	98,446	11/7/2009
2010		503,000 (373,072)	MFMT	534,095	161,023	10/28/2010
2011		503,000 (342,091)	MFMT	508,489	166,398	6/18/2011
2012		503,000 (237,438)	2,380,000	307,921	70,483	3/1/2012
2013	338,167	481,000 (410,167)	2,380,000	457,821	47,654	7/1/2013
2014	409,000	481,000	2,380,000			8/25/2014

Table 1.5.2. Summary of recent annual recreational landings relative to management targets (pounds whole weight). The accountability measures implemented in Reef Fish Amendment 30a (GMFMC 2008) requires that annual recreational harvest exceeding the recreational ACL be deducted from the recreational ACL in the subsequent calendar year. In these cases, the adjusted recreational ACL values are indicated in parentheses. Also, these overage adjustments are made on preliminary landings as final landings are not available at the beginning of the subsequent fishing year. This results in minor deviations from the final overage (if any) and the overage deduction.

Year	Recreational ACT	Recreational ACL	Stock ACL	Stock OFL	Recreational Harvest	Harvest-ACL	Closure date
2008		1,368,000	1,871,000	MFMT	1,318,662	-49,338	
2009		1,368,000	1,871,000	MFMT	1,480,306	112,306	10/24/09
2010		1,368,000 (1,243,184)	1,871,000	MFMT	1,225,222	-17,962	
2011	1,368,000	1,368,000 (1,315,224)	1,871,000	MFMT	949,999	-365,225	
2012	1,299,000	1,368,000	1,780,000	2,380,000	1,238,719	-129,281	
2013	1,299,000	1,299,000	1,780,000	2,380,000	1,616,629	317,629	
2014	888,839	1,299,000 (1,063,538)	1,780,000	2,380,000			8/25/14

CHAPTER 2. MANAGEMENT OPTIONS

2.1 Action 1 - Modifications to the Greater Amberjack Annual Catch Limits and Annual Catch Targets

All weights are in pounds whole weight.

Option 1. Maintain the acceptable biological catch (ABC), annual catch limit (ACL), and annual catch target (ACT) at the 2014 level until the next assessment.

Year	ABC/Stock	Recreational		Commercial	
		ACL	ACT	ACL	ACT
2014	1,780,000	1,299,000	1,130,000	481,000	409,000

Option 2. Use the ABC schedule recommended by the Scientific and Statistical Committee (SSC) from 2015 to 2018.

Sub-Option a. No ACT buffer (i.e., ABC = ACL = ACT); note this option would require modification of the accountability measures.

Year	ABC/Stock	Recreational		Commercial	
		ACL	ACT	ACL	ACT
2015	1,720,000	1,255,600	1,255,600	464,400	464,400
2016	2,230,000	1,627,900	1,627,900	602,100	602,100
2017	2,490,000	1,817,700	1,817,700	672,300	672,300
2018	2,620,000	1,912,600	1,912,600	707,400	707,400

Sub-Option b. Apply ACL/ACT Control Rule:

Commercial Buffer = 15%

Recreational Buffer = of 13%

Year	ABC/Stock	Recreational		Commercial	
		ACL	ACT	ACL	ACT
2015	1,720,000	1,255,600	1,092,372	464,400	394,740
2016	2,230,000	1,627,900	1,416,273	602,100	511,785
2017	2,490,000	1,817,700	1,581,399	672,300	571,455
2018	2,620,000	1,912,600	1,663,962	707,400	601,290

Sub-Option c. Apply a 20% buffer to set the ACL and ACT for 2015-2018

Year	Recreational			Commercial	
	ABC/Stock ACL	ACL	ACT	ACL	ACT
2015	1,720,000	1,255,600	1,004,480	464,400	371,520
2016	2,230,000	1,627,900	1,302,320	602,100	481,680
2017	2,490,000	1,817,700	1,454,160	672,300	537,840
2018	2,620,000	1,912,600	1,530,080	707,400	565,920

Option 3. Set a constant ABC at the level recommended the Scientific and Statistical Committee (SSC) for 2015.

Sub-Option a. No ACL buffer; note this option would require modification of the accountability measures.

Year	Recreational			Commercial	
	ABC/Stock ACL	ACL	ACT	ACL	ACT
2015 +	1,720,000	1,255,600	1,255,600	464,400	464,400

Sub-Option b. Apply ACL/ACT Control Rule:

Commercial Buffer = 15%

Recreational Buffer = 13%

Year	Recreational			Commercial	
	ABC/Stock ACL	ACL	ACT	ACL	ACT
2015 +	1,720,000	1,255,600	1,092,372	464,400	394,740

Sub-Option c. Use a 20% buffer to set the ACL and ACT for 2015-2018

Year	Recreational			Commercial	
	ABC/Stock ACL	ACL	ACT	ACL	ACT
2015 +	1,720,000	1,255,600	1,004,480	464,400	371,520

Option 4. Set the stock ACL at zero. No landings of greater amberjack.

Discussion:

The SEDAR 33 (2014) stock assessment indicated that the greater amberjack stock remains overfished and is experiencing overfishing (as of 2012, most recent year included in the assessment). The status determination criteria used to make these determinations were established in Secretarial Amendment 2, implemented in July 2003 and are defined as follows: maximum sustainable yield (MSY) is the yield associated with $F_{30\% SPR}$ (proxy for MSY) when the stock is at equilibrium, optimum yield (OY) is the yield associated with an $F_{40\% SPR}$ when the stock is at equilibrium, maximum fishing mortality threshold (MFMT) is equal to $F_{30\% SPR}$, and minimum stock size threshold (MSST) is equal to $(1-M) \cdot B_{MSY}$, or 75% of biomass at maximum sustainable yield (B_{MSY}). Natural mortality (M) equals 0.25 for greater amberjack.

Action 1 includes options to modify the ABC, ACL, and ACT for greater amberjack in response to results from the SEDAR 33 (2014) and subsequent SSC review and recommendations for ABC.

Amendment 35 to the Reef Fish Fishery Management Plan (FMP) established a stock ABC of 1,780,000 pounds, which exceeds the current ABC recommendation of 1,720,000 pounds for the 2015. The ABC established in Amendment 35 of the Reef Fish FMP was set using Tier 3b of the ABC control rule where the ABC was set at the mean of recent landings. This procedure was adopted by the SSC as the projections from the stock assessment were unstable and highly uncertain (SEDAR 9 update. 2010).

The recommendations made by the SSC after reviewing SEDAR 33 (2014) will replace the previous ABC and OFL recommendations (GMFMC 2012). A ten year rebuilding plan ended in 2012 without rebuilding the Greater amberjack stock and guidance on a new rebuilding plan is necessary from the Gulf Council.

An additional goal of this framework action is to re-evaluate the stock ACL as both the recreational and commercial sectors exceeded their quotas twice in the last four years. The National Standard 1 guidelines (NS1) section 600.310 (g)(3) states “If catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be re-evaluated, and modified if necessary, to improve its performance and effectiveness”.

Option 1 is the no action alternative and would retain the current ABC/stock ACL. Based on the greater amberjack SEDAR 33 Update (2014) and subsequent SSC review and ABC recommendations the Council would be exceeding the ABC in 2015 (albeit only by 60,000 pounds). Therefore, this alternative is not a viable option.

Option 2 would modify the rebuilding plan and set the stock ACL at the ABC recommended by the SSC for the years 2015 to 2018. Based on the 73% recreational and 27% commercial allocation the respective sector quotas would be 1,255,600 pounds for the recreational sector (2015) and 464,400 pounds for the commercial sector (2015). **Option 2** would also establish combined sector ACLs that are 60,000 pounds below the current stock ACL followed by increases in 2016 - 2018. However, at the August 2014 SSC meeting (Tampa, FL) the SSC discussed the harvest projections from SEDAR 33 (Gulf of Mexico Greater Amberjack) and the ABC schedule recommended by the SSC at the June 2014 meeting. The additional discussion occurred because the stock is overfished and experiencing overfishing, the previous 10 year rebuilding plan was not met, and that stock biomass has been relatively stable (at overfished levels) for a long-period while experiencing harvest levels below what is currently projected to rebuild the stock in upcoming years. The SSC discussed that historical stock assessment model projections were quite uncertain, and retrospectively, were overly optimistic about the productivity of the stock. A SSC member stated that the current stock assessment differed in terms of modeling environment and approach from previous assessments and the current SS3 modeling environment allowed a length structured assessment with uncertainty in both lengths and landings. These are substantial improvements over previous stock assessments and should add reliability to the results and projections relative to previous assessments of greater amberjack.

The SSC discussed that current fishing recommendations (**Option 2**) are based on 75% of F_{MSY} as a specific timeline for rebuilding the stock has not been provided to the SSC. If a rebuilding target date were provided, a harvest schedule to meet this timeline could be calculated and the result could suggest a greater or reduced ABC is necessary to meet the rebuilding deadline. If the Gulf Council

provided a rebuilding target date, the SEFSC could produce a probability of overfishing for various yield strategies that reflects the desired risk tolerance by the Gulf Council.

Greater Amberjack is currently managed to harvest the ACL. The ACT may be reduced from the ACL to incorporate uncertainty in the manage structure to constrain harvest to the desired catch level. **Option 2** includes three sub-options. **Sub-option a** would not apply a buffer between the ACL and ACT and assumes that management practices are effective to constrain catch to the ACL.

Sub-option b would apply the existing ACL/ACT Control Rule that results in an ACT buffer of 15% for the commercial sector (i.e., management target) and the recreational ACT would be reduced by 13% of the ACL to accommodate uncertainty in the effectiveness of the management strategy to constrain catch. The Council established an ACL/ACT Control Rule in the Generic ACL Amendment (GMFMC 2011). The Council developed the ACL/ACT Control Rule so it could objectively and efficiently assign catch limits and targets that take into account management uncertainty (GMFMC 2011). The rule uses different levels of information about catch levels, sector overages, stock management practices, and data quality to assign levels of reduction for either sector ACLs or ACTs.

Sub-option c would not use the ACL/ACT Control Rule and instead apply a 20% buffer, effectively reducing the management target 20% from the ACL. The rationale for **sub-option c** is that recreational harvest has exceeded the sector ACL previously and this would provide a larger buffer and increase the likelihood of rebuilding this stock to target biomass levels.

Option 3 (including all **sub-options**) is identical in 2015, however, does not allow for increases in the ACL and ACT in years (2016 - 2018) as compared to **Option 2**. As with **Option 2**, **sub-option a** would set the ACT equal to the ACL (i.e., no buffer). **Sub-option b** would apply the ACL/ACT Control Rule corresponding to a 15% commercial buffer and a 13% recreational buffer for each year 2015 to 2018 inclusive. **Sub-option c** would apply a constant 20% buffer between the ACL and ACT from 2015 through 2018.

Option 4 would set the stock ACL and stock ACT at zero and is a reasonable option given that this stock is overfished and experiencing overfishing despite previous management efforts to rebuild the stock within the ten year rebuilding plan. **Option 4** would provide the greatest likelihood of rebuilding the stock albeit with the greatest short-term, negative socio-economic impact to the reef fish fishery.

Post-season AMs such as overage adjustments would only occur if the respective sector ACL was exceeded. Any ACL overage by a sector would then reduce the respective sectors ACL and ACT the following year, by the amount of the sector ACL overage.

For both **Option 2** and **Option 3** the **sub-options** under consideration would retain the same ABC. However, **sub-options 2a** and **3a** would result in AMs being triggered immediately if the ACL is exceeded as it is equivalent to the ABC. **Sub-options 2b** and **3b** would provide additional flexibility by establishing an ACT (commercial sector buffer =15% and the recreational buffer =13%). **Sub-options 2a** and **3a** would establish an ACT value as the "target" yet accountability measures would not be triggered unless the ACL was exceeded. **Sub-options 2c** and **3c** would also establish an ACT

value as the "target" yet with larger buffers (5% larger commercial; 7% larger recreational) than **sub-options 2b** and **3b**. While **sub-options 2c** and **3c** would further reduce the likelihood of exceeding the ACL and aid in preventing overages that have occurred frequently in the management of this species; however, if the buffer is too large, it could prevent the fishery from achieving OY.

2.2 Action 2 - Recreational Management Measures

Action 2.1: Modify the Recreational Minimum Size Limit for Greater Amberjack

- Option 1: No Action – do not modify the current minimum size limit of 30 inches FL
- Option 2: Modify the minimum size limit for greater amberjack to 32 inches FL
- Option 3: Modify the minimum size limit for greater amberjack to 34 inches FL
- Option 4: Modify the minimum size limit for greater amberjack to 36 inches FL

Discussion:

Action 2 includes options to modify the recreational minimum size limit for greater amberjack.

Option 1 would maintain the current recreational minimum size limit of 30 inches FL. Based on recreational landings in 2009-2010 the most frequently landed greater amberjack was 31 inches FL (Figure 2.2.1). However, a 30 inch FL greater amberjack is approximately 2 years old and has not likely reproduced yet based on size at maturity data (Figure 2.2.2). At the current 30 inch FL minimum size limit 11% (95% confidence interval (0 - 23%)) of the females in the population have achieved reproductive maturity (Table 2.2.1).

Option 2 would modify the minimum size limit for greater amberjack to 32 inches FL. At 32 inches FL 45% of females (95% confidence interval (23 - 66%)) are reproductively mature. **Option 3** would modify the minimum size limit for greater amberjack to 34 inches FL. At 34 inches FL 85% of females (95% confidence interval (69 - 100%)) are reproductively mature. **Option 4** would modify the minimum size limit for greater amberjack to 36 inches FL. At 36 inches FL 97% of females (95% confidence interval (92 - 100%)) are reproductively mature. For **Option 3** or **Option 4**, greater than 50% of female greater amberjack are estimated to be reproductively mature and **Option 4** would be consistent with the commercial sector's minimum size limit. As minimum size limits increase from 30 inches FL, dead discards are estimated to increase and subsequent estimates of changes in harvest and dead discards for various minimum size limits could be calculated. Dead discard mortality is estimated at 20% and would be used to estimate increases in total dead discards with various minimum size limits consistent with SEDAR 33 (2014) SEDAR 9 Update (2010).

Spawning potential ratio (SPR) (Figure 2.2.3) and yield-per-recruit (YPR) (Figure 2.2.4) were calculated for a range of fishing mortality rates for three different minimum size limits following SERO-LAPP-2011-4. The calculations incorporated discard selectivity and discard mortality for sub-legal fish and harvest selectivity within 2 inches of the minimum size limit. SPR and YPR calculations were updated with SEDAR 33 (2014) parameter estimates of length-weight conversion, von Bertalanffy growth model, length at maturity model, natural mortality, fishing mortality, and discard mortality.

Spawning potential ratio addresses the spawning potential of the stock relative to the stock with no fishing mortality. The largest minimum size limit considered (**Option 4**; 36 inches fork length) resulted in the largest spawning potential for the stock. Yield per recruit addresses the fishing mortality rate that produces the maximum yield of the fishery. The smallest minimum size considered (**Option 1**; 30 inches fork length) resulted in the largest yield of the fishery. Thus, the SPR and YPR results reveal a trade-off between SPR and YPR. If the management goal is to achieve a higher SPR, then increasing the minimum size would be beneficial; however, this results in less

YPR. If the management goal is to maximize yield then the current minimum size limit of 30 inches fork length appears appropriate.

The SPR and YPR analysis presented herein only takes into account growth and mortality. Recruitment is assumed to be constant which is likely unrealistic since recruitment typically varies over time with changing stock size and environmental conditions. Thus, there is uncertainty associated with these results. Also, this analysis does not address the issue of determining a fishing mortality rate that will produce a maximum yield that is likely to be sustainable.

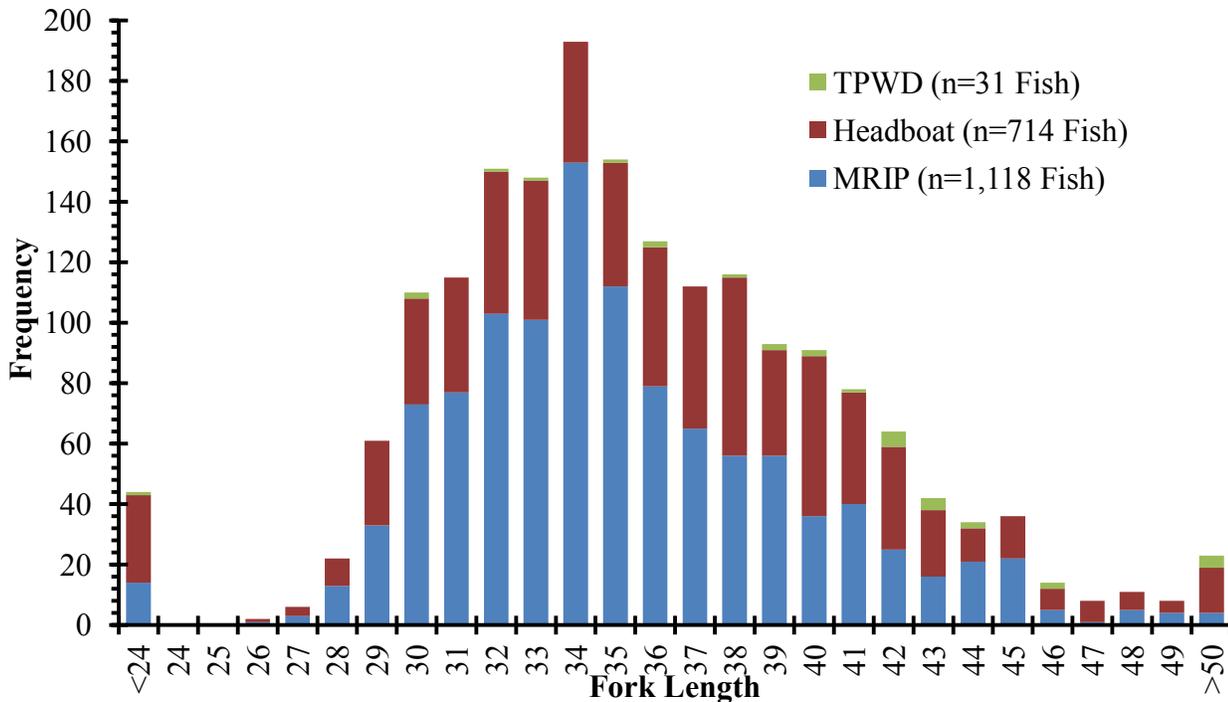


Figure 2.2.1. Size frequency distribution of recreational greater amberjack landings in 2012-2013 in the Gulf of Mexico. The current minimum size limit is 30 inches fork length. Note: Landings in blue = Marine Recreational Information Program and Statistics (MRIP), red = Headboat, and green = Texas Parks and Wildlife Division. Source: SERO 2014.

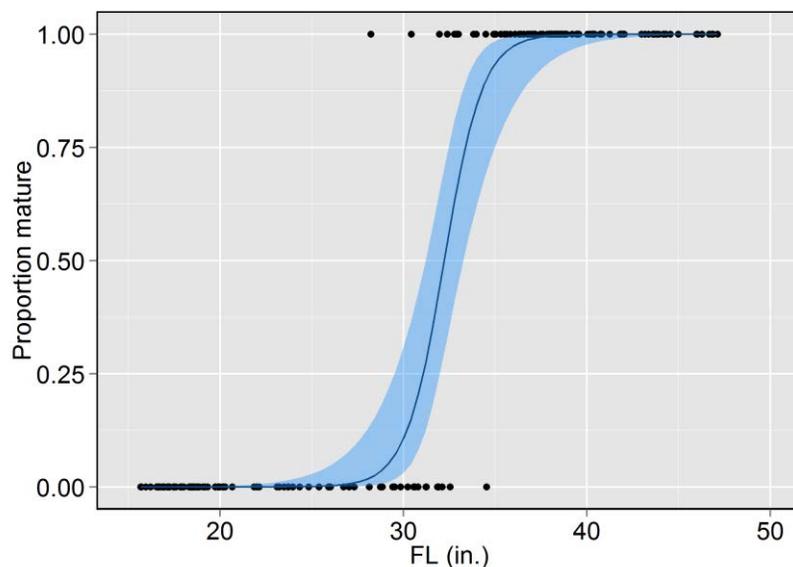


Figure 2.2.2. Proportion of mature females by length for greater amberjack in the Gulf of Mexico. Solid line represents the logistic regression model, blue shaded region represents 95% confidence interval. Filled black circles are individual samples that were noted as mature or immature. Source: D. Murie, personal communication and SERO 2014.

Table 2.2.1. Proportion of mature females at selected lengths for greater amberjack in the Gulf of Mexico. At each selected length, the proportion of mature females is estimated using logistic regression. The 95% lower (LCL) and upper (UCL) confidence limits are also provided.

Proportion of mature females			
Fork length (in)	Proportion mature	LCL	UCL
30	0.11	0.00	0.23
32	0.45	0.23	0.66
34	0.85	0.69	1.00
36	0.97	0.92	1.00

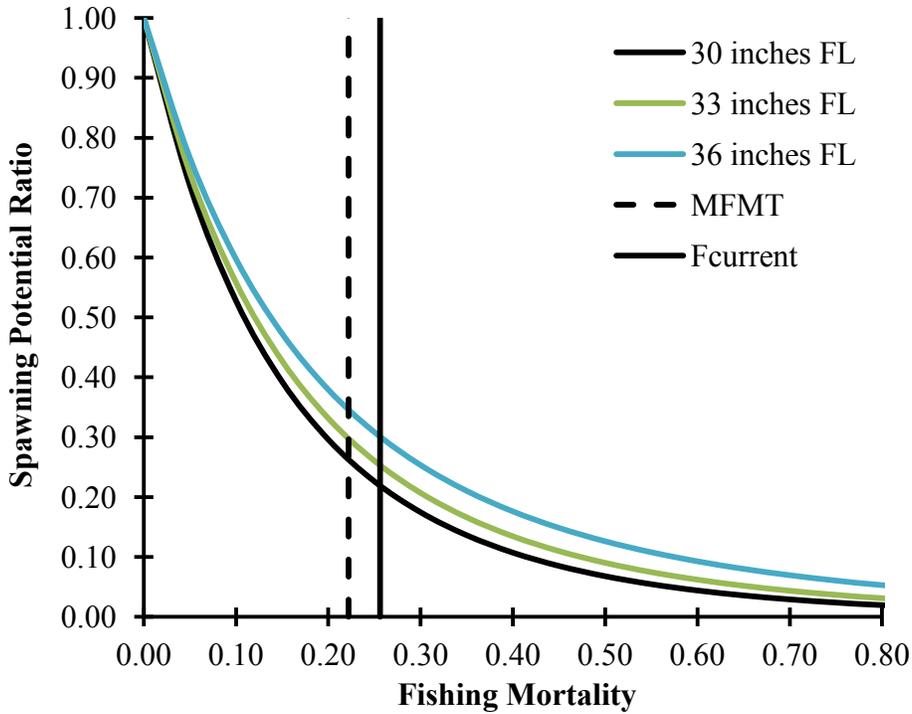


Figure 2.2.3. Gulf of Mexico greater amberjack spawning potential ratio plotted against fishing mortality rates for three different minimum size limits. The black bar represents the current fishing mortality rate ($F_{\text{current}} = 0.256$) and the dashed line represents the Maximum Fishing Mortality Threshold (MFMT = 0.222) as stated in SEDAR 33.

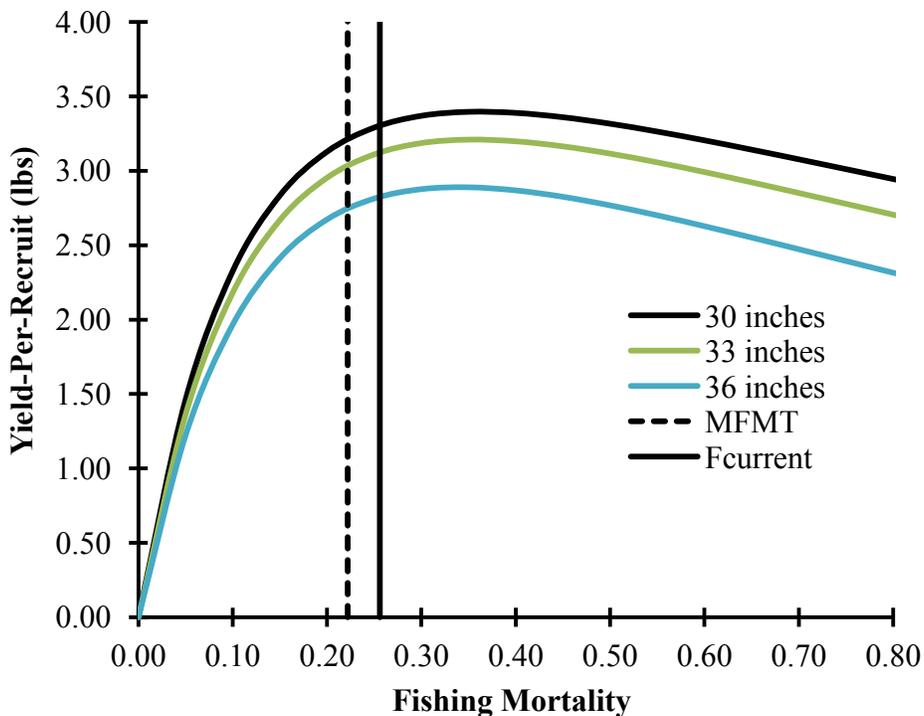


Figure 2.2.4. Gulf of Mexico greater amberjack yield-per-recruit plotted against fishing mortality rates for three different minimum size limits. The black bar represents the current fishing mortality rate ($F_{\text{current}} = 0.256$) and the dashed line represents the Maximum Fishing Mortality Threshold (MFMT = 0.222) as stated in SEDAR 33.

Action 2.2: Modify the Recreational Closed Seasons for Greater Amberjack

- Option 1: No Action – do not modify the current June 1 - July 31 closed season
- Option 2: Eliminate the closed season and open January 1 until the ACT is harvested
- Option 3: Modify the recreational seasonal closure to March 1 - May 31
- Option 4: Modify the recreational seasonal closures to be:
January 1 – May 31 and November 1 – December 31

Discussion:

Minimum size limits are not the only management measure that can be used to accomplish the management goal of 30% SPR. Another measure the Council is considering is modification to the closed season. The primary reason for a fixed recreational closed season is to eliminate in-season quota closures in the fall, which can be very disruptive to the fishery.

Option 1 would maintain the current fixed closed season June 1-July 31. The primary reason behind this fixed recreational closed season was to eliminate in-season quota closures and allow one highly targeted species to be open when the other was closed (red snapper and greater amberjack). In addition, by establishing a fixed closed season the fishery is more likely to stay open through the remainder of the calendar year.

Option 2 would eliminate the fixed closed season (June 1-July 31) and the recreational fishery would open January 1 until quota is filled. This was the recreational fishing season until the implementation of the 2010 Regulatory Amendment (GMFMC 2010b) which established a fixed closed season June 1-July 31, 2011. This fixed closure was a management tool implemented to slow harvest and reduce the probability of an early fall closure which can be disruptive to the fishery.

Option 3 would eliminate the fixed closed season (June 1-July 31) and establish a recreational fixed closed season from March 1-May 31. This alternative would be consistent with the commercial fixed closed season and would also protect greater amberjack during peak spawning.

Option 4 would eliminate the fixed closed season (June 1-July 31) and establish recreational fixed closed seasons from January 1-May 31 and from November 1-December 31 providing protection for spawning greater amberjack and allowing recreational fishing effort to occur throughout the summer into early fall (September-October).

Action 2.1 and **Action 2.2** consider management options to 1) achieve the ACT selected in Action 1 and 2) consider changes in minimum size limits and or closed seasons to maximize benefits from the greater amberjack stock while ending overfishing and allowing for rebuilding of the stock. A recreational decision tool was developed to evaluate combinations of size limits and closed season on the total removals of the stock (catch + dead discards) as well as the number of days required to harvest the ACT (catch, not including dead discards). This permits evaluation of tradeoffs in management options to maximize benefits (e.g., season length) and minimize negative attributes (e.g., dead discards). The estimated season length for combinations of minimum size limits (**Action 2.1, Options 1 -4**) and recreational closed seasons (**Action 2.2, Options 1 -4**) are presented in Table 2.2.1. These estimates are restricted to calendar year 2015 as some options include constant ACT values and uncertainty increases with each successive year of the projection. As such, the number of days presented in Table 2.2.1 represent the best estimate and are considered useful in a comparative sense. The combinations yielding the longest season length include a 36 inch minimum size limit (FL) and a closed season during June and July when harvest rates are typically greatest. The split season closure (i.e., **Action 2.2, Option 4**) is predicted to yield the shortest fishing season of all the options considered, as the closed seasons occur in relatively low-effort periods, thus requiring longer closed seasons to achieve the same level of reductions.

Table 2.2.2 Season length in days under selected closed season and ACT alternatives.

Closed Seasons	Size Limit	ACT Alt 1	ACT Alt 2			ACT Alt 3		
		no buffer	no buffer	13% buffer	20% buffer	no buffer	13% buffer	20% buffer
June 1 - July 31	30	182	199	179	172	199	179	172
January 1 until ACT harvested	30	190	200	187	181	200	187	181
March 1 to May 31	30	145	157	142	135	157	142	135
January 1 – May 31 and November 1 – December 31	30	97	114	92	85	114	92	85
June 1 - July 31	32	196	214	191	180	214	191	180
January 1 until ACT harvested	32	199	209	195	188	209	195	188
March 1 to May 31	32	152	170	149	142	170	149	142
January 1 – May 31 and November 1 – December 31	32	108	126	102	91	126	102	91
June 1 - July 31	34	215	233	209	196	233	209	196
January 1 until ACT harvested	34	211	222	208	200	222	208	200
March 1 to May 31	34	168	187	162	150	187	162	150
January 1 – May 31 and November 1 – December 31	34	123	142	118	104	142	118	104
June 1 - July 31	36	258	304	237	222	304	237	222
January 1 until ACT harvested	36	227	240	224	215	240	224	215
March 1 to May 31	36	192	226	185	170	226	185	170
January 1 – May 31 and November 1 – December 31	36	147	153	140	125	153	140	125

2.3 Action 3 - Commercial Management Measures

- Option 1: No Action – Maintain the 2,000 pound whole weight trip limit
- Option 2: Establish a 1,500 pound whole weight trip limit for greater amberjack
- Option 3: Establish a 1,000 pound whole weight trip limit for greater amberjack
- Option 4: Establish a 750 pound whole weight trip limit for greater amberjack
- Option 5: Establish a 500 pound whole weight trip limit for greater amberjack

Discussion:

Action 3 includes options to reduce commercial trip limits for greater amberjack. A 2,000 pound commercial trip limit was implemented in December 13, 2012 (GMFMC 2012) in effort to reduce harvest rates and prevent quota overages. Prior to implementation of the 2,000 commercial trip limit, the commercial ACL was exceeded each year from 2009 to 2012. While the 2,000 pound trip limit moderately reduced the average poundage landed per trip, the commercial ACL was exceeded in 2013. If the current stock (and/or commercial ACL) is reduced from status quo to meet the objectives of the rebuilding plan (i.e., Action 1), an additional reduction to the commercial trip limit could be considered to meet the ACL. **Option 1** would retain the existing 2,000 trip limit established in Reef Fish Amendment 35 (GMFMC 2012)(Table 2.3.1). **Options 2 - 4** would reduce the commercial greater amberjack trip limits to 1,500 lbs ww (Option 2); 1,000 lbs ww (Option 3), 500 lbs ww (Option 4) respectively. The reduced trip limits are expected to reduce the rate of harvest and the likelihood of exceeding the ACL. This could be an effective management measure if necessary to prevent ACL overages in the future.

To estimate season lengths necessary to harvest the commercial ACT, a decision tool was developed to compare management options (1-3). Estimates are restricted to fishing year 2015 as projection uncertainty increases with each subsequent year estimated. These season lengths are reported as a range since they are dependent upon the ACT value selected in **Action 1**. **Option 1** (2,000 pound trip limit) would have the shortest season of the options under consideration and the season is projected to range from 75 to 92 days (assuming January 1, 2015 opening date) (Table 2.3.2). **Option 2** would slow the overall harvest rate of the fleet by restraining trip harvest to 1,500 pounds and the projected season length ranges from 84 to 109 days. **Option 3** would enact a 1,000 pound trip limit with a projected season length ranging from 113 to 148 days. **Option 4** (750 pound trip limit) would require 145 to 189 days to harvest the ACT. **Option 5** (500 pound trip limit) is the smallest trip limit under consideration which may be undesirable. However, If no buffer between the ACL and ACT is selected as Preferred in Action 1, **Option 5** could allow the season to remain open all-year (except March to May closure) while harvesting 100% of the ACT. In all cases, **Option 5** would have the longest season length at the expense of the smallest allowable harvest per trip.

Table 2.3.1. Total greater amberjack commercial landings (2008 - 2013). The commercial ACL was exceeded each year from 2009 to 2013. A 2,000 pound whole weight trip limit was implemented in December 2012, (fully implemented in 2013). Note, the ACL was adjusted for prior year overages in some years as explained in **Table 1.5.1**.

Year	Total Landings (ww)	ACL (ww)	Closure Date
2008	439,176	503,000	
2009	601,446	503,000	11/7/2009
2010	534,095	373,072	10/28/2010
2011	508,489	342,091	6/18/2011
2012	307,921	314,734	3/1/2012
2013	457,821	410,157	7/1/2013

Table 2.3.2. Estimated commercial season length (i.e., days open) under three management options. The table represents the number of fishing necessary to harvest the Annual Catch Target (ACT) as specified in Action 1. The color scale ranges from yellow (i.e., fewest days) to green (i.e., most days).

Trip Limit (lbs ww)	ACT Option 1	ACT Option 2			ACT Option 3		
	no buffer	no buffer	15% buffer	20% buffer	no buffer	15% buffer	20% buffer
2000 (status quo)	82	92	79	75	92	79	75
1500	93	109	89	84	109	89	84
1000	127	148	122	113	148	122	113
750	162	189	156	145	189	156	145
500	240	273	231	216	273	231	216

CHAPTER 3. AFFECTED ENVIRONMENT

3.1 Description of the Physical Environment

The Gulf has a total area of approximately 600,000 square miles (1.5 million km²), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel (Figure 3.1.1). Oceanographic conditions are affected by the Loop Current, discharge of freshwater into the northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf. The Gulf includes both temperate and tropical waters (McEachran and Fechhelm 2005). Mean annual sea surface temperatures ranged from 73 through 83° F (23-28° C) including bays and bayous (Figure 3.1.1) between 1982 and 2009, according to satellite-derived measurements (NODC 2012: <http://accession.nodc.noaa.gov/0072888>). In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

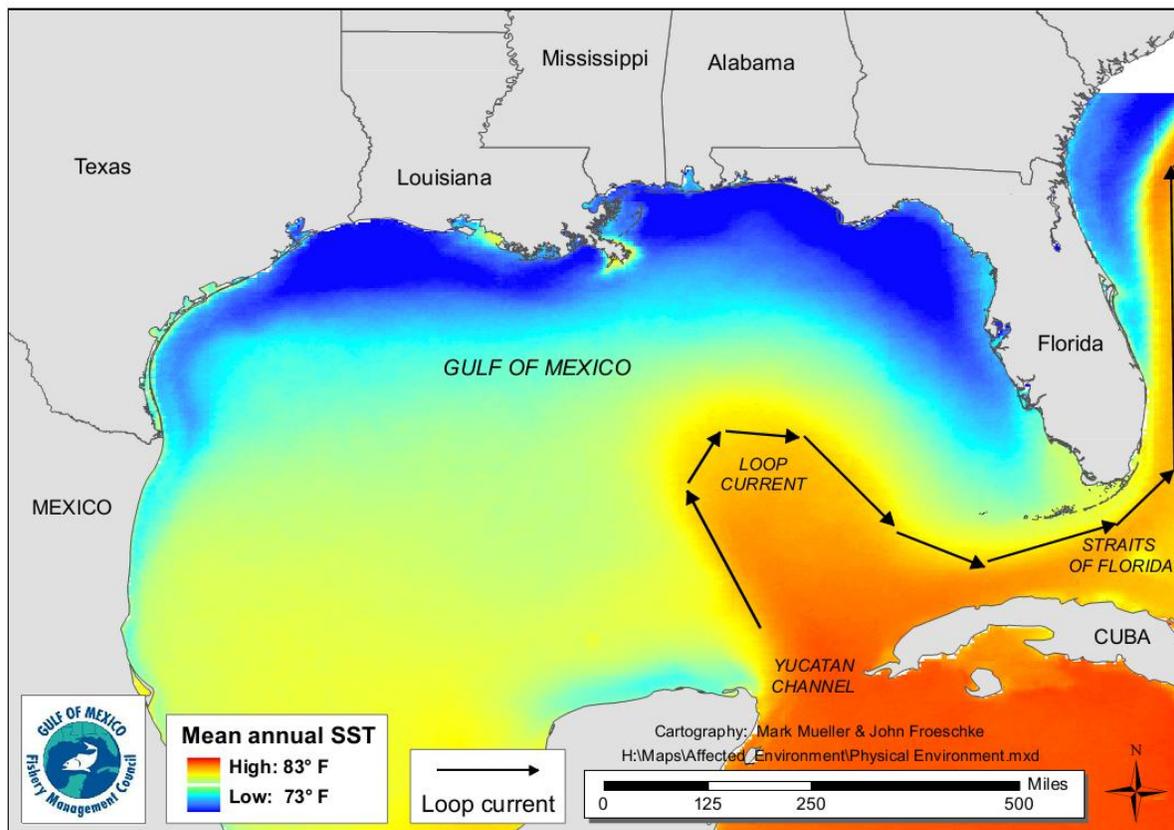


Figure 3.1.1. Mean annual sea surface temperature derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (<http://pathfinder.nodc.noaa.gov>).

The physical environment for Gulf reef fish is detailed in the Environmental Impact Statement for the Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004a) and the Generic ACL/AM Amendment (GMFMC 2011) which are hereby incorporated by reference.

Habitat Areas of Particular Concern (HAPC)

Generic Amendment 3 (GMFMC 2005) for addressing EFH, HAPC, and adverse effects of fishing in the following fishery management plans of the Gulf Reef Fish Resources, Red Drum, and Coastal Migratory Pelagics is hereby incorporated by reference.

Environmental Sites of Special Interest Relevant to Reef Fish, Red Drum, Coastal Migratory Pelagics, Spiny Lobster, Red Drum, and Coral and Coral Reefs (Figure 3.1.2)

Longline/Buoy Gear Area Closure – Permanent closure to use of these gears for reef fish harvest inshore of 20 fathoms (36.6 meters) off the Florida shelf and inshore of 50 fathoms (91.4 meters) for the remainder of the Gulf, and encompasses 72,300 square nautical miles (nm²) or 133,344 km² (GMFMC 1989). Bottom longline gear is prohibited inshore of 35 fathoms (54.3 meters) during the months of June through August in the eastern Gulf (GMFMC 2009), but is not depicted in Figure 3.2.1.

Madison-Swanson and Steamboat Lumps Marine Reserves - No-take marine reserves (total area is 219 nm² or 405 km²) sited based on gag spawning aggregation areas where all fishing is prohibited except surface trolling from May through October (GMFMC 1999; 2003).

The Edges Marine Reserve – All fishing is prohibited in this area (390 nm² or 1,338 km²) from January through April and possession of any fish species is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified. The provisions of this do not apply to highly migratory species (GMFMC 2008).

Tortugas North and South Marine Reserves – No-take marine reserves (185 nm²) cooperatively implemented by the state of Florida, National Ocean Service, the Gulf of Mexico Fishery Management Council (Council), and the National Park Service in Generic Amendment 2 Establishing the Tortugas Marine Reserves (GMFMC 2001).

Reef and bank areas designated as Habitat Areas of Particular Concern (HAPCs) in the northwestern Gulf include – East and West Flower Garden Banks, Stetson Bank, Sonnier Bank, MacNeil Bank, 29 Fathom, Rankin Bright Bank, Geyer Bank, McGrail Bank, Bouma Bank, Rezak Sidner Bank, Alderice Bank, and Jakkula Bank – pristine coral areas protected by preventing the use of some fishing gear that interacts with the bottom and prohibited use of anchors (totaling 263.2 nm² or 487.4 km²). Subsequently, three of these areas were established as marine sanctuaries (i.e., East and West Flower Garden Banks and Stetson Bank). Bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots on coral reefs are prohibited in the East and West Flower Garden Banks, McGrail Bank, and on significant coral resources on Stetson Bank (GMFMC 2005). A weak link in the tickler chain of bottom trawls on all habitats throughout the EEZ is required. A weak link is defined as a length or section of the tickler chain that has a breaking strength less than the chain itself and is easily seen as such when visually inspected. An education program for the protection of coral reefs when using various fishing gears in coral reef areas for recreational and commercial fishermen was also developed.

Florida Middle Grounds HAPC - Pristine soft coral area (348 nm² or 644.5 km²) that is protected by prohibiting the following gear types: bottom longlines, trawls, dredges, pots and traps (GMFMC and SAFMC 1982).

Pulley Ridge HAPC - A portion of the HAPC (2,300 nm² or 4,259 km²) where deepwater hermatypic coral reefs are found is closed to anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots (GMFMC 2005).

Alabama Special Management Zone – For vessels operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, or a vessel with such a permit fishing for Gulf reef fish, fishing is limited to hook-and-line gear with no more than three hooks. Nonconforming gear is restricted to recreational bag limits, or for reef fish without a bag limit, to 5% by weight of all fish aboard (GMFMC 1993).

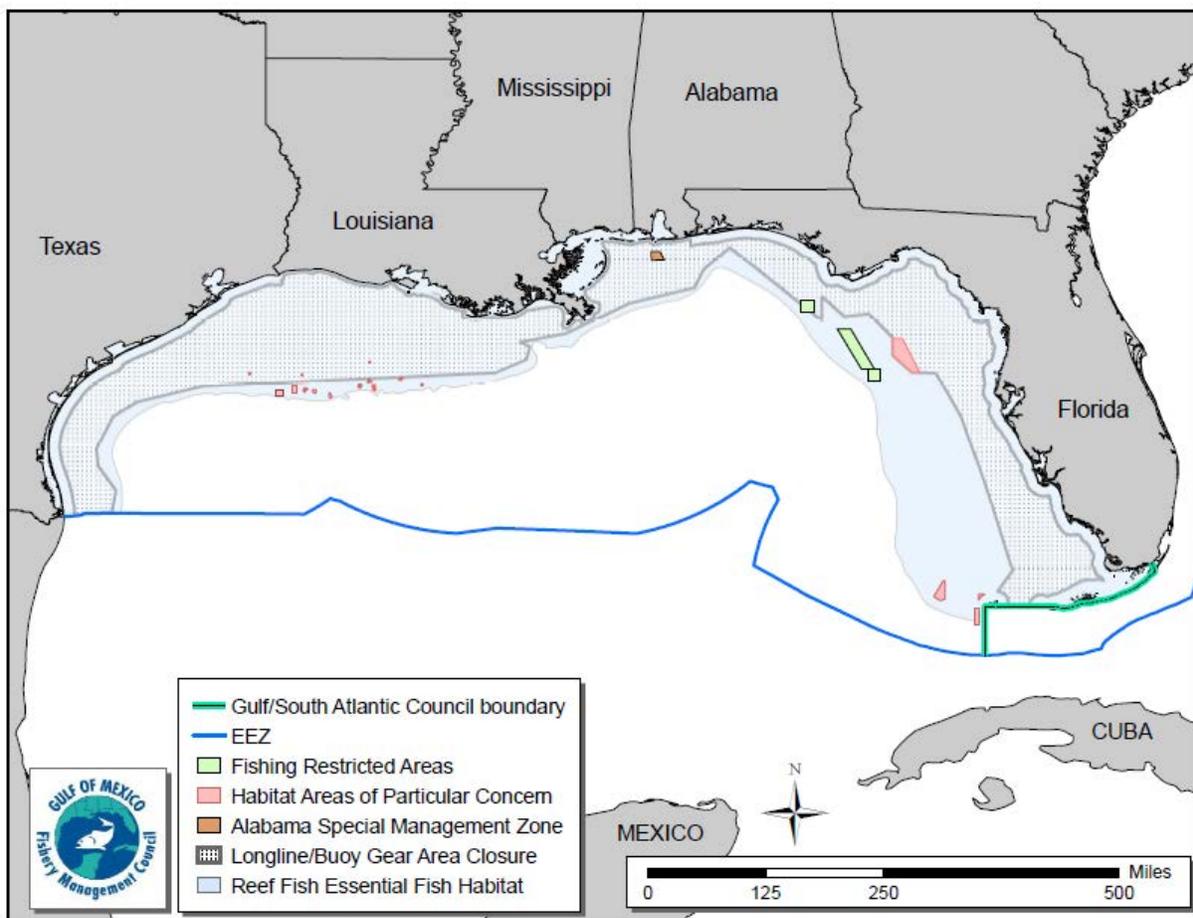


Figure 3.1.2. Map of most fishery management closed areas in the Gulf.

3.1.1 Deepwater Horizon

The Deepwater Horizon MC252 oil spill in 2010 affected at least one-third of the Gulf of Mexico area from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. The impacts of the Deepwater Horizon MC252 oil spill on the physical environment are

expected to be significant and may be long-term. Oil was dispersed on the surface, and because of the heavy use of dispersants (both at the surface and at the wellhead), oil was also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf of Mexico as were non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are persistent in the environment and can be transported hundreds of miles.

Surface or submerged oil during the Deepwater Horizon MC252 event could have restricted the normal processes of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column, thus affecting the long-standing hypoxic zone located west of the Mississippi River on the Louisiana continental shelf. In addition, microbes in the water that break down oil and dispersant also consume oxygen, which could lead to further oxygen depletion. Zooplankton that feed on algae could also be negatively impacted, thus allowing more of the hypoxia-fueling algae to grow.

3.2 Description of the Biological Environment

Greater Amberjack Life History and Biology

Recent studies conducted in the South Atlantic have consistently estimated that greater amberjack peak spawning occurs in April and May (Sedberry et al. 2006; Harris et al. 2007); whereas, studies conducted in the Gulf of Mexico have consistently estimated that peak spawning occurs a month earlier during March and April (Wells and Rooker 2002; Murie and Parkyn 2008).

Early studies on greater amberjack conducted in south Florida indicated that maximum gonad development occurred in the spring months (Burch 1979). Studies in the 1990s on greater amberjack in the Gulf of Mexico estimated the spawning season off Louisiana peaked in April-June based on increased gonad weight (Beasley 1993) and in May and June by Thompson et al. (1991). Wells and Rooker (2002) conducted studies in the northwestern Gulf of Mexico on larval and juvenile fish associated with floating *Sargassum* spp. Based on the size and season larvae and juvenile greater amberjack were captured, peak spawning season occurred in March and April.

Sedberry et al. (2006) documented greater amberjack spawning in the South Atlantic on both the middle and outer shelf as well as on upper-slope reefs from 49 - 709 ft (15 - 216 m) depth, but spawning females were found at deeper depths from 148 - 400 ft (45 - 122 m). They collected spawning females from January to June, and estimated peak spawning occurred in April and May. Harris et al. (2007) completed a fishery-dependent and fishery-independent study on greater amberjack reproductive biology in the southeastern U.S. Atlantic from 2000 - 2004. Greater amberjack in spawning condition were captured from North Carolina to the Florida Keys; however, spawning was concentrated in areas off south Florida and the Florida Keys. Harris et al. (2007) documented evidence of spawning from January - June with peak spawning during April and May. Female greater amberjack were significantly larger than males (Harris 2004; Harris et al. 2007). For males, the size at which 50% of individuals were mature was 25

inches fork length (FL) (644 mm FL) and for females was 29 inches FL (733 mm FL). They estimated a spawning season of approximately 73 days off south Florida, with a spawning period of 5 days, estimating that an individual female could spawn as frequently as 14 times during the season. Female fecundity increased with size, but was essentially constant throughout the spawning season. Greater amberjack are extremely fecund releasing 18 to 59 million eggs per female in a single spawning season (Harris et al. 2007).

Murie and Parkyn (2008) completed a recent study on reproductive biology of greater amberjack throughout the Gulf of Mexico using fishery-dependent as well as fishery-independent data from 1989 - 2008. They also found females were significantly larger than males but that peak spawning occurred during March and April, and by May, they documented low gonad weights indicating spawning was ending. For females, 50% of individuals were mature at 35 inches FL (900 mm FL), larger than what Harris et al. (2007) documented off south Florida.

It was suggested in the Harris et al. (2007) study that there are known spawning aggregations of greater amberjack targeted by fishers in the South Atlantic, but no evidence of this was presented. Observations by SCUBA divers in Belize documented greater amberjack in pair courtship when they were in a school of approximately 120 fish (Graham and Castellanos 2005). However, no aggregation or indication of spawning aggregations was discussed by the Murie and Parkyn (2008) Gulf of Mexico study or other earlier Gulf of Mexico studies.

After spawning, eggs and larvae of greater amberjack are pelagic. Smaller juvenile greater amberjack less than 1 inch standard length (SL) (20 mm SL) were found associated with pelagic *Sargassum* spp. mats (Bortone et al. 1977; Wells and Rooker 2004). Juveniles then shift to demersal habitats (5 - 6 months), where they congregate around reefs, rocky outcrops, and wrecks (GMFMC 2004a). Since greater amberjack are only seasonally abundant in certain parts of their range, they likely utilize a variety of habitats and/or areas each year. Greater amberjack have been documented on artificial structures as well as natural reefs (Ingram and Patterson 2001). Greater amberjack in the Gulf of Mexico have been reported to live as long as 15 years and commonly reach sizes greater than 40 inches FL (1,016 mm FL) (Manooch and Potts 1997).

Status of the Greater Amberjack Stock

See Section 1.1 under the Introduction.

General Information on Reef Fish Species

The National Ocean Service (NOS) of NOAA collaborated with NOAA Fisheries Service and the Council to develop distributions of reef fish (and other species) in the Gulf of Mexico (SEA 1998). The NOS staff obtained fishery-independent data sets for the Gulf of Mexico, including Southeast Area Monitoring and Assessment Program (SEAMAP), and state trawl surveys. Data from the Estuarine Living Marine Resources (ELMR) Program contain information on the relative abundance of specific species (highly abundant, abundant, common, rare, not found, and no data) for a series of estuaries, by five life stages (adult, spawning, egg, larvae, and juvenile) and month for five seasonal salinity zones (0-0.5, 0.5-5, 5-15, 15-25, and >25 parts per million). The NOS staff analyzed these data to determine relative abundance of the mapped species by

estuary, salinity zone, and month. For some species not in the ELMR database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

In general, reef fish are widely distributed in the Gulf of Mexico, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages are summarized in Table 3.2.1 and can be found in more detail in GMFMC (2004a). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper where larvae are found around submerged aquatic vegetation (SAV). Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf less than 328 ft (100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. Juvenile red snapper are common on mud bottoms in the northern Gulf of Mexico, particularly off Texas through Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981). More detail on hard bottom substrate and coral can be found in the fishery management plan (FMP) for Corals and Coral Reefs (GMFMC and SAFMC 1982).

Table 3.2.1. Summary of habitat use by life history stage for species in the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico. This table was adapted from Table 3.2.7 in the final draft of the EIS from the Council’s EFH generic amendment (GMFMC 2004a) and consolidated in this amendment.

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red snapper	Pelagic	Pelagic	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms
Queen snapper	Pelagic	Pelagic	Unknown	Unknown	Hard bottoms	
Mutton snapper	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
Blackfin snapper	Pelagic		Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Cubera snapper	Pelagic		Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray snapper	Pelagic, Reefs	Pelagic, Reefs	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Lane snapper	Pelagic		Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk snapper	Unknown	Unknown	Unknown	Unknown	Shelf edge	
Yellowtail snapper	Pelagic		Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	
Wenchman	Pelagic	Pelagic			Hard bottoms, Shelf edge/slope	Shelf edge/slope

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Vermilion snapper	Pelagic		Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
Gray triggerfish	Reefs	Drift algae, <i>Sargassum</i>	Drift algae, <i>Sargassum</i>	Drift algae, Reefs, <i>Sargassum</i>	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater amberjack	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser amberjack			Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco jack	Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Banded rudderfish		Pelagic	Drift algae	Drift algae	Pelagic	Pelagic
Hogfish			SAV	SAV	Hard bottoms, Reefs	Reefs
Blueline tilefish	Pelagic	Pelagic			Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
Tilefish (golden)	Pelagic, Shelf edge/slope	Pelagic	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Goldface tilefish	Unknown					
Speckled hind	Pelagic	Pelagic			Hard bottoms, Reefs	Shelf edge/slope
Yellowedge grouper	Pelagic	Pelagic		Hard bottoms	Hard bottoms	
Goliath grouper	Pelagic	Pelagic	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red grouper	Pelagic	Pelagic	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	
Warsaw grouper	Pelagic	Pelagic		Reefs	Hard bottoms, Shelf edge/slope	
Snowy grouper	Pelagic	Pelagic	Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
Black grouper	Pelagic	Pelagic	SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth grouper	Pelagic	Pelagic	Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic	SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic	Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin grouper			SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

Status of Reef Fish Stocks

The Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) currently encompasses 31 species (Table 3.2.2). Eleven other species were removed from the Reef Fish FMP in 2012 by the Council in their Generic ACL/AM Amendment. Stock assessments and stock assessment reviews can be found on the Council (www.gulfcouncil.org) and SEDAR (<http://www.sefsc.noaa.gov/sedar>) websites and have been conducted for 13 species:

- red snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013)
- vermilion snapper (Porch and Cass-Calay 2001; SEDAR 9 2006a; SEDAR 9 Update 2011b; SEDAR Update 2014)
- yellowtail snapper (Muller et al. 2003; SEDAR 3 2003)
- mutton snapper (SEDAR 15A 2008)
- gray triggerfish (Valle et al. 2001; SEDAR 9 2006b; SEDAR 9 Update 2011c and 2014)
- greater amberjack (Turner et al. 2000; SEDAR 9 2006c; SEDAR 9 Update 2010, SEDAR 33 2014)
- hogfish (Ault et al. 2003; SEDAR 6 2004a, SEDAR 37 2013)
- red grouper (NMFS 2002; SEDAR 12 2007; SEDAR 12 Update 2009)
- gag grouper (Turner et al. 2001; SEDAR 10 2006; SEDAR 10 Update 2009, SEDAR 33 2014)
- black grouper (SEDAR 19 2010)
- yellowedge grouper (Cass-Calay and Bahnick 2002; SEDAR 22 2011a)
- tilefish (golden) (SEDAR 22 2011b)
- goliath grouper (Porch et al. 2003; SEDAR 6 2004b; SEDAR 23 2011)

Utilizing the most current stock assessment information, the Gulf of Mexico fourth quarter report of the 2014 Status of U.S. Fisheries (<http://www.nmfs.noaa.gov/sfa/statusoffisheries/2011/fourth/Q4%202011%20FSSI%20and%20nonFSSI%20StockStatus.pdf>) classifies the 13 species as follows:

Overfished and Experiencing Overfishing:

- greater amberjack
- gray triggerfish

Not Overfished or Experiencing Overfishing:

- red snapper – most current stock assessment (SEDAR 31 2013)
- yellowtail snapper
- yellowedge grouper
- vermilion snapper
- black grouper
- red grouper
- gag grouper
- mutton snapper– not reflected in the 2011 Status of the Stocks
- hogfish – may be experiencing growth overfishing

Unknown:

- goliath grouper – benchmarks do not reflect appropriate stock dynamics
- snowy grouper
- speckled hind
- warsaw grouper
- yellowfin grouper
- SCAMP
- yellowmouth grouper
- cubera snapper
- gray snapper
- lane snapper
- queen snapper
- blackfin snapper
- silk snapper
- wenchman
- jacks complex (lesser amberjack, banded rudderfish)
- tilefish (golden) – insufficient data

Table 3.2.2. Species of the reef fish FMP grouped by family.

**Note: Goliath grouper is a protected grouper.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
gray triggerfish	<i>Balistes capriscus</i>	Overfished, overfishing
Family Carangidae – Jacks		
greater amberjack	<i>Seriola dumerili</i>	Overfished, overfishing
lesser amberjack	<i>Seriola fasciata</i>	Unknown
almaco jack	<i>Seriola rivoliana</i>	Unknown
banded rudderfish	<i>Seriola zonata</i>	Unknown
Family Labridae - Wrasses		
Hogfish	<i>Lachnolaimus maximus</i>	Not overfished, no overfishing
Family Malacanthidae - Tilefishes		
Tilefish (golden)	<i>Lopholatilus chamaeleonticeps</i>	Unknown
blueline tilefish	<i>Caulolatilus microps</i>	Unknown
goldface tilefish	<i>Caulolatilus chrysops</i>	Unknown
Family Serranidae - Groupers		
Gag	<i>Mycteroperca microlepis</i>	Overfished, overfishing
red grouper	<i>Epinephelus morio</i>	Not overfished, no overfishing
Scamp	<i>Mycteroperca phenax</i>	Unknown
black grouper	<i>Mycteroperca bonaci</i>	Not overfished, no overfishing
yellowedge grouper	<i>Epinephelus flavolimbatus</i>	Not overfished, no overfishing
snowy grouper	<i>Epinephelus niveatus</i>	Unknown
speckled hind	<i>Epinephelus drummondhayi</i>	Unknown
yellowmouth grouper	<i>Mycteroperca interstitialis</i>	Unknown
yellowfin grouper	<i>Mycteroperca venenosa</i>	Unknown
warsaw grouper	<i>Epinephelus nigritus</i>	Unknown
**goliath grouper	<i>Epinephelus itajara</i>	Unknown, not overfishing
Family Lutjanidae - Snappers		
queen snapper	<i>Etelis oculatus</i>	Unknown
mutton snapper	<i>Lutjanus analis</i>	Unknown
blackfin snapper	<i>Lutjanus buccanella</i>	Unknown
red snapper	<i>Lutjanus campechanus</i>	Overfished, no overfishing
cubera snapper	<i>Lutjanus cyanopterus</i>	Unknown
gray snapper	<i>Lutjanus griseus</i>	Unknown
lane snapper	<i>Lutjanus synagris</i>	Unknown
silk snapper	<i>Lutjanus vivanus</i>	Unknown
yellowtail snapper	<i>Ocyurus chrysurus</i>	Not overfished, no overfishing
vermilion snapper	<i>Rhomboplites aurorubens</i>	Not overfished, no overfishing
Wenchman	<i>Pristipomoides aquilonaris</i>	Unknown

Protected Species

There are 28 different species of marine mammals that may occur in the Gulf of Mexico. All 28 species are protected under the Marine Mammal Protection Act (MMPA) and six are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback and North Atlantic right whales). Other species protected under the ESA occurring in the Gulf of Mexico include five sea turtle species (Kemp's Ridley, loggerhead, green, leatherback, and hawksbill); two fish species (Gulf sturgeon and smalltooth sawfish), and two coral species (elkhorn coral and staghorn coral). Information on the distribution, biology, and abundance of these protected species in the Gulf of Mexico is included in final EIS to the Gulf Council's Generic EFH Amendment (GMFMC 2004a) and the February 2005, October 2009, and September 2011 ESA biological opinions on the reef fish fishery (NMFS 2005; NMFS 2009; NMFS 2011). Marine Mammal Stock Assessment Reports and additional information are also available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/species/>.

The MMPA 2015 Proposed List of Fisheries (79 FR 14418) considers vertical line gear and longline gear as Category III gears. These gears are the dominant gear used in the Gulf of Mexico reef fish fishery - vertical line (90%) and longline (5.4%) gear. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. Dolphins are the only species documented as interacting with these fisheries. Bottlenose dolphins prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery. They are also a common predator around reef fish vessels, feeding on the discards.

All five species of sea turtles are adversely affected by the Gulf of Mexico reef fish fishery. Incidental captures are relatively infrequent, but occur in all commercial and recreational hook- and-line components of the reef fishery. Loggerhead sea turtles are by far the most frequently incidentally caught sea turtles. Captured sea turtles can be released alive or can be found dead upon retrieval of the gear as a result of forced submergence. Sea turtles released alive may later succumb to injuries sustained at the time of capture or from exacerbated trauma from fishing hooks or lines that were ingested, entangling, or otherwise still attached when they were released. Sea turtle release gear and handling protocols are required in the commercial and for-hire reef fish fisheries to minimize post-release mortality.

NMFS has conducted specific analyses (Section 7 consultations) to evaluate potential effects from the Gulf reef fish fishery on species and critical habitats protected under the ESA. On September 30, 2011, the Protected Resources Division released a biological opinion (Opinion), which concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (NMFS 2011a). The Opinion also concluded that other ESA-listed species are not likely to be adversely affected by the FMP. An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. The Gulf of Mexico Fishery Management Council

addressed further measures to reduce take in the reef fish fishery's longline component in Amendment 31 (GMFMC 2009).

Subsequent to the completion of the biological opinion, NMFS published final rules listing 20 new coral species (September 10, 2014), and designating critical habitat for the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles (July 10, 2014). NMFS addressed these changes in a series of consultation memoranda. In a consultation memorandum dated October 7, 2014, NMFS assessed the continued operation of the Gulf reef fish fishery's potential impact on the newly-listed coral species occurring in the Gulf (3 species of *Orbicella* and *Mycetophyllia ferox*) and concluded the fishery is not likely to adversely affect any of the protected coral species. Similarly, in a consultation memorandum dated September 16, 2014, NMFS assessed the continued authorization of South Atlantic and Gulf of Mexico fisheries' potential impacts on loggerhead critical habitat and concluded the Gulf reef fish fishery is not likely to adversely affect the newly designated critical habitat.

Smalltooth sawfish also interact with the Gulf of Mexico reef fish fishery, but to a much lesser extent. Smalltooth sawfish primarily occur in the Gulf of Mexico off peninsular Florida. Incidental captures in the commercial and recreational hook-and-line components of the reef fish fishery are rare events, with only eight smalltooth sawfish estimated to be incidentally caught every three years, and none are expected to result in mortality (NMFS 2011). Fishermen in this fishery are required to follow smalltooth sawfish safe handling guidelines. The long, toothed rostrum of the smalltooth sawfish causes this species to be particularly vulnerable to entanglement in fishing gear.

3.3 Description of the Economic Environment

A description of the greater amberjack stock is provided in Section 1.1. Additional details on the fishery for greater amberjack are provided in Amendment 30A to the Reef Fish FMP (GMFMC 2008) and Regulatory Framework Action to the Reef Fish FMP (Greater Amberjack Recreational Fishing Closure) (GMFMC 2011), and are incorporated herein by reference. The following section contains updated information on the economic environment of the greater amberjack fishery.

3.3.1 Economic Description of the Commercial Sector

The major source of data summarized in this description is the Federal Logbook System (FLS), supplemented by average prices calculated from the NMFS Accumulated Landings System (ALS) and price indices taken from the Bureau of Labor Statistics. Inflation adjusted revenues and prices are reported in real 2013 dollars. Landings are expressed in gutted weight to match the method for collecting ex-vessel price information. The gutted to whole weight conversion rate is 1.04.

Landings, Value, and Effort

The number of vessels that landed greater amberjack each year decreased rapidly from 2009 through 2012 and then increased modestly in 2013 (Table 3.3.1.1). The number of trips on which greater amberjack was landed, as well as landings of greater amberjack and landings of other species jointly caught with greater amberjack, exhibited similar trends during this time period. The number of non-greater amberjack trips taken by vessels that landed at least one pound of greater amberjack during the year, as well as landings on those trips, fluctuated from 2009 through 2013. On average (2009 through 2013), vessels that landed greater amberjack took 4.6 times as many non-greater amberjack trips as greater amberjack trips. Greater amberjack landings for those vessels accounted for only 4.7% of all species landings from all trips.

Table 3.3.1.1. Number of vessels, number of trips and landings by year.

Year	Number of vessels that caught GOM greater amberjack (> 0 lbs)	Number of trips that caught GOM greater amberjack	GOM greater amberjack landings (lbs gutted wt)	Other species' landings jointly caught with GOM greater amberjack (lbs gutted wt)	Number of GOM trips that only caught other species	Other species' landings on GOM trips without greater amberjack (lbs gutted wt)
2009	320	1,148	477,778	3,064,904	3,909	7,975,844
2010	222	634	472,090	1,617,077	2,379	5,484,925
2011	191	524	445,027	1,155,942	3,030	6,686,227
2012	142	314	270,223	692,299	2,458	5,698,505
2013	179	489	346,442	1,146,752	2,593	6,984,252
Average	211	622	402,312	1,535,395	2,874	6,565,951

Source: NMFS SEFSC Coastal Fisheries Logbook.

Ex-vessel revenues by year for greater amberjack and non-greater amberjack species are presented in Table 3.3.1.2. On average (2009 through 2013), greater amberjack revenues accounted for about 1.9% of total revenues earned by vessels that landed at least one pound of greater amberjack. On trips in which greater amberjack was harvested (2009 through 2013), species other than greater amberjack accounted for the majority of revenues on average. Total dockside revenue for vessels that landed greater amberjack fluctuated from 2009 through 2013 but did not change that much overall, whereas average total dockside revenue per vessel increased steadily.

Table 3.3.1.2. Number of vessels and ex-vessel revenues by year (2013 dollars)*.

Year	Number of vessels that caught GOM greater amberjack (> 0 lbs)	Dockside revenue from GOM greater amberjack only	Dockside revenue from 'other species' jointly caught with GOM greater amberjack only	Dockside revenue from 'other species' caught on GOM trips without greater amberjack	Total dockside revenue	Average total dockside revenue per vessel
2009	320	\$599,315	\$8,680,032	\$22,974,684	\$32,254,031	\$100,794
2010	222	\$545,065	\$5,121,735	\$17,469,806	\$23,136,606	\$104,219
2011	191	\$559,961	\$3,599,690	\$20,876,537	\$25,036,187	\$131,080
2012	142	\$337,302	\$2,141,370	\$18,128,951	\$20,607,623	\$145,124
2013	179	\$510,558	\$4,128,833	\$25,410,189	\$30,049,580	\$167,875
Average	211	\$510,440	\$4,734,332	\$20,972,033	\$26,216,806	\$129,818

Source: NMFS SEFSC Coastal Fisheries Logbook for landings and NMFS Accumulated Landings System for prices.

*Revenues converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).

Given the sole commercial management measure being considered in this framework action is a trip limit, it's useful to analyze the amount of recent effort and the number of vessels that would have been non-compliant had each proposed trip limit option been in place historically. This provides a sense of the proportion of total effort and vessels likely to be affected by the commercial trip limits going forward. Table 3.3.1.3 presents the average number of trips with landings in excess of each trip limit option and average number of vessels that took such trips (2009-2013)¹. About 14% of greater amberjack trips on average had landings in excess of the 1500-lb trip limit, whereas 28% of those trips had greater amberjack landings in excess of the 500-lb trip limit option from 2009 through 2013. Fifteen percent of greater amberjack vessels reported landings in excess of the 1500-lb trip limit option and 31% of greater amberjack vessels reported landings in excess of the 500-lb trip limit on average (2009-2013). Lower trip limits

¹ The status quo 2000-lb trip limit implemented in 2013 is excluded from this table since averaging across years with non-consistent trip limits could be misleading and since it does not provide additional information in terms of potential displaced effort. About 11% of GAJ vessels, however, did report trip-level landings in excess of the 2000-lb trip limit in 2013. These trips accounted for 8% of all GAJ trips taken in 2013. Anecdotal evidence suggests many fishermen misinterpreted the trip limit as being in gutted weight rather than whole weight. The data supports this as well, showing a large drop in non-compliant vessels and trips when gutted weight is substituted for whole weight (19 vessels to 8 vessels and 38 trips to 10 trips respectively). NMFS released a bulletin on July 29, 2014 that reminded commercial reef fish fishermen that the trip limit is in whole weight and provided the gutted weight conversion.

may reduce profits and the severity of such impacts will be based on the overall dependence a vessel has on greater amberjack and the vessel's ability to substitute other species revenue. On average (2009-2013), there were 3 or fewer vessels that both derived the majority of their revenues from greater amberjack and took a trip with landings in excess of each trip limit option. It seems likely that these vessels would be the most severely impacted by a reduction in trip limits, though it is not possible to quantify the magnitude of such impacts given the uncertainty of future revenues, costs and behavioral responses of the fishermen. If trip limits successfully extend the greater amberjack season, some vessels, especially those that do not experience large reductions in their trip-level landings, may benefit from the opportunity to take additional trips. Other vessels may experience a decline in trip-level revenues to the point where it is no longer profitable to fish for greater amberjack.

Table 3.3.1.3. Number of trips with landings in excess of each trip limit option and number of vessels that took such trips (2009-2013 Average).

	Trip Limit (lbs, ww)		
	500	1000	1500
Number of trips with greater amberjack landings in excess of each trip limit option (percent of total greater amberjack trips)	176 (28%)	115 (18%)	87 (14%)
Number of vessels that took a trip with greater amberjack landings in excess of each trip limit option (percent of total greater amberjack vessels)	66 (31%)	41 (20%)	32 (15%)

Source: NMFS SEFSC Coastal Fisheries Logbook.

Imports

Imports of seafood products compete in the domestic seafood market and have in fact been dominant in many segments of the seafood market. They help determine the price for domestic seafood products and tend to set the price in market segments where they dominate. Seafood imports have downstream effects on the local fish market. At the harvest level for reef fish in general and greater amberjack in particular, imports affect the returns to fishermen through the ex-vessel prices they receive for their landings. As substitutes to domestic production of reef fish, including greater amberjack, imports tend to cushion the adverse economic effects on consumers resulting from a reduction in domestic landings. The following describes the imports of fish products which directly compete with domestic harvest of reef fish, including greater amberjack.

Imports² of fresh snapper ranged from 21.5 million pounds product weight (pw) in 2009 to 23.2 million pounds pw in 2013 with minor fluctuations in between. Total revenue from fresh snapper imports increased steadily from \$53.6 million (2013 dollars³) in 2009 to a five-year high of \$67.9 million in 2013. Imports of fresh snappers primarily originated in Mexico, Central America, or South America, and entered the U.S. through the port of Miami. Imports of fresh snapper were highest on average (2009 through 2013) during the months March through May.

Imports of frozen snapper were substantially less than imports of fresh snapper from 2009 through 2013. The annual value of frozen snapper imports ranged from \$17.2 million (2013 dollars) to \$26.7 million during the time period, with a peak in 2011. Imports of frozen snapper primarily originated in South America (especially Brazil), Indonesia, and Mexico. The majority of frozen snapper imports entered the U.S. through the ports of Miami and New York. Imports of frozen snappers tended to be lowest during March, April and May when fresh snapper imports were the highest.

Imports of fresh grouper ranged from 8.3 million pounds pw worth \$23.7 million (2013 dollars) in 2009 to 10 million pounds pw worth \$36.2 million in 2013 with minor fluctuations in between. The bulk of fresh grouper imports originated in Mexico and entered the U.S. through Miami. From 2009 through 2013 fresh grouper imports were lowest on average during the month of March and higher the rest of the year, with a peak in July.

Imports of frozen grouper were minimal and stable from 2009 through 2013, ranging from 1 million pounds pw worth \$2.1 million (2013 dollars) to 2 million pounds pw worth \$3.5 million. Frozen grouper imports generally originated in Mexico and to a lesser extent, Asia and entered the U.S. through Miami and Tampa. There was an inverse relationship in monthly landings between frozen and fresh groupers, with average imports being the highest in March for frozen grouper and lower during other months.

Business Activity

The commercial harvest and subsequent sales and consumption of fish generates business activity as fishermen expend funds to harvest the fish and consumers spend money on goods and services, such as greater amberjack purchased at a local fish market and served during restaurant visits. These expenditures spur additional business activity in the region(s) where the harvest and purchases are made, such as jobs in local fish markets, grocers, restaurants, and fishing supply establishments. In the absence of the availability of a given species for purchase, consumers would spend their money on substitute goods and services. As a result, the analysis presented below represents a distributional analysis only; that is, it only shows how economic effects may be distributed through regional markets and should not be interpreted to represent the impacts if these species are not available for harvest or purchase.

² NOAA Fisheries Service purchases fisheries trade data from the Foreign Trade Division of the U.S. Census Bureau. Data are available for download at <http://www.st.nmfs.noaa.gov/st1/trade/index.html>.

³ Converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).

Estimates of the U.S. average annual business activity associated with the commercial harvest of greater amberjack, and all species harvested by the vessels that harvested these greater amberjack, were derived using the model developed for and applied in NMFS (2011) and are provided in Table 3.3.1.4. This business activity is characterized as full-time equivalent jobs, income impacts (wages, salaries, and self-employed income), and output (sales) impacts (gross business sales). Income impacts should not be added to output (sales) impacts because this would result in double counting. It should be noted that the results provided should be interpreted with caution and demonstrate the limitations of these types of assessments. These results are based on average relationships developed through the analysis of many fishing operations that harvest many different species. Separate models to address individual species are not available. For example, the results provided here apply to a general reef fish category rather than just greater amberjack, and a harvester job is “generated” for approximately every \$44,000 in ex-vessel revenue. These results contrast with the information provided in Section 3.3.1. which shows an average of 211 harvesters (vessels) with recorded landings of greater amberjack.

Table 3.3.1.4. Average annual business activity (2009 through 2013) associated with the commercial harvest of greater amberjack and the harvest of all species by vessels that landed greater amberjack. All monetary estimates are in 2013 dollars.

Species	Average Ex-vessel Value (\$ thousands)	Total Jobs	Harvester Jobs	Output (Sales) Impacts (\$ thousands)	Income Impacts (\$ thousands)
Greater amberjack	\$510	89	12	\$6,721	\$2,864
All species on all trips made by vessels that landed greater than one pound of greater amberjack in a year.	\$26,217	4,566	596	\$345,184	\$147,114

3.3.2 Economic Description of the Recreational Sector

The Gulf recreational sector is comprised of the private and for-hire modes. The private mode includes anglers fishing from shore (all land-based structures) and private/rental boats. The for-hire mode is composed of charter boats and headboats (also called partyboats). Charter boats generally carry fewer passengers and charge a fee on an entire vessel basis, whereas headboats carry more passengers and payment is per person. The type of service, from a vessel- or passenger-size perspective, affects the flexibility to search different fishing locations during the course of a trip and target different species since larger concentrations of fish are required to satisfy larger groups of anglers.

Landings

The recreational sector has been allocated 73% of the greater amberjack stock ACL each year since the implementation of Amendment 30A in August 2008 (GMFMC 2008). Recreational harvests of greater amberjack declined from 2009 through 2011 and then increased from 2011 to a five-year high in 2013 (Table 3.3.2.1).

Table 3.3.2.1. Recreational landings (lbs ww) and percent distribution of greater amberjack and reef fish, 2009 - 2013.

	Greater Amberjack (pounds ww)	Reef Fish (pounds ww)	Percent of Reef Fish*
2009	1,480,306	12,866,823	11.5%
2010	1,225,222	8,472,155	14.5%
2011	949,999	9,938,318	9.6%
2012	1,238,719	13,099,518	9.5%
2013	1,616,629	20,379,130	7.9%
Average	1,302,175	12,951,189	10.1%

Source: SEFSC MRIP ACL datasets (Aug 2014).

* Species managed under the Reef Fish FMP; see <http://www.gulfcouncil.org/>.

From 2009 through 2013, recreational landings of greater amberjack in west Florida were consistently higher than landings in any other state, accounting for over 75% of total Gulf-wide landings on average (Table 3.3.2. 2). Yearly landings fluctuated for all states.

Table 3.3.2.2. Recreational landings (lbs ww) and percent distribution of greater amberjack across all modes, by state, 2009 - 2013.

	AL	AL/FLW*	FLW	LA	LA/MS**	MS	TX
	Landings (pounds ww)						
2009	43,661	57,566	950,852	359,595	27,246	20,344	21,043
2010	85,833	33,860	1,002,601	78,238	2,485	0	22,205
2011	64,394	39,201	810,525	9,253	7,986	0	18,640
2012	58,005	66,054	924,292	151,875	10,390	0	28,103
2013	216,865	0	1,172,107	178,308	7,262	12,358	29,729
Avg	93,752	39,336	972,075	155,454	11,074	6,540	23,944
	Percent Distributions						
2009	2.9%	3.9%	64.2%	24.3%	1.8%	1.4%	1.4%
2010	7.0%	2.8%	81.8%	6.4%	0.2%	0.0%	1.8%
2011	6.8%	4.1%	85.3%	1.0%	0.8%	0.0%	2.0%
2012	4.7%	5.3%	74.6%	12.3%	0.8%	0.0%	2.3%
2013	13.4%	0.0%	72.5%	11.0%	0.4%	0.8%	1.8%
Avg	7.0%	3.2%	75.7%	11.0%	0.8%	0.4%	1.9%

Source: SEFSC MRIP ACL datasets (Aug 2014).

* Headboat landings are estimated jointly for west Florida and Alabama through 2012.

** Heaboat landings data from Louisiana and Mississippi are combined for confidentiality purposes.

The majority of recreational greater amberjack landings (93.9%) from 2009 through 2013 were reported by the private and charter vessel modes (Table 3.3.2.3). During this time period, average landings were about 15% higher for private vessels than charter vessels. Charter landings were, however, almost double those of the private mode in 2011. Headboat landings were consistently much lower than both charter and private modes, accounting for only 6.1% on average (2009 through 2013). There were no landings reported from shore for greater amberjack.

Table 3.3.2.3. Recreational landings (lbs ww) and percent distribution of greater amberjack across all states, by mode, 2009 - 2013.

	Landings (pounds ww)				Percent Distribution			
	Charter boat	Headboat	Private	Shore	Charter boat	Headboat	Private	Shore
2009	653,160	103,191	723,955	0	44.1%	7.0%	48.9%	0.0%
2010	460,740	53,203	711,279	0	37.6%	4.3%	58.1%	0.0%
2011	583,813	62,835	303,351	0	61.5%	6.6%	31.9%	0.0%
2012	546,086	99,680	592,952	0	44.1%	8.0%	47.9%	0.0%
2013	604,626	73,246	938,757	0	37.4%	4.5%	58.1%	0.0%
Avg	569,685	78,431	654,059	0	44.9%	6.1%	49.0%	0.0%

Source: SEFSC MRIP ACL datasets (Aug 2014).

As seen in Table 3.3.2.4, over the period 2009-2013, greater amberjack recreational landings generally started low at the beginning of each year, peaked in May through August, then tapered back down till the end of the year. Prior to the implementation of the June through July seasonal closure beginning in 2011, the majority of landings occurred during May through August. Following the implementation of the seasonal closure in 2011, the distribution of monthly landings changed somewhat, with a higher average percentage of annual landings occurring in March, April, September, and October.

Table 3.3.2.4. Recreational landings (lbs ww) and percent distribution of greater amberjack, by month, 2009-2013.

	Jan	Feb	Mar	Apr	May	Jun*	Jul*	Aug	Sep	Oct	Nov	Dec
Landings (pounds ww)												
2009	95,126	85,920	40,854	39,536	339,464	328,513	230,162	230,162	44,466	45,948	77	79
2010	36,884	33,314	139,968	135,452	268,592	259,928	44,175	44,175	96,715	99,938	32,123	33,194
2011	32,421	29,283	52,927	51,220	196,240	-	-	247,109	144,619	149,440	22,987	23,753
2012	63,811	59,694	197,159	190,799	236,256	-	-	165,023	97,960	101,225	62,356	64,435
2013	15,284	13,805	199,921	193,472	293,793	-	-	404,001	225,802	233,328	18,306	18,916
Avg	48,705	44,403	126,166	122,096	266,869	NA**	NA**	218,094	121,912	125,976	27,170	28,075
Percent Distribution												
2009	6.4%	5.8%	2.8%	2.7%	22.9%	22.2%	15.5%	15.5%	3.0%	3.1%	0.0%	0.0%
2010	3.0%	2.7%	11.4%	11.1%	21.9%	21.2%	3.6%	3.6%	7.9%	8.2%	2.6%	2.7%
2011	3.4%	3.1%	5.6%	5.4%	20.7%	-	-	26.0%	15.2%	15.7%	2.4%	2.5%
2012	5.2%	4.8%	15.9%	15.4%	19.1%	-	-	13.3%	7.9%	8.2%	5.0%	5.2%
2013	0.9%	0.9%	12.4%	12.0%	18.2%	-	-	25.0%	14.0%	14.4%	1.1%	1.2%
Avg	3.8%	3.5%	9.6%	9.3%	20.6%	NA**	NA**	16.7%	9.6%	9.9%	2.2%	2.3%

Source: SEFSC MRIP ACL datasets (Aug 2014).

Note: Landings in each wave are assumed uniformly distributed across open months.

*A June 1st through July 31 closure was implemented in 2011.

** Averages for June and July are not applicable due to the closures. The average percent distribution row will not sum to 100% as a result.

Angler Effort

Recreational effort derived from the Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

- Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or the second primary target for the trip. The species did not have to be caught.

- Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
- Total recreational trips - The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

A target trip may be considered an angler’s revealed preference for a certain species, and thus may carry more relevant information when assessing the economic effects of regulations on the subject species than the other two measures of recreational effort. Given the subject nature of this amendment, the following discussion focuses on target trips for greater amberjack.

On average, greater amberjack target trips⁴ accounted for 3.3% of target reef fish trips and target reef fish trips accounted for 5.6% of total angler trips for the years 2009 through 2013 in the Gulf (Table 3.3.2.5). This excludes headboat trips and trips from Texas, for which target data is unavailable. Both greater amberjack and reef fish target trips were at five-year highs in 2013 following a period of reduced effort starting in 2010. The reduction in effort in 2010 could be due in part to the Deepwater Horizon oil spill and associated closures (see Section 3.2.1). There is a subtle downward trend from 2009 through 2013 in the percent of reef fish target trips made up of greater amberjack target trips.

Table 3.3.2.5. Target trips for greater amberjack and reef fish, 2009 -2013.

	Greater Amberjack Target Trips*		Reef Fish Target Trips*	
	Trips	Percent ¹	Trips	Percent ²
2009	48,972	3.6%	1,351,092	6.0%
2010	31,195	3.4%	906,060	4.4%
2011	36,208	3.8%	958,092	4.3%
2012	35,222	3.2%	1,112,276	4.9%
2013	50,719	2.5%	2,053,975	8.2%
Average	40,463	3.3%	1,276,299	5.6%

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

* Target data for headboats and the state of Texas are unavailable and are not included.

¹Percent of reef fish target trips. ²Percent of total angler trips.

On average, the highest number of estimated greater amberjack target trips for the Gulf occurred in Florida (81.3%), followed by Alabama (10.7%) and Louisiana (7.7%) (Table 3.3.2.6). Mississippi recorded greater amberjack target effort in 2009, but not in subsequent years. The number of target trips in Florida decreased substantially in 2010, increased gradually from 2010

⁴ Monroe County, FL is excluded from all target effort metrics to be consistent with greater amberjack landings post-stratification. This potentially underestimates total reef fish target effort in the Gulf, since not all species in the reef fish complex require post-stratification.

through 2012 and then rose quickly in 2013 to a five-year high. Target effort in Alabama fluctuated with a peak in 2011. The number of target trips in Louisiana dropped drastically in 2010 and 2011, then increased heavily in 2012 and 2013, but did not return to 2009 levels. As discussed earlier, it may be likely that the severe declines in target effort in Louisiana during 2010 and 2011 were due in part to the 2010 oil spill. The potential impact of the oil spill is not, however, apparent for Alabama, which experienced increases in the number of estimated target trips in 2010 and 2011.

Table 3.3.2.6. Greater amberjack target trips and percent distribution across all modes by state, 2009 - 2013.

	Greater Amberjack Target Trips*				Percent Distribution			
	AL	FLW	LA	MS	AL	FLW	LA	MS
2009	1,838	38,053	8,437	644	3.8%	77.7%	17.2%	1.3%
2010	3,758	26,466	970	-	12.0%	84.8%	3.1%	0.0%
2011	7,874	28,148	186	-	21.7%	77.7%	0.5%	0.0%
2012	2,341	30,229	2,652	-	6.6%	85.8%	7.5%	0.0%
2013	4,748	40,820	5,152	-	9.4%	80.5%	10.2%	0.0%
Average	4,112	32,743	3,479	129	10.7%	81.3%	7.7%	0.3%

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

* Target data for headboats and the state of Texas are unavailable and are not included.

On average, approximately 75% of the estimated target trips for greater amberjack were recorded by anglers in private boats and the rest, by charter vessels (Table 3.3.2.7). No greater amberjack target trips were recorded by the shore-mode anglers. The number of private angler target trips decreased annually to a five-year low in 2011, then increased annually through 2013, almost returning to 2009 levels. The estimated number of target trips for charter anglers fluctuated with a peak in 2011.

Table 3.3.2.7. Greater amberjack target trips and percent distribution across all states, 2009 - 2013.

	Greater Amberjack Target Trips*			Percent Distribution		
	Shore	Charter	Private	Shore	Charter	Private
2009	0	8,294	40,679	0.0%	16.9%	83.1%
2010	0	5,534	25,661	0.0%	17.7%	82.3%
2011	0	15,165	21,043	0.0%	41.9%	58.1%
2012	0	9,427	25,795	0.0%	26.8%	73.2%
2013	0	11,168	39,551	0.0%	22.0%	78.0%
Average	0	9,918	30,546	0.0%	25.1%	74.9%

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

* Target data for headboats and the state of Texas are unavailable and are not included.

On average, target effort for greater amberjack was concentrated most heavily in the months March through May and August through September (Table 3.3.2.8). Target effort was low or

zero in June and July following the implementation of the seasonal closure in 2011. The monthly distribution of target effort generally coincided with the monthly distribution of landings.

Table 3.3.2.8. Greater amberjack target trips and percent distribution across all modes and states, by month, 2009 - 2013.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Greater Amberjack Target Trips*												
2009	772	7,062	809	7,275	4,584	19,461	4,819	2,165	1445	0	580	0
2010	0	1810	5,437	150	9,974	342	2,007	888	3,214	3,653	3,721	0
2011	0	0	1,737	2,785	5,501	0	0	14,653	7447	1409	0	2,675
2012	1,851	262	5,107	9,337	3,032	441	0	8,205	1,862	1,103	1309	2712
2013	50	3,363	13,497	0	11,986	0	1,348	9,263	6,683	1,478	1,241	1,811
Avg	535	2,499	5,317	3,909	7,015	4,049	1,635	7,035	4,130	1,529	1,370	1,440
Percent Distribution												
2009	1.6%	14.4%	1.7%	14.9%	9.4%	39.7%	9.8%	4.4%	3.0%	0.0%	1.2%	0.0%
2010	0.0%	5.8%	17.4%	0.5%	32.0%	1.1%	6.4%	2.8%	10.3%	11.7%	11.9%	0.0%
2011	0.0%	0.0%	4.8%	7.7%	15.2%	0.0%	0.0%	40.5%	20.6%	3.9%	0.0%	7.4%
2012	5.3%	0.7%	14.5%	26.5%	8.6%	1.3%	0.0%	23.3%	5.3%	3.1%	3.7%	7.7%
2013	0.1%	6.6%	26.6%	0.0%	23.6%	0.0%	2.7%	18.3%	13.2%	2.9%	2.4%	3.6%
Avg	1.4%	5.5%	13.0%	9.9%	17.8%	8.4%	3.8%	17.9%	10.5%	4.3%	3.9%	3.7%

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

* Target data for headboats and the state of Texas are unavailable and are not included.

Note: There are some target trips shown during the June through July closure implemented in 2011. This is likely due to a small number of intercepted angler trips with high sample weights that either targeted greater amberjack for catch and release purposes or mistakenly reported greater amberjack as one of their primary targets.

Similar analysis of recreational effort is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of effort by the headboat mode are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. The stationary “fishing for demersal species” nature of headboat fishing, as opposed to trolling, suggests that most, if not all, headboat trips and, hence, angler days, are demersal or reef fish trips by intent. In a study of the for-hire fishing industry in the Gulf, Sutton et al. (1999) found that the mean percentage of time spent targeting greater amberjack for the entire year for all party boat (headboat) operators in the Gulf was 5.10%⁵.

The distribution of headboat effort (angler days) by geographic area is presented in Table 3.3.2.9. For purposes of data collection, the headboat data collection program divides the Gulf into several areas. In Table 3.3.2.9, FLW refers to areas in Florida from the Dry Tortugas through the

⁵ No newer studies have been identified which discuss greater amberjack targeting behavior of headboats in the Gulf.

Florida Middle Grounds, FL-AL covers northwest Florida and Alabama, MS refers to the entire coastline of Mississippi, LA refers to the entire coastline of Louisiana, and TX includes areas in Texas from Sabine Pass-Freeport south to Port Isabel. On average, the area from the Dry Tortugas through the Florida Middle Grounds accounted for 40.2% of total headboat angler days in the Gulf, followed by northwest Florida through Alabama (33.2%), Texas (25.2%), Louisiana (<1%) and Mississippi (<1%). Western Florida, Northwest Florida through Alabama, and Texas all experienced declines in angler days in 2010, but then saw steady increases to five-year highs in 2013. In Louisiana, the number of headboat angler days dropped precipitously in 2010, increased in 2011, but then decreased again in 2012 and 2013. In Mississippi, the number of angler days increased substantially in 2011 and then remained mostly stable through 2013.

Table 3.3.2.9. Headboat angler days and percent distribution, by state, 2009 - 2013.

	Angler Days					Percent Distribution				
	FLW	FL-AL*	LA	TX	MS**	FLW	FL-AL	LA	TX	MS
2009	76,815	65,623	3268	50,737	-	39.1%	33.4%	1.7%	25.8%	-
2010	70,424	40,594	217	47,154	498	44.3%	25.5%	0.1%	29.7%	0.3%
2011	79,722	77,303	1,886	47,284	1,771	38.3%	37.2%	0.9%	22.7%	0.9%
2012	84,205	77,770	1,839	51,776	1,841	38.7%	35.8%	0.8%	23.8%	0.8%
2013	94,752	80,048	1,579	55,749	1,827	40.5%	34.2%	0.7%	23.8%	0.8%
Average	81,184	68,268	1,758	50,540	1,484	40.2%	33.2%	0.8%	25.2%	0.7%

Source: NMFS Southeast Region Headboat Survey (SRHS).

*For 2013, SRHS data was reported separately for NW Florida and Alabama, but has been combined here for consistency with previous years.

** No headboats in Mississippi were included in the SRHS in 2009.

Headboat effort in terms of angler days for the entire Gulf was concentrated most heavily during the summer months of June through August on average (2009 through 2013) (Table 3.3.2.10). The monthly trend in angler days was very similar across years, building gradually from January through May, rising sharply to a peak in June and July, dropping rapidly through September, increasing slightly in October, then tapering through December.

Table 3.3.2.10. Headboat angler days and percent distribution, by month, 2009 - 2013.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Headboat Angler Days												
2009	7,611	8,525	14,444	15,513	17,089	36,749	38,955	25,060	9,201	9,745	6,889	6,662
2010	4,962	5,709	13,186	18,077	14,029	26,495	22,616	14,378	8,759	16,328	9,488	4,860
2011	5,242	9,174	16,378	17,626	16,148	39,775	42,089	22,513	10,766	12,609	8,514	7,132
2012	7,924	9,364	18,326	16,404	17,708	39,662	46,468	21,440	12,629	13,281	7,135	7,090
2013	8,630	9,576	16,759	16,426	17,150	47,791	38,304	27,610	12,697	21,256	8,654	9,102
Avg	6,874	8,470	15,819	16,809	16,425	38,094	37,686	22,200	10,810	14,644	8,136	6,969
Percent Distribution												
2009	3.9%	4.3%	7.4%	7.9%	8.7%	18.7%	19.8%	12.8%	4.7%	5.0%	3.5%	3.4%
2010	3.1%	3.6%	8.3%	11.4%	8.8%	16.7%	14.2%	9.0%	5.5%	10.3%	6.0%	3.1%
2011	2.5%	4.4%	7.9%	8.5%	7.8%	19.1%	20.2%	10.8%	5.2%	6.1%	4.1%	3.4%
2012	3.6%	4.3%	8.4%	7.5%	8.1%	18.2%	21.4%	9.9%	5.8%	6.1%	3.3%	3.3%
2013	3.7%	4.1%	7.2%	7.0%	7.3%	20.4%	16.4%	11.8%	5.4%	9.1%	3.7%	3.9%
Avg	3.4%	4.1%	7.8%	8.5%	8.2%	18.6%	18.4%	10.9%	5.3%	7.3%	4.1%	3.4%

Source: NMFS Southeast Region Headboat Survey (SRHS).

Permits

For-hire vessels are required to have a Charter/Headboat for Reef Fish permit (for-hire permit) to fish for or possess reef fish species in the Gulf EEZ (a similar, but separate, permit is required for coastal migratory pelagic species). This sector is currently under a permit limitation program since June, 2006. On September 22, 2014, there were 1,195 valid (non-expired) or renewable⁶ Gulf for-hire permits.

For 2009 through 2013, an average of 1,364 for-hire vessels were permitted to harvest reef fish in the Gulf (Table 3.3.2.11). Florida, with an average of 819 permitted vessels, was the foremost homeport state of for-hire vessels, followed by Texas (222), Alabama (147), Louisiana (111), and Mississippi (48). An average of 17 vessels had homeports in states outside the Gulf.

The total number of Gulf reef fish for-hire permits steadily declined from 2009 through 2013 (Table 3.3.2.11). Florida was the driving force behind this trend, though there were similar trends in Mississippi, Texas, and all non-Gulf states combined. Alabama and Louisiana saw modest increases in the number of for-hire permitted vessels during the time period.

⁶ A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration.

Table 3.3.2.11. Number of vessels with a Gulf for-hire permit by homeport state, 2009- 2013.

	FL	AL	MS	LA	TX	OTHERS	TOTAL
2009	871	143	50	103	232	18	1,417
2010	840	142	50	103	229	21	1,385
2011	810	143	48	116	219	17	1,353
2012	792	151	46	116	214	17	1,336
2013	783	155	45	115	215	14	1,327
Average	819	147	48	111	222	17	1364

Source: Southeast Permits Database, NOAA Fisheries, SERO.

Based on permits data alone, it is not possible to distinguish headboats from charter boats, but the 2013 headboat survey program included 70 headboats in the Gulf. The majority of headboats were located in Florida (37), followed by Texas (16), Alabama (9), Mississippi (5), and Louisiana (3) (K. Brennen, NMFS SEFSC, pers. comm.)⁷.

There are no specific federal permitting requirements for recreational anglers to fish for or harvest reef fish, including greater amberjack. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Economic Value

Participation, effort, and harvest are indicators of the value of saltwater recreational fishing. However, a more specific indicator of value is the satisfaction that anglers experience over and above their costs of fishing. The monetary value of this satisfaction is referred to as consumer surplus (CS). The value or benefit derived from the recreational experience is dependent on several quality determinants, which include fish size, catch success rate, and the number of fish kept. These variables help determine the value of a fishing trip and influence total demand for recreational fishing trips. Haab et al. (2012) estimated the CS (willingness to pay (WTP) per fish) for snapper in the Southeastern U.S. using four separate econometric modeling techniques. The finite mixture model, which takes into account variation in the preferences of fishermen, had the best prediction rates of the four models and as such was selected for this analysis⁸. The WTP

⁷ Sixty-seven vessels were registered in the SHRS as of April 8, 2014.

⁸ Haab et al. (2012) did not explicitly account for endogenous stratification and avidity bias in the MRFSS data which could potentially inflate the estimates. The WTP estimates from the four models used in their study ranged from \$9-\$25 (2000 dollars) and the one that was selected for use here was at the bottom of the range, so the bias may not be that big of an issue. In addition, given its popularity as a sport fish, greater amberjack may be more valuable to anglers than many of the other snapper species included in the model.

per snapper estimated by this model is \$12.18 (2013 dollars)⁹. Although this estimate is not specific to greater amberjack, their study did include the amberjack genus as part of the snapper group. This value may seem low and may be strongly influenced by the pooling effect inherent to the model in which it was estimated. For comparison purposes, the estimated value of the consumer surplus for catching and keeping a second grouper on an angler trip is approximately \$102 (values updated to 2013 dollars), and decreases thereafter (approximately \$68 for a third grouper, \$50 for a fourth grouper, and \$39 for a fifth grouper) (Carter and Liese 2012). Values by specific grouper species are not available.

The foregoing estimates of economic value should not be confused with economic impacts associated with recreational fishing expenditures. Although expenditures for a specific good or service may represent a proxy or lower bound of value (a person would not logically pay more for something than it was worth to them), they do not represent the net value (benefits minus cost), nor the change in value associated with a change in the fishing experience.

While anglers receive economic value as measured by the CS associated with fishing, for-hire businesses receive value from the services they provide. Producer surplus (PS) is the measure of the economic value these operations receive. The PS is the difference between the revenue a business receives for a good or service, such as a charter or headboat trip, and the cost the business incurs to provide that good or service. Estimates of the PS associated with for-hire trips are not available. However, proxy values in the form of net operating revenues (NOR)¹⁰ were generated for the charter and headboat operations. The estimated NOR values are \$158.06 (2013 dollars) per charter angler trip and \$51.96 (2013 dollars) per headboat angler trip (D. Carter and C. Liese, NMFS SEFSC, pers. comm.)¹¹.

Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for greater amberjack were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2011). Estimates of the average expenditures

⁹ Converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).

¹⁰ Net operating revenues are trip revenues minus trip-based variable costs and do not include fixed costs. These represent the total returns used to pay all labor wages, returns to capital, and owner profits.

¹¹ Estimates were converted to 2013 dollars using the 2013 June CPI for all US urban consumers provided by the BLS.

by recreational anglers are also provided in NMFS (2011) and are incorporated herein by reference.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Estimates of the average greater amberjack target effort (2009-2013) and associated business activity (2013 dollars) are provided in Table 3.3.2.12. The average impact coefficients, or multipliers, used in the model are invariant to the “type” of effort and can therefore be directly used to measure the impact of other effort measures such as greater amberjack catch trips. To calculate the multipliers from Table 3.3.2.12, simply divide the desired impact measure (output impact, value-added impact, or jobs) associated with a given state and mode by the number of target trips for that state and mode.

The estimates provided in Table 3.3.2.12 only apply at the state-level. These numbers should not be added across the region. Addition of the state-level estimates to produce a regional (or national) total could either under- or over-estimate the actual amount of total business activity because of the complex relationship between different jurisdictions and the expenditure/impact multipliers. Neither regional nor national estimates are available at this time.

Florida clearly received the greatest level of economic impact from greater amberjack in comparison to the other Gulf states, which is not surprising given the majority of greater amberjack target trips are estimated to be taken by Florida anglers (Table 3.3.2.12). Although not shown in Table 3.3.2.12, Florida also had the highest multipliers for all impact measures associated with the charter mode. Louisiana had the highest multipliers for output impact and value-added impact for the private angler mode and was tied with Alabama for the highest jobs impact multiplier for the private angler mode.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRFSS/MRIP, so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.2.12. Summary of greater amberjack target trips (2009-2013 average) and associated business activity (2013 dollars). Output and value added impacts are not additive.

	Alabama	West Florida	Louisiana	Mississippi	Texas
Shore Mode					
Target Trips	0	0	0	0	*
Output Impact	\$0	\$0	\$0	\$0	*
Value Added Impact	\$0	\$0	\$0	\$0	*
Jobs	0	0	0	0	*
Private/Rental Mode					
Target Trips	3,098	24,401	2,918	129	*
Output Impact	\$167,403	\$1,319,539	\$220,547	\$4,533	*
Value Added Impact	\$90,593	\$747,195	\$105,982	\$2,306	*
Jobs	2	11	2	0	*
Charter Mode					
Target Trips	1,014	8,342	561	0	*
Output Impact	\$648,122	\$6,117,419	\$271,425	\$0	*
Value Added Impact	\$443,540	\$4,089,823	\$186,638	\$0	*
Jobs	6	54	2	0	*
All Modes					
Target Trips	4,112	32,743	3,479	129	*
Output Impact	\$815,525	\$7,436,958	\$491,972	\$4,533	*
Value Added Impact	\$534,133	\$4,837,018	\$292,619	\$2,306	*
Jobs	8	65	4	0	*

*Because target information is unavailable, associated business activity cannot be calculated.

Source: effort data from MRIP, economic impact results calculated by NMFS SERO using the model developed for NMFS (2011).

3.4 Description of the Social Environment

A description of the social environment including analysis of communities engaged in reef fish fishing, was provided in Amendment 30A (GMFMC 2008) and is incorporated here by reference. This section provides a summary of that information.

Greater amberjack is fished throughout the Gulf although landings are greatest in Florida. The majority of greater amberjack is landed by the recreational sector (72.4% from 2002 – 2013 with a range of 59.6% to 80.1%) and 27.6% is landed by the commercial sector (range of 19.9% to 40.4% from 2002 - 2013, Table 1.2.1). For the purpose of setting quotas, the Council selected an interim allocation at 73% recreational: 27% commercial in Amendment 30A (GMFMC 2008). The low commercial value and one fish recreational bag limit likely restrict greater amberjack from being a directed fishery. Rather than directed fishing trips, greater amberjack is an important component to a multi-species fishery for both commercial and recreational fishermen. Because of this multi-species fishing practice, it is difficult to discuss greater amberjack fishing separate from its broader context within commercial and recreational fishing.

3.4.1 Fishing Communities

Recreational Fishing Communities

There is no information available concerning targeted trips within the recreational sector (private and for-hire vessels). However, due to the one fish bag limit and 30 inch fork length minimum size limit, few fishermen are likely to engage in directed trips for greater amberjack. Because of their large size, greater amberjack is often a trip's trophy catch, making it an important part to a multi-species fishing trip. Greater amberjack is also an important component in recreational tournaments.

Landings for the recreational sector are not available by species at the community level; therefore, it is difficult to identify communities as dependent on recreational fishing for greater amberjack. The 20 Gulf communities identified as the most engaged in recreational fishing (GMFMC 2008) are listed in Table 3.4.1.1. Because the analysis used discrete geo-political boundaries, Panama City and Panama City Beach had separate values for the associated variables. Calculated independently, each still ranked high enough to appear in the top 20 list suggesting a greater importance for recreational fishing.

Table 3.4.1.1. Top ranking communities based on recreational fishing engagement and reliance, in descending order.

Community	County	State
Destin	Okaloosa	FL
Orange Beach	Baldwin	AL
Panama City	Bay	FL
Port Aransas	Nueces	TX
Pensacola	Escambia	FL
Panama City Beach	Bay	FL
Naples	Collier	FL
St. Petersburg	Pinellas	FL
Freeport	Brazoria	TX
Biloxi	Harrison	MS
Galveston	Galveston	TX
Clearwater	Pinellas	FL
Fort Myers Beach	Lee	FL
Sarasota	Sarasota	FL
Tarpon Springs	Pinellas	FL
Dauphin Island	Mobile	AL
Apalachicola	Franklin	FL
Carrabelle	Franklin	FL
Port St. Joe	Gulf	FL
Marco Island	Collier	FL

Source: SERO permit office 2008, MRIP site survey 2010.

Commercial Fishing

Most commercially landed greater amberjack is caught using vertical line alongside other target species, as opposed to being the primary target species. This is partly due to its relatively low economic value (approximately \$1/pound) and large minimum size limit (36 inch fork length). A small percentage of commercial vessels direct trips toward greater amberjack and may land thousands of pounds in a single trip. Other commercial vessels may direct effort toward greater amberjack during part of a multi-day trip.

Figure 3.4.1.1 shows the spatial distribution of commercial greater amberjack landings around the Gulf (2001-2010). The landings are based on the dealer’s address which may not correspond to the actual landing site or vessel homeport. Numerous separate communities along the west central coast of Florida are identified as having sizeable landings, whereas dealer addresses are more concentrated in fewer communities around Houston and Galveston, Texas. This suggests a different social organization of commercial fishing infrastructure between Florida and Texas. While dealers with a Houston business address reported the largest proportion of landings during this time, three separate communities in Pinellas County, Florida appear among the top 10 communities (GMFMC 2008). Furthermore, Panama City and Destin, both in the Florida Panhandle, also appear among the top 10 communities. Although place is one way of defining a community, a community is not defined by discrete geo-political boundaries alone. Social

relationships, information exchanges, and economic interactions reflect shared interests that overlap place-based boundaries.

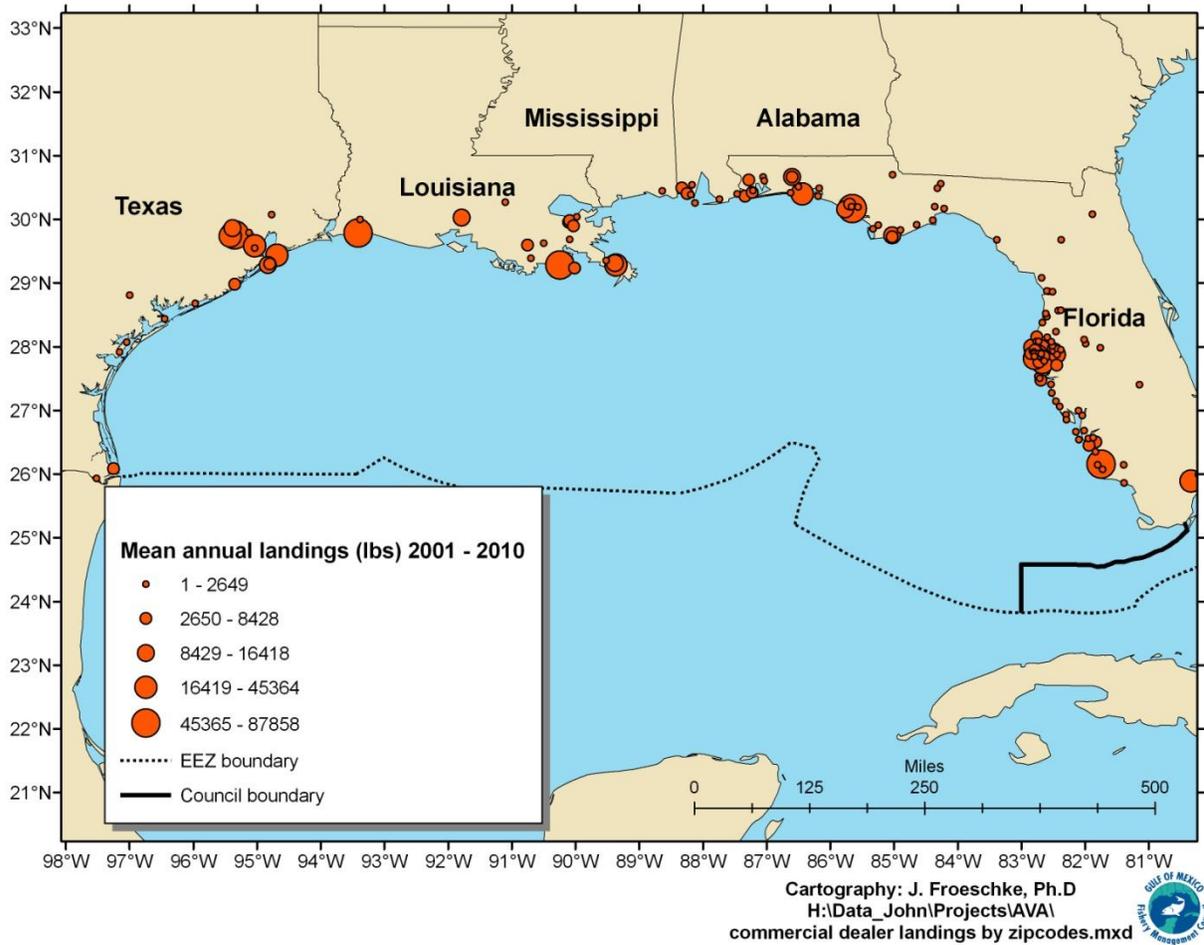


Figure 3.4.1.1. Distribution of commercial greater amberjack mean landings (2001 - 2010), based on dealer reports. Source: Accumulated landings system dealer reports.

Importance of Greater Amberjack to Communities

Table 3.4.1.1 identified the top Gulf communities engaged and reliant on recreational fishing generally (i.e., not specific to greater amberjack). Figure 3.4.1.1 identified where commercial landings of greater amberjack are most abundant. However, this does not necessarily reflect the importance of greater amberjack in relation to other landed species in those communities. No data are available for the proportion of recreational landings of greater amberjack by community, but these data are available for the commercial sector. Commercial landings include many species that may not be caught by the recreational sector such as shrimp and tilefish, while recreational landings would include other species such as red drum and spotted sea trout. Therefore, it cannot be assumed that the proportion of commercial greater amberjack landings among other species in a community would be similar to its proportion among recreational

landings within the same community. These data should also be considered in terms of the difference between the commercial and recreational sectors' allocation of the quota.

Comparing the communities of recreational importance and those with greater amounts of greater amberjack commercial landings, four communities overlap: Destin, Panama City, and Saint Petersburg, Florida, and Galveston, Texas. Collectively, these communities represented approximately 28% of the commercial greater amberjack landings in the Gulf in 2009. Within each of the communities, greater amberjack represented a very small proportion (less than 5%) of total commercial landings.

Gulf-wide, Destin, Florida ranks first for the number of reef fish for-hire permits in 2010, with 118 federal permits. Destin ranked fifth in 2009 for commercial greater amberjack landings with 12% of the total value and 10% of the total pounds. Among all commercially landed species in Destin in 2009, greater amberjack made up less than 5% of the total commercial landings. To compare, king and cero mackerels (37%), vermilion snapper (22%), and red snapper (9%) represented the top three commercial species by weight landed in Destin.

Panama City, Florida ranks third for the number of reef fish for-hire permits in 2010, with 67 federal permits. Both Panama City and Panama City Beach ranked within the top 10 recreational fishing communities based on the fishing involvement analysis provided above suggesting a higher level of involvement across geo-political boundaries. Panama City ranked third in terms of commercial greater amberjack landings in 2009 with 12% of the total value and 11% of the total pounds. Among all commercially landed species in Panama City, greater amberjack made up less than 5% of the total commercial landings in 2009. To compare, vermilion snapper (24%) and tunas (15%) represent the top two commercial species by weight landed in Panama City.

With 23 reef fish for-hire permits in 2010, Saint Petersburg, Florida did not rank among the top recreational communities in terms of the number of permits. However, it ranked within the top 20 communities in terms of recreational involvement (Table 3.4.1.1). Saint Petersburg ranked sixth in the Gulf in terms of commercial greater amberjack landings in 2009 with 4.3% of the total value and 4.3% of the total pounds. Among all commercially landed species, greater amberjack makes up less than 5% of all commercial landings. To compare, red grouper (25%), shrimp (9% by weight, 24% of value), mullet (19%), and dolphin (9%) represent the top four commercial species by weight landed in Saint Petersburg in 2009.

Galveston, Texas was ranked fifth in terms of number of reef fish for-hire permits for the year 2010 with 45 federal permits. Gulf-wide, Galveston ranked eighth in terms of commercial greater amberjack landings for 2009 with 3.4% of the total value and 3.5% of the total pounds. Nearby Houston, Texas ranked first in terms of commercial greater amberjack landings in 2009 based on dealer reports, with 18% of the Gulf-wide landings by weight. It is likely that a significant proportion of these landings occurred at a physical site in or near Galveston, the nearest coastal port to the inland city of Houston. Among all commercial species landed in Galveston in 2009, white and brown shrimp represented 88% of the landings by weight.

For both sectors it is difficult to speak of community reliance on greater amberjack; rather, greater amberjack is an important component to the reef fish complex. For example, although

the communities above ranked among the top communities for commercial landings of greater amberjack throughout the Gulf, greater amberjack represents less than 5% of the total commercial landings within each community. While landings are proportionally low compared with other species in each community, greater amberjack consistently ranks within the top 15 species in commercial communities. This supports its status as an important component in the reef fish complex, rather than a primary target species. Landings at the community level are not available for the recreational sector, thus a comparable analysis is not possible. Rather than engaging in directed trips, greater amberjack is generally targeted during trips along with other species. It is an important trophy and meat fish, prized for both its size and fighting behavior, making for a thrilling fishing experience.

3.4.2 Environmental Justice Considerations

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider “the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories...” This executive order is generally referred to as environmental justice (EJ).

Persons employed in greater amberjack fishing and associated businesses and communities along the Gulf coast would be expected to be affected by this proposed action. However, information on the race and income status for groups at the different participation levels (vessel owners, crew, dealers, processors, employees, employees of associated support industries, etc.) is not available. Because this proposed action could be expected to affect fishermen and associated industries in numerous communities along the Gulf coast, census data (available at the county level, only) have been assessed to examine whether any coastal counties have poverty or minority rates that exceed the EJ thresholds.

The threshold for comparison that was used was 1.2 times the state average such that, if the value for the county was greater than or equal to 1.2 times the state average, then the county was considered an area of potential EJ concern. Census data for the year 2010 was used. For Florida, the estimate of the minority (interpreted as non-white, including Hispanic) population was 39.5%, while 13.2% of the total population was estimated to be below the poverty line. These values translate in EJ thresholds of approximately 47.4% and 15.8%, respectively (Table 3.4.2). Based on the demographic information provided, no potential EJ concern is evident with regard to the percent of minorities for the counties of the west coast of Florida. With regard for poverty, Dixie (3.8%), Franklin (8%), Gulf (1.7%), Jefferson (4.6%), Levy (3.3%), and Taylor (7.1%) counties exceed the threshold by the percentage noted. No potential EJ concern is evident for the remaining counties which fall below the poverty and minority thresholds. The same method was applied to the remaining Gulf of Mexico states.

Table 3.4.2.1. Each state’s average proportion of minorities and population living in poverty, and the corresponding threshold used to consider an area of potential EJ concern (Census Bureau 2010).

State	Minorities		Poverty	
	% Population	EJ Threshold	% Population	EJ Threshold
FL	39.5	47.4	13.2	15.8
AL	31.5	37.8	16.8	20.2
MS	41.2	49.4	21.4	25.7
LA	38.2	45.8	18.4	22.1
TX	52.3	62.7	16.8	20.1

In Alabama, Mobile was the only county to exceed the minority threshold (by 1.7%). Neither of Alabama’s coastal counties exceeded the poverty threshold for potential EJ concern. No coastal county in Mississippi exceeded either threshold. In Louisiana, Orleans Parish exceeded the minority threshold by 25% and the poverty threshold by 1.3%. Texas has several counties that exceeded the thresholds. In descending order of magnitude for exceeding the minority threshold were Willacy (26.3%), Cameron (24.7%), Kleberg (12.3%), Kenedy (9%), Nueces (2.8%), and Harris (.8%). Exceeding the poverty threshold were Kenedy (32.3%), Willacy (26.8%), Cameron (15.6%), Kleberg (6%), and Matagorda (1.8%). Willacy, Kenedy, Cameron, and Kleberg counties exceed both the minority and poverty thresholds and are the communities identified as most likely to be vulnerable to EJ concerns.

Comparing the recreational communities identified as substantially engaged in fishing with the counties identified as having potential EJ concerns, several communities overlap. In Florida, Apalachicola and Carrabelle are both located in Franklin County, which exceeds the poverty threshold by 8%. Port St. Joe in Gulf County exceeds the poverty threshold by 1.7%. In Alabama, Dauphin Island in Mobile County exceeds the minority threshold by 1.7%. And in Texas, Port Aransas in Nueces County exceeds the minority threshold by 2.8%. Among commercial communities with the most greater amberjack landings Gulf-wide, Bayou La Batre in Mobile County, Alabama exceeded the minority threshold by 1.7%. Houston in Harris County, Texas exceeded the minority threshold by .8%. However, none of these communities ranked among both the identified commercial and recreational communities.

People in these communities may be affected by fishing regulations in two ways: participation and employment. Although these communities may have the greatest potential for EJ concerns, no data are available on the race and income status for those involved in the local fishing industry (employment), or for their dependence on greater amberjack specifically (participation). The fishery is primarily recreational and requires boat access. There are no known claims for customary usage or subsistence consumption of Gulf greater amberjack by any population including tribes or indigenous groups. Thus, it is not likely that the participation of EJ populations will be affected. Based on the analysis above, the greatest risk would likely arise in Franklin County (exceeds the poverty threshold by 8%), should loss of employment occur. However, it would be difficult to identify a causal relationship between actions in this

amendment and any loss of jobs in the county, as numerous other factors would likely be involved. Nevertheless, because greater amberjack does not represent a substantial proportion of landings in the respective communities, no EJ concerns are expected to arise in these communities as a result of the actions in this amendment. Although no EJ issues have been identified, the absence of potential EJ concerns cannot be assumed.

3.5 Description of the Administrative Environment

3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the EEZ. The EEZ is defined as an area extending 200 nautical miles from the seaward boundary of each of the coastal states. The Magnuson-Stevens Act also claims authority over U.S. anadromous species and continental shelf resources that occur beyond the EEZ.

Responsibility for federal fishery management decision-making is divided between the Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Section 10. In most cases, the Secretary has delegated this authority to NOAA Fisheries Service.

The Council is responsible for fishery resources in federal waters of the Gulf of Mexico. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the Gulf of Mexico coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NOAA Fisheries Service. The public is also involved in the fishery management process through participation on advisory panels and through publically open Council meetings, with some exceptions for discussing internal administrative matters. The regulatory process is also in accordance with the Administrative Procedures Act, in the form of “notice and comment” rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of the NOAA’s Office of Law Enforcement, the U.S. Coast Guard, and various state authorities. To better coordinate

enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council's Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission's Law Enforcement Committee have developed a two year "Gulf Cooperative Law Enforcement Strategic Plan – 2011 - 2012."

3.5.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf of Mexico states exercises legislative and regulatory authority over their states' natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states' natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each state's primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004b).

CHAPTER 4. LIST OF PREPARERS

Name	Expertise	Responsibility	Agency
John Froeschke	Fishery Biologist	Co-Team Lead – Amendment development, introduction, social analyses	GMFMC
Rich Malinowski	Biologist	Co-Team Lead – Amendment development, effects analysis, and cumulative effects	SERO
David Records	Economist	Economic environment and Regulatory Flexibility Act analysis	SERO
Ava Lasseter	Anthropologist	Social analyses and Reviewer	GMFMC
Mara Levy	Attorney	Legal compliance and Reviewer	NOAA GC
Scott Sandorf	Technical Writer Editor	Regulatory writer	SERO
Noah Silverman	Natural Resource Management Specialist	NEPA compliance	SERO
Nick Farmer	Biologist	Data analysis	SERO
Michael Larkin	Biologist	Data analysis	SERO
Stephen Holliman	Economist	Reviewer	SERO
Assane Diagne	Economist	Economic effects analysis and Regulatory Impact Review	GMFMC
Carrie Simmons	Fishery biologist	Reviewer	GMFMC
Nancy Cummings	Biologist	Reviewer	SEFSC

CHAPTER 5. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS CONSULTED

The following have or will be consulted.

- National Marine Fisheries Service
 - Southeast Fisheries Science Center
 - Southeast Regional Office
 - Protected Resources
 - Habitat Conservation
 - Sustainable Fisheries
- NOAA General Counsel
- U.S. Coast Guard

CHAPTER 6. REFERENCES

- Beasley, M. 1993. Age and growth of greater amberjack, *Seriola dumerili*, from the northern Gulf of Mexico. Master's Thesis. Department of Oceanography and Coastal Sciences, Louisiana State University, Baton Rouge, Louisiana.
- Bortone, S. A., P. A. Hastings, and S.B. Collard. 1977. The Pelagic-*Sargassium* ichthyofauna of the Eastern Gulf of Mexico. *Northeast Gulf Science*: 60-67.
- Burch, R. K. 1979. The greater amberjack, *Seriola dumerili*: its biology and fishery off Southeastern Florida. Master's Thesis. University of Miami, Miami.
- Carter, D.W. and C. Liese. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. *North American Journal of Fisheries Management*, 32:4, 613-625. <http://dx.doi.org/10.1080/02755947.2012.675943>
- Gore, R. H. 1992. *The Gulf of Mexico: A treasury of resources in the American Mediterranean*. Pineapple Press. Sarasota, Florida.
- Graham, R. T., and D. W. Castellanos. 2005. Courtship and spawning behaviors of carangid species in Belize. *Fishery Bulletin* 103:426-432.
- GMFMC and SAFMC. 1982. Fishery management plan final environmental impact statement for coral and coral reefs. Gulf of Mexico Fishery Management Council. Tampa, Florida. and South Atlantic Fishery Management Council. Charleston, South Carolina.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Coral%20FMP.pdf>
- GMFMC. 1989. Amendment 1 to the reef fish fishery management plan. . Gulf of Mexico Fishery Management Council, Tampa, Florida. 356 p.
- GMFMC. 1999a. Generic sustainable fisheries act amendment to the following FMPs: Gulf coral and coral reef resources, coastal migratory pelagics, red drum, reef fish, shrimp, spiny lobster, stone crab. Gulf of Mexico Fishery Management Council, Tampa, Florida. 155 p. + tables + append.
- GMFMC. 2003. Secretarial amendment 2 to the reef fish fishery management plan to set greater amberjack sustainable fisheries act targets and thresholds and to set a rebuilding plan. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/beta/gmfmcweb/downloads/Secretarial-Amendment-2-RF.pdf>

GMFMC. 2004a. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

GMFMC. 2005a. Generic amendment number 3 for addressing essential fish habitat requirements, habitat areas of particular concern, and adverse effects of fishing in the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, United States waters, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, coastal migratory pelagic resources (mackerels) in the Gulf of Mexico and South Atlantic, stone crab fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coral and coral reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/FINAL3_EFH_Amendment.pdf

GMFMC. 2008. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%202008.pdf>

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2011a. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2011b. Final regulatory amendment to the reef fish fishery management plan – greater amberjack – recreational fishing season closure, including an environmental assessment, regulatory impact review, regulatory flexibility analysis, and social impact analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://gulfcouncil.org/docs/amendments/Final%20Greater%20Amberjack%20Reg%20Amend-Fishing%20Season%20Closure%20Dec%202010.pdf>

GMFMC. 2012. Final regulatory amendment to the reef fish fishery management plan – greater amberjack – Modifications to the Greater Amberjack Rebuilding Plan and Adjustments to the Recreational and Commercial Management Measures. Gulf of Mexico Fishery Management Council. Tampa, Florida.

[http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

Haab, T., Hicks, R. L., Schnier, K., Whitehead, J. C. 2012. Angler heterogeneity and the species-specific demand for marine recreational fishing. Working Paper No. 10-02. Appalachian State University, Department of Economics. Available: <http://econ.appstate.edu/marfin/>. (September 2014).

Harris, P.J., D.M. Wyanski, D.B. White, P.P. Mikell, P.B. Eyo. 2007. Age, growth, and reproduction of greater amberjack off the southeastern U.S. Atlantic Coast. Transactions of American Fisheries Society 136:1534-1545.

Ingram, G.W. Jr. and W.F. Patterson. 2001. Movement patterns of red snapper (*Lutjanus campechanus*), greater amberjack (*Seriola dumerili*), and gray triggerfish (*Balistes capriscus*) in the Gulf of Mexico and the utility of marine reserves as management tools. Proceedings of the 52nd Gulf and Caribbean Fisheries Institute: 686-699.

Manooch, C. S., and J. C. Potts. 1997. Age, growth, and mortality of greater amberjack, *Seriola dumerili*, from the U.S. Gulf of Mexico headboat fishery. Bulletin of Marine Science 61:671-683.

Murie, D.J., and D.C. Parkyn. 2008. Age, Growth and Sex Maturity of Greater Amberjack (*Seriola dumerili*) in the Gulf of Mexico. MARFIN Final Report NA05NMF4331071, 52 pp.

NMFS (National Marine Fisheries Service). 2011. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118.

http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2009.html

SEA (Strategic Environmental Assessment Division, NOS). 1998. Product overview: Products and services for the identification of essential fish habitat in the Gulf of Mexico. NOS, Page 7-62 DEIS for EFH for the Gulf of Mexico FMPs July 2003 Silver Spring MD; National Marine Fisheries Service, Galveston, Texas; and Gulf of Mexico Fishery Management Council. Tampa Florida.

SEDAR 2006. SEDAR 9 Stock assessment report for Gulf of Mexico greater amberjack. SEDAR9-SAR2. SEDAR, Charleston, SC.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR. 2014. SEDAR 33 Gulf of Mexico Greater Amberjack Stock Assessment Report. SEDAR, North Charleston SC. 490 pp. http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=33

Sedberry, G.R., O. Pashuk, D.M. Wyanski, J.A. Stephen, and P. Weinbach. 2006. Spawning locations for Atlantic Reef Fishes off the Southeastern U.S. Proceedings of the Gulf and Caribbean Fisheries Institute 57:463-514.

SERO-LAPP-2011-04. 2011. Greater amberjack yield-per-recruit and spawning potential ratio analysis for the Gulf of Mexico. NOAA Fisheries Service. Southeast Regional Office.

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Texas A&M University. College Station, Texas. Memorandum Report

Thompson, B. A., M. Beasley, and C. W. Wilson. 1991. Age distribution and growth of greater amberjack, *Seriola dumerili*, from north-central Gulf of Mexico. Fishery Bulletin 97:362-371.

Turner, S.C., N.J. Cummings, and C.P. Porch. 2000. Stock assessment of Gulf of Mexico greater amberjack using data through 1998. NOAA, NMFS, SEFSC, 75 Virginia Beach Drive, Miami, Florida 33149. SFD-99/00-100.

Wells, R.J.D., and J.R. Rooker. 2002. Distribution, age, and growth of young-of-the-year greater amberjack (*Seriola dumerili*) associated with pelagic Sargassum. Fishery Bulletin 102:545-554.

Wells, R. J. D., and J. R. Rooker. 2004. Spatial and temporal patterns of habitat use by fishes associated with *Sargassum* mats in the northwestern Gulf of Mexico. Bulletin of Marine Science 74:81-99.

Regional Management of Recreational Red Snapper



Updated Draft for Amendment 39 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

Including Draft Environmental Impact Statement,
Fishery Impact Statement, Regulatory Impact Review,
and Regulatory Flexibility Act Analysis

January 2015



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.

This page intentionally blank

Gulf of Mexico Reef Fish Amendment 39

Draft Environmental Impact Statement (DEIS) Cover Sheet

Regional Management of Recreational Red Snapper Amendment 39 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including a Draft Environmental Impact Statement (DEIS).

Abstract:

This DEIS is prepared pursuant to the National Environmental Policy Act to assess the environmental impacts associated with a regulatory action. The DEIS analyzes the impacts of a reasonable range of alternatives intended to address approaches to regional management for the recreational harvest of red snapper, including delegating limited management authority to the Gulf of Mexico states and the development of conservation equivalency measures at the regional level. This may include the authority to establish size limits, bag limits, season start and end dates, and season structure for private angling and for-hire vessels. The purpose of this action is to provide flexibility in the management of the recreational red snapper component in the reef fish fishery by reorganizing the federal fishery management strategy and developing accountability measures for recreational overages to better account for biological, social, and economic differences among the regions of the Gulf.

Responsible Agencies:

National Marine Fisheries Service
(Lead Agency)
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
727-824-5305
727-824-5308 (fax)
<http://sero.nmfs.noaa.gov>
Contact: Cynthia Meyer
cynthia.meyer@noaa.gov

Gulf of Mexico Fishery Management
Council
2203 North Lois Avenue, Suite 1100
Tampa, Florida 33607
813-348-1630
813-348-1711 (fax)
<http://www.gulfcouncil.org>
Contact: Ava Lasseter
ava.lasseter@gulfcouncil.org

Type of Action

Administrative
 Draft

Legislative
 Final

Filing Dates with EPA

Notice of intent (NOI) to prepare EIS published: May 13, 2013
Draft environmental impact statement (DEIS) filed with EPA:
DEIS comment period ended:
EPA comments on DEIS:

DEIS TABLE OF CONTENTS

Abstract i
Executive Summary ix
Purpose and Need 4
Management Alternatives 8
Affected Environment 25
Environmental Consequences 57
List of Preparers 62
List of Agencies, Organizations and Persons to whom a Copy of the EIS was sent 63

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
ACT	annual catch target
ALS	Accumulated Landings System
AM	accountability measure
BP	British Petroleum
CE	conservation equivalency
Council	Gulf of Mexico Fishery Management Council
DEIS	Draft Environmental Impact Statement
EEZ	exclusive economic zone
EFH	Essential Fish Habitat
EFP	exempted fishing permit
EIS	Environmental Impact Statement
EJ	Environmental Justice
ESA	Endangered Species Act
FMP	Fishery Management Plan
Gulf	Gulf of Mexico
HBS	Southeast Headboat Survey
IFQ	individual fishing quota
LDWF	Louisiana Department of Wildlife and Fisheries
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
mp	million pounds
MRFSS	Marine Recreational Fisheries Survey and Statistics
MRIP	Marine Recreational Information Program
MSST	minimum stock size threshold
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OFL	overfishing limit
PDF	probability density function
SAV	submerged aquatic vegetation
SEAMAP	Southeast Area Monitoring and Assessment Program
Secretary	Secretary of Commerce
SEDAR	Southeast Data Assessment and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office of NMFS
SSB	spawning stock biomass
SSC	Scientific and Statistical Committee
SPR	spawning potential ratio
TAC	total allowable catch
TL	total length
TPWD	Texas Parks and Wildlife Department
VEC	valued environmental components
ww	whole weight
YPR	yield per recruit

TABLE OF CONTENTS

Gulf of Mexico Reef Fish Amendment 39	i
Draft Environmental Impact Statement (DEIS) Cover Sheet	i
Abbreviations Used in this Document	iii
List of Tables	vii
List of Figures	viii
Executive Summary	ix
Fishery Impact Statement	ix
Chapter 1. Introduction	1
1.1 Background	1
1.2 Purpose and Need	4
1.3 History of Management	4
Chapter 2. Management Alternatives	8
2.1 Action 1 –Regional Management	8
2.2 Action 2 – Regional Management and Sector Separation	13
2.3 Action 3 – Establish Regions for Management	14
2.4 Action 4 – Apportioning the Recreational Quota among Regions	18
2.5 Action 5 – Post-Season Accountability Measures (AMs)	23
Chapter 3. Affected Environment	25
3.1 Description of the Red Snapper Component of the Reef Fish Fishery	25
3.2 Description of the Physical Environment	31
3.3 Description of the Biological/Ecological Environment	33
3.4 Description of the Economic Environment	46
3.4.1 Commercial Sector	46
3.4.2 Recreational Sector	46
3.5 Description of the Social Environment	51
3.5.1 Environmental Justice Considerations	52
3.6 Description of the Administrative Environment	54
3.6.1 Federal Fishery Management	54
3.6.2 State Fishery Management	55
Chapter 4. Environmental Consequences	57
4.1 Action 1 – Regional Management	57
4.1.1 Direct and Indirect Effects on the Physical Environment	57

4.1.2	Direct and Indirect Effects on the Biological/Ecological Environment	57
4.1.3	Direct and Indirect Effects on the Economic Environment	57
4.1.4	Direct and Indirect Effects on the Social Environment	57
4.1.5	Direct and Indirect Effects on the Administrative Environment	57
4.2	Action 2 –Regional Management and Sector Separation	57
4.2.1	Direct and Indirect Effects on the Physical Environment.....	57
4.2.2	Direct and Indirect Effects on the Biological/Ecological Environment	57
4.2.3	Direct and Indirect Effects on the Economic Environment	57
4.2.4	Direct and Indirect Effects on the Social Environment	57
4.2.5	Direct and Indirect Effects on the Administrative Environment	57
4.3	Action 3 – Establish Regions for Management	57
4.3.1	Direct and Indirect Effects on the Physical Environment.....	57
4.3.2	Direct and Indirect Effects on the Biological/Ecological Environment	57
4.3.3	Direct and Indirect Effects on the Economic Environment	57
4.3.4	Direct and Indirect Effects on the Social Environment	57
4.3.5	Direct and Indirect Effects on the Administrative Environment	57
4.4	Action 4 – Apportioning the Recreational Red Snapper Quota among Regions.....	58
4.4.1	Direct and Indirect Effects on the Physical Environment.....	58
4.4.2	Direct and Indirect Effects on the Biological/Ecological Environment	58
4.4.3	Direct and Indirect Effects on the Economic Environment	58
4.4.4	Direct and Indirect Effects on the Social Environment	58
4.4.5	Direct and Indirect Effects on the Administrative Environment	58
4.5	Action 5 – Post-season Accountability Measures (AMs).....	58
4.5.1	Direct and Indirect Effects on the Physical Environment.....	58
4.5.2	Direct and Indirect Effects on the Biological/Ecological Environment	58
4.5.3	Direct and Indirect Effects on the Economic Environment	58
4.5.4	Direct and Indirect Effects on the Social Environment	58
4.5.5	Direct and Indirect Effects on the Administrative Environment	58
4.8	Cumulative Effects Analysis (CEA).....	58
Chapter 5.	Regulatory Impact Review.....	59
Chapter 6.	Regulatory Flexibility Act Analysis.....	60
Chapter 7.	Bycatch Practicability Analysis	61
Chapter 8.	List of Preparers	62
Chapter 9.	List of Agencies, Organizations and Persons to Whom a Copy of the EIS was sent	63

Chapter 10. References	64
Appendix A. Alternatives Considered but Rejected	77
Appendix B. Other Applicable Law	81
Appendix C. Summaries of Public Comments Received	87
Appendix D. Delegation Provision	115
Appendix E. Fishery Allocation Policy	116
Appendix F. Recreational Red Snapper Landings by State	119
Appendix G. Current Federal Regulations for Gulf of Mexico Recreational Red Snapper Management.....	120

LIST OF TABLES

Table 1.1.1. Recreational red snapper federal season lengths, quotas, and landings.....	2
Table 2.4.1. Percentage of annual recreational red snapper landings by state (1986-2013), based on whole weight (ww) of fish.	19
Table 2.4.2. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series.	20
Table 2.4.3. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2006.	20
Table 2.4.4. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2010.	21
Table 2.4.5. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2006 and 2010.....	21
Table 3.1.1. Recreational red snapper landings in 2012 by state and mode.	25
Table 3.1.2. Red snapper landings and overage/underage by sector, 1986-2013.	27
Table 3.1.3. Red snapper recreational landings vs. allocation/quota and days open 1986-2012. Landings are in mp ww. Recreational allocations began in 1991, and became quotas in 1997..	29
Table 3.1.4. Commercial red snapper harvest vs. days open, by sector, 1986-2012.	31
Table 3.3.1. Summary of habitat utilization by life history stage for species in the Reef Fish FMP.	37
Table 3.3.2. Species of the Reef Fish FMP grouped by family.	41
Table 3.4.2.1. Effects of 2010 data on average annual red snapper recreational effort.	47
Table 3.4.2.2. Average annual red snapper recreational effort by mode, 2006-2011 excluding 2010.....	47
Table 3.4.2.3. Headboat angler days.	48
Table 3.4.2.4. Summary of red snapper target trips (2006-2009 and 2011 average) and associated business activity (2011 dollars). Output and value added impacts are not additive...	50
Table 3.4.1. Top ranking Gulf communities based on recreational fishing engagement and reliance, in descending order.	52
Table 3.5.1.1. Each state’s average proportion of minorities and population living in poverty, and the corresponding threshold used to consider an area of potential EJ concern.....	53

LIST OF FIGURES

Figure 2.3.1. Map of state waters and the EEZ with established and proposed boundaries between states. These boundaries were agreed upon at the February 2013 Council meeting.	16
Figure 3.2.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (http://accession.nodc.noaa.gov/0072888)	32
Figure 3.3.1. Fishery closure at the height of the Deepwater Horizon MC252 oil spill.	45

EXECUTIVE SUMMARY

[To be completed.]

FISHERY IMPACT STATEMENT

[To be completed. Not a part of the DEIS.]

CHAPTER 1. INTRODUCTION

1.1 Background

Currently, the recreational harvest of red snapper in the Gulf of Mexico (Gulf) exclusive economic zone (EEZ) is constrained by a 2-fish bag limit, 16-inch total length (TL) minimum size limit, and a fishing season that begins on June 1 and closes when the quota is projected to be caught. Additional federal regulations pertaining to recreational red snapper,¹ such as permit requirements and gear restrictions, are provided in Appendix G. Since 1996, the recreational fishing season for red snapper has become progressively shorter (Table 1.1.1). Shorter seasons have continued despite an annual increase in the quota since 2010, as the quota continues to be caught in a shorter amount of time. In 2013, the federal season was initially estimated to be 28 days. The results of the benchmark assessment (SEDAR 31 2013) were released shortly before the start of the season and allowed for an increase in the recreational and commercial quotas. With these increases, the National Marine Fisheries Service (NMFS) opened a supplementary recreational season for October 1 through 14. In 2014, red snapper harvest in federal waters was open for nine days.

Gulf of Mexico Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 17 voting members, 11 of whom are appointed by the Secretary of Commerce, the National Marine Fisheries Service Regional Administrator, and 1 representative from each of the 5 Gulf states marine resource agencies
- Responsible for developing fishery management plans and amendments, and recommends actions to National Marine Fisheries Service for implementation

National Marine Fisheries Service

- Responsible for preventing overfishing while achieving optimum yield
- Responsible for ensuring compliance with other applicable federal, state, and local laws and regulations
- Implements regulations

Fishermen from different areas of the Gulf have requested more flexibility in recreational red snapper management so that regulations provide greater socioeconomic benefits to their particular area. Therefore, the Gulf of Mexico Fishery Management Council (Council) is considering regional management as a way to provide greater flexibility in the management of recreational red snapper. Here, regional management refers to allowing regulations to be

¹ Recreational red snapper refers to red snapper harvested by the recreational sector.

different for identified regions of the Gulf, in contrast to uniform recreational regulations applied to the entire EEZ. This document considers two alternatives for implementing regional management (Action 1): 1) delegation of limited authority to regions to specify management measures and 2) develop of conservation equivalency proposals, in which each region specifies the management measures (season structure, bag limit, and size limit) to be used to constrain harvest to its regional portion of the recreational quota. Under either alternative, regionally specific management measures may be more appropriate to the fishing preferences of local fishermen. For example, regional regulations could accommodate different tourist seasons or rough weather conditions, thereby optimizing fishing opportunities around the Gulf.

Table 1.1.1. Recreational red snapper federal season lengths, quotas, and landings.

Year	Federal season dates	Number of Days	Recreational Quota	Recreational Landings
1996	January 1 – December 31	365	4.47 mp	5.339 mp
1997	January 1 – November 27	330	4.47 mp	6.804 mp
1998	January 1 – September 30	272	4.47 mp	4.854 mp
1999	January 1 – August 29	240	4.47 mp	4.972 mp
2000	April 21 – October 31	194	4.47 mp	4.750 mp
2001	April 21 – October 31	194	4.47 mp	5.252 mp
2002	April 21 – October 31	194	4.47 mp	6.535 mp
2003	April 21 – October 31	194	4.47 mp	6.105 mp
2004	April 21 – October 31	194	4.47 mp	6.460 mp
2005	April 21 – October 31	194	4.47 mp	4.676 mp
2006	April 21 – October 31	194	4.47 mp	4.131 mp
2007	April 21 – October 31	194	3.185 mp	5.809 mp
2008	June 1 – August 4	65	2.45 mp	4.056 mp
2009	June 1 – August 14	75	2.45 mp	5.597 mp
2010	June 1 – July 23; Oct 1 – Nov. 21 (Fri, Sat., & Sun.)	77	3.403 mp	2.651 mp
2011	June 1 – July 18	48	3.866 mp	6.734 mp
2012	June 1 – July 16	46	3.959 mp	7.524 mp
2013	June 1 – June 28	42	5.390 mp	9.639 mp
2014	June 1 – June 9	9	5.390 mp	T.B.D.

Quotas and landings are in millions of pounds (mp) whole weight. In 2014, the season length was estimated based on an ACT of 4.312 mp, reduced from the 5.390 mp quota. Source: Southeast Fisheries Science Center (SEFSC) annual catch limit dataset, including calibrated landings from the Marine Recreational Information Program (MRIP), Texas Parks and Wildlife Department (TPWD), and the Southeast Headboat Survey (HBS) (January 2015).

Regional management would allow for certain management measures (such as bag limits and season dates) to vary around the Gulf, enabling the establishment of recreational red snapper management measures most suited to a given region. Regional management may not result in additional fishing days. However, providing flexibility to the regions to establish management measures most appropriate locally is expected to result in social and economic benefits by providing optimal fishing opportunities for a region’s share of the quota. Nevertheless, proposed regional measures must achieve the same conservation goals as the federal management

measures in existence at a given time (i.e., constrain the catches of participating fishermen to the region's allocation of the total recreational quota). Red snapper would remain a federally managed species. The Council and NMFS would continue to oversee management of the stock. This includes continuing to comply with the mandate to ensure the red snapper annual recreational quota is not exceeded and that conservation objectives are achieved. The Scientific and Statistical Committee would continue to determine the acceptable biological catch (ABC), while the Council and NMFS would determine the total recreational red snapper quota which would be allocated among the regions. All federal regulations for the harvest of red snapper would remain effective. The existing bag limit, season start date, and minimum size limit would be designated the default federal regulations, and would be applied to a region not participating in regional management or to a region for which regional management is not active. NMFS would retain authority for the remaining management components, provided in Appendix G, including implementing quota adjustments, regulating permits, and managing the commercial red snapper individual fishing quota (IFQ) program.

There are benefits and challenges to adopting regional management. The benefits include providing regional level flexibility in the design of management measures. The consideration of regional differences in regulations may allow for optimization of social and economic benefits. For example, the distance from shore that anglers must travel to fish and the optimal times of year for fishing due to weather conditions or tourist seasons may vary, favoring different fishing seasons around the Gulf. The challenges of a regional management approach include a more complex regulatory program, because the single quota would need to be divided and managed separately for each region. Regional management also requires cooperation among federal and state marine resource managers. Effort shifting between regions may reduce the effectiveness of regionalized management. Also, the geographic distribution of the stock may change as the stock rebuilds, resulting in a pattern of landings that may not reflect the original allocation that is distributed. Monitoring catches on a regional level may be more costly than on a Gulf-wide level and require increased sample sizes for data collection. There may also be enforcement concerns, especially at regional boundaries, should fishing seasons and bag limits vary between regions.

History of Council Discussion on Regional Management

The Council has explored the concept of regional management for red snapper for several years. Regional management was discussed by the Ad Hoc Recreational Red Snapper Advisory Panel at its October 2008 meeting, and the Red Snapper Advisory Panel at its December 2009 meeting. Staff presented papers exploring red snapper regional management to the Council at the January 2009, August 2010, and October 2010 meetings (http://www.gulfcouncil.org/resources/briefing_book_archive.php).

In June 2012, the Louisiana Department of Wildlife and Fisheries presented a proposal to the Council for a recreational red snapper regional management pilot program. The Council requested that Louisiana provide further details of their proposed regional management plan for red snapper, and instructed staff to begin developing a plan amendment for regional management of recreational red snapper. At the August 2012 meeting, the Council requested development of a scoping document for regional management of recreational red snapper, which was then

discussed at the October 2012 meeting. Scoping meetings were held in January 2013 (Appendix C). The Council reviewed an options paper at its April 2013 meeting, and the first public hearing draft at its June 2013 meeting.

At the February 2013 meeting, the Council passed a motion granting NMFS the authority to reduce the recreational red snapper season in the EEZ off a Gulf state that implements less restrictive regulations for their state-water seasons. This reduction of the federal season was to compensate for the additional harvest that would occur in state waters as a result of the incompatible regulations. In response to the Council's motion, NMFS implemented a temporary emergency rule for the 2013 season (SERO 2013a) and announced the resulting state-specific seasons. On May 31, 2013, the U.S. District Court in Brownsville, Texas, voided the emergency rule. As a result, a Gulf-wide federal recreational red snapper season was established in the EEZ off of all five Gulf States. For 2013, the federal season length was 28 days, followed by a supplemental fall red snapper season for 14 days. In 2014, the season length in federal waters was 9 days long.

NMFS determines the length of the season based on the amount of the quota, the average weight of fish landed, the amount of fish estimated to be caught in extended state water seasons, and the estimated catch rates over time. Per the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), NMFS closes all federal waters for the recreational harvest of red snapper when the quota is projected to be met to ensure the entire recreational harvest, including the harvest in state waters, does not exceed the recreational quota.

1.2 Purpose and Need

The purpose of this action is to provide flexibility in the management of the red snapper recreational component in the reef fish fishery by reorganizing the federal fishery management strategy, modifying the for-hire permit provisions, and developing AMs for recreational overages to better account for biological, social, and economic differences among the regions of the Gulf.

The need is to adhere to the NSs of the Magnuson-Stevens Act and to reconsider fishery management within the context of the regions of the Gulf. This reconsideration is intended to better prevent overfishing while achieving, on a continuing basis, the optimum yield from the recreational red snapper component of the Gulf reef fish fishery (NS 1); take into account and allow for variations among, and contingencies in the fisheries, fishery resources, and catches (NS 6); and provide for the sustained participation of the fishing communities of the Gulf and to the extent practicable, minimize adverse economic impacts on such communities (NS 8).

1.3 History of Management

This history of management covers events pertinent to recreational red snapper and the Council's consideration of regional management for the recreational harvest of red snapper. A complete history of management for the FMP is available on the Council's website:

http://www.gulfcouncil.org/fishery_management_plans/reef_fish_management.php

Prior to 1997, the recreational red snapper season was open year-round. Catch levels were controlled through minimum size limits and bag limits. The Sustainable Fisheries Act of 1996 required the establishment of quotas for recreational and commercial red snapper that, when reached, result in a prohibition on the retention of fish caught by each sector, respectively, for the remainder of the fishing year. From 1997 through 1999, NMFS implemented the recreational quota requirement through an in-season monitoring process that projected closing dates a few weeks in advance. For the years 1997 through 1999, the recreational red snapper season was closed earlier each year (Table 1.1.1). In 1999, an emergency rule temporarily raised the recreational red snapper minimum size limit from 15 to 18 inches TL towards the end of the season from June 4 through August 29 in an attempt to slow down the retained harvest rate. Without this emergency rule, the season would have closed on August 5. However, the rule resulted in a large increase in dead discards and the size limit was allowed to revert back to 15 inches TL the following year. Additional details regarding the seasons and regulation changes for red snapper are presented in Hood et al. (2007).

A February 2000 regulatory amendment (GMFMC 2000) replaced the system of in-season monitoring and closure projections with a fixed season based on a pre-season projection of when the recreational quota would be reached. The season for 2000 and beyond was initially set at April 15 through October 31, with a 16-inch TL minimum size limit, 4-fish bag limit, and zero bag limit of red snapper by the captain and crew of for-hire vessels. Shortly before the regulatory amendment was submitted to NMFS, the Council, at the request of representatives of the for-hire industry, withdrew the zero bag limit proposal for captain and crew. NMFS recalculated the season length under the revised proposal, and as a result, implemented the regulatory amendment with a recreational fishing season of April 21 through October 31. This recreational fishing season remained in effect through 2007.

In 2008, Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007) revised the rebuilding plan for red snapper. For the recreational sector, the rule implemented a June 1 through September 30 fishing season in conjunction with a 2.45 million pound (mp) recreational quota, 16-inch TL minimum size limit, 2-fish bag limit, and zero bag limit for captain and crew of for-hire vessels. The implementing regulations for this amendment created the June 1 through September 30 season by establishing fixed closed seasons of January 1 through May 31, and October 1 through December 31.

The amendment also addressed differences in shrimp and red snapper fishing effort between the western and eastern Gulf, and the impacts of fishing on the red snapper rebuilding plan. The Council considered options for modifying recreational red snapper fishing effort, including different season opening dates and weekend only or consecutive seasons, for the following regions: Texas and the rest of the Gulf; east and west of the Mississippi River; and maintaining consistent Gulf-wide regulations. The Council ultimately opted to maintain consistent Gulf-wide regulations, with a recreational season from June 1 through September 15. Early versions of the amendment proposed establishing regulations for commercial red snapper fishing for the eastern and western Gulf. The action was considered but rejected because establishing different regulations would compromise the objectives of the IFQ program and reduce the flexibility and efficiency of IFQ program participants.

The Southeast Data Assessment and Review (SEDAR) 7 red snapper assessment provided an option to set two regional total allowable catches with the Mississippi River as the dividing line (SEDAR 7 2005; SEDAR 7 Update 2009). These assessments assume there are two sub-units of the red snapper stock within this region, separated commercially by the Mississippi River (shrimp statistical grids 12 and 13) and recreationally at the Mississippi/Louisiana state line. The most information collected and developed thus far is based on the assessment process and follows this particular split, which is included as an alternative for regional management.

The Sustainable Fisheries Act required the NMFS Regional Administrator to close the recreational red snapper season when the quota is projected to be met. When Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007) was submitted to NMFS, the Council requested that the five Gulf States adopt compatible regulations in state waters. Florida adopted a compatible 2-fish bag limit, but maintained its state red snapper fishing season of April 15 through October 31, 78 days longer than the federal fishing season. Texas also maintained its 4-fish bag limit and year-round fishing season in its state waters. Prior to the start of the 2008 season, NMFS recalculated its projections for the recreational red snapper season in light of the state regulations, and projected that there would be a 75% probability that the recreational quota would not be exceeded if the season closed on August 5. As a result, NMFS set the 2008 season to be June 1 through August 4. In 2009, NMFS again recalculated its projections for the season length prior to the start of the recreational season and announced that the recreational season would be June 1 to August 15.

A February 2010 regulatory amendment (GMFMC 2010) increased the total allowable catch from 5.0 mp to 6.945 mp, which increased the recreational quota from 2.45 mp to 3.403 mp. However, NMFS estimated that in 2009, the recreational sector overharvested its quota by approximately 75%. In recalculating the number of days needed to fill the recreational quota, even with the quota increase, NMFS projected that the 2010 season would need to be shortened to June 1 through July 24, and published notice of those dates prior to the start of the recreational fishing season.

In April 2010, the Deepwater Horizon MC252 deep-sea drilling rig exploded and sank off the coast of Louisiana. Because of the resulting oil spill, approximately one-third of the Gulf was closed to fishing for much of the summer months. The direct loss of fishing opportunities due to the closure, plus the reduction in tourism throughout the coastal Gulf, resulted in a much lower catch than had been projected. After the recreational season closed on July 24, NMFS estimated that 2.3 mp of the 3.4 mp recreational quota remained unharvested (NMFS 2010). However, due to the fixed October 1 through December 31 closed season, NMFS could not reopen the recreational season without an emergency rule to suspend the closure. Consequently, the Council requested an emergency rule to provide the NMFS Regional Administrator with the authority to reopen the recreational red snapper season. After considering various reopening scenarios, the Council requested that the season be reopened for eight consecutive weekends (Friday, Saturday and Sunday) from October 1 through November 21 (24 fishing days).

A January 2011 regulatory amendment (GMFMC 2011a) increased the red snapper total allowable catch to 7.185 mp, with a 3.521 mp recreational quota and a 3.664 mp commercial quota. The final rule also established a 48-day recreational red snapper season, running June 1

through July 19. On August 12, 2011, NMFS published an emergency rule that, in part, increased the recreational red snapper quota by 345,000 lbs for the 2011 fishing year and provided the agency with the authority to reopen the recreational red snapper season later in the year, if the recreational quota had not been filled by the July 19 closing date. However, based on available recreational landings data through June, NMFS calculated that 80% of the recreational quota had been caught. With the addition of July landings data plus Texas Parks and Wildlife Department survey data, NMFS estimated that 4.4 to 4.8 mp were caught, well above the 3.865 mp quota. Thus, no unused quota was available to reopen the recreational fishing season.

A March 2012 regulatory amendment (GMFMC 2012d) increased the commercial and recreational quotas and removed the fixed recreational season closure date of October 1. The recreational season opened June 1 through July 11. However, the north-central Gulf experienced extended severe weather during the first 26 days of the 2012 recreational red snapper fishing season, including Tropical Storm Debby. Because of the severe weather, NMFS extended the season by six days and closed on July 17.

A March 2013 framework action (GMFMC 2013a) increased the commercial and recreational red snapper quotas from a combined 8.08 mp to 8.46 mp. This was the result of new rebuilding projections based on the 2009 update assessment (SEDAR 7 Update 2009) that were revised to account for actual landings during 2009-2012. The resulting sector allocations were 4.315 mp (commercial) and 4.145 mp (recreational). NMFS published the final rule increasing the quota based on state-specific recreational red snapper seasons, which NMFS had previously announced it would do in a March 2013 emergency rule. On May 31, 2013, the U.S. District Court in Brownsville, Texas voided the emergency rule, and the Gulf-wide federal recreational red snapper season was established from June 1 through June 28. In July, the Council reviewed a new benchmark assessment (SEDAR 31 2013) which showed that the red snapper stock was rebuilding faster than projected, partly due to strong recruitment in some recent years. Combined with a new method for calculating the ABC, the SSC increased the ABC for 2013 to 13.5 mp, but warned that the catch levels would have to be reduced in future years if recruitment returned to average levels. After incorporating a buffer to reduce the possibility of having to later reduce the quota, the Council further increased the 2013 commercial and recreational quotas to a combined 11.0 mp (5.61 mp and 5.39 mp, respectively) (GMFMC 2013b). This increase occurred too late to extend the June recreational season, so the Council requested that NMFS reopen the recreational season. NMFS announced a supplemental season of October 1 through 14, 2013. In 2014, the recreational fishing season in federal waters was nine days long.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 –Regional Management

Alternative 1: No Action – Retain current federal regulations for management of recreational red snapper in the Gulf of Mexico (Gulf) exclusive economic zone (EEZ).

Preferred Alternative 2: Establish a regional management program that **delegates** some management authority to a state or group of states (regions). These regions would establish the red snapper season structure, bag limit, and minimum and/or maximum size limits for the harvest of an assigned portion of the recreational red snapper quota. If a region does not participate or is determined to be inconsistent with the requirements of delegation, the recreational harvest of red snapper in the EEZ off such region would be restricted to the federal default regulations for red snapper.

Establish a provision to sunset regional management after:

Option a: 10 calendar years of the program.

Option b: 5 calendar years of the program.

Preferred Option c: 3 calendar years of the program.

Option d: 2 calendar years of the program.

Alternative 3: Establish a regional management program in which a state or group of states (regions) submit proposals to **NMFS** describing the **conservation equivalent measures** the region will adopt for the management of its portion of the red snapper quota. Conservation equivalency proposals would specify the red snapper season structure, bag limit, and minimum and/or maximum size limits for the harvest of an assigned portion of the recreational red snapper quota. If a region does not participate or its proposal is determined by NMFS to be inconsistent with the requirements of the regional management program selected in Action 1, the recreational harvest of red snapper in the EEZ off such region would be restricted to the federal default regulations for red snapper.

Establish a provision to sunset regional management after:

Option a: 10 calendar years of the program.

Option b: 5 calendar years of the program.

Option c: 3 calendar years of the program.

Option d: 2 calendar years of the program.

Alternative 4: Establish a regional management program in which a state or group of states (regions) submit proposals to a **technical review committee** describing the **conservation equivalent measures** the region will adopt for the management of its portion of the red snapper quota. Conservation equivalency proposals would specify the red snapper season structure, bag limit, and minimum and/or maximum size limits for the harvest of an assigned portion of the recreational red snapper quota. The technical review committee reviews and may make recommendations on the proposal, which is either returned to the region for revision or forwarded to NMFS for final review. If a region does not participate or its proposal is

determined by NMFS to be inconsistent with the requirements of the regional management program selected in Action 1, the recreational harvest of red snapper in the EEZ off such region would be restricted to the federal default regulations for red snapper.

Establish a provision to sunset regional management after:

Option a: 10 calendar years of the program.

Option b: 5 calendar years of the program.

Option c: 3 calendar years of the program.

Option d: 2 calendar years of the program.

Discussion:

Federal default regulations refer to the Gulf-wide regulations governing the recreational harvest of red snapper in the Code of Federal Regulations (50 CFR Part 622). To implement regional management by delegation or conservation equivalency (CE) measures, the current federal regulations in the Code of Federal Regulations (50 CFR Part 622) would need to be suspended while consistent delegation or CE measures are in effect. Federal default regulations for the recreational harvest of red snapper would be applied to the EEZ off that region in the event a region's delegation or CE measures are suspended or deemed inconsistent, or if a region does not participate in regional management. If the federal default regulations are implemented for a region, NMFS would publish a notice with the Office of the Federal Register announcing such an action. Currently, the federal regulations concerning bag limit, size limit, and season length include a 2-fish bag limit, minimum size limit of 16 inches total length (TL), and season opening June 1 and closing when the recreational quota is reached or projected to be met.² The current federal regulations will serve as the default regulations for inactive regional management. These regulations have been established and revised over time through framework and regulatory amendments, which considered many ranges of reasonable alternatives and those analyses support utilizing the current federal regulations as the federal default measures.

Alternative 1 (no action) would retain current management measures for the recreational harvest of red snapper in the Gulf of Mexico (Gulf) exclusive economic zone (EEZ). Currently, these measures include a 2-fish per angler per day bag limit, a 16-inch TL minimum size limit, and a June 1 fishing season start date. **Preferred Alternative 2** and **Alternatives 3** and **4** propose different approaches to regional management for recreational red snapper. Under all of the alternatives, red snapper would remain under federal management jurisdiction, subject to Gulf-wide closure when the annual recreational quota is met. Essentially, while a state or states would be given some management authority to determine the regulations to be applied in their region, it is not the complete authority advocated for by some supporters of regional management. Only the season start and end dates, season structure, bag limit, and potentially, the size limit would be eligible for modification at the regional level. Any management measures implemented for a region must adhere to the goals of the rebuilding plan and be consistent with federal and other applicable laws.

² Recreational red snapper management measures are codified as follows in the *Federal Register*: season opening 50 CFR 622.34(b); size limit 50 CFR 622.37(a); and bag limit 50 CFR 622.38(b)(3). The regulations are also provided in Appendix G.

Under **Preferred Alternative 2**, regional management is defined as the delegation of limited management authority to a state or contiguous states, which would then establish appropriate management measures to constrain recreational harvest to the assigned portion of the recreational red snapper quota. The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) allows for the delegation of management to a state to regulate fishing vessels beyond their state waters, provided its regulations are consistent with the fishery management plan (FMP; Appendix D). The delegation of management authority to the states (**Preferred Alternative 2**) requires a three-quarters majority vote of the voting members of the Gulf of Mexico Fishery Management Council (Council) members.

If **Preferred Alternative 2** is selected, it is possible that not all states will participate. Non-participating states or regions would be required to adhere to the federal default regulations, which would be applied to the adjacent EEZ for the recreational harvest of red snapper. Because participating states would still receive their allocation (Action 4), a non-participating state's season length would be determined based on the remaining quota balance after subtracting the quota for participating states. Thus, a single non-participating state's season length would be projected based on the amount of quota it would have received if participating.

Alternatives 3 and 4 would adopt a process by which regions submit proposals describing the conservation equivalency of their intended management measures for the recreational harvest of red snapper. While **Alternatives 3 and 4** would grant less management authority directly to the states or regions than **Preferred Alternative 2**, all three alternatives provide comparable flexibility to the regions to modify the season structure, bag limit, and (potentially) size limit for the harvest of their portion of the recreational red snapper quota.

Alternatives 3 and 4 differ based on the review process for the CE proposals. Under **Alternative 3**, regions would submit proposals directly to NMFS for review while under **Alternative 4**, regions would submit CE proposals to a technical review committee. **Alternative 4** is most similar to the Mid-Atlantic Council's management of summer flounder. The technical review committee would need to be created and populated, such as by members of the Council's Scientific and Statistical Committee. The technical review committee would provide the initial review of CE proposals and may make recommendations on the proposal, which is either returned to the region for revision or forwarded to NMFS for final review. Because of the additional time needed for the technical review committee to meet and review proposals, **Alternative 4** would entail a longer process for consistency determination than under **Alternative 3**.

Under **Preferred Alternative 2** or **Alternatives 3-4**, the selected suite of management measures to be established for a region could consist of numerous combinations and ranges. Although there is flexibility in the assemblage of management measures to be adopted for a region, each region must establish its season dates and structure, bag limit, and minimum size limit. If a region does not establish a season, bag limit, and minimum size limit, then NMFS will deem the region's regulations inconsistent. If the inconsistency is not resolved and NMFS suspends the region's regional management, the federal default regulations will go into effect for the region's portion of the EEZ (Figure 2.4.1).

At any time, a region or regions could opt out and not participate in regional management. Although regional management would be inactive and such a region would fish under the federal default regulations, related actions in this amendment would remain effective. If one or more regions opt out of regional management, the regulations implementing the preferred alternatives selected under Actions 4 (apportioning the quota) and 5 (post-season accountability measures) would remain effective and applicable toward those regions until modified through a plan amendment.

The sunset options provided for each alternative (**Options a-d**) propose timelines for ending regional management and all associated actions in this amendment at a specified time. An option need not be selected as preferred. If no option is selected, no sunset date for delegation will be established. Should a sunset provision be adopted and the Council decides subsequently to continue regional management, the Council would need to extend regional management through the appropriate document and process.

Regional management would end after 10 calendar years (**Options a**), 5 years (**Options b**), 3 years (**Preferred Option c**), or 2 years (**Options d**). For all options, regional management would expire at the end of the tenth, fifth, third, or second calendar year of the program, regardless of the implementation date of this amendment. For example, if this amendment were to be implemented in May 2016 with **Option c** selected as preferred, regional management would end December 31, 2018. All regulations associated with all actions in this plan amendment would expire at the sunset date, including any accountability measures.

Requirements of Delegation

If delegation of recreational red snapper management is adopted (**Preferred Alternative 2**), then the management measures delegated to the individual states or groups of states must be consistent with the Reef Fish Fishery Management Plan (FMP), including the rebuilding plan, and the Magnuson-Stevens Act. Consistency with the FMP requires, among other things, rebuilding declining reef fish stocks, monitoring the reef fish fishery, conserving reef fish habitats and increasing fish habitats, and minimizing conflicts between user groups.

The Magnuson-Stevens Act (16 U.S.C. §1856(a)(3)) outlines the procedure in the case of a state's regulations not being consistent with the FMP (Appendix D). If NMFS determines that a state's regulations are not consistent with the FMP, NMFS shall promptly notify the state and the Council of the determination and provide an opportunity for the region to correct any inconsistencies identified in the notification. If, after notice and opportunity for corrective action, the region does not correct the inconsistencies identified by NMFS, then the delegation to the region shall not apply until NMFS and the Council find that the region has corrected the inconsistencies.

In application, the response times between NMFS' determination of inconsistency and the implementation of corrective action by the state would be case specific. The timelines for correction of inconsistencies would be decided by NMFS on a case by case basis, as it determines whether inconsistencies exist. The timeline for the region's response would be dependent on the nature of the inconsistency. Due to the short season lengths and high catch

rates for the recreational harvest of red snapper, the implementation of corrective actions may need to occur very quickly. Under such circumstances, the region would need to establish a process to implement corrective actions very quickly.

As a hypothetical example, if the region implemented the delegated management measures shortly before the season opened, any notification of inconsistency and the implementation of corrective action would need to occur quickly. To accomplish this, the region would need to have the authority to close the season and adjust the bag limit perhaps without having an opportunity to discuss the issue at a formal commission meeting. Alternatively, if the region implemented regulations several months before the opening of the red snapper recreational season, then a longer response time would be possible. This scenario may also allow for the discussion of the issue at a formal commission meeting. These scenarios exemplify the need for case-by-case timelines for the region's response to a notification of inconsistency.

A region may decide to opt out of delegation and request the federal default measures be applied to the adjacent EEZ (Figure 2.4.1) for the recreational harvest of red snapper. To opt out of delegation, the region should send a letter to NMFS requesting the federal default regulations be applied to their region for the fishing year. A season length would be calculated by NMFS based on the region's quota as apportioned in Action 4. Inherently, if only one region opts-out, then it would still essentially be constrained by the terms of delegation as per the regional area and quota apportionment.

Under delegation, the EEZ could potentially remain open year-round, and anglers' access to harvesting red snapper from the EEZ would be constrained by the management measures established for their region. Each region would prohibit further landings after its portion of the quota has been caught. Under certain conditions, the EEZ off a given region could be closed. To be consistent with national standard 4 (NS 4) of the Magnuson-Stevens Act, these closures should apply to all recreational vessels.

Requirements of Conservation Equivalency

If the conservation equivalency model for regional red snapper management is adopted (**Alternatives 2 or 3**), then the management measures developed by the regions must be consistent with the FMP, including the rebuilding plan, and the Magnuson-Stevens Act. Consistency with the FMP requires, among other things, rebuilding declining reef fish stocks, monitoring the reef fish fishery, conserving reef fish habitats and increasing fish habitats, and minimizing conflicts between user groups. Furthermore, the adopted management measures must be compatible with the region's projected season length and apportioned quota. This means that the selected suite of management measures must be reasonably expected to constrain the region's harvest to its portion of the Gulf-wide recreational quota, to avoid the region's proposal being deemed inconsistent. Corrective action is required should a region's conservation equivalency measures be deemed inconsistent, to avoid application of the federal default measures.

2.2 Action 2 – Regional Management and Sector Separation

Alternative 1: No Action – Retain current federal management of recreational red snapper in the Gulf exclusive economic zone (EEZ). For the years 2015-2017, establish separate quotas for the federal for-hire and private angling components as specified in Reef Fish Amendment 40.

Alternative 2: For regional management, extend the separate management of the federal for-hire and private angling components of the recreational sector. The actions of this amendment would apply to the private angling component, only.

Alternative 3: End the separate management of the federal for-hire and private angling components upon implementation of this amendment. The actions of this amendment would apply to both the federal for-hire and private angling components of the recreational sector.

Discussion:

In October 2014, the Council took final action to adopt sub-quotas for the federal for-hire and private angling components of the recreational sector for a period of three years. This action is only applicable in the event this amendment is implemented while the sub-quotas are still in effect. **Alternative 1 (no action)** would continue management of the for-hire and private angling components until the end of 2017, as specified in Amendment 40 (GMFMC 2014). It is possible that this alternative would allow for the component quotas to remain in place when regional management is implemented, only to be vacated at the specified time. This may complicate the development of regional management measures.

Alternative 2 would remove the sunset provision specified in Amendment 40 upon implementation of this amendment and continue separate management of the for-hire and private angling components. Under this alternative, regional management would apply to the private angling component, only. **Alternative 3** would end the separate component quotas concurrent with implementation of this amendment and regional management would apply to the entire recreational sector.

This action does not include an alternative for regional management to apply to the federal for-hire component alone and not to private anglers, because the for-hire component consists of vessels possessing a federal permit and are required to comply with additional federal regulations to which private anglers are not subject. For example, captains and crew on federally permitted for-hire vessels are prohibited from retaining a bag limit. Further, these vessels are restricted to fishing under more restrictive federal regulations and may not land red snapper in state waters when federal waters are closed.

2.3 Action 3 – Establish Regions for Management

Alternative 1: No Action – Retain current federal regulations for management of recreational red snapper in the Gulf EEZ.

Alternative 2: Establish an east (Florida, Alabama, Mississippi) and west (Louisiana, Texas) region and allow for different management measures for each region.

Alternative 3: Establish an east (Florida, Alabama) and west (Mississippi, Louisiana, Texas) region and allow for different management measures for each region.

Preferred Alternative 4: Establish five regions representing each Gulf state.

Alternative 5: Establish five regions representing each Gulf state, which may voluntarily form larger multistate regions with adjacent states.

Discussion:

Under **Alternative 1 (no action)**, management measures would remain the same for the recreational harvest of red snapper in the entire Gulf EEZ. Currently those regulations specify a June 1 fishing season start date, a 16-inch TL minimum size limit, and a 2-fish per angler per day bag limit. Additionally, captain and crew are prohibited from retaining a bag limit while under charter. The remaining alternatives propose to divide the Gulf into regions, using the boundaries specified in Figure 2.3.1.

Alternatives 2 and 3 would establish two regions: eastern and western Gulf. In both alternatives, Florida and Alabama make up the eastern region, and Louisiana and Texas make up the western region. The alternatives differ in that Mississippi is part of the eastern region under **Alternative 2**, and is part of the western region in **Alternative 3**. Because **Alternatives 2 and 3** include more than one state in a region, the states sharing a region would need to agree on the set of shared management measures and to close the region's red snapper season when the quota is reached or projected to be reached.

Alternative 2 would divide the Gulf into regions that most closely approximate the eastern and western sub-units used in the red snapper stock assessment, thereby affording the possibility to adopt regional management measures based on the differences in biological abundance. The Red Snapper Benchmark Assessment (SEDAR 31 2013) estimated that the western Gulf sub-unit would carry a disproportionate burden of stock recovery. This is true for two reasons, first because it is currently estimated to have higher stock biomass and second because the average fishing mortality rate at age is estimated to be lower in the western Gulf compared to the eastern Gulf (SEDAR 31 2013). Therefore, the eastern and western sub-units of the red snapper stock are projected to rebuild at different rates based on current estimates of population abundance. However, the ultimate result of increasing fishing pressure on the eastern sub-unit compared to the western sub-unit is that the eastern component is projected to continue to be prosecuted on mostly small, young fish which is projected to result in a truncated population age distribution.

A red snapper larval transport study in the northern Gulf examined the potential for repopulating the eastern Gulf stock through larval transport from the more populous western stock (Johnson et al. 2009). Red snapper larval abundance was determined to be twice as great over the Louisiana-Texas shelf as over the Mississippi-Alabama shelf and four times as great over the Mississippi-Alabama shelf as over the west Florida shelf (Hanisko et al. 2007). Hanisko et al. (2007) compared the larval abundance from fall plankton studies in the eastern Gulf and determined the area off Mississippi/Alabama was disproportionately smaller than off west Florida, but accounted for half the abundance of red snapper larvae in the eastern Gulf.

A problem with using the sub-units of the stock assessment is that the dividing line used in the assessment does not fall precisely along a state boundary. Thus, there would be a difference in using the proportion of the red snapper suggested by the stock assessment that could be taken from each sub-unit (Action 4, Alternative 5), and the proportion of aggregated states' landings coinciding with the selection of **Alternative 2**, which most closely approximates the boundary used in the stock assessment. This difference would be even greater if **Alternative 3** is selected as preferred, as the western region's boundary would also include Mississippi. Although the regional boundary under **Alternative 3** is further to the east than **Alternative 2** (and thus deviates further from the sub-units of the stock assessment), including Mississippi in the same region as Louisiana rectifies the issue that the eastern portion of Louisiana's state water boundary essentially obstructs Mississippi's access to the EEZ from its state waters (Figure 2.3.1). **Preferred Alternative 4** would establish each Gulf state as its own region. This alternative would provide the most flexibility to individual states to determine their choice of management measures. Should a region fail to implement regional regulations consistent with the FMP, that region would harvest red snapper under the federal default management measures.

Generally, establishing more regions (such as under **Preferred Alternative 4** or **Alternative 5**) will mean a more subdivided quota and entail more complicated management. For example, under current management, state and federal waters Gulf-wide are open during the red snapper season. By allowing regions to set their own fishing seasons, some regions of the Gulf could be open while others are closed. Bag limits and size limits may also vary among regions. Therefore, enforcement will be conducted dockside, primarily. At sea enforcement could be most complicated near the boundaries between regions with different management measures, as it could be difficult for enforcement agents to determine which region's jurisdiction applies to a recreational vessel. In these cases, it is assumed that enforcement agents would consider the most liberal of the regions' management measures in place at the time, to serve as guidelines for determining regulatory compliance. For example, if no region has a bag limit greater than four red snapper per person per day, then a vessel possessing red snapper in excess of this bag limit, regardless of where in the EEZ it is fishing, could be in violation if stopped by enforcement agents.

Alternative 5 is most similar to **Preferred Alternative 4**, but would allow one or more regions to choose to form multistate regions with adjacent states. While this additional measure of flexibility could allow regions to pool their portions of the recreational quota, it would also require cooperation among states included in the region.

There are also issues with using the Marine Recreational Information Program (MRIP) catch estimates for states where species are infrequently sampled. This may occur if a given species is rarely captured or if there are relatively few sample locations in a state. These situations increase proportional variability, resulting in additional scientific or management uncertainty that could affect the use of these data. These problems can be mitigated by increasing: 1) the intensity of sampling, 2) spatial extent of the sample frame (e.g., Gulf-wide variability is less than estimates for individual states), or 3) lengthening the time-period used to develop catch estimates (i.e., wave-length). In practice, each of these measures has impediments. For example, funding may be inadequate to support additional monitoring and temporal or spatial resolution may not match management needs. This should be considered when developing management frameworks. In addition, Texas Parks and Wildlife Department (TPWD) uses its own survey for estimating catches, using a different methodology than MRIP. Also, Louisiana Department of Wildlife and Fisheries announced on September 5, 2013 that the state will no longer participate in MRIP. If regional management is established at the state level, this could create a question of whether the catch estimates for Texas and Louisiana are comparable to those of the other states.

If one or more states are combined into a region (**Alternatives 2, 3, and 5**), then the outermost state boundaries would be used to define the geographic region (Figure 2.3.1). In addition, the Council could choose to establish new jurisdictional lines to define regions.

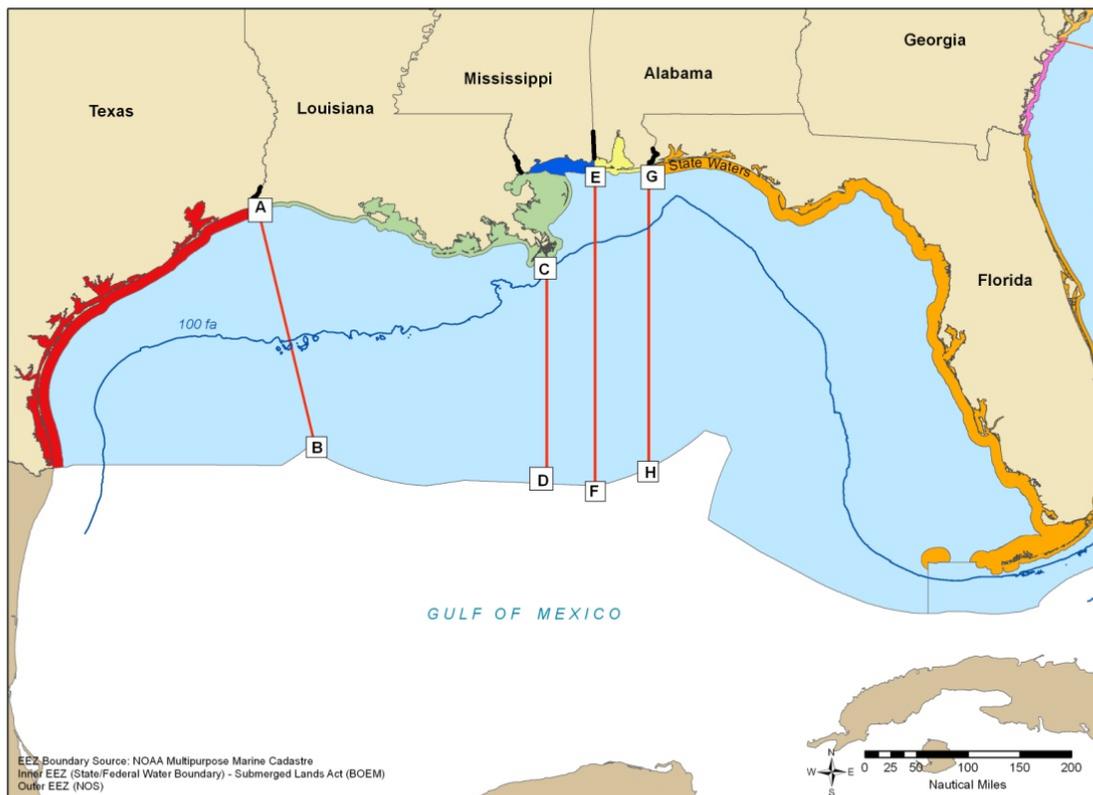


Figure 2.3.1. Map of state waters and the EEZ with established and proposed boundaries between states. These boundaries were agreed upon at the February 2013 Council meeting.

The boundaries in Figure 2.3.1 were agreed upon by the representatives from each state marine resource agency at the February 2013 Council meeting. All lines begin at the boundary between state waters and the EEZ. Line A-B, defining the EEZ off Texas, is already codified as a line from 29°32.1' N latitude, 93°47.7' W longitude to 26°11.4' N latitude, 92°53.0' W longitude, which is an extension of the boundary between Louisiana and Texas (50 CFR 622.2). Likewise, line G-H, defining the EEZ off Florida, is codified as a line at 87°31.1' W longitude extending directly south from the Alabama/Florida boundary (50 CFR 622.2). The other two lines have not been codified, but were negotiated between the adjacent states prior to the February 2013 meeting. Line E-F is a line at 88°23.1' W longitude extending directly south from the boundary between Alabama and Mississippi.

Line C-D is a line at 89°10.0' W longitude extending directly south from the South Pass Light in the Mississippi River delta in Louisiana. Unlike the other lines, this line is not based on the boundary between Louisiana and Mississippi because doing so would be impracticable. Louisiana has jurisdiction over the Chandeleur Islands, which extend into waters south of Mississippi. A line based on the state waters boundary just north of the islands could result in inequitable impacts on Mississippi anglers as it would identify federal waters that are off both Mississippi and Louisiana as being exclusively off Louisiana. A line based on the state land boundary would be even further west and would reduce the size of the EEZ off Louisiana. Therefore, this line was considered a fair compromise by representatives of both states.

2.4 Action 4 – Apportioning the Recreational Quota among Regions

Alternative 1: No Action – Retain current federal regulations for management of recreational red snapper in the Gulf EEZ. Do not divide the recreational quota or component quotas among regions.

Alternative 2: Apportion the recreational quota (or component quotas) among the regions selected in Action 3, based on the average of historical landings for the years **1986-2013**.

Alternative 3: Apportion the recreational quota (or component quotas) among the regions selected in Action 3, based on the average of historical landings for the years **1996-2013**.

Alternative 4: Apportion the recreational quota (or component quotas) among the regions selected in Action 3, based on the average of historical landings for the years **2006-2013**.

Preferred Alternative 5: Apportion the recreational quota (or component quotas) among the regions selected in Action 3, based on **50%** of average historical landings **from 1986-2013** and **50%** of average historical landings **from 2006-2013**.

Preferred Alternative 6: In calculating regional apportionments, exclude from the selected time series:

Preferred Option a: 2006 landings

Preferred Option b: 2010 landings

Alternative 7: Establish eastern and western recreational red snapper quotas (or component quotas) divided at the Mississippi River, based on the regional biogeographical differences in the stock used in the stock assessments.

Discussion:

The adoption of regional management for the recreational red snapper quota will require the quota to be apportioned, or allocated, among the selected regions. Allocation is an inherently controversial issue because a limited resource is divided among competing user groups, each of which benefits from receiving the largest portion possible. Allocation decisions would need to follow the Principles and Guidelines for Allocation adopted by the Council (Appendix E).

Alternative 1 (no action) would maintain a single red snapper quota for the recreational sector. Currently, there is no expressed state allocation; the proportion of the total recreational landings made up by each state varies from year to year, as seen in Table 2.4.1. If Alternative 1 (no action) is selected as preferred in Action 2 and this plan amendment is implemented before sector separation sunsets, it is possible that 10 allocations of the recreational quota would be necessary.

Alternatives 2-4 and Preferred Alternative 5 propose methods for apportioning the recreational red snapper quota based on the average of historical landings for different time series. Regardless of the alternative selected, in some years, each state's landings exceed their

average. This means that requiring the states to constrain their catches to a percentage of the total quota could restrict the fluctuations in annual landings that occur in some years.

Table 2.4.1. Percentage of annual recreational red snapper landings by state (1986-2013), based on whole weight (ww) of fish.

Year	Alabama	Florida	Louisiana	Mississippi	Texas
1986	11.3%	55.5%	18.1%	0.1%	15.0%
1987	18.5%	43.7%	13.5%	2.6%	21.7%
1988	16.5%	29.9%	33.1%	0.7%	19.8%
1989	18.4%	12.4%	24.1%	11.7%	33.3%
1990	39.5%	18.0%	16.9%	3.4%	22.2%
1991	30.1%	15.1%	33.2%	6.2%	15.5%
1992	32.7%	8.0%	24.5%	16.6%	18.2%
1993	29.2%	17.6%	22.7%	12.7%	17.9%
1994	32.1%	13.9%	21.1%	8.1%	24.7%
1995	32.1%	10.2%	28.3%	2.9%	26.6%
1996	32.9%	18.6%	16.6%	4.0%	27.9%
1997	39.3%	14.6%	16.8%	9.8%	19.5%
1998	29.6%	28.9%	14.9%	3.9%	22.8%
1999	39.5%	28.9%	15.8%	4.1%	11.8%
2000	29.5%	35.9%	18.6%	1.1%	14.9%
2001	42.4%	39.8%	6.0%	2.1%	9.7%
2002	40.3%	38.5%	6.2%	3.6%	11.4%
2003	37.9%	36.3%	8.9%	6.0%	10.9%
2004	30.0%	53.9%	5.8%	0.4%	9.9%
2005	29.1%	48.0%	10.4%	0.1%	12.5%
2006	20.3%	50.7%	12.2%	0.8%	16.0%
2007	19.7%	56.6%	15.6%	0.1%	8.0%
2008	17.2%	57.4%	15.7%	1.0%	8.6%
2009	21.7%	46.9%	18.8%	0.8%	11.8%
2010	21.4%	55.8%	5.0%	0.4%	17.3%
2011	53.6%	29.3%	8.9%	1.0%	7.2%
2012	36.1%	32.3%	19.2%	4.2%	8.2%
2013	43.9%	40.8%	6.0%	4.5%	4.9%

Source: Southeast Fisheries Science Center (SEFSC) annual catch limit dataset, including Calibrated MRIP, TPWD, and Southeast Headboat Survey (HBS) landings. Alabama and the Florida Panhandle HBS landings are initially reported to the same headboat fishing area. Landings have been assigned to each state based on the HBS vessel landing records (December 2014). Actual landings are provided in the Appendix (Table F-1).

Alternatives 2-5 present four options for apportioning the recreational quota using averages of historical landings for varying time series (Table 2.4.2). **Alternative 3** provides options for excluding particular years from the historical landings averages, due to impacts that affected

recreational fishing opportunities during or immediately preceding those years (e.g., fishing closures following the Deepwater Horizon MC252 oil spill). **Alternative 3** may only be selected if an option under **Alternative 2** is selected as preferred; additionally, one or both options under **Alternative 3** may be selected as preferred. The two years provided were discussed at a joint meeting of the five Gulf States' respective heads of their natural resource departments. Hurricane Katrina struck late in the fishing season of 2005, therefore landings from 2006 are proposed for exclusion. The Deepwater Horizon MC252 oil spill began in April 2010, prior to the opening of the 2010 recreational red snapper season (see Figure 3.3.1 for the extent of the fishing closures). **Option a** would exclude landings from 2006 from each time series (Table 2.4.3), and **Option b** would exclude landings from 2010 from the time series (Table 2.4.4). Resulting averages for landings if both options are selected are provided in Table 2.4.5. The exclusion of landings from 2006 (**Option a**), 2010 (**Option b**), or both (**Options a and b**) could be selected alongside one of **Alternatives 2-5**. Landings from 2010 were excluded (**Preferred Option a**) due to the disruptions to recreational fishing following the Deepwater Horizon MC252 oil spill and subsequent fishing closures.

Table 2.4.2. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series.

Alternative	Years	Alabama	Florida	Louisiana	Mississippi	Texas
2	1986-2013	30.2%	33.5%	16.3%	4.0%	16.0%
3	1996-2013	32.5%	39.6%	12.3%	2.7%	13.0%
4	2006-2013	29.2%	46.2%	12.7%	1.6%	10.3%
5	50% (1986-2013), 50% (2006-2013)	29.7%	39.9%	14.5%	2.8%	13.1%

Note: Actual landings on which Tables 2.4.2 – 2.4.5 are based can be found in the Appendix (Table F-1).

Table 2.4.3. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2006.

Alternatives 2 -5 with Pref. Alt. 6 Pref. Option a	Years	Alabama	Florida	Louisiana	Mississippi	Texas
Alternative 2	1986-2013	30.5%	32.8%	16.5%	4.1%	16.0%
Alternative 3	1996-2013	33.2%	39.0%	12.3%	2.8%	12.8%
Alternative 4	2006-2013	30.5%	45.6%	12.8%	1.7%	9.4%
Alternative 5	50%:50%	30.5%	39.2%	14.6%	2.9%	12.7%

Table 2.4.4. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2010.

Alternatives 2-5 with Pref. Alt. 6 Pref. Option b	Years	Alabama	Florida	Louisiana	Mississippi	Texas
Alternative 2	1986-2013	30.5%	32.7%	16.7%	4.2%	16.0%
Alternative 3	1996-2013	33.1%	38.7%	12.7%	2.8%	12.7%
Alternative 4	2006-2013	30.4%	44.9%	13.8%	1.8%	9.2%
Alternative 5	50%:50%	30.4%	38.8%	15.3%	3.0%	12.6%

Table 2.4.5. Resulting proportions of the recreational red snapper quota that could be apportioned to each state based on four options (Alternatives 2-5) of historical landings time series, excluding landings from 2006 and 2010.

Alternatives 2-5 with Pref. Alt. 6 Pref. Options a & b	Years	Alabama	Florida	Louisiana	Mississippi	Texas
Alternative 2	1986-2013	30.9%	32.0%	16.9%	4.3%	16.0%
Alternative 3	1996-2013	33.9%	37.9%	12.8%	2.9%	12.5%
Alternative 4	2006-2013	32.0%	43.9%	14.1%	1.9%	8.1%
Alternative 5	50%:50%	31.5%	37.9%	15.5%	3.1%	12.0%

Alternative 7 considers apportioning the quota based on the projected yields for the ABC for the eastern and western Gulf, as derived from the updated projections from the 2009 assessment (Linton 2012a), and may be selected as preferred if Alternatives 2 or 3 are selected as preferred in Action 3. The resulting apportionments of the ABC from that assessment would be 48.5% for the eastern and 51.5% for the western Gulf (Linton 2012a).

As discussed in the previous action, all options for creating regions fall along state boundaries. Although the eastern and western regions proposed under Action 3’s Alternative 2 most closely approximate the eastern and western components used in the stock assessment, they do not overlap exactly. There would be a difference in using the proportion of red snapper suggested by the stock assessment that could be taken from each sub-unit, and the proportion of aggregated states’ landings coinciding with the selection of Action 2’s Alternative 2. Nevertheless, **Alternative 7** would provide a biologically based apportionment for regional management. Action 2’s Alternative 3 would also divide the Gulf into eastern and western regions, but its regional boundary, between Mississippi and Alabama, deviates further from the eastern and western components of the stock assessment than Action 2’s Alternative 2.

It is possible that one or more states may opt out and not participate in regional management. If only one state opts out, the remaining four states would still receive their portion of the quota, as specified in the selected preferred alternative. This means that a single non-participating state’s

landings would be restricted to the remaining balance of the quota, equivalent to the share it would receive if participating in regional management. Should more than one state choose to opt out, the participating states would still receive their respective portions of the quota. The quota which would have been distributed to each non-participating state would be pooled and NMFS would estimate the length of the fishing season based on the aggregate quota. Those states would then fish under the federal default regulations and a shared fishing season (Action 7).

An additional issue may arise for individual regions to monitor and constrain catches to their apportioned quota. NMFS regularly issues exempted fishing permits (EFPs) for research or activities which would otherwise be considered fishing. Fish harvested under an EFP are exempt from specific regulations such as bag limits, size limits, and fishing seasons. Because the fish landed under a research activity EFP are normally accounted for in the stock assessment process, before any quotas or allocations are established, these fish are not deducted from the quota. However, there are instances where NMFS may determine that an EFP is specific to a fishing quota or allocation, and may require the regions to account for those fish during a fishing season. If a quantity of fish under an EFP is required to be monitored and accounted for by regions under regional management, the region will be responsible for accounting for these landings, along with their other monitoring to assure they do not exceed their portion of the quota.

2.5 Action 5 – Post-Season Accountability Measures (AMs)

Alternative 1: No action – Retain current federal regulations for managing overages of the recreational red snapper quota in the Gulf EEZ. While red snapper are overfished (based on the most recent Status of U.S. Fisheries Report to Congress), if the recreational red snapper quota is exceeded, reduce the **recreational sector** quota in the following year by the full amount of the overage unless the best scientific information available determines that a greater, lesser, or no overage adjustment is necessary. The recreational ACT will be adjusted to reflect the previously established percent buffer.

Preferred Alternative 2: While red snapper are overfished (based on the most recent Status of U.S. Fisheries Report to Congress), if the combined recreational landings from all regions exceed the recreational sector quota, then reduce in the following year the quota of any **region** which exceeded its regional quota by the amount of the region’s quota overage in the prior fishing year. The recreational ACT will be adjusted to reflect the previously established percent buffer.

Alternative 3: While red snapper are overfished (based on the most recent Status of U.S. Fisheries Report to Congress), if the combined recreational landings from all regions exceed the red snapper recreational quota, then reduce in the following year the quota of the **component** (for-hire and/or private angling) by the full amount of the respective component’s overage unless the best scientific information available determines that a greater, lesser, or no overage adjustment is necessary. The recreational ACT will be adjusted to reflect the previously established percent buffer.

Alternative 4: While red snapper are overfished (based on the most recent Status of U.S. Fisheries Report to Congress), if the combined recreational landings from all regions exceed the red snapper recreational quota, in the following year: reduce the **for-hire component**’s quota by the full amount of the component’s overage; for the private angling component’s quota, reduce the quota of any **region** which exceeded its regional quota by the amount of the region’s quota overage in the prior fishing year. The recreational ACTs will be adjusted to reflect the previously established percent buffer.

Note: If the total landings from all regions do not exceed the Gulf-wide recreational quota in that year, the region’s quota would not need to be reduced to account for the region’s overage.

Discussion:

Section 407(d) of the Magnuson-Stevens Act requires that the Council ensure the FMP (and its implementing regulations) have conservation and management measures that establish a separate quota for recreational fishing (private and for-hire vessels) and prohibit the retention of red snapper caught for the remainder of the fishing year once that quota is reached. The national standard 1 guidelines identify two types of accountability measures (AMs): in-season and post-season. These AMs are not mutually exclusive and should be used together where appropriate. In 2014, the Council adopted an in-season AM to create an annual catch target (ACT) determined by deducting 20% from the ACL. To correct or mitigate any overages during a specific fishing year (50 CFR 600.310(g)), the Council also adopted a post-season AM which

would reduce the recreational quota in the year following an overage by the full amount of the overage (**Alternative 1**).

Alternative 1 (no action), would continue to apply the recently adopted post-season AM Gulf-wide. Although the possibility of triggering an overage adjustment would encourage regions to constrain harvest to the region's quota, the Gulf-wide approach may be perceived as inequitable across regions. For example, if a particular region greatly exceeded their regional quota, then the necessary overage adjustment may restrict the length of the following year's fishing season both in the region with the overage and the other regions which did not exceed their regional quotas. If this occurs, this may reduce the flexibility provided to the regions under regional management.

Preferred Alternative 2 would apply the post-season AM only to a region or regions which exceeded its portion of the recreational quota. With the apportionment of regional quotas, **Preferred Alternative 2** would prevent the overage adjustment from affecting regions that do not exceed their regional quota. However, if a region's overage is greater than the following year's regional quota, then the region may not have a recreational red snapper season. The overage adjustments would need to be taken into account when regions develop their management strategy, including the length of the fishing season for the following year.

Preferred Alternative 2 would encourage a region to constrain harvest to the regional quota to ensure that the overage adjustment is not applied to the recreational season for the following year. Regardless of a region exceeding its quota, an overage adjustment would only need to be applied if the Gulf-wide recreational sector quota was exceeded.

Alternative 3 would apply the post season AM to the component (for-hire or private angling) that exceeds its component quota in the prior fishing year. In the event the Gulf-wide recreational quota is exceeded, the quota of the component that exceeded its portion of the quota would have its quota reduced in the following year by the amount of the overage. This alternative would prevent the overage adjustment from affecting a component of the recreational sector that does not exceed its component quota. If Alternative 3 in Action 2 is selected as preferred, this alternative would not be applicable.

Alternative 4 combines both **Preferred Alternative 2** and **Alternative 3**, by applying the post-season AM to both a region and component that has exceeded its portion of the recreational quota in the previous year. Although the possibility of triggering an overage adjustment would encourage both regions and the components to constrain harvest to the respective quotas, a region and sector-wide approach may be perceived as inequitable by the different regions and components. If Alternative 3 in Action 2 is selected as preferred, this alternative would not be applicable.

CHAPTER 3. AFFECTED ENVIRONMENT

The actions considered in this environmental impact statement (EIS) would affect recreational fishing for red snapper in federal and state waters of the Gulf of Mexico (Gulf). Descriptions of the physical, biological, economic, social, and administrative environments were completed in the EIS for Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), the Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004a), and the Generic Annual Catch Limits/Accountability Measures (ACL/AM) Amendment (GMFMC 2011b). Below, information on each of these environments is summarized or updated, as appropriate.

3.1 Description of the Red Snapper Component of the Reef Fish Fishery

A description of the fishery and affected environment relative to red snapper was last fully discussed in joint Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007). This section updates the previous description to include additional information since publication of that EIS.

General Features

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). The commercial sector operates under an individual fishing quota (IFQ) program. In 2011, 362 vessels participated in the IFQ program (NMFS 2012a). The recreational sector operates in three modes, charter boats, headboats, and private vessels. In 2012, private vessels accounted for 70.1% of recreational red snapper landings, followed by charter boats (20.3%) and headboats (9.6%). On a state-by-state basis, Alabama accounted for the most landings (36.1%), followed by Florida (32.3%), Louisiana (19.2%), Texas (8.2%), and Mississippi (4.2%) (Table 3.1.1).

Table 3.1.1. Recreational red snapper landings in 2012 by state and mode.

State	Landings (lbs whole weight)				% by State
	Charter	Headboat	Private	All Modes	
FL (west)	806,118	205,830	1,420,620	2,432,569	32.3%
AL	445,816	71,482	2,197,377	2,714,675	36.1%
MS	1,406	5,894	306,854	314,154	4.2%
LA	236,145	21,199	1,188,763	1,446,106	19.2%
TX	39,128	419,671	157,937	616,736	8.2%
Total	1,528,613	724,077	5,271,550	7,524,239	
% by Mode	20.3%	9.6%	70.1%		100%

Source: NMFS 2014.

The red snapper stock has been found to be in decline or overfished in every stock assessment conducted, beginning with the first assessment in 1986 (Parrack and McClellan 1986).

Implemented in 1990, Amendment 1 (GMFMC 1989) established the first red snapper rebuilding plan. From 1990 through 2009, red snapper harvest was managed through the setting of an annual total allowable catch (TAC), which has been divided into allocations of 51% commercial, and 49% recreational. Beginning in 2010, TAC was phased out in favor of an ACL. The red snapper rebuilding plan has not formally adopted the use of the term ACL. However, by allocating the acceptable biological catch (ABC) between the commercial and recreational sectors, and then setting quotas for each sector that do not exceed those allocations, the terminology and approaches used in the red snapper rebuilding plan are consistent with the use of ACLs, and optionally annual catch targets as discussed in the national standard 1 guidelines. Such alternative terminology is allowed under the guidelines.

Also in 1990, Amendment 1 established a commercial red snapper quota of 2.65 million pounds (mp) whole weight (ww). There was no explicit recreational allocation specified, only a bag limit of 7 fish and a minimum size limit of 13 inches total length. Based on the 51:49 commercial to recreational sector allocation, the commercial quota implied a TAC of about 6.0 mp in 1990, followed by explicit TACs of 4.0 mp in 1991 and 1992, 6.0 mp in 1993 through 1995, and 9.12 mp from 1996 through 2006. The TAC was reduced to 6.5 mp in 2007 and 5.0 mp in 2008 and 2009.

In 2010, the ABC was increased to 6.945 mp. In 2011, it was initially raised to 7.185 mp, and then increased in August by another 345,000 lbs (7.530 mp total) which was allocated to the recreational sector. In 2012 the ABC was raised to 8.080 mp. A scheduled increase in 2013 to 8.690 mp was cancelled due to an overharvest in 2012 by the recreational sector. After an analysis of the impacts of the overharvest on the red snapper rebuilding plan, the 2013 ABC was increased to 8.460 mp. In July 2013, the Council reviewed a new benchmark assessment (SEDAR 31 2013) which showed that the red snapper stock was rebuilding faster than projected, partly due to strong recruitment in some recent years. Combined with a new method for calculating the ABC, the Scientific and Statistical Committee (SSC) increased the ABC for 2013 to 13.5 mp, but warned that the catch levels would have to be reduced in future years if recruitment returned to average levels. After incorporating a buffer to reduce the possibility of having to later reduce the quota, the Gulf of Mexico Fishery Management Council (Council) further increased the 2013 commercial and recreational quotas to a combined 11.0 mp (5.61 mp and 5.39 mp respectively) (GMFMC 2013b). This increase occurred too late to extend the June recreational season, so the Council requested that the National Marine Fisheries Service (NMFS) reopen the recreational season on October 1 for whatever number of days would be needed to harvest the additional quota. NMFS estimated that the additional recreational quota would take 14 days to be caught, and therefore announced a supplemental season of October 1 through 14.

Both the commercial and recreational sectors have had numerous allocation overruns. Table 3.1.2 shows a comparison of quotas and actual harvests from 1990 through 2013. The recreational sector has had allocation overruns in 21 out of 23 years in which an allocation was specified, while the commercial sector has had overruns in 10 of 23 years. The commercial sector has not had overruns since 2005. Since 2007, commercial harvest of red snapper has operated under an IFQ program.

Table 3.1.2. Red snapper landings and overage/underage by sector, 1986-2013. Landings are in mp ww. Commercial quotas began in 1990. Recreational allocations began in 1991 and recreational quotas began in 1997. Summing the recreational allocation/quota and the commercial quota yields the total allowable catch (TAC) for the years 1991-2009 and the acceptable biological catch (ABC) for 2010-2013.

Year	Recreational			Commercial			Total		
	Alloc. Quota	Actual landings	Difference	Quota	Actual landings	Difference	Quota	Actual landings	Difference
1986	na	2.770	na	na	3.700	na	na	6.470	na
1987	na	1.814	na	na	3.069	na	na	4.883	na
1988	na	2.568	na	na	3.960	na	na	6.528	na
1989	na	2.656	na	na	3.098	na	na	5.754	na
1990	na	1.614	na	3.1	2.650	-0.450	na	4.264	na
1991	1.96	2.917	+0.957	2.04	2.213	+0.173	4.0	5.130	+1.130
1992	1.96	4.618	+2.658	2.04	3.106	+1.066	4.0	7.724	+3.724
1993	2.94	7.161	+4.221	3.06	3.374	+0.314	6.0	10.535	+4.535
1994	2.94	6.076	+3.136	3.06	3.222	+0.162	6.0	9.298	+3.298
1995	2.94	5.464	+2.524	3.06	2.934	-0.126	6.0	8.398	+2.398
1996	4.47	5.339	+0.869	4.65	4.313	-0.337	9.12	9.652	+0.532
1997	4.47	6.804	+2.334	4.65	4.810	+0.160	9.12	11.614	+2.494
1998	4.47	4.854	+0.384	4.65	4.680	+0.030	9.12	9.534	+0.414
1999	4.47	4.972	+0.502	4.65	4.876	+0.226	9.12	9.848	+0.728
2000	4.47	4.750	+0.280	4.65	4.837	+0.187	9.12	9.587	+0.467
2001	4.47	5.252	+0.782	4.65	4.625	-0.025	9.12	9.877	+0.757
2002	4.47	6.535	+2.065	4.65	4.779	+0.129	9.12	11.314	+2.194
2003	4.47	6.105	+1.635	4.65	4.409	-0.241	9.12	10.514	+1.394
2004	4.47	6.460	+1.990	4.65	4.651	+0.001	9.12	11.111	+1.991
2005	4.47	4.676	+0.206	4.65	4.096	-0.554	9.12	8.772	-0.348
2006	4.47	4.131	-0.339	4.65	4.649	-0.001	9.12	8.780	-0.340
2007	3.185	5.809	+2.624	3.315	3.153	-0.162	6.5	8.962	+2.462
2008	2.45	4.056	+1.606	2.55	2.461	-0.089	5.0	6.517	+1.517
2009	2.45	5.597	+3.147	2.55	2.461	-0.089	5.0	8.058	+3.058
2010	3.403	2.651	-0.752	3.542	3.362	-0.180	6.945	6.013	-0.932
2011	3.866	6.734	+2.868	3.664	3.562	-0.102	7.53	10.296	+2.766
2012	3.959	7.524	+3.565	4.121	4.000	-0.121	8.08	11.524	+3.444
2013	5.390	9.639	+4.249	5.610	5.399	-0.211	11.00	15.038	+4.038

Sources: For recreational landings, Southeast Fisheries Science Center (SEFSC) including landings from the Calibrated Marine Recreational Information Program (MRIP), Texas Parks and Wildlife Department (TPWD), and the Southeast Headboat Survey (HBS) (December 2014). For commercial landings, Southeast Data Assessment and Review (SEDAR) 31 Data Workshop Report (1990-2011), commercial quotas/catch allowances report from NMFS/Southeast Regional Office (SERO) IFQ landings website (2012 commercial):

<http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>.

Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

Recreational Red Snapper Sector

Red snapper are an important component of the recreational sector's harvest of reef fish in the Gulf. Recreational red snapper fishing includes charter boats, headboats (or party boats), and private anglers fishing primarily from private or rental boats. As with the commercial fishery, red snapper are primarily caught with hook-and-line gear in association with bottom structures. Recreational red snapper harvest allocations since 1991 have been set at 49% of the TAC, or 1.96 mp in 1991 and 1992, 2.94 mp for 1993 through 1995, and 4.47 mp from 1996 through 2006. In 2007, the recreational quota was reduced to 3.185 mp. It was reduced again to 2.45 mp in 2008 and 2009. Since 2010, the recreational quota has been increased each year: 3.403 mp in 2010, 3.866 mp in 2011, and 3.959 mp in 2012 (Table 3.1.3).

Before 1984, there were no restrictions on the recreational harvest of red snapper. In November 1984, a 12-inch total length size limit was implemented, but with an allowance for five undersized fish per person. In 1990, the undersized allowance was eliminated, and the recreational sector was managed through bag and size limits with a year-round open season. In 1997, the recreational red snapper allocation was converted into a quota with accompanying quota closure should the sector exceed its quota. Recreational quota closures occurred in 1997, 1998, and 1999, becoming progressively shorter each year even though the quota remained a constant 4.47 mp.

A fixed recreational season of April 21 through October 31 (194 days) was established for 2000 through 2007. However, NMFS returned to variable length seasons beginning in 2008. Under this management approach, due to a lag in the reporting of recreational catches, catch rates over the course of the season were projected in advance based on past trends and changes in the average size of a recreationally harvested red snapper. The recreational season opened each year on June 1 and closed on the date when the quota was projected to be reached. In 2008, the season length was reduced from 194 days to 65 days in conjunction with a reduction in quota to 2.45 mp. The season length then increased to 75 days in 2009. In 2010, the recreational red snapper season was originally projected to be 53 days. However, due to reduced effort and large emergency area closures resulting from the Deepwater Horizon MC252 oil spill, catches were below projections, and a one-time supplemental season of weekend only openings (Friday, Saturday, and Sunday) was established from October 1 through November 22. This added 24 fishing days to the 2010 season for a total of 77 days. In 2011, the season was reduced to 48 days despite an increase in the quota, due to an increase in the average size of a recreationally harvested fish. In 2012 the season was initially scheduled to be 40 days, but was extended to 46 days to compensate for the loss of fishing days due to storms (Table 3.1.3).

During the six years when the recreational harvest was an allocation, not a quota (1991 – 1996), actual recreational harvests in pounds of red snapper exceeded the allocation every year. During the period when the recreational harvest was managed as a quota (1997 – 2013), actual recreational harvest in pounds of red snapper exceeded the quota in 15 out of 17 years, including 5 of the last 6 years (Table 3.1.3). Historical recreational landings estimates have recently been revised to reflect changes in methodology under the Marine Recreational Information Program (MRIP).

Table 3.1.3. Red snapper recreational landings vs. allocation/quota and days open 1986-2012. Landings are in mp ww. Recreational allocations began in 1991, and became quotas in 1997.

Year	Alloc. Quota	Actual landings	Difference	% over or under	Days open
1986	na	2.770	na		365
1987	na	1.814	na		365
1988	na	2.568	na		365
1989	na	2.656	na		365
1990	na	1.614	na		365
1991	1.96	2.917	+0.957	+49%	365
1992	1.96	4.618	+2.658	+136%	365
1993	2.94	7.161	+4.221	+144%	365
1994	2.94	6.076	+3.136	+107%	365
1995	2.94	5.464	+2.524	+86%	365
1996	4.47	5.339	+0.869	+19%	365
1997	4.47	6.804	+2.334	+52%	330
1998	4.47	4.854	+0.384	+9%	272
1999	4.47	4.972	+0.502	+11%	240
2000	4.47	4.750	+0.280	+6%	194
2001	4.47	5.252	+0.782	+17%	194
2002	4.47	6.535	+2.065	+46%	194
2003	4.47	6.105	+1.635	+37%	194
2004	4.47	6.460	+1.990	+45%	194
2005	4.47	4.676	+0.206	+5%	194
2006	4.47	4.131	-0.339	-8%	194
2007	3.185	5.809	+2.624	+82%	194
2008	2.45	4.056	+1.606	+66%	65
2009	2.45	5.597	+3.147	+128%	75
2010	3.403	2.651	-0.752	-22%	53 + 24 = 77
2011	3.866	6.734	+2.868	+74%	48
2012	3.959	7.524	+3.565	+90%	46
2013	5.390	9.639	+4.249	+79%	42

Source: Southeast Fisheries Science Center (SEFSC) including calibrated landings from MRIP, Texas Parks and Wildlife Department (TPWD), and the Southeast Headboat Survey (HBS) (December 2014). Values highlighted in red are those where landings exceeded quotas.

For-hire vessels have operated under a limited access system with respect to the issuance of new for-hire permits for fishing reef fish or coastal migratory pelagics since 2003. A total of 3,340 reef fish and coastal migratory pelagic charter permits were issued under the moratorium, and they are associated with 1,779 vessels. Of these vessels, 1,561 have both reef fish and coastal migratory pelagics permits, 64 have only reef fish permits, and 154 have only coastal migratory pelagics permits. About one-third of Florida charter boats targeted three or less species; two-thirds targeted five or less species; and 90% targeted nine or less species. About 40% of these charter boats did not target particular species. The species targeted by the largest proportion of

Florida charter boats were king mackerel (46%), grouper (29%), snapper (27%), dolphin (26%), and billfish (23%). In the eastern Gulf, the species receiving the most effort were grouper, king mackerel, and snapper. About 25% of Florida headboats targeted three or fewer species; 75% targeted four or fewer species; and 80% targeted five or fewer species. About 60% of headboats did not target any particular species. The species targeted by the largest proportion of Florida headboats are snapper and other reef fish (35%), red grouper (29%), gag grouper (23%), and black grouper (16%). In the eastern Gulf, the species receiving the most effort were snapper, gag, and red grouper (Sutton et al. 1999).

The majority of charter boats in Alabama, Mississippi, Louisiana, and Texas reported targeting snapper (91%), king mackerel (89%), cobia (76%), and tuna (55%). The species receiving the largest percentage of effort by charter boats in the four-state area were snapper (49%), king mackerel (10%), red drum (6%), cobia (6%), tuna (5%), and speckled trout (5%). The majority of headboat operators reported targeting snapper (100%), king mackerel (85%), shark (65%), tuna (55%), and amberjack (50%). The species receiving the largest percentage of total effort by headboats in the four-state area were snapper (70%), king mackerel (12%), amberjack (5%), and shark (5%) (Sutton et al. 1999).

Commercial Red Snapper Sector

In the Gulf, red snapper are primarily harvested commercially with hook-and-line and bandit gear, with bandit gear being more prevalent. Longline gear captures a small percentage of total landings (< 5%). Longline gear is prohibited for the harvest of reef fish inside of 50 fathoms west of Cape San Blas. East of Cape San Blas, longline gear is prohibited for harvest of reef fish inside of 20 fathoms, with a seasonal shift in the longline boundary to 35 fathoms during June through August to protect foraging sea turtles.

Between 1990 and 2006, the principal method of managing the commercial sector for red snapper was with quotas set at 51% of TAC and seasonal closures after each year's quota was filled. The result was a race for fish in which fishermen were compelled to fish as quickly as possible to maximize their catch of the overall quota before the season was closed. The fishing year was characterized by short periods of intense fishing activity with large quantities of red snapper landed during the open seasons rather than lower levels of activity with landings spread more uniformly throughout the year. The result was short seasons and frequent quota overruns (Table 3.1.4). From 1993 through 2006, trip limits, limited access endorsements, split seasons and partial monthly season openings were implemented in an effort to slow the race for fish. At the beginning of the 1993 season, 131 boats qualified for red snapper endorsements on their reef fish permits that entitled them to land 2,000 lbs of red snapper per trip.

In 2007, an IFQ program was implemented for the commercial red snapper sector. Each vessel that qualified for the program was issued an allocation of a percentage of the commercial quota based on historical participation. The allocations were issued as shares representing pounds of red snapper, which the fishermen could harvest, sell or lease to other fishermen, or purchase from other fishermen. Beginning in 2007, the commercial red snapper season is no longer closed, but a commercial vessel cannot land red snapper unless it has sufficient allocation in its vessel account to cover the landing poundage. As a result, there have not been any quota

overruns under the IFQ program (Table 3.1.4). The red snapper IFQ program is currently undergoing a 5-year review to determine if changes are needed to the program.

Table 3.1.4. Commercial red snapper harvest vs. days open, by sector, 1986-2012.

Year	Quota	Actual landings	Days Open (days that open or close at noon are counted as half-days) (“+” = split season)
1986	na	3.700	365
1987	na	3.069	365
1988	na	3.960	365
1989	na	3.098	365
1990	3.1	2.650	365
1991	2.04	2.213	235
1992	2.04	3.106	52½ + 42 = 94½
1993	3.06	3.374	94
1994	3.06	3.222	77
1995	3.06	2.934	50 + 1½ = 51½
1996	4.65	4.313	64 + 22 = 86
1997	4.65	4.810	53 + 18 = 71
1998	4.65	4.680	39 + 28 = 67
1999	4.65	4.876	42 + 22 = 64
2000	4.65	4.837	34 + 25 = 59
2001	4.65	4.625	50 + 20 = 70
2002	4.65	4.779	57 + 24 = 81
2003	4.65	4.409	60 + 24 = 84
2004	4.65	4.651	63 + 32 = 95
2005	4.65	4.096	72 + 48 = 120
2006	4.65	4.649	72 + 43 = 115
2007	3.315	3.183	IFQ
2008	2.55	2.484	IFQ
2009	2.55	2.484	IFQ
2010	3.542	3.392	IFQ
2011	3.664	3.594	IFQ
2012	4.121	4.036	IFQ

Sources: SEDAR 31 Data Workshop Report (1990-2011 landings), commercial quotas/catch allowances report from NMFS/Southeast Regional Office IFQ landings website (2012 landings): <http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>.

Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

3.2 Description of the Physical Environment

The Gulf has a total area of approximately 600,000 square miles (1.5 million km²), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean

by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel (Figure 3.2.1). Oceanographic conditions are affected by the Loop Current, discharge of freshwater into the northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf. The Gulf includes both temperate and tropical waters (McEachran and Fechhelm 2005). Gulf water temperatures range from 54° F to 84° F (12° C to 29° C) depending on time of year and depth of water. Mean annual sea surface temperatures ranged from 73 ° F through 83° F (23-28° C) including bays and bayous (Figure 3.2.1) between 1982 and 2009, according to satellite-derived measurements (NODC 2012: <http://accession.nodc.noaa.gov/0072888>). In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

The physical environment for Gulf reef fish, including red snapper, is also detailed in the EIS for the Generic EFH Amendment and the Generic ACL/AM Amendment (refer to GMFMC 2004a; GMFMC 2011b).

In the Gulf, fish habitat for adult red snapper consists of submarine gullies and depressions; coral reefs, rock outcroppings, and gravel bottoms; oilrigs; and other artificial structures (GMFMC 2004b). Detailed information pertaining to the closures and preserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010).

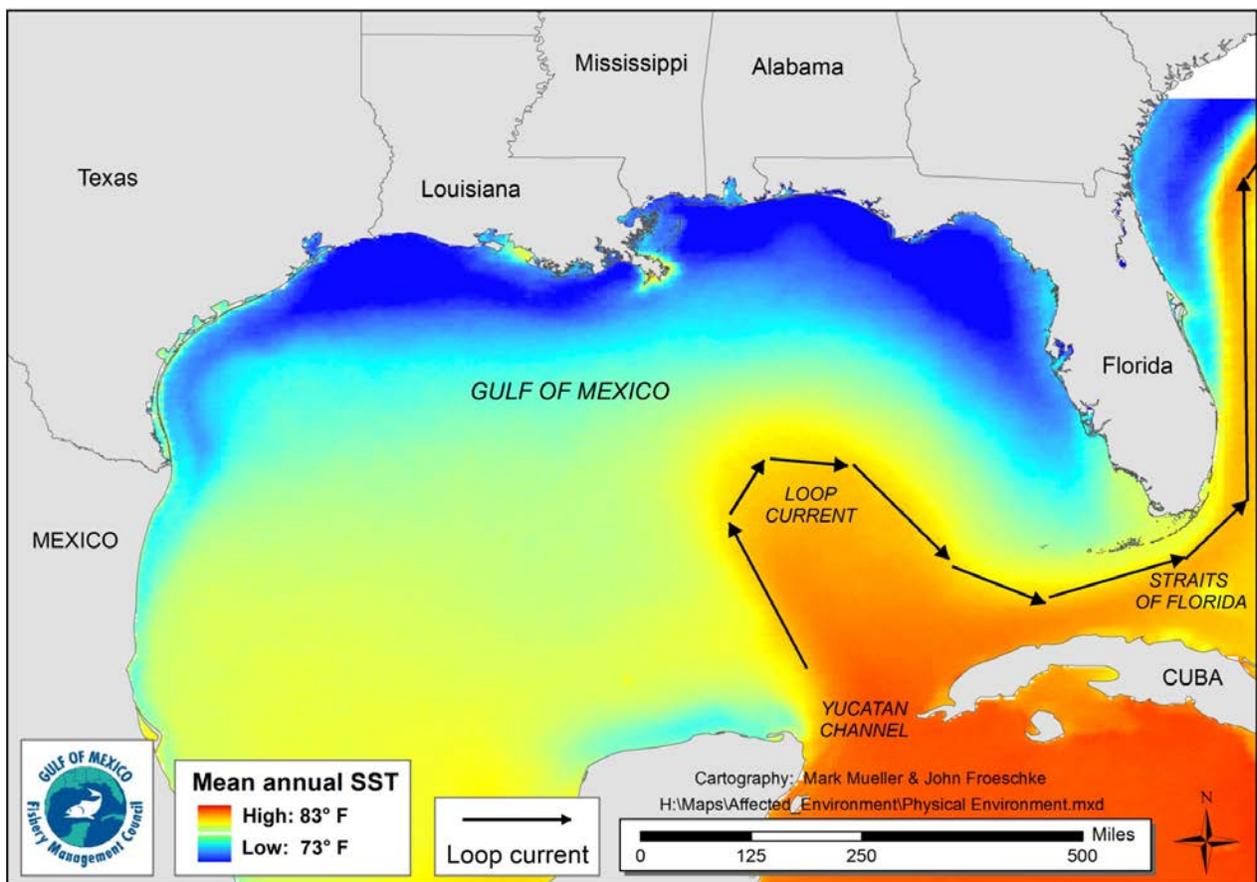


Figure 3.2.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (<http://accession.nodc.noaa.gov/0072888>)

3.3 Description of the Biological/Ecological Environment

The biological environment of the Gulf, including the species addressed in this amendment, is described in detail in the final EIS for the Generic EFH Amendment (GMFMC 2004a) and is incorporated here by reference.

Red Snapper Life History and Biology

Red snapper demonstrate the typical reef fish life history pattern (Table 3.3.1). Eggs and larvae are pelagic while juveniles are found associated with bottom features or over barren bottom. Spawning occurs over firm sand bottom with little relief away from reefs during the summer and fall. Adult females mature as early as two years and most are mature by four years (Schirripa and Legault 1999). Red snapper have been aged up to 57 years. Until recently, most caught by the directed fishery were 2- to 4-years old (Wilson and Nieland 2001), but a recently completed stock assessment suggests that the age and size of red snapper in the directed fishery has increased in recent years (SEDAR 31 2013). A more complete description of red snapper life history can be found in the EIS for the Generic EFH Amendment (GMFMC 2004a).

Status of the Red Snapper Stock

Southeast Data Assessment and Review (SEDAR) 31 Benchmark Stock Assessment

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). The first stock assessment conducted by NMFS in 1986 suggested that the stock was in decline (Parrack and McLellan 1986) and since 1988 (Goodyear 1988) the stock biomass has been found to be below threshold levels.

The most recent red snapper stock assessment was completed in 2013 (SEDAR 31 2013). The primary assessment model selected for the Gulf red snapper stock evaluation assessment was Stock Synthesis (Methot 2010). Stock Synthesis is an integrated statistical catch-at-age model which is widely used for stock assessments in the United States and throughout the world. Commercial landings data included commercial handline and longline landings from the accumulated landings system from 1964 through 2011. For landings between 1880 and 1963, previously constructed historical landings were used. Total annual landings from the IFQ program for years 2007-2011 were used to reapportion 2007-2011 accumulated landings system data across strata. Recreational landings data included the MRIP/Marine Recreational Fishery Statistics Survey (MRFSS) from 1981-2011, Southeast Headboat Survey for 1981-2011, and Texas Parks and Wildlife Department survey. For the years 2004-2011, MRIP landings are available. For earlier years, MRFSS data were calibrated to MRIP estimates using a standardized approach for calculating average weight that accounts for species, region, year, state, mode, wave, and area.

Standardized indices of relative abundance from both fishery dependent and independent data sources were included in the model. The fishery dependent indices came from the commercial handline fleet, recreational headboats, and recreational private/for-hire sectors. Fishery

independent indices came from the Southeast Area Monitoring and Assessment Program (SEAMAP) bottom trawl survey, SEAMAP reef fish video survey, NMFS bottom longline survey, and the SEAMAP plankton survey.

Red snapper discards in the Gulf were calculated from data collected by the self-reported commercial logbook data and the NMFS Gulf reef fish observer program. In addition to these directed fisheries discards, estimates of red snapper bycatch from the commercial shrimp fleet were also generated.

The results of the SEDAR 31 assessment, including an assessment addendum that was prepared after a review of the SEDAR Assessment Panel Report by the SEDAR Review Panel, was presented to the SSC in May 2013. Under the base model, it was estimated that the red snapper stock has been overfished since the 1960s.

Current (2011) stock status was estimated relative to two possible proxies for F_{MSY} : $F_{SPR26\%}$ (i.e., the fishing mortality rate that would produce an equilibrium spawning potential ratio (SPR) of 26%) and F_{MAX} , which corresponded to $F_{SPR20.4\%}$ (i.e., the fishing mortality rate that would produce an equilibrium SPR 20.4%). A proxy of $F_{SPR26\%}$ was previously used as the overfishing and F_{MSY} proxy in SEDAR 7 and the SEDAR 7 update assessment in 2009. F_{MAX} was evaluated as an alternative proxy because at high spawner-recruit steepness values near 1.0, such as the value of 0.99 fixed in the red snapper assessment, F_{MAX} approximates the actual estimate of F_{MSY} . However, the actual estimate of F_{MSY} is sensitive to the parameters of the spawner-recruit relationship. The SSC did not have confidence in using the direct F_{MSY} estimate due to the fact that the spawner-recruit function is poorly estimated and data exist for a very limited range of potential spawning stock biomass (SSB) for the stock. In addition, the SSC felt that the equivalent SPR for F_{MAX} (20.4%) was inappropriately low for species with life history parameters similar to red snapper. The SSC felt that the $F_{SPR26\%}$ proxy, while still somewhat low for species with life history parameters similar to red snapper, was more realistic than the 20.4% SPR associated with F_{MAX} . Furthermore, the $F_{SPR26\%}$ proxy is consistent with the current fishery management plan (FMP) and rebuilding plan for red snapper.

Although the red snapper stock continues to recover, spawning stock biomass is estimated to remain below both the minimum stock size threshold (MSST) and the spawning stock size associated with maximum sustainable yield ($SSB_{MSY\ proxy}$) using either proxy described above. Therefore, the SSC concluded that the stock remains overfished. With respect to overfishing, the current fishing mortality rate (geometric mean of 2009-2011) was estimated to be below both F_{MSY} proxies. Therefore, the SSC estimated the stock is not currently experiencing overfishing.

Based on an evaluation to the Tier 1 P* spreadsheet used for the ABC control rule, the SSC determined that the P* (probability of overfishing) should equal 0.427. This P* is applied to a probability density function (PDF) to determine an ABC that takes into account scientific uncertainty in the setting of the overfishing limit (OFL). In order to capture more of the scientific uncertainty, the SSC decided to use a weighted average of PDFs constructed for the base model (50% weighting), a high M model that assumed a higher natural mortality rate for age-0 and age-1 red snapper (25% weighting), and a lower M model that assumed a lower natural mortality rate for age-0 and age-1 red snapper (25% weighting). These model runs were

selected because they bracket the range of plausible results obtained from the base run and 15 alternative state model runs. Based on the results of the $P^* = 0.427$ applied to the weighted average PDF, the SSC set the following ABCs: 13.5 mp ww in 2013; 11.9 mp in 2014; 10.6 mp in 2015. A red snapper update assessment scheduled for 2014 is expected to re-evaluate the ABC for 2015 and beyond.

Definition of Overfishing

In January 2012, the Generic ACL/AM Amendment (GMFMC 2011b) became effective. One of the provisions in this amendment was to redefine overfishing. In years when there is a stock assessment, overfishing is defined as the fishing mortality rate exceeding the maximum fishing mortality threshold. In years when there is no stock assessment, overfishing is defined as the catch exceeding the OFL. Even though the recreational harvest exceeded its quota in 2012, the total catch (recreational and commercial combined) remained below the OFL. Therefore, as of 2012, overfishing is no longer occurring in the red snapper stock. Note that, because the overfishing threshold is now re-evaluated each year instead of only in years when there is a stock assessment, this status could change on a year-to-year basis.

General Information on Reef Fish Species

The National Ocean Service collaborated with NMFS and the Council to develop distributions of reef fish (and other species) in the Gulf (SEA 1998). The National Ocean Service obtained fishery-independent data sets for the Gulf, including SEAMAP, and state trawl surveys. Data from the Estuarine Living Marine Resources Program contain information on the relative abundance of specific species (highly abundant, abundant, common, rare, not found, and no data) for a series of estuaries, by five life stages (adult, spawning, egg, larvae, and juvenile) and month for five seasonal salinity zones (0-0.5, 0.5-5, 5-15, 15-25, and >25 parts per thousand). National Ocean Service staff analyzed these data to determine relative abundance of the mapped species by estuary, salinity zone, and month. For some species not in the Estuarine Living Marine Resources Program database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages are summarized in Table 3.3.1 and can be found in more detail in GMFMC (2004a). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation (SAV). Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf (<328 feet; <100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. Juvenile red snapper are common on mud bottoms in the northern Gulf, particularly from Texas to Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems

(GMFMC 1981). More detail on hard bottom substrate and coral can be found in the FMP for Corals and Coral Reefs (GMFMC and SAFMC 1982).

Table 3.3.1. Summary of habitat utilization by life history stage for species in the Reef Fish FMP.

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red Snapper	Pelagic	Pelagic	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms
Queen Snapper	Pelagic	Pelagic	Unknown	Unknown	Hard bottoms	
Mutton Snapper	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
Blackfin Snapper	Pelagic		Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Cubera Snapper	Pelagic		Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray Snapper	Pelagic, Reefs	Pelagic, Reefs	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Lane Snapper	Pelagic		Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk Snapper	Unknown	Unknown	Unknown	Unknown	Shelf edge	
Yellowtail Snapper	Pelagic		Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	
Wenchman	Pelagic	Pelagic			Hard bottoms, Shelf edge/slope	Shelf edge/slope
Vermilion Snapper	Pelagic		Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Gray Triggerfish	Reefs	Drift algae, <i>Sargassum</i>	Drift algae, <i>Sargassum</i>	Drift algae, Reefs, <i>Sargassum</i>	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater Amberjack	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser Amberjack			Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco Jack	Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Banded Rudderfish		Pelagic	Drift algae	Drift algae	Pelagic	Pelagic
Hogfish			SAV	SAV	Hard bottoms, Reefs	Reefs
Blueline Tilefish	Pelagic	Pelagic			Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
Tilefish (golden)	Pelagic, Shelf edge/ Slope	Pelagic	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Goldface Tilefish	Unknown					
Speckled Hind	Pelagic	Pelagic			Hard bottoms, Reefs	Shelf edge/slope
Yellowedge Grouper	Pelagic	Pelagic		Hard bottoms	Hard bottoms	
Atlantic Goliath Grouper	Pelagic	Pelagic	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
Red Grouper	Pelagic	Pelagic	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Warsaw Grouper	Pelagic	Pelagic		Reefs	Hard bottoms, Shelf edge/slope	
Snowy Grouper	Pelagic	Pelagic	Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
Black Grouper	Pelagic	Pelagic	SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth Grouper	Pelagic	Pelagic	Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic	SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic	Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin Grouper			SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

Source: Adapted from Table 3.2.7 in the final draft of the EIS from the Generic EFH Amendment (GMFMC 2004a) and consolidated in this document.

Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 31 species (Table 3.3.2). Eleven other species were removed from the FMP in 2012 through the Generic ACL/AM Amendment (GMFMC 2011b). Stock assessments and stock assessment reviews have been conducted for 13 species and can be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) websites. The assessed species are:

- Red Snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013)
- Vermilion Snapper (Porch and Cass-Calay 2001; SEDAR 9 2006a; SEDAR 9 Update 2011a)
- Yellowtail Snapper (Muller et al. 2003; SEDAR 3 2003; O’Hop et al. 2012)
- Mutton Snapper (SEDAR 15A 2008)
- Gray Triggerfish (Valle et al. 2001; SEDAR 9 2006b; SEDAR 9 Update 2011b)
- Greater Amberjack (Turner et al. 2000; SEDAR 9 2006c; SEDAR 9 Update 2010)
- Hogfish (Ault et al. 2003; SEDAR 6 2004a)
- Red Grouper (NMFS 2002; SEDAR 12 2007; SEDAR 12 Update 2009)
- Gag (Turner et al. 2001; SEDAR 10 2006; SEDAR 10 Update 2009)
- Black Grouper (SEDAR 19 2010)
- Yellowedge Grouper (Cass-Calay and Bahnick 2002; SEDAR 22 2011a)
- Tilefish (Golden) (SEDAR 22 2011b)
- Atlantic Goliath Grouper (Porch et al. 2003; SEDAR 6 2004b; SEDAR 23 2011)

The NMFS Office of Sustainable Fisheries updates its Status of U.S. Fisheries Report to Congress on a quarterly basis utilizing the most current stock assessment information. The most recent update can be found at: (<http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>). The status of both assessed and unassessed stocks as of the writing of this report is shown in Table 3.3.2.

Table 3.3.2. Species of the Reef Fish FMP grouped by family.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
Gray Triggerfish	<i>Balistes capriscus</i>	Overfished, no overfishing
Family Carangidae – Jacks		
Greater Amberjack	<i>Seriola dumerili</i>	Overfished, no overfishing
Lesser Amberjack	<i>Seriola fasciata</i>	Unknown
Almaco Jack	<i>Seriola rivoliana</i>	Unknown
Banded Rudderfish	<i>Seriola zonata</i>	Unknown
Family Labridae - Wrasses		
Hogfish	<i>Lachnolaimus maximus</i>	Unknown
Family Malacanthidae - Tilefishes		
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	Not overfished, no overfishing
Blueline Tilefish	<i>Caulolatilus microps</i>	Unknown
Goldface Tilefish	<i>Caulolatilus chrysops</i>	Unknown
Family Serranidae - Groupers		
Gag	<i>Mycteroperca microlepis</i>	Overfished, no overfishing
Red Grouper	<i>Epinephelus morio</i>	Not overfished, no overfishing
Scamp	<i>Mycteroperca phenax</i>	Unknown
Black Grouper	<i>Mycteroperca bonaci</i>	Not overfished, no overfishing
Yellowedge Grouper	* <i>Hyporthodus flavolimbatus</i>	Not overfished, no overfishing
Snowy Grouper	* <i>Hyporthodus niveatus</i>	Unknown
Speckled Hind	<i>Epinephelus drummondhayi</i>	Unknown
Yellowmouth Grouper	<i>Mycteroperca interstitialis</i>	Unknown
Yellowfin Grouper	<i>Mycteroperca venenosa</i>	Unknown
Warsaw Grouper	* <i>Hyporthodus nigritus</i>	Unknown
**Atlantic Goliath Grouper	<i>Epinephelus itajara</i>	Unknown
Family Lutjanidae - Snappers		
Queen Snapper	<i>Etelis oculatus</i>	Unknown
Mutton Snapper	<i>Lutjanus analis</i>	Not overfished, no overfishing
Blackfin Snapper	<i>Lutjanus buccanella</i>	Unknown
Red Snapper	<i>Lutjanus campechanus</i>	Overfished, no overfishing
Cubera Snapper	<i>Lutjanus cyanopterus</i>	Unknown
Gray Snapper	<i>Lutjanus griseus</i>	Unknown
Lane Snapper	<i>Lutjanus synagris</i>	Unknown
Silk Snapper	<i>Lutjanus vivanus</i>	Unknown
Yellowtail Snapper	<i>Ocyurus chrysurus</i>	Not overfished, no overfishing
Vermilion Snapper	<i>Rhomboplites aurorubens</i>	Not overfished, no overfishing
Wenchman	<i>Pristipomoides aquilonaris</i>	Unknown

Notes: * In 2013 the genus for yellowedge grouper, snowy grouper, and warsaw grouper was changed by the American Fisheries Society from *Epinephelus* to *Hyporthodus* (American Fisheries Society 2013).

**Atlantic goliath grouper is a protected grouper and benchmarks do not reflect appropriate stock dynamics. In 2013 the common name was changed from goliath grouper to Atlantic goliath grouper by the American Fisheries Society to differentiate from the Pacific goliath grouper, a newly named species (American Fisheries Society 2013).

Protected Species

There are 29 different species of marine mammals that may occur in the Gulf. All 29 species are protected under the Marine Mammal Protection Act and seven are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales and the West Indian manatee). Other species protected under the ESA occurring in the Gulf include five sea turtle species (Kemp's ridley, loggerhead, green, leatherback, and hawksbill); two fish species (Gulf sturgeon and smalltooth sawfish), and two coral species (elkhorn coral and staghorn coral). Information on the distribution, biology, and abundance of these protected species in the Gulf is included in the final EIS to the Generic EFH Amendment (GMFMC 2004a) and the February 2005, October 2009, and September 2011 ESA biological opinions on the reef fish fishery (NMFS 2005; NMFS 2009; NMFS 2011a). Marine Mammal Stock Assessment Reports and additional information are also available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/species/>.

The Gulf reef fish fishery is classified in the Marine Mammal Protection Act 2013 List of Fisheries as a Category III fishery (78 FR 53336, August 29, 2013). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. Dolphins are the only species documented as interacting with these fisheries. Bottlenose dolphins prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery. They are also a common predator around reef fish vessels, feeding on the discards.

All five species of sea turtles are adversely affected by the Gulf reef fish fishery. Incidental captures are relatively infrequent, but occur in all commercial and recreational hook-and-line and longline components of the reef fish fishery. Captured sea turtles can be released alive or can be found dead upon retrieval of the gear as a result of forced submergence. Sea turtles released alive may later succumb to injuries sustained at the time of capture or from exacerbated trauma from fishing hooks or lines that were ingested, entangled, or otherwise still attached when they were released. Sea turtle release gear and handling protocols are required in the commercial and for-hire reef fish fisheries to minimize post-release mortality.

Smalltooth sawfish are also affected by the Gulf reef fish fishery, but to a much lesser extent. Smalltooth sawfish primarily occur in the Gulf off peninsular Florida. Incidental captures in the commercial and recreational hook-and-line components of the reef fish fishery are rare events, with only eight smalltooth sawfish estimated to be incidentally caught annually, and none are expected to result in mortality (NMFS 2005). Fishermen in this fishery are required to follow smalltooth sawfish safe handling guidelines. The long, toothed rostrum of the smalltooth sawfish causes this species to be particularly vulnerable to entanglement in fishing gear.

On September 30, 2011, the Protected Resources Division released a biological opinion, which concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (NMFS 2011a). An incidental take statement was issued specifying the

amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. The Council addressed measures to reduce take in the reef fish fishery's longline component in Amendment 31 (GMFMC 2009). Other listed species and designated critical habitat in the Gulf were determined not likely to be adversely affected.

On December 7, 2012, NMFS published a proposed rule to list 66 coral species under the ESA and reclassify *Acropora* from threatened to endangered (77 FR 73220). In a memo dated February 13, 2013, NMFS determined the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora* where they are most likely to occur. None of the new information regarding population level concerns would affect those determinations.

Deepwater Horizon MC252 Oil Spill

On April 20, 2010 an explosion occurred on the Deepwater Horizon MC252 oil rig approximately 36 nautical miles (41 statute miles) off the Louisiana coast. Two days later the rig sank. An uncontrolled oil leak from the damaged well continued for 87 days until the well was successfully capped by British Petroleum on July 15, 2010. The Deepwater Horizon MC252 oil spill affected at least one-third of the Gulf area from western Louisiana east to the Florida Panhandle and south to the Campeche Bank in Mexico (Figure 3.3.1).

As reported by the National Oceanic and Atmospheric Administration Office of Response and Restoration (NOAA 2010), the oil from the Deepwater Horizon MC252 spill is relatively high in alkanes, which can readily be used by microorganisms as a food source. As a result, the oil from this spill is likely to biodegrade more readily than crude oil in general. The Deepwater Horizon MC252 oil is also relatively much lower in polyaromatic hydrocarbons. Polyaromatic hydrocarbons are highly toxic chemicals that tend to persist in the environment for long periods of time, especially if the spilled oil penetrates into the substrate on beaches or shorelines. Like all crude oils, MC252 oil contains volatile organic compounds (VOCs) such as benzene, toluene, and xylene. Some VOCs are acutely toxic but because they evaporate readily, they are generally a concern only when oil is fresh.³

In addition to the crude oil, 1.4 million gallons of the dispersant, Corexit 9500A[®], was applied to the ocean surface and an additional 770,000 gallons of dispersant was pumped to the mile-deep well head (National Commission 2010). No large-scale applications of dispersants in deep water had been conducted until the Deepwater Horizon MC252 oil spill. Thus, no data exist on the environmental fate of dispersants in deep water. However, a study found that, while Corexit 9500A[®] and oil are similar in their toxicity, when Corexit 9500A[®] and oil were mixed in lab tests, toxicity to microscopic rotifers increased up to 52-fold (Rico-Martínez et al. 2013). This suggests that the toxicity of the oil and dispersant combined may be greater than anticipated.

Oil could exacerbate development of the hypoxic “dead” zone in the Gulf as could higher than normal input of water from the Mississippi River drainage. For example, oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing

³ Source: http://sero.nmfs.noaa.gov/sf/deepwater_horizon/OilCharacteristics.pdf

oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion.

Changes have occurred in the amount and distribution of fishing effort in the Gulf in response to the oil spill. This has made the analysis of the number of days needed for the recreational sector to fill its quota more complex and uncertain, and will make the requirement to allow the recreational sector to harvest its quota of red snapper while not exceeding the quota particularly challenging. Nevertheless, substantial portions of the red snapper population are found in the northwestern and western Gulf (western Louisiana and Texas) and an increasing population of red snapper is developing off the west Florida continental shelf. Thus, spawning by this segment of the stock may not be impacted, which would mitigate the overall impact of a failed spawn by that portion of the stock located in oil-affected areas.

As a result of the Deepwater Horizon MC252 spill, a consultation pursuant to ESA Section 7(a)(2) was reinitiated. As discussed above, on September 30, 2011, the Protected Resources Division released a biological opinion, which after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC252 oil release event in the northern Gulf), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp's ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011a).

For additional information on the Deepwater Horizon MC252 oil spill and associated closures, see: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm.

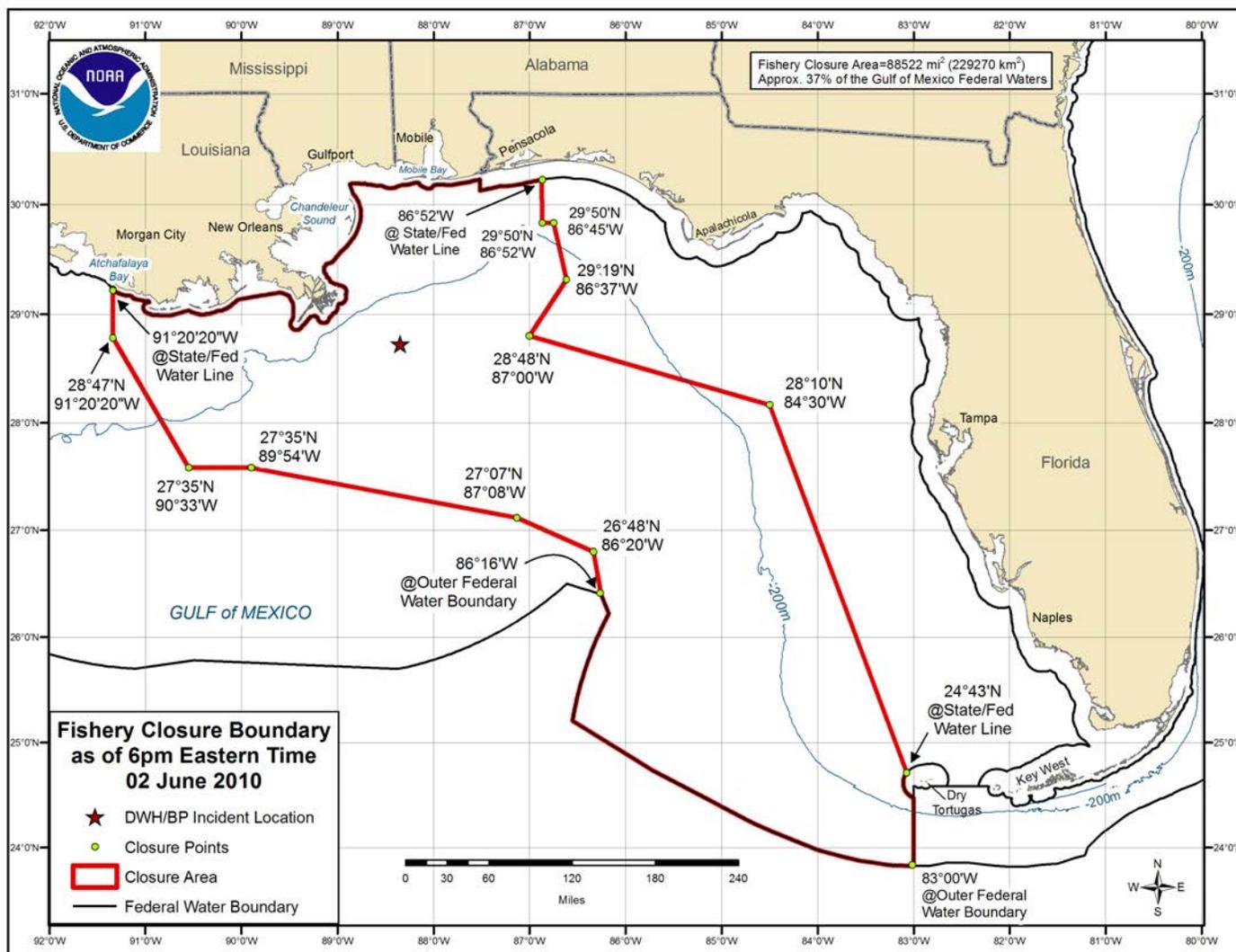


Figure 3.3.1. Fishery closure at the height of the Deepwater Horizon MC252 oil spill.

3.4 Description of the Economic Environment

3.4.1 Commercial Sector

A description of the commercial sector is provided in GMFMC (2013) and is incorporated herein by reference. Because this proposed amendment would only change management of the recreational sector, an update of the information on the commercial sector provided in GMFMC (2013) is not provided.

3.4.2 Recreational Sector

Angler Effort

Recreational effort derived from the MRFSS/MRIP database can be characterized in terms of the number of trips as follows:

1. Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or second primary target for the trip. The species did not have to be caught.
2. Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
3. Total recreational trips - The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

Other measures of effort are possible, such as the number of harvest trips (the number of individual angler trips that harvest a particular species regardless of target intent), and directed trips (the number of individual angler trips that either targeted or caught a particular species), among other measures, but the three measures of effort listed above are used in this assessment. Because of the Deepwater Horizon MC252 oil spill, 2010 was not a typical year for recreational fishing due to the extensive closures (Figure 3.3.1) and associated decline in fishing in much of the Gulf. For information on the Deepwater Horizon MC252 oil spill and associated closures, see: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm. Estimates of the average annual red snapper effort for the shore, charter, and private/rental boat modes in the Gulf for the period 2006-2011 with and without 2010 data are provided in Table 3.4.2.1. The average annual red snapper target effort for 2006-2011 was approximately 9% less than the average for this period excluding 2010. For red snapper catch effort, the difference was approximately 7%. Because of these differences, this assessment excludes recreational effort data for 2010 from further analysis. Table 3.4.2.2 contains estimates for the average annual red snapper recreational effort for 2006-2011 excluding 2010 by state and mode (shore, charter, and private/rental boat only).

Table 3.4.2.1. Effects of 2010 data on average annual red snapper recreational effort.

	Target Trips					
	Alabama	West Florida	Louisiana	Mississippi	Texas	Total
Average 2006-2011	98,373	186,656	49,934	7,225	*	342,187
Average w/o 2010	111,846	198,609	58,108	7,729	*	376,292
	Catch Trips					
	Alabama	West Florida	Louisiana	Mississippi	Texas	Total
Average 2006-2011	150,641	465,282	77,689	9,284	*	702,896
Average w/o 2010	163,316	494,783	90,524	9,722	*	758,346

*Unavailable.

Source: Southeast Regional Office using MRFSS/MRIP data.

Table 3.4.2.2. Average annual red snapper recreational effort by mode, 2006-2011 excluding 2010.

	Alabama	West Florida	Louisiana	Mississippi	Texas	Total
Shore Mode						
Target Trips	610	1,215	0	0	*	1,825
Catch Trips	912	1,114	0	0	*	2,026
Charter Mode						
Target Trips	22,131	46,389	18,510	33	*	87,064
Catch Trips	49,405	212,494	34,418	247	*	296,563
Private/Rental Mode						
Target Trips	89,105	151,005	39,598	7,696	*	287,403
Catch Trips	112,999	281,175	56,106	9,476	*	459,757
All Modes						
Target Trips	111,846	198,609	58,108	7,729	*	376,292
Catch Trips	163,316	494,783	90,524	9,722	*	758,346

*Unavailable.

Source: Southeast Regional Office using MRFSS/MRIP data.

Headboat data do not support the estimation of target or catch effort because target intent is not collected and the harvest data (the data reflect only harvest information and not total catch) are collected on a vessel basis and not by individual angler. Table 3.4.2.3 contains estimates of the number of headboat angler days for all Gulf states for 2006-2011.

Table 3.4.2.3. Headboat angler days.

Year	W Florida/Alabama	Louisiana	Mississippi	Texas	Total
2006	124,049	5,005	0	70,789	199,843
2007	136,880	2,522	0	63,764	203,166
2008	130,176	2,945	0	41,188	174,309
2009	142,438	3,268	0	50,737	196,443
2010	111,018	217	*	47,154	158,389
2011	157,025	1,886	1,771	47,284	207,966
Average All	133,598	2,641	*	53,486	189,724
Average w/o 2010	138,114	3,125	1,771**	54,752	196,345

*Confidential.

**Because the average totals are used to represent expectations of future activity, the 2011 number of trips is provided as best representative of the emergent headboat fishery in Mississippi.

Source: NMFS Southeast Headboat Survey (HBS).

Permits

The for-hire sector is comprised of charter vessels and headboats (party boats). Although charter vessels tend to be smaller, on average, than headboats, the key distinction between the two types of operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

A federal for-hire vessel permit has been required for reef fish since 1996 and the sector currently operates under a limited access system. On June 4, 2013, there were 1,349 valid (non-expired) or renewable Gulf Charter/Headboat Reef Fish Permits. A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration. Although the permit does not distinguish between headboats and charter boats, an estimated 70 headboats operate in the Gulf (K. Brennen, NMFS Southeast Fisheries Science Center, pers. comm.).

Information on Gulf charter boat and headboat operating characteristics, including average fees and net operating revenues, is included in Savolainen et al. (2012) and is incorporated herein by reference.

There are no specific permitting requirements for recreational anglers to fish for or harvest reef fish. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment.

Economic Value

Economic value can be measured in the form of consumer surplus per red snapper trip for anglers (the amount of money that an angler would be willing to pay for a fishing trip in excess of the cost of the trip) and producer surplus per passenger trip for for-hire vessels (the amount of money that a vessel owner earns in excess of the cost of providing the trip). The estimated value of the consumer surplus per red snapper angler trip for a trip on which the angler is allowed to harvest two red snapper is \$56.42 (GMFMC 2010; value updated to 2011 dollars). Estimates of the consumer surplus per fish, instead of per angler trip, for red snapper and other saltwater species are provided in Carter and Liese (2012) and are incorporated herein by reference.

Estimates of the producer surplus per for-hire passenger trip are not available. Instead, net operating revenues, which are the return used to pay all labor wages, returns to capital, and owner profits, are used as the proxy for producer surplus. The estimated net operating revenue is \$154.62 per target charter angler trip and \$51.19 (2011 dollars) per target headboat angler trip regardless of species targeted or catch success (C. Liese, NMFS Southeast Fisheries Science Center, pers. comm.). Estimates of net operating revenue by target species are not available.

Recreational Sector Business Activity

Estimates of the business activity (economic impacts) associated with recreational angling for red snapper were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2011b). Estimates of these coefficients for target or catch behavior for individual species are not available. Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011b) and are incorporated herein by reference.

Business activity for the recreational sector is characterized in the form of full time equivalent jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Job and output (sales) impacts are equivalent metrics across both the commercial and recreational sectors. Income impacts (commercial sector) and value-added impacts (recreational sector) are not equivalent, though similarity in the magnitude of multipliers generated and used for the two metrics may result in roughly equivalent values. Similar to income impacts, value-added impacts should not be added to output (sales) impacts because this would result in double counting.

Estimates of the average red snapper effort (2006-2009 and 2011) and associated business activity (2011 dollars) are provided in Table 3.4.2.4. Red snapper target effort (trips) was selected as the measure of red snapper effort. More individual angler trips catch red snapper than target red snapper, as shown in Tables 3.4.2.1 and 3.4.2.2. Estimates of the economic activity associated with red snapper catch trips can be calculated using the ratio of catch trips to target trips because the available estimates of the average impacts per trip are not differentiated by trip intent or catch success. For example, if the estimated number of catch trips is three times the number of target trips for a particular state and mode, the estimate of the economic activity associated with these catch trips would equal three times the estimated impacts of target trips.

Table 3.4.2.4. Summary of red snapper target trips (2006-2009 and 2011 average) and associated business activity (2011 dollars). Output and value added impacts are not additive.

	Alabama	West Florida	Louisiana	Mississippi	Texas
Shore Mode					
Target Trips	610	1,215	0	0	*
Output Impact	\$46,624	\$86,025	\$0	\$0	*
Value Added Impact	\$25,081	\$49,977	\$0	\$0	*
Jobs	1	1	0	0	*
Private/Rental Mode					
Target Trips	89,105	151,005	39,598	7,696	*
Output Impact	\$5,416,278	\$7,162,669	\$3,373,684	\$229,300	*
Value Added Impact	\$2,965,290	\$4,259,192	\$1,659,295	\$109,897	*
Jobs	54	68	30	2	*
Charter Mode					
Target Trips	22,131	46,389	18,510	33	*
Output Impact	\$12,038,231	\$15,218,384	\$9,206,092	\$10,712	*
Value Added Impact	\$6,626,643	\$9,022,935	\$5,227,203	\$6,036	*
Jobs	154	150	93	0	*
All Modes					
Target Trips	111,846	198,609	58,108	7,729	*
Output Impact	\$17,501,134	\$22,467,077	\$12,579,776	\$240,012	*
Value Added Impact	\$9,617,014	\$13,332,104	\$6,886,498	\$115,933	*
Jobs	209	219	123	2	*

*Because target information is unavailable, associated business activity cannot be calculated.

Source: Effort data from the MRFSS/MRIP, economic impact results calculated by NMFS Southeast Regional Office using the model developed for NMFS (2011b). Estimates of the economic activity (impacts) associated with headboat red snapper effort are not available. Headboat vessels are not covered in MRFSS/MRIP, so estimation of the appropriate economic impact coefficients for headboat vessels has not been conducted. While appropriate economic impact coefficients are available for the charter boats, potential differences in certain factors, such as the for-hire fee, rates of tourist versus local participation rates, and expenditure patterns, may result in significant differences in the economic impacts of the headboat fleet relative to the charter fleet.

The estimates of the business activity associated with red snapper recreational trips are only available at the state level. Addition of the state-level estimates to produce a regional or national total will underestimate the actual amount of total business activity because summing the state estimates will not capture business activity that leaks outside the individual states. A state estimate only reflects activities that occur within that state and not related activity that occurs in

another state. For example, if a good is produced in Alabama but sold in Florida, the measure of business activity in Florida associated with the its sale in Florida does not include the production process in Alabama. Assessment of business activity at the national (or regional) level would capture activity in both states and include all activity except that which leaks into other nations.

3.5 Description of the Social Environment

A description of the social environment for the commercial and recreational sectors' harvest of red snapper is provided in GMFMC (2013a) and is incorporated herein by reference. Because this proposed amendment would only affect management of the recreational sector, a summary of the information provided in GMFMC (2013a) is included for the recreational sector only.

Red snapper is harvested recreationally in all five Gulf states. The proportion of total recreational landings by state for the years 1986 through 2012 is provided in Table 2.3.1. Landings by state are not constant; the proportion of the quota represented by each state varies from year to year. Across time, the proportion of landings made up by the eastern Gulf states (Alabama and western Florida) has increased compared to the western Gulf states (Texas and Louisiana), as the rebuilding plan has proceeded.

Red snapper landings for the recreational sector are not available at the community level, making it difficult to identify communities as dependent on recreational fishing for red snapper. Data reflecting commercial landings of red snapper may or may not reflect areas of importance for recreational fishing of red snapper. It cannot be assumed that the proportion of commercial red snapper landings among other species in a community would be similar to its proportion among recreational landings within the same community because of sector differences in fishing practices and preferences. Thus, in addition to communities with the greatest commercial red snapper landings, the referenced analysis identifies communities with the greatest recreational fishing engagement, based on numbers of: 1) federal for-hire permits, 2) vessels designated recreational by owner address, and 3) vessels designated recreational by homeport, plus availability of recreational fishing infrastructure. The 20 Gulf communities to score highest for recreational fishing engagement based on the described analysis are listed in Table 3.4.1. Because the analysis used discrete geo-political boundaries, Panama City and Panama City Beach had separate values for the associated variables. Calculated independently, each still ranked high enough to appear in the top 20 list suggesting a greater importance for recreational fishing in that region.

Comparing the communities of recreational importance (Table 3.4.1) and those with greater commercial landings and IFQ shareholders (see Figure 3.4.2 and Table 3.4.2 in GMFMC 2013a), five communities overlap: Destin, Panama City, Pensacola, and Apalachicola, Florida and Galveston, Texas. Social effects resulting from actions taken in this plan amendment are likely to be greatest in these communities.

Table 3.4.1. Top ranking Gulf communities based on recreational fishing engagement and reliance, in descending order.

Community	County	State
Destin	Okaloosa	FL
Orange Beach	Baldwin	AL
Panama City	Bay	FL
Port Aransas	Nueces	TX
Pensacola	Escambia	FL
Panama City Beach	Bay	FL
Naples	Collier	FL
St. Petersburg	Pinellas	FL
Freeport	Brazoria	TX
Biloxi	Harrison	MS
Galveston	Galveston	TX
Clearwater	Pinellas	FL
Fort Myers Beach	Lee	FL
Sarasota	Sarasota	FL
Tarpon Springs	Pinellas	FL
Dauphin Island	Mobile	AL
Apalachicola	Franklin	FL
Carrabelle	Franklin	FL
Port St. Joe	Gulf	FL
Marco Island	Collier	FL

Source: NMFS Southeast Regional Office permit office 2008, MRIP site survey 2010.

For additional information pertaining to the social environment for the harvest of red snapper, the reader is directed to the following documents which are included here by reference. The February 2010 Regulatory Amendment (GMFMC 2010) includes a detailed discussion of the commercial communities within each state and county which are the most reliant on red snapper. This description focuses on the demographic character of each county in order to aid in understanding the dependence of a particular county on red snapper fishing. The January 2011 Regulatory Amendment (GMFMC 2011a) includes an update on the impacts of the Deepwater Horizon MC252 oil spill. The Gulf of Mexico 2011 Red Snapper IFQ Annual Report (NMFS 2012a) provides a detailed discussion of the commercial red snapper IFQ program.

3.5.1 Environmental Justice Considerations

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider “the disproportionately high and adverse human health or

environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories...” This executive order is generally referred to as environmental justice (EJ).

Recreational red snapper fishermen and associated businesses and communities along the coast may be affected by this proposed action. However, information on race, ethnicity, and income status for groups at the different participation levels (private anglers, for-hire captain, crew, and customers, and employees of recreational fishing businesses, etc.) is not available. Because this proposed action could be expected to affect fishermen and associated industries in numerous communities along the Gulf coast, census data (available at the county level, only) have been assessed to examine whether any coastal counties have poverty or minority rates that exceed the EJ thresholds.

The threshold for comparison that was used was 1.2 times the state average such that, if the value for the county was greater than or equal to 1.2 times the state average, then the county was considered an area of potential EJ concern (EPA 1999). Census data for the year 2010 was used. For Florida, the estimate of the minority (interpreted as non-white, including Hispanic) population was 39.5%, while 13.2% of the total population was estimated to be below the poverty line. These values translate in EJ thresholds of approximately 47.4% and 15.8%, respectively (Table 3.5.1). Based on the demographic information provided, no potential EJ concern is evident with regard to the percent of minorities for the counties of the west coast of Florida. With regard for poverty, Dixie (3.8%), Franklin (8%), Gulf (1.7%), Jefferson (4.6%), Levy (3.3%), and Taylor (7.1%) counties exceed the threshold by the percentage noted. No potential EJ concern is evident for the remaining counties which fall below the poverty and minority thresholds. The same method was applied to the remaining Gulf states.

Table 3.5.1.1. Each state’s average proportion of minorities and population living in poverty, and the corresponding threshold used to consider an area of potential EJ concern.

State	Minorities		Poverty	
	% Population	EJ Threshold	% Population	EJ Threshold
FL	39.5	47.4	13.2	15.8
AL	31.5	37.8	16.8	20.2
MS	41.2	49.4	21.4	25.7
LA	38.2	45.8	18.4	22.1
TX	52.3	62.7	16.8	20.1

Source: Census Bureau 2010.

In Alabama, Mobile was the only county to exceed the minority threshold (by 1.7%). Neither of Alabama’s coastal counties exceeded the poverty threshold for potential EJ concern. No coastal county in Mississippi exceeded either threshold. In Louisiana, Orleans Parish exceeded the minority threshold by 25% and the poverty threshold by 1.3%. Texas has several counties that exceeded the thresholds. In descending order of magnitude for exceeding the minority threshold were Willacy (26.3%), Cameron (24.7%), Kleberg (12.3%), Kenedy (9%), Nueces (2.8%), and

Harris (0.8%). Exceeding the poverty threshold were Kenedy (32.3%), Willacy (26.8%), Cameron (15.6%), Kleberg (6%), and Matagorda (1.8%). Willacy, Kenedy, Cameron, and Kleberg counties exceed both the minority and poverty thresholds and are the communities identified as most likely to be vulnerable to EJ concerns. Although this analysis identifies areas of potential EJ concern, it is not possible to determine whether the populations of potential EJ concern are involved in or dependent upon marine fishing activities.

Table 3.4.1 provides a summary of 20 communities considered substantially engaged in recreational fishing, generally. When compared with the referenced commercial fishing analysis, the following five communities (and respective county) are considered most likely to be affected: Destin (Okaloosa), Panama City (Bay), Pensacola (Escambia), and Apalachicola (Franklin), Florida and Galveston (Galveston), Texas. In comparing these communities with the preceding analysis identifying counties with potential EJ concerns, Apalachicola is the only community located within a county identified as having potential for EJ concerns. Apalachicola, located in Franklin County, exceeds the poverty threshold by 8% and would be the community most likely to experience unanticipated negative impacts.

The actions in this amendment are designed to implement a program for the regional management of recreational red snapper in which states or regions will be authorized to adapt certain management measures to regional conditions. It is assumed that the flexibility provided to adopt management measures most appropriate to a given region would result in optimal fishing opportunities for local anglers which in turn, would result in benefits to local communities. As will be addressed in the social effects analysis for each action, direct impacts are not expected to accrue to the social environment from most actions of this amendment, which establish the parameters of the program. However, indirect effects (positive or negative) may result due to 1) the specific regulations implemented in each region, 2) how any new regulations differ from existing regulations, and 3) the success or failure of cooperation under the new management regime. Disproportionate impacts to EJ populations are not expected to result from any of the actions in this amendment. Nevertheless, because the regulations to be implemented in each region remain unknown, the lack of impacts on EJ populations cannot be assumed.

3.6 Description of the Administrative Environment

3.6.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the exclusive economic zone, an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the exclusive economic zone.

Responsibility for federal fishery management is shared by the Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and

revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Appendix B. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the Gulf coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through Council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative Procedures Act, in the form of “notice and comment” rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of the National Oceanic and Atmospheric Administration’s Office of Law Enforcement, the United States Coast Guard, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council’s Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission’s Law Enforcement Committee, which have developed a 5-year “Gulf of Mexico Cooperative Law Enforcement Strategic Plan – 2008-2012.”

The red snapper stock in the Gulf is classified as overfished, but no longer undergoing overfishing. A rebuilding plan for red snapper was first implemented under Amendment 1 (GMFMC 1989), and has undergone several revisions. The current rebuilding plan was established in Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), and calls for rebuilding the stock to a level capable of supporting maximum sustainable yield on a continuing basis by 2032. Periodic adjustments to the ACL and other management measures needed to affect rebuilding are implemented through regulatory amendments.

3.6.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf states exercises legislative and regulatory authority over their respective state’s natural resources through discrete administrative units. Although each agency is the primary administrative body

with respect to the states' natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each state's primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004b).

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action 1 – Regional Management

4.1.1 Direct and Indirect Effects on the Physical Environment

4.1.2 Direct and Indirect Effects on the Biological/Ecological Environment

4.1.3 Direct and Indirect Effects on the Economic Environment

4.1.4 Direct and Indirect Effects on the Social Environment

4.1.5 Direct and Indirect Effects on the Administrative Environment

4.2 Action 2 –Regional Management and Sector Separation

4.2.1 Direct and Indirect Effects on the Physical Environment

4.2.2 Direct and Indirect Effects on the Biological/Ecological Environment

4.2.3 Direct and Indirect Effects on the Economic Environment

4.2.4 Direct and Indirect Effects on the Social Environment

4.2.5 Direct and Indirect Effects on the Administrative Environment

4.3 Action 3 – Establish Regions for Management

4.3.1 Direct and Indirect Effects on the Physical Environment

4.3.2 Direct and Indirect Effects on the Biological/Ecological Environment

4.3.3 Direct and Indirect Effects on the Economic Environment

4.3.4 Direct and Indirect Effects on the Social Environment

4.3.5 Direct and Indirect Effects on the Administrative Environment

4.4 Action 4 – Apportioning the Recreational Red Snapper Quota among Regions

4.4.1 Direct and Indirect Effects on the Physical Environment

4.4.2 Direct and Indirect Effects on the Biological/Ecological Environment

4.4.3 Direct and Indirect Effects on the Economic Environment

4.4.4 Direct and Indirect Effects on the Social Environment

4.4.5 Direct and Indirect Effects on the Administrative Environment

4.5 Action 5 – Post-season Accountability Measures (AMs)

4.5.1 Direct and Indirect Effects on the Physical Environment

4.5.2 Direct and Indirect Effects on the Biological/Ecological Environment

4.5.3 Direct and Indirect Effects on the Economic Environment

4.5.4 Direct and Indirect Effects on the Social Environment

4.5.5 Direct and Indirect Effects on the Administrative Environment

4.8 Cumulative Effects Analysis (CEA)

CHAPTER 5. REGULATORY IMPACT REVIEW

[This review is completed after selection of all preferred alternatives.]

CHAPTER 6. REGULATORY FLEXIBILITY ACT ANALYSIS

[This analysis is completed after selection of all preferred alternatives.]

CHAPTER 7. BYCATCH PRACTICABILITY ANALYSIS

CHAPTER 8. LIST OF PREPARERS

PREPARERS

Name	Expertise	Responsibility	Agency
Ava Lasseter	Anthropologist	Co-Team Lead – Amendment development, introduction, social analyses	GMFMC
Cynthia Meyer	Fishery biologist	Co-Team Lead – Amendment development, purpose and need, cumulative effects analysis	SERO
Carrie Simmons	Fishery biologist	Biological analyses	GMFMC
Stephen Holiman	Economist	Economic analyses, Regulatory Impact Review, Regulatory Flexibility Act analysis	SERO
Steven Atran	Fishery biologist	Biological analyses	GMFMC
Peter Hood	Fishery biologist	Biological analyses, bycatch practicability analysis	SERO
Andy Strelcheck	Fishery biologist	Scientific analyses	SERO

REVIEWERS (Preparers also serve as reviewers)

Name	Expertise	Responsibility	Agency
Assane Diagne	Economist	Economic review	GMFMC
Heather Blough	Policy	Policy review	SERO
Akbar Marvasti	Economist	Economic review	SEFSC
Noah Silverman	Natural resource management specialist	National Environmental Policy Act review	SERO
Mara Levy	Attorney	Legal review	NOAA GC
Jason Brand	Law enforcement	Law enforcement review	USCG

GMFMC = Gulf of Mexico Fishery Management Council; NOAA GC = National Oceanic and Atmospheric Administration General Counsel; SEFSC = Southeast Fisheries Science Center; SERO = Southeast Regional Office of the National Marine Fisheries Service; USCG = United States Coast Guard

CHAPTER 9. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM A COPY OF THE EIS WAS SENT

National Marine Fisheries Service

- Southeast Fisheries Science Center
- Southeast Regional Office
- Office for Law Enforcement
- Endangered Species Division
- Domestic Fisheries Division

NOAA General Counsel

Environmental Protection Agency (Region 4 and 6)

United States Coast Guard

United States Fish and Wildlife Services

Department of Interior, Office of Environmental Policy and Compliance

Department of State, Office of Marine Conservation,

Marine Mammal Commission

Texas Parks and Wildlife Department

Alabama Department of Conservation and Natural Resources/Marine Resources Division

Louisiana Department of Wildlife and Fisheries

Mississippi Department of Marine Resources

Florida Fish and Wildlife Conservation Commission

CHAPTER 10. REFERENCES

- American Fisheries Society. 2013. Common and Scientific Names of Fishes from the United States, Canada, and Mexico. Seventh Edition. Special Publication 34. Bethesda, MD.
- Ault, J. S., S. G. Smith, G. A. Diaz, and E. Franklin. 2003. Florida hogfish fishery stock assessment. University of Miami, Rosenstiel School of Marine Science. Contract No. 7701 617573 for Florida Marine Research Institute, St. Petersburg, Florida.
- Barnette, M. C. 2001. A review of the fishing gear utilized within the Southeast Region and their potential impacts on essential fish habitat. NOAA Technical Memorandum. NMFS-SEFSC-449. National Marine Fisheries Service. St. Petersburg, Florida.
- Berkes, Fikret. 2009. Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *Journal of Environmental Management* 90:1692-1702.
- Burns, K. M., and J. T. Froeschke. 2012. Survival of red grouper (*Epinephalus morio*) and red snapper (*Lutjanus campechanus*) caught on J-hooks and circle hooks in the Florida recreational and recreational-for-hire fisheries. *Bull. Mar. Sci.* 88(3):633-646.
- Burns, K. M., N. F. Parnell, R. R. Wilson. 2004. Partitioning release mortality in the undersized red snapper bycatch: Comparison of depth vs. hooking effects. Final Report MARFIN Grant No. NA97FF0349 36 pp.
- Burns, K. M., C. C. Koenig, and F. C. Coleman. 2002. Evaluation of multiple factors involved in release mortality of undersized red grouper, gag, red snapper, and vermilion snapper. Mote Marine Laboratory Technical Report No. 814. (MARFIN grant #NA87FF0421). 53 pp.
- Campbell, M.D., W.B. Driggers, and B. Sauls. 2012. Release mortality in the red snapper fishery: a synopsis of three decades of research. SEDAR31-DW22. SEDAR, North Charleston, SC. 25 pp.
- Canter, L. 2012. Guidance on cumulative effects analysis in environmental assessments and environmental impact statements. Prepared for National Oceanic & Atmospheric Administration National Marine Fisheries Service, Northeast Regional Office, Gloucester, Massachusetts.
- Carter, D. W., and Liese, C. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. *North American Journal of Fisheries Management*, 32:4, 613-625. Available at: <http://dx.doi.org/10.1080/02755947.2012.675943>
- Cass-Calay, S. L., and M. Bahnick. 2002. Status of the yellowedge grouper fishery in the Gulf of Mexico. Contribution SFD 02/03 – 172. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- Census Bureau. 2010. United States 2010 Census. <http://www.census.gov/2010census/>.

CEQ. 1997 Considering cumulative effects under the National Environmental Policy Act. Council on Environmental Policy, Executive Office of the President. 64 pp. + appendices. Available at <http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm>.

Chester, W. 2001. Full box! One hundred years of fishing and boat building in Bay County. Fire in the Water Publishing Company, South port, Florida. 314 p.

Clapp, R. B., R. C. Banks, D. Morgan-Jacobs, and W. A. Hoffman. 1982. Marine birds of the southeastern United States and Gulf of Mexico. U.S. Dept. of Interior, Fish and Wildlife Service, Office of Biological Services, Washington D.C. FWS/OBS-82/01. 3 vols.

Collins, L.A., G.R. Fitzhugh, L. Mourand, L.A. Lombardi, W.T. Walling Jr., W.A. Fable, M.R. Burnett, R.J. Allman. 2001. Preliminary results from a continuing study of spawning and fecundity in the red snapper (Lutjanidae: *Lutjanus campechanus*) from the Gulf of Mexico, 1998-1999. Proceedings of the 52nd Gulf and Caribbean Fisheries Institute. 52: 34-47.

EPA. 1999. EPA Region 4: Interim Policy to Identify and Address Potential Environmental Justice Areas. EPA-904-R-99-004

Gannon, D. P., E. J. Berens McCabe, S. A. Camilleri, J. G., Gannon, M. K. Brueggen, A. A. Barleycorn, V. I. Palubok, G. J. Kirkpatrick, and R. S. Wells. 2009. Effects of *Karenia brevis* harmful algal blooms on nearshore fish communities in southwest Florida. Mar. Ecol. Prog. Ser. 378:171–186.

GMFMC. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico and environmental impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20FMP%20and%20EIS%201981-08.pdf>

GMFMC. 1989. Amendment 1 to the reef fish fishery management plan including environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20Amend-01%20Final%201989-08-rescan.pdf>

GMFMC. 1999. Regulatory amendment to the reef fish fishery management plan to set 1999 gag/black grouper management measures (revised), includes environmental assessment, regulatory impact review, and initial regulatory flexibility analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20RegAmend%20-%201999-08.pdf>

GMFMC. 2000. Regulatory amendment to the reef fish fishery management plan to set total allowable catch and management measures for red snapper for the 2000 and 2001 seasons. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20RegAmend%20-%202000-02.pdf>

GMFMC. 2002. Amendment number 10 to the fishery management plan for the shrimp fishery of the Gulf of Mexico, U.S. Waters with environmental assessment, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/SHRIMP%20Amend-10%20Final%202002-07.pdf>

GMFMC. 2004a. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

GMFMC. 2004b. Amendment 22 to the fishery management plan for the reef fish fishery of the Gulf of Mexico, U.S. waters, with supplemental environmental impact statement, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend%2022%20Final%2070204.pdf>

GMFMC. 2004c. Final amendment 23 to the reef fish fishery management plan to set vermilion snapper sustainable fisheries act targets and thresholds and to establish a plan to end overfishing and rebuild the stock, including a final supplemental environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/VS%2023%20Oct%20Final%2010-21-04%20with%20Appendix%20E.pdf>

GMFMC. 2005. Final amendment 18A to the fishery management plan for the reef fish resources of the Gulf of Mexico, including environmental assessment, regulatory impact review, and initial regulatory flexibility analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amendment_18A_Final.pdf

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008a. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%202008.pdf>

GMFMC. 2008b. Final reef fish amendment 30B: gag – end overfishing and set management thresholds and targets. Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance. Gulf of Mexico Fishery Management Council, 2203 North Lois Avenue, Suite 1100, Tampa, FL. http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 261 pp with appendices. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2010. Final regulatory amendment the reef fish fishery management plan to set total allowable catch for red snapper including revised environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Regulatory%20Amendment%203_26_10.pdf

GMFMC. 2011a. Regulatory amendment to the reef fish fishery management plan to set 2011 total allowable catch for red snapper. Gulf of Mexico Fishery Management Council, Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%202011%20Regulatory%20Amendment%20-%201-11.pdf>

GMFMC. 2011b. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida. http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2011c. Final reef fish amendment 32 – gag grouper – rebuilding plan, annual catch limits, management measures, red grouper – annual catch limits, management measures, and grouper accountability measures. Gulf of Mexico Fishery Management Council. Tampa,

Florida.

[http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

GMFMC. 2012a. Final amendment 35 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – modifications to the greater amberjack rebuilding plan and adjustments to the recreational and commercial management measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final_Amendment_35_Greater_Amberjack_Rebuilding_8_May_2012.pdf

GMFMC. 2012b. Final amendment 37 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – Modifications to the gray triggerfish rebuilding plan including adjustments to the annual catch limits and annual catch targets for the commercial and recreational sectors. Gulf of Mexico Fishery Management Council. Tampa, Florida.

[http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12\[1\].pdf](http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12[1].pdf)

GMFMC. 2012c. Final amendment 38 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – modifications to the shallow-water grouper accountability measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Final%20Amendment%2038%2009-12-2012.pdf>

GMFMC. 2012d. Final regulatory amendment to the fishery management plan for the reef fish resources of the Gulf of Mexico, revise fall recreational fixed closed season and set 2012 and 2013 quotas for red snapper. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Red%20Snapper%20Fall%20Season%20and%20Quota%20RegAmend%20-%2003-20-2012.pdf>

GMFMC. 2013a. Framework action to set the 2013 red snapper commercial and recreational quotas and modify the recreational bag limit, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://gulfcouncil.org/docs/amendments/Red%20Snapper%20Framework%20Action%20to%20Set%202013%20Quotas.pdf>

GMFMC. 2013b. Red snapper 2013 quota increase and supplemental recreational season, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Framework%20Action%20Set%202013%20Quotas%2008-01-13.pdf>

GMFMC. 2014. Final amendment 40 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – recreational red snapper sector separation. Gulf of Mexico Fishery Management Council, Tampa, Florida. 274 p.

<http://www.gulfcouncil.org/docs/amendments/RF%2040%20-%20Final%2012-17-2014.pdf>

GMFMC and SAFMC. 1982. Fishery management plan final environmental impact statement for coral and coral reefs. Gulf of Mexico Fishery Management Council. Tampa, Florida; and South Atlantic Fishery Management Council. Charleston, South Carolina.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Coral%20FMP.pdf>

Goodyear, C. P. 1988. The Gulf of Mexico fishery for reef fish species, a descriptive profile. Unpublished report. National Marine Fisheries Service, Southeast Fisheries Center, Miami Laboratory, CRD 87/88-19.

https://grunt.sefsc.noaa.gov/P_QryLDS/DisplayDocuments.jsp?min_series_code=CR&min_record_id=935&direction=next&total_rows=2955&description=SEFSC%20Technical%20Memorandum#

Goodyear, C. P. 1995. Red snapper in U.S. waters of the Gulf of Mexico. NOAA, NMFS, SEFSC, 75 Virginia Beach Drive, Miami, Florida 33149. Contribution: MIA 95/96-05. 171 pp.

Gore, R. H. 1992. The Gulf of Mexico: A treasury of resources in the American Mediterranean. Pineapple Press. Sarasota, Florida.

Hamilton, A. N., Jr. 2000. Gear impacts on essential fish habitat in the Southeastern Region. , National Marine Fisheries Service, Southeast Fisheries Science Center. Pascagoula, Mississippi.

Hanisko, David S., Joanne Lyczkowski-Shultz, and G. Walter Ingram. 2007. Indices of larval red snapper occurrence and abundance for use in stock assessment. American Fisheries Society Symposium 60:285-300.

Harrison, P. 1983. Seabirds: an identification guide. Houghton Mifflin Company, Boston, MA. Field Notes 48: 976-978.

Hood, P. B., A. J. Strelcheck, and P. Steele. 2007. A history of red snapper management in the Gulf of Mexico. Pages 267-284. in W. F. Patterson, III, J. H. Cowan, G. R. Fitzhugh, and D. L. Nieland, editors. Red snapper ecology and fisheries in the U.S. Gulf of Mexico. AFS, Symp 60, Bethesda, MD.

IPCC. 2007. Climate Change 2007: the physical science basis. Contribution of working group I to the fourth assessment report of the Intergovernmental Panel on Climate Change. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, editors. Cambridge University Press, Cambridge, United Kingdom and New York, New York, USA.

Jentoft, Svein, Bonnie J. McCay and Douglas C. Wilson. 1998. Social theory and fisheries co-management 22(4-5):423-436.

- Johnson, D.R., H.M. Perry, J. Lyczkowski-Shultz, and D. Hanisko. 2009. Red snapper larval transport in the northern Gulf of Mexico. *Transactions of the American Fisheries Society* 138:458-470.
- Kennedy, V., Twilley, R. Klypas, J. Cowan, J. and Hare, S. 2002. Coastal and marine ecosystems & global climate change: Potential effects on U.S. resources. Prepared for the Pew Center on Global Climate Change.
- Landsberg, J.H., L.J. Flewelling, J. Naar. 2009. *Karenia brevis* red tides, brevetoxins in the food web, and impacts on natural resources: Decadal advancements. *Harmful Algae* 8:598–607.
- Linton, B. 2012a. Population projections for Gulf of Mexico red snapper with preliminary 2012 landings estimates. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, FL.
- Linton, B. 2012b. Shrimp fishery bycatch estimates for Gulf of Mexico red snapper, 1972-2011. SEDAR31-DW30. SEDAR, North Charleston, SC. 11 pp.
- McEachran, J.D. and J.D. Fechhelm. 2005. *Fishes of the Gulf of Mexico, Vol. 2*. University of Texas Press. Austin, Texas.
- Methot, R. D. 2010. User manual for stock synthesis, model version 3.10b. Seattle, Washington. The most recent version of this manual and software is available at <http://nft.nefsc.noaa.gov/Download.html>.
- Muller, R. G., M. D. Murphy, J. de Silva, and L. R. Barbieri. 2003. Final report submitted to the national marine fisheries service, the Gulf of Mexico fishery management council, and the South Atlantic fishery management council as part of the southeast data, assessment, and review (SEDAR) iii. Florida Fish and Wildlife Conservation Commission, FWC-FMRI Report: IHR 2003-10. Florida Fish and Wildlife Research Institute. St. Petersburg, Florida.
- National Commission. 2010. The use of surface and subsea dispersants during the BP Deepwater Horizon oil spill. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (National Commission). Staff Working Paper No. 4. <http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Dispersants%20Working%20Paper.pdf>
- NMFS. 2002. Status of red grouper in United States waters of the Gulf of Mexico during 1986-2001, revised. Contribution No. SFD-01/02-175rev. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- NMFS. 2005. Endangered Species Act – Section 7 consultation on the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan and proposed amendment 23. February 15, 2005. National Marine Fisheries Service. St. Petersburg, Florida.

NMFS. 2009. Biological Opinion - the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan, including Amendment 31, and a rulemaking to reduce sea turtle bycatch in the Eastern Gulf bottom longline component of the fishery. October 13, 2009. National Marine Fisheries Service. St. Petersburg, Florida. Available at:

<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/2009%20GOM%20Reef%20Fish%20Re-in%20BO.pdf>

NMFS. 2010. 2010 Recreational Red Snapper Quota Closure Analysis – Fall Reopening. SERO-LAPP-2010-04. Southeast Regional Office, National Marine Fisheries Service. St. Petersburg, Florida. Available at:

http://sero.nmfs.noaa.gov/sf/pdfs/2010_Recreational_Red_Snapper_Quota_Closure_Analysis_Fall_Reopening.pdf

NMFS. 2011a. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at:

<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

NMFS. 2011b. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118. Available at:

http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2009.html

NMFS. 2012a. Gulf of Mexico 2011 red snapper individual fishing quota annual report. SERO-LAPP-2012-04. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701. 42 pp. Available at:

http://sero.nmfs.noaa.gov/sf/ifq/2011_RS_AnnualReport_Final.pdf.

NMFS. 2012b. Guidance on Cumulative Effects Analysis.

NMFS. 2013. Updated 2013 Gulf of Mexico red snapper recreational season length estimates. National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida. SERO-LAPP-2013-02 Addendum. 12 p.

http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/documents/pdfs/2013_red_snapper_emergency_regs.pdf

NOAA. 2010. Deepwater Horizon Oil: Characteristics and Concerns. NOAA Office of Response and Restoration, Emergency Response Division. 2 p.

http://www.noaa.gov/deepwaterhorizon/publications_factsheets/documents/OilCharacteristics.pdf

O’Hop, J., M. Murphy, and D. Chagaris. 2012. The 2012 stock assessment report for yellowtail snapper in the south Atlantic and Gulf of Mexico. Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida.

- Parrack, N.C. and D.B. McClellan. 1986. Trends in Gulf of Mexico red snapper population dynamics, 1979-85. National Marine Fisheries Service, Southeast Fisheries Center, Miami, Florida. Coastal Resources Division Contribution No. CRD-86/87-4. 116 p.
- Patterson, W. F. III, J. C. Watterson, R. L. Shipp, and J. H. Cowan, Jr. 2001. Movement of tagged red snapper in the northern Gulf of Mexico. Transactions of the American Fisheries Society 130: 533-545.
- Porch, C. E., and S. L. Cass-Calay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico – assessment 5.0. Sustainable Fisheries Division Contribution No. SFD-01/01-129. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- Porch, C. E., A. M. Eklund, and G. P. Scott. 2003. An assessment of rebuilding times for goliath grouper. Contribution: SFD 2003-0018. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- Porch, C. E. 2005. Projected effects of changes in minimum size regulations on the future status of the red snapper (*Lutjanus campechanus*) fishery in the U. S. Gulf of Mexico. NOAA, NMFS, SEFSC, 75 Virginia Beach Drive, Miami, Florida 33149. Contribution: SFD-2005-009. 7 pp.
- Porch, C.E., G.R. Fitzhugh, and B.C. Linton. 2013. Modeling the dependence of batch fecundity and spawning frequency on size and age for use in stock assessment of red snapper in U.S. Gulf of Mexico waters-SEDAR31-AW03. Southeast Fisheries Science Center, Miami, Florida 33149.
- RFSAP. 1999. September 1999 Report of the Reef Fish Stock Assessment Panel. Gulf of Mexico Fishery Management Council. Tampa, FL.
- Rico-Martínez, R., T.W. Snell, and T.L. Shearer. 2013. Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A[®] to the *Brachionus plicatilis* species complex (Rotifera). Environmental Pollution 173:5-10.
- Savolainen, M. A., R. H. Caffey, and R. F. Kazmierczak, Jr. 2012. Economic and Attitudinal Perspectives of the Recreational For-hire Fishing Industry in the U.S. Gulf of Mexico. Center for Natural Resource Economics and Policy, LSU AgCenter and Louisiana Sea Grant College Program, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, LA. 171 p. Available at: <http://www.laseagrant.org/pdfs/Gulf-RFH-Survey-Final-Report-2012.pdf>
- Schirripa, M. J., and C. M. Legault. 1999. Status of the red snapper fishery in the Gulf of Mexico: Updated through 1998. SFD-99/00-75. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- SEA (Strategic Environmental Assessment Division, NOS). 1998. Product overview: Products and services for the identification of essential fish habitat in the Gulf of Mexico. NOS, Page 7-62 DEIS for EFH for the Gulf of Mexico FMPs July 2003 Silver Spring MD; National Marine

Fisheries Service, Galveston, Texas; and Gulf of Mexico Fishery Management Council. Tampa Florida.

SEDAR 3. 2003. Complete stock assessment report of yellowtail snapper in the southeastern United States – SEDAR 3, Assessment report 1. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004a. SEDAR report 1 the goliath grouper in southern Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004b. SEDAR report 2 the hogfish in Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7 Update. 2009. Update stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006a. Stock assessment report 1 of SEDAR 9: Gulf of Mexico gray triggerfish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006b. Stock assessment report 2 of SEDAR 9: Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006c. Stock assessment report 3 of SEDAR 9: Gulf of Mexico vermilion snapper assessment report 3. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011a. SEDAR update stock assessment of vermilion snapper in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011b. SEDAR update stock assessment of gray triggerfish in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10. 2006. Gulf of Mexico Gag Grouper Stock Assessment Report 2. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10 Update. 2009. Stock assessment of gag in the Gulf of Mexico. – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12 Update. 2009. Stock assessment of red grouper in the Gulf of Mexico – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 15A. 2008. Stock assessment report 3 (SAR 3) South Atlantic and Gulf of Mexico mutton snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2012. SEDAR 31 Section II: Data workshop report, Gulf of Mexico red snapper. SEDAR, North Charleston, SC.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SERO. 2006. Red snapper yield-per-recruit analyses. NOAA, NMFS, SERO, 263 13th Ave. South, St. Petersburg, Florida 33701. 13 pp.

SERO. 2012a. 2011 Gulf of Mexico grouper-tilefish individual fishing quota annual report. SERO-LAPP-2012-09. Southeast Regional Office. St. Petersburg, Florida. 49 p.

SERO. 2012b. Southeast Regional Office National Marine Fisheries Service. 2013 Recreational Red Snapper Quota Closure Analysis. Southeast Regional Office, St. Petersburg, FL.

SERO. 2012c. Southeast Regional Office National Marine Fisheries Service. Estimated reduction in Gulf of Mexico recreational red snapper harvest associated with various bag limits. Southeast Regional Office, St. Petersburg, Florida.

SERO. 2013a. Establishing Recreational Closure Authority Specific to Federal Waters off Individual States for the Red Snapper Component of the Gulf of Mexico Reef Fish Fishery. Emergency Action to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico. Southeast Regional Office, St. Petersburg, FL.

SERO. 2013b. Red snapper individual fishing quota program 5-year review. Southeast Regional Office. St. Petersburg, Florida. 94 p.

SERO-LAPP-2013-02. Southeast Regional Office National Marine Fisheries Service. 2013 Gulf-wide and State-specific Projected 2013 Red Snapper Federal Season Closure Dates. Southeast Regional Office, St. Petersburg, FL.

Shipp, R.L. 2001. The snapper fishery in the Gulf of Mexico, an historical perspective, and management implications. PowerPoint presentation to the Gulf of Mexico Fishery Management Council, January 2001.

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Report by the Human Dimensions of Recreational Fisheries Research Laboratory, Texas A&M University, MARFIN program grant number NA77FF0551.

Turner, S. C., N. J. Cummings, and C. P. Porch. 2000. Stock assessment of Gulf of Mexico greater amberjack using data through 1998. SFD-99/00-100. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Turner, S. C., C. E. Porch, D. Heinemann, G. P. Scott, and M. Ortiz. 2001. Status of the gag stocks of the Gulf of Mexico: assessment 3.0. August 2001. Contribution: SFD-01/02-134. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Valle, M., C. Legault, and M. Ortiz. 2001. A stock assessment for gray triggerfish, *Balistes capriscus*, in the Gulf of Mexico. Contribution: SFD-01/02-124. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Walker, B. M., R. F. Zales II, and B. W. Rockstall. 2006. Charter fleet in peril: losses to the Gulf of Mexico charter fleet from hurricane storms during 2005. National Association of Charterboat Operators. 208 pp.

Wilson, C.A. and D.L. Nieland. 2001. Age and growth of red snapper, *Lutjanus campechanus*, from the northern Gulf of Mexico off Louisiana. Fishery Bulletin 99:653-664.
<http://fishbull.noaa.gov/994/wil.pdf>

APPENDIX A. ALTERNATIVES CONSIDERED BUT REJECTED

REMOVED AT APRIL 2013 COUNCIL MEETING:

Two alternatives from Action 2 – Establish Regions for Management

Alternative 3: Establish an east (Florida, Alabama) and west (Mississippi, Louisiana, Texas) region and allow for different management measures for each region.

* ALTERNATIVE 3 (ABOVE) SUBSEQUENTLY REPLACED IN ACTION 2 AT OCTOBER 2013 COUNCIL MEETING.

Alternative 4: Establish three regions representing the west (Texas), north (Louisiana, Mississippi, Alabama), and east (Florida) region and allow for different management measures for each region.

Remove entire Action 7:

Action 7 – In-Season Accountability Measure Establishing Regional Closures in the EEZ

*Note: Both **Alternative 2** and **Alternative 3** could be selected as Preferred Alternatives.

Alternative 1: No action. When the recreational red snapper quota is reached, or is projected to be reached, the National Marine Fisheries Service (NMFS) files a notification with the Office of the Federal Register that prohibits the recreational harvest of red snapper in the economic exclusive zone (EEZ) for the remainder of the fishing year.

Alternative 2: If a region, as defined in Action 2, establishes an approved regional regulations, NMFS has the authority to alter the recreational red snapper season in the EEZ off those states (including a zero-day season) by the amount necessary to compensate for the additional harvest that would occur in state waters as a result of the region's regulations. (Boundaries for the EEZ off each state are in Figure 1.2.1.)

Alternative 3: If a region, as defined in Action 2, does not have an approved regional regulations and establishes regulations inconsistent with federal red snapper regulations, NMFS has the authority to adjust the recreational red snapper season in the EEZ off those states (including a zero day season) by the amount necessary to compensate for the additional harvest that would occur in state waters as a result of the region's inconsistent regulations. (Boundaries for the EEZ off each state are in Figure 1.2.1.)

Discussion:

Under current management, state and federal waters Gulf wide are open during the red snapper season. If the regions, as defined in Action 2, set their own fishing seasons through an approved management plan or inconsistent regulations, some areas of the Gulf could be open while other areas are closed. This action allows the Council to extend boundary lines of state waters into the EEZ, to correspond with the regions. These boundaries would enable NMFS to close federal

waters off of a region when its regional quota has been reached. Or, the boundaries could be used to close a portion of the EEZ off a state or region that establishes inconsistent regulations. This in-season accountability measure would help prevent the annual catch limit from being exceeded. The in-season and post-season (Action 6) accountability measures are not mutually exclusive and could be used together where appropriate. Further information on accountability measures is described in the Generic ACL/AM Amendment in Section 2.8 (GMFMC 2011).

In March 2013, NMFS implemented a temporary emergency rule that gives NMFS the authority to set separate closure dates for the recreational red snapper season in federal waters off individual Gulf states (Figure 1.2.1). This action was requested by the Council to provide a fairer and more equitable distribution of recreational red snapper fishing opportunities among anglers in all the Gulf states for the 2013 season. Although a temporary emergency rule will be in effect for the 2013 season, it will not be used as the analytical baseline. The temporary emergency rule, even if extended, would not be effective for the 2014 red snapper recreational fishing season.

Alternative 1 would continue the current method of determining the closure date for the recreational red snapper season and apply that date to all federal waters of the Gulf. NMFS determines the length of the season based on the quota, average weight of fish, and estimated catch rates. Because NMFS must ensure the entire stock harvest does not exceed the quota, including harvest in state waters, if states establish less restrictive regulations, the federal season must be adjusted to account for the additional expected harvest. For example, when calculating the projected 27-day 2013 season length, NMFS adjusted the mean catch rate to account for the year-round open season in state waters and 4-fish bag limit in Texas (SERO 2012). In addition, Louisiana has proposed an 88-day season with a 3-fish bag limit and Florida has proposed a 44-day season with a 2-fish bag limit in state waters. Based on the estimated catch rate with those regulations in the three state waters, the 2013 federal recreational red snapper season could be reduced to 22 days (SERO 2013). After the 22-day season, the entire EEZ would be closed for the recreational harvest of red snapper.

Both **Alternative 2** and **Alternative 3** would use regions developed in Action 2 to establish boundaries and allow NMFS to set different closure dates for the red snapper recreational season in the EEZ adjacent to each Gulf state. If the Council chooses to delegate management to the regions in Action 1 and Action 4, then there may be a review process to assess if the region's management plan is consistent with the goals of the FMP and red snapper rebuilding plan. A specific process would need to be established for plan approval. **Alternative 2** would apply to regions with approved management plans. If the region has an approved management plan, but the regional quota is determined to be met before the planned season closure, then NMFS could close the harvest in federal waters to prevent overharvest. **Alternative 3** would apply to regions that do not have an approved management plan and establishes regulations inconsistent with the federal regulations. If a region were to set red snapper regulations that were not less restrictive than federal regulations, NMFS would calculate the red snapper recreational season within those boundaries using an adjusted catch rate, to account for a longer season or larger bag limit in state waters. In some cases, this could allow the EEZ off regions with consistent regulations to have more days than if the season for the entire Gulf was adjusted. For example, if the 2013 federal season was reduced off Texas, Louisiana, and Florida to account for inconsistent regulations in

those waters, the federal seasons could be as follows: Texas = 12 days, Louisiana = 8 days, Mississippi = 28 days, Alabama = 28 days, and Florida = 21 days (SERO-LAPP-2013-2). If increased catch from a region with inconsistent regulations exceeds its sub-quota regardless of the adjacent EEZ being closed, then NMFS may need to adjust the federal season in other regions to account for harvest. Conversely, if a state were to implement regulations in state waters that were more restrictive than federal regulations, the federal season in the EEZ off that state could potentially be increased. The Council could choose both **Alternative 2** and **Alternative 3** to address situations where a region or state may or may not have an approved management plan.

If the current regulations are maintained (**Alternative 1**), they could confound the goals of regional management. If regions set varying seasons, it is possible the activities of one or more regions could exceed the recreational sector quota before another region's season occurs. In turn, NMFS would close the remainder of the season to prevent over-fishing. When the total recreational quota is met, all recreational harvest of red snapper would be prohibited regardless of whether one or more regions have reached their respective apportionments. By establishing varying closed areas, the enforcement issues would likely increase. Recreational fishermen would need to abide by the area closures and be mindful of transiting through closed areas. Provisions for transit through closed areas may need to be considered. If the EEZ was closed off a region due to inconsistent regulations (**Alternative 3**), then a clear definition of the state/federal boundary would help recreational fishermen to insure compliance. Currently, this boundary is the 9-nautical mile buffer off of Texas and Florida, and 3-nautical mile buffer off of Alabama, Mississippi, and Louisiana.

REMOVED AT OCTOBER 2014 COUNCIL MEETING:

Options a and b from Alternatives 2, 3, and 4, in Action 6: Post-Season Accountability Measures (AMs) Adjusting for Regional Overages

Option a: Apply the quota adjustment beginning one year after the implementation of the plan.

Option b: Apply the quota adjustment beginning two years after the implementation of the plan.

These options were removed because they are now less restrictive than the overage adjustment recently adopted in the Framework Action to Set Accountability Measures for Red Snapper (GMFMC 2014).

RESTRUCTURING OF ACTIONS AND ALTERNATIVES FOLLOWING OCTOBER 2014 COUNCIL MEETING:

[Track change the restructuring.]

References

GMFMC. 2011. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2014.

SERO 2012. Southeast Regional Office National Marine Fisheries Service. 2013 Recreational Red Snapper Quota Closure Analysis. Southeast Regional Office, St. Petersburg, FL.

SERO 2013. Southeast Regional Office National Marine Fisheries Service. 2013 Gulf-wide and State-specific Projected 2013 Red Snapper Federal Season Closure Dates. Southeast Regional Office, St. Petersburg, FL.

APPENDIX B. OTHER APPLICABLE LAW

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the exclusive economic zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, the National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that affect any land or water use or natural resource of a state’s coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NMFS regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state’s coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary, NMFS will determine if this plan amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, Mississippi, and Texas to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Data Quality Act

The Data Quality Act (DQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the DQA directs the Office of Management and Budget to issue government wide guidelines that “provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies.” Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to Office of Management and Budget on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the Act, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires federal agencies use their authorities to conserve endangered and threatened species. The ESA requires NMFS, when proposing a fishery action that “may affect” critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the proposed action. Consultations are concluded informally when proposed actions may affect but are “not likely to adversely affect” endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are “likely to adversely affect” endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives.

On September 30, 2011, the Protected Resources Division released a biological opinion which, after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC 252 oil release event in the northern Gulf of Mexico), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf of Mexico reef fish fishery is also not likely to jeopardize the continued existence of green, hawksbill, Kemp’s ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011). On December 7, 2012, NMFS published a proposed rule to list 66 coral species under the ESA and reclassify *Acropora* from threatened to endangered (77 FR 73220). In a memorandum dated February 13, 2013, NMFS determined the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora* where they are most likely to occur.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, and on the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea and marine otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as “depleted,” and a conservation plan is developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction, development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and studies of pinniped-fishery interactions.

Under Section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. The categorization of a fishery in the List of Fisheries determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The primary gears used in the Gulf of Mexico reef fish fishery are classified in the updated 2012 MMPA List of Fisheries as Category III fishery (74 FR 73912). The conclusions of the most recent List of Fisheries for gear used by the reef fish fishery can be found in Section 3.3.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501 et seq.) regulates the collection of public information by federal agencies to ensure the public is not overburdened with information requests, the federal government’s information collection procedures are efficient, and federal agencies adhere to appropriate rules governing the confidentiality of such information. The PRA requires NMFS to obtain approval from the Office of Management and Budget before requesting most types of fishery information from the public. Action 2 adds reporting and monitoring requirements to the list of post-season accountability measures that can be implemented or changed under the framework procedure and may have PRA consequences.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The National Oceanic and Atmospheric Administration Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan (See Chapter 5). RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Analysis. A regulation is significant if it a) has an annual effect on the economy of \$100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency; c) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or d) raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

This Executive Order mandates that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. The Executive Order is described in more detail relative to fisheries actions in Section 3.5.1.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, States and Tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental Federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes, and local entities (international, too).

E.O. 13158: Marine Protected Areas

This Executive Order requires federal agencies to consider whether their proposed action(s) will affect any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural or cultural resource within the protected area. There are several marine protected areas, habitat areas of particular concern, and gear-restricted areas in the eastern and northwestern Gulf of Mexico.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as essential fish habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the Council has, under separate action, approved an Environmental Impact Statement (GMFMC 2004) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

References

GMFMC. 2004. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

NMFS. 2011. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at:

<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

APPENDIX C. SUMMARIES OF PUBLIC COMMENTS RECEIVED

Scoping workshops were held from January 14 – 22, 2013.
Public hearings were held from August 1 – 15, 2013.

Written comments submitted in response to Reef Fish Amendment 39 can be found here:
<https://docs.google.com/spreadsheets/cc?key=0Atgbk2rxQkqhdFViUTB3VERSX2ZwcXJmckl1QTBXZkE#gid=0>

Scoping workshops were held in the following locations:

January 14, 2013

Baton Rouge, Louisiana
DoubleTree by Hilton
4964 Constitution Ave.
Baton Rouge, LA 70808
(225) 925-1005

January 14, 2013

Texas City, Texas
Holiday Inn Express
2440 Gulf Freeway
Texas City, TX 77591
(409) 986-6700

January 15, 2013

Corpus Christi, Texas
Hilton Garden Inn
6717 S. Padre Island Dr.
Corpus Christi, TX 78412
(361) 991-8200

January 15, 2013

Biloxi, Mississippi
Four Points by Sheraton
940 Beach Blvd.
Biloxi, MS 39530
(228) 546-3100

January 16, 2013

Orange Beach, Alabama
Hilton Garden Inn
23092 Perdido Beach Blvd.
Orange Beach, AL 36561
(251) 974-1600

January 17, 2013

Destin, Florida
Destin Community Center
101 Stahlman Ave.
Destin, FL 32541
(850) 654-5184

January 22, 2013

St. Petersburg, Florida
Hilton St. Petersburg Carillon Park
950 Lake Carillon Dr.
St. Petersburg, FL 33716
(727) 540-0050

Summaries of Scoping Workshops

Baton Rouge, Louisiana

January 14, 2013

Council and Staff

Campo Matens

Ryan Rindone

32 members of the public attended.

Joe Macaluso - www.theadvocate.com

The big issue is that the federal government is ignoring the fishermen. How do the federal fisheries managers know which survey, either the Texas Parks and Wildlife or MRIP, is correct? Red snapper can be caught in less than 25 meters of water. Also, how is funding for data collection going to be shared with the states who take on regional management? Allocation should be based on biological criteria. There is a disparity between how recreational and commercial catches figure into the overall red snapper quota. Louisiana's issue with respect to regional management is Florida: Florida has all the people, and Louisiana has all the fish.

George Huye - CCA

Regional management should be done by state, with each state constituting its own region. States should not have to share authority with other states with less resources.

Mike Montalbano - CCA

Regulations are intentionally cumbersome. The Gulf Council should pursue regional management. The Gulf Council should remove as many regulations from the fishery as possible.

Austin Johnson - Private recreational angler

Supports regional management.

Trey Williams - CCA

There are lots of red snapper out there. A 27-day season is not sufficient. Anyone with a boat can catch red snapper. The current system is broken. State-level red snapper is the way to go.

Rawlston Phillips - Private recreational angler

Regional management is the way to go. The money spent by Louisiana on the fishery goes much further than the money spent by the federal government.

Rad Trascher - CCA

Supports regional management. LDWF has a better sense of the red snapper fishery than the federal government and can better manage catch data and conduct stock assessments. Regional management is a step in the right direction.

Larry Hooper - Our Freedom Charters

Will regional management lead to catch shares? Catch share programs haven't worked well anywhere. Supports regional management. Let states handle their own fisheries. Would like to

see the charter for-hire industry recognized as its own business. We pay for everything and get punished for it. Regional management should be conducted at the state level. Red snapper should be assessed using numbers of fish instead of pounds. Scientists need to count all the fish.

Andrew Roberts - CCA

Supports regional management, with Louisiana acting as its own region and governed by LDWF.

Ben Graham - CCA

There are tons of red snapper. Supports regional management of red snapper at the state level. States can do a better job than the federal government. Allocation should be based on biological criteria.

Chris Moran - Marina operator

Supports regional management of red snapper at the state level. Louisiana has the best red snapper fishery and the smallest number of fishermen. There should be shorter seasons as you go from the western Gulf of Mexico to the eastern Gulf of Mexico. Allocation should be based on biological criteria. States could do a better job with sampling funding.

Jim McDowell - Private recreational angler

Supports regional management of red snapper at the state level, with Louisiana managed by LDWF. Allocation should not be based on landings.

David Cresson -CCA Executive Director, LA

The Gulf Council proposed regional management plan is different from the Louisiana proposal. One goal was to show that Louisiana can count fish better than the federal government. In favor of management at the lowest possible level. In favor of regional management as proposed by LDWF.

**Texas City, Texas
January 14, 2013**

Council and Staff

Patrick Riley

Emily Muehlstein

30 members of the public attended.

Bubba Cochran - Charter, commercial, and recreational angler; Good News Charters and Southern Seafood LLC

What is happening with red snapper management right now isn't working and regional management should be pursued. He likes the idea of managing with 3 regions. Bubba does not want the states to manage red snapper without a regional system.

Shane Cantrell - Charter; Fishin' Addiction Charters and Charter Fishing Association

Shane is a young captain and he believes that regional management has a lot of potential as long as states can agree with one another. He would like to see regional management because it may be a way to increase accountability for the recreational sector.

Tom Hilton - Private recreational angler

The Council is working backwards and should identify fishing effort first. He thinks that an offshore boat permit would solve a lot of issues. The charter for-hire industry already has their own permit and the private recreational anglers should, too. An offshore recreational permit would allow for better determination of what the recreational sector is catching without the time lag associated with MRIP. The permit could also solve the problem of National Standard 4 that disallows discrimination between residents of different states by charging different fees for resident and nonresident fishermen. The real solution is an honest stock assessment that gives full credit to the fish on artificial structure in the Gulf. He could really get behind a regional management system if the regions actually had control, but not if this is just a way to further micromanage the fishery.

John Thomas - Private recreational angler

He echoes Tom Hilton's perspective. He sees that there is more snapper out there than ever, and even though he is allergic to fish he wants the system to be fixed.

Jonathan McKay - Private recreational angler

Jonathan suggests that permitting or buying a license that gives a certain number of fish to each angler would be a good idea. A tag system should be considered; this could be considered using regional management or it could be done Gulf-wide. Ultimately, Jonathan is worried about what the overpopulation of snapper is doing to the other fish.

Roger Dickert - Private recreational angler

Roger would not want to trade more days for a smaller bag limit. He supports a tag system because he would like to be given the opportunity to fish when he wants to so he doesn't have to risk unsafe seas. Regional management would be better because the local folks in control would better be able to make management judgments for their region.

David Conrad - Charter; Circle H Charter

David supports the idea of using a tag system. He likes the idea of regional management and would like to see the idea developed a little more.

Bill Platt - Charter boat captain and tournament angler

Bill likes the idea of a regional management system and he really wants accountability in the recreational sector to be improved. 20 years ago there were way more offshore fishermen and there are a lot less now. A tag system is a reasonable idea for Texas because better accountability should let them fish longer.

Scott Hickman - Charter Captain; Circle H Charters

One size fits all management doesn't work in the Gulf of Mexico. He would rather fish red snapper in the fall, and he supports regional management on a state-by-state level so that they

have the authority to come up with their own system under the federal quota and federal accountability measures. Regional management will allow us to get to the accountable fishery quicker than the federal fishery would allow. The status quo system does not work; 27 days is ridiculous, and Texas may as well not have a federal season with the bad weather. Texas Parks and Wildlife could do better for their fishermen and he applauds the Council for trying to give the recreational fishermen a solution.

Tyler Walker - For-hire deckhand and recreational fisherman.

Tyler has seen how the fish population has grown and he supports the idea of moving forward with a regional management program.

Billy Woolsey - Private recreational angler

Billy thinks regional management is a good idea. He wants accountability to be better and believes that a tag system is a reasonable solution to the problem we're facing. We need to do something different.

Johnny Williams - Owner, Williams Party Boats

Jonny believes there needs to be some safeguards because management has potential to become a derby where the state that opens first gets to catch their fish and the rest of the states are punished when the quota is caught. If a state wants to participate in the program, then it should have to agree that it will close its own state waters, not just the federal waters off the state if the individual region's allocation is reached. He thinks that NMFS should relinquish federal control of snapper completely and allow the states to manage it.

Buddy Guindon - Commercial fisherman; Katie's Seafood

Regional management and accountability would be good but he wants to ensure that the people out there can continue to make a living taking people fishing.

Johnny Walker - Charter owner

Johnny thinks the states can better manage the fishery than the federal government. If the Council can put in place measures that ensure one state's harvest does not cut into another, then regional management is a good idea. He also believes that a tag system is a reasonable solution to the recreational season problems.

Todd Hanslik - Private recreational angler

He supports the idea of regional management and would like the Council to give the states a shot at incremental management of this fishery. It will be very complex to develop the regional management program and Todd would like to be sure that the Council continues to involve fishermen in the development of the program by sharing information and inviting people to comment. He wants to pass on the ability for future generations to fish, and he fears that the fishery is slowly migrating to a liberal system that is similar to that of Canada where you must pay someone to take you bluefin tuna fishing. He would really like the state to have the opportunity to manage snapper on their own.

Gary Graham - Texas Sea Grant

He thinks tags should be considered because it is a potentially viable system that works in the hunting world. He would like to discuss density-dependent allocation because population is limited by habitat.

**Corpus Christi, Texas
January 15, 2013**

Council and Staff

Doug Boyd

Emily Muehlstein

37 members of the public attended.

Mary Ann Heimann – South Bay Marina

It's a good idea that the states take control of the fishery but she thinks that the states should be given full control.

Russell Sanguinet - Charter; Dolphin Dock Inc.

Council can't allocate based on the number of licenses because we can't use historical licenses to determine it; people have not been buying licenses and won't until there is something to catch. He wonders how we are going to differentiate between federally permitted vessels and state-permitted for-hire vessels if the state of Texas gets regional control? Would federal permits be allowed to fish in state waters? The whole purpose of this idea should be to make each state responsible for their own fishery and not be managed by another mismanaged fishery (NMFS).

Jackie Romeyn - Charter; Fisherman's Wharf

She would like to know what the distinction would be between the federal and state waters. She does not currently have a federal permit and wonders what the distinction will be under regional management. Jackie likes the idea of state-based regions or even smaller regions because she believes it will allow for better scientific information, better allocation, and better local regulations if the states are given more responsibility.

Troy Williamson - CCA

The concept of regional management has been developed because of frustration toward federal management. Red snapper are more abundant than ever and management has worked, but it's time to reap the benefits of success. The CCA supports driving management to the lowest level of government possible. The states should manage with as little federal influence as possible. NMFS is "rewarding" anglers with a 27-day season and a 2-fish bag limit after they have sacrificed to rebuild the stock. This short season will result in a wide-spread revolt to fisheries management. The transfer of responsibility will be no easy task; enforcement, monitoring, etc. will be difficult to control. The states should have the ability to manage both commercial and recreational harvest of red snapper.

Mike Nugent - Port Aransas Boatman Association and Charter operator

They have been asking to split the Gulf for 10 years. This is the first time the Council has responded and he hopes that people keep moving forward to get this plan to work. Each state should get their allocation from historical landings and it's really important that each state is independent from the others. The mistakes other regions make should not affect each region. The problems with MRIP could be solved by dividing it into other states who can take more control of their data collection programs. Regional management is desperately needed and would take away the state vs. federal permit issues.

Mike Miglini - Charter; Out to Sea Adventures

He would like allocation to be based on biological abundance of the fish. He supports regional management because local folks can make better regulations for local needs. He sees problems with Reef Fish Amendment 30b and section 407 of MSA which will kill charter boats and headboats. Credit should be given for artificial reef and restocking programs when determining abundance. He would like people to look at tags for recreational boats, and if that's good for private recreational boats he would like to see something for for-hire boats that would allow anglers to fish the days they want; they could use an AB tag system to stay in business.

Mike O'Dell - Charter; A Fishing Fantasy Guide Service

He supports regional management because the states can make better regulations than NMFS can.

Dennis Lug - Retired charter, now private recreational angler.

Would like to see some sort of regional management system worked out.

Steve Hardy - Private recreational angler

We are here because federal fisheries management is not working and it's time for something different. He supports any plan that has Texas as their own region. Boundaries would extend into the EEZ. We are not managing licenses, we are managing fish, so allocation should be based on abundance of fish. There are multiple stocks of red snapper based on habitat and reefs. He is worried that we are having a discussion about how we divide the pie but we are saying nothing about how to make the pie bigger. We need to do something about structure offshore.

Jim Smarr - RFA Texas

RFA believes in state management and has for 17 years. We should use the longest data set possible (historical landings) so that Texas can be treated fairly. It should be a biological abundance decision, period. The SEDAR-style stock assessments should be conducted regionally so that Texas can fish their own stock; monitored and determined by Texas. Management guidelines should not be established by the Council; the state should be given full control of their allocation. There needs to be an amendment to the MSA that cures the system that allows the other states to be affected by another region's overrun of their own allocation.

Brett Casey - For-hire; Port Aransas Boatman Association

Out of all the discussion, it still boils down to NMFS still monitoring the red snapper, and if one state catches the whole allocation, we're still back to square one. We need to figure out what we

need to do to limit this. Texas should be given their own allocation and each region's behavior should not affect what the other regions do. It's time to make a change for the good.

Tim Oestreich – Headboat Captain; Dolphin Dock Inc.

The federal limit seems to mainly limit the for-hire folks with federal permits. Some kind of separation should be made for someone who owns a business, because as it is, private fishermen can catch 4 fish all year-round, while federally permitted for-hire boats have a real short season. It would be very helpful if the season can stretch.

Biloxi, Mississippi

January 15, 2013

Council and Staff

Dale Diaz

Ryan Rindone

23 members of the public attended.

Johnny Marquez - CCA Executive Director, MS

Local managers can do a better job of managing fisheries for constituents. Concerned about how regions will be defined. Want fair and equitable access to the fishery. How would state management entities be funded to conduct regional management?

Tom Becker - Charter for-hire captain

Red snapper are very abundant. Concerned about what Mississippi will get with respect to allocation. Want to know who makes up the catch numbers.

J.R. Titmus - Private recreational angler, artificial reef builder

Louisiana is claiming 9 nautical miles for state waters. Has no idea how recreational catch data are calculated. Would like to see state control out to 9 nautical miles in Mississippi, and the federal government can control beyond that. It is not possible to fish all 27 days of the proposed 27-day red snapper season; it's just too expensive.

Tim Knighten - Private recreational angler

Does not understand how the stock assessments work. It is hard to catch triggerfish because there are so many red snapper. Red snapper are eating everything. Doesn't trust the federal government or federally generated data. Supports state management of red snapper.

Gary Smith - Gulf Council Red Snapper Advisory Panel

There is a major issue with counting the recreational catch. The entire process is a joke, and the federal government is screwing the recreational sector. Flew from Mississippi to Florida to count the number of boats fishing to prove it. Mississippi needs regional management. What happens when Texas removes all of the oil rigs?

Keith Cuevas - Marine Biologist, Gulf Coast Research Lab

Mississippi needs regulations extended into federal waters. Allocation should account for this. Other states have shallow water oil rigs and Mississippi does not. The Gulf Council needs to get involved in the rigs-to-reef process. Juvenile red snapper recruit to the oil rigs. Supports regional management authorities, based on good communication. If states pursue regional management individually, then their independent harvests could have a domino effect on the other states.

**Orange Beach, AL
January 16, 2013**

Council and Staff

Bob Shipp

Ryan Rindone

125 members of the public attended.

Pat Willingham - Private recreational angler

Has seen a four- to fivefold increase in red snapper over the last 40 years. All of the fish are in the 9-25 pound range. Divers tell him that the juvenile fish of other reef species are almost gone due to the red snapper. The Gulf Council needs to consider the impact of large red snapper on reefs.

Tom Steber - Charter for-hire captain

Need to look at regional management. The big issue will center around how the lines are drawn. The overarching issue is the Magnuson-Stevens Act. Fishermen need to rally together to get MSA redone or fixed. Alabama has the best reef zone in the world.

Kevin Sinyard - Private recreational angler

Watched the bag limit drop from five fish to two. It costs a fortune to go fishing for red snapper now.

Dale Ruckle - Private recreational angler

Can't even get a charter to go out fishing for red snapper. Bag limits are too low. Local businesses are losing tourism business as a result.

Troy Frady - Charter for-hire captain

Concerned about how to make a living. Bag limits have plummeted. Cautious about regional management of recreational red snapper. Is regional management going to extend the season or increase the creel limits? Is Alabama going to manage the fishery better than the National Marine Fisheries Service? The regulations are affecting our livelihood.

Gary Malin - Private recreational angler

Fished only a few days last season and limited out on red snapper each time. Red snapper are eating everything. Regional management should be done with a break between Florida and Alabama; this would be more fair for Alabama. Current fisheries regulations don't make sense.

John Kemper - Private recreational angler from Minnesota
Alabama anglers should fight for their rights.

Tim Wilson - Private recreational angler
Fishing is an inalienable right. There are plenty of fish in the ocean. The charter for-hire fleet is afraid of the federal government. Fishermen need to protect their rights. Government has taken all of those rights away. Shorter seasons make it less likely that people will fish. Local control of fisheries is better.

Tom Ard - Charter for-hire captain
The best idea so far for red snapper is regional management. Alabama does a great job counting fish. Each region should be held accountable for their allocation. Would fish tags be used? How might regional management apply to grouper in the future? Use historical biological data for setting the allocation and adjust it periodically. Fears noncompliance by states like Texas and Louisiana.

Ben Fairey - Charter for-hire captain
The fisheries management process takes too long. Regions will all fight for allocation. Alabama should not be grouped with Florida. Alabama only has 3 nautical miles worth of state waters, while other Gulf states have more. Wants assurance from the Alabama Gulf Council representatives that Alabama will be cared for in this process.

Bill Coursen - Private recreational angler, Pensacola, FL
Whenever the government takes anything over, they mess it up. Fishing rights are being denied. Caught 76 red snapper last year, and discarded close to 400. Hopes that some regions won't be unjustly shorted on their allocation.

Matt McLeod - Charter for-hire captain
There is a disparity between the number of fish caught and the reported landings. Both are total unknowns. Supports states all going noncompliant. NMFS's red snapper management plan will crumble with noncompliance, and NMFS will have to do what the fishermen want.

Chris Sherrill - Restaurateur
There will be economic problems if the season length drops to zero. He depends on recreational fishermen eating at his restaurant during the summer; no red snapper, no customers.

Gary Bryant - Charter for-hire captain
Red snapper season should last 180 days at a 4-fish per person bag limit. Supports regional management by individual states with accountability measures provided by the Gulf Council. Likes the idea of fish tags. The charter for-hire industry could receive their annual allotment of tags at the beginning of each year, and the private recreational anglers could get tags to catch red snapper at will. Harder to find more desirable fish.

Rashley - Private recreational angler
The federal government is over-managing. Flawed management affects everything.

Alan Taylor - Private recreational angler

Supports regional management of recreational red snapper by state.

Dwain Sanders - Private recreational angler

There are thousands of red snapper off Alabama. The charter for-hire industry is ruined. Commercial fishermen are paying lobbyists to raise the price of red snapper.

Robert Turpin - Escambia County Marine Resources, Private recreational angler

Supports regional management of recreational red snapper with allocation based on biomass. NMFS is currently trying to rebuild red snapper to a threshold that is too high. Will never be able to meet the rebuilding threshold.

**Destin, Florida
January 17th, 2013**

Council and Staff

Pam Dana

Ryan Rindone

104 members of the public attended.

Candy Hansard - Private recreational angler

The portion of Amendment 30B requiring CFH fishermen to adhere to the strictest regulations needs to be eliminated. States shouldn't be penalized for other states exceeding their allocation. Regional management is needed. Need to solve fisheries problems, not manage them. Need more artificial reefs. The Gulf Council needs to look into private artificial reef construction.

George Eller - Charter for-hire captain

Regional management of recreational red snapper may have merit under some conditions. There are too many unanswered questions right now. Need to table the amendment until the next assessment is completed. Until the CFH portion of Amendment 30B is gone, competition will be unfair. Texas is in violation of current regulations. Louisiana extending their state waters will take an act of Congress.

Matt McLeod - Charter for-hire captain

Been coming to these meetings for ten years. Lots of false hope. System has failed the fishermen. The regions would be fighting over a constantly shrinking pie. Supports states all going noncompliant. Fishermen need leverage against NMFS. States could grossly exceed the TAC set by NMFS, and the NMFS's red snapper management plan would crumble. Fishermen could then demand that NMFS work with them. The problem won't be solved by anything less.

BJ Burkhead - Charter for-hire captain

Opposed to regional management; table the amendment.

Stewart Miller - Charter for-hire captain

Opposed to regional management; table the amendment. Too many unanswered questions.

Chuck Guilford - Charter for-hire captain

Opposed to regional management. Opposes all management without consideration of ecosystem variations. Opposes any separation between the CFH and private recreational fishing groups.

Tom Adams - Charter for-hire captain, www.mexicobeachcharters.com

The Gulf Council should appoint new people to the Advisory Panels.

Dr. Rain - Private recreational angler, Destin resident

Has quit fishing deepwater outside of the red snapper season because red snapper are all you can catch when you go out there. Huge red snapper off of Destin. Fisheries management needs to focus on the data collection.

Brant Kelly - Charter for-hire captain, www.relentlesscharterfishing.com

Opposed to regional management. Table the amendment.

**St. Petersburg, Florida
January 22, 2013**

Council and Staff

Martha Bademan

John Sanchez

Ava Lasseter

24 members of the public attended.

Capt. Bob Bryant - Charter

In considering regional management, once again we are trying to manage something that we don't know what we're managing; we don't know the numbers. The stock assessment fails to get a huge percentage of the fish from oil rigs and artificial reefs. The majority of the stock assessment is based on natural structure that NMFS knows. The majority of fishermen are going to artificial structures and we are not capturing fish from those places. Stock assessments are useless without this, making catch data useless, too. There are more problems than benefits in regional management and it seems to be a backdoor to sector separation. What we need to do is to unite fishermen and provide good data to NMFS and have them provide good data to the fishermen in return.

Bo Gorham - Private recreational angler

For-hire operators do a great service, but private anglers put money into economy and so have an important voice. He works weekdays so only had 12 days possible to fish red snapper during last year's season, and was only able to go fishing four times. Investing in gas and boat wear and tear for a derby fishery is not sustainable. Upon hearing this year's estimated 27-day season, he started running his own numbers. He compared MRIP's effort data and number of fish caught a day and the numbers don't work out. If effort data stays constant, it shows they didn't overfish last year but came out right at quota. If that's true, he should have 42-day season again this year. But it's a crap shoot because we don't know the stock. He does agree that taking management to the regional level now is crazy; the data are not there now to manage as a whole. Dividing into

five ways creates new bureaucracy that taxpayers will have to pay for. The states don't cooperate now. It's a way to avoid the hard part which is to validate what is going on in the fishery. Data is the key.

Capt. Mark Hubbard - Hubbard's marina, John's Pass.

He is strongly against splitting up amongst the states and echoes Bo Gorham's comments. He doesn't want another layer of bureaucracy on this fishery, especially since the Council can't manage fishery now. Plus, taxpayers can't afford it; it's more and bigger government. The plan takes away from state powers and discriminates between for-hire, federal, and state permit holders. It discriminates between the states, and appears to move toward sector separation. It uses fatally flawed data to micromanage a fishery that is already screwed up. It seems to divide and conquer the Gulf of Mexico. He is against regional management now, but would have supported it with a 6-month season. A full benchmark assessment needs to be done on red snapper. The fishery needs more days for open access fishing. It's the opportunity to fish that drives our economy, and a 27-day season is just silly with all the fish out there. Resources are being spent on assessing smaller reef fish instead of the important species.

Before considering regional management of gag, a full benchmark stock assessment is needed. The Council is restricting the gag fishery based on a flawed stock assessment. The gag fishery is huge and more reliable data are needed. There aren't as many boats fishing now because they must spend so much money to go out. Ten years ago, there would be 15 boats at the Middle Grounds, but that doesn't happen anymore. The pressure isn't on the fishery the way NMFS and the Council say it is.

Concerning state boundaries and allocation of red snapper, if states get allocated pounds, could those allocations start to migrate over from the commercial fishery? If that was the case, he wants the commercial allocation that moves into the recreational sector to stay in the recreational sector. He doesn't want the commercial sector to buy out of the recreational sector. That would give them some protection, in case catch shares take hold in the recreational fishery.

Stephen Furman - Tampa CCA

He hasn't fished offshore much lately; fuel prices keep him in his kayak. He knows others don't do it as much anymore either, so offshore effort has gone down. He thinks people understand regional management would allow states to manage the fishery and they can do a better job. But it sounds to him like the feds would spread the 27-day season among the 5 states and each gets a 5-day season and that's not appealing. He thinks a 4-day weekend season would help spread out the days so people could fish longer. Concerning how to get better data, he supports the idea of an offshore permit for collecting data from fishermen, and says it's easy to do and is already done for migratory game bird hunting.

Dennis O'Hern - FRA

This plan appears to increase uncertainty and it is uncertainty applied to allowable catch that is hurting them. The idea for regional management, regional cooperation, is a great concept, but it's called the Gulf Council and you already have that. The problem seems like the Council is told what they have to do. He is not sure where regional management is coming from; it looks like sector separation. He doesn't want to give NMFS more power to close a fishery arbitrarily.

For greater amberjack, they closed the season in 5 days, in-season, based on MRFSS data which is not supposed to be used for in-season quota monitoring. The MRIP data is still just random telephone surveys; Florida is starting new data collection but it's not making it to the top.

It's been 10 years since having a full stock assessment on red snapper. The current one is a modified benchmark assessment, and it should be a full assessment; the Council needs to make some more noise about that. These plans take away state powers; if state waters are managed by the states, anyone can fish in state waters, permit or no permit. The feds cannot come in and chain you to that federal rule. That is for all the charter guys.

They had clamped down on red grouper even though they were thick as flies, and they won a lawsuit against the regulations. The same thing has been going on with red snapper and gag; the clamp is staying on it. Roy Crabtree is clamped by certain rules, as is the Council, but we threw off slavery and other rules and putting up with this is just plain wrong. The spring shallow-water grouper closure is not needed, and he can't believe it isn't done (the rule making), so Mark Hubbard and his employees cannot access what is known to be a healthy fishery. There is no reason the closure can't be rescinded. If Dr. Crabtree can close amberjack in five days, he can open shallow-water grouper. The analyses have already been done. There will be an online petition up by tomorrow to address the 2-month closure, because it would be a half million dollar bump to the fishing economy.

Libby Fetherston - Ocean Conservancy

She lauds the goal on increasing flexibility for recreational fishermen, but is concerned that regional management isn't the way to go. There are issues with monitoring and enforcement and it is unclear where from the federal budget enforcement funds would come from. Without additional funds for monitoring, they would need a bigger uncertainty buffer and she doesn't see that happening because it would further reduce the season. She is uncertain how much flexibility states would have; it may be limited to when they have their seasons and the bag limit. She doesn't see this as a mechanism for optimizing recreational fishing opportunities.

As with all their comments on scoping documents, she feels that the Council and NMFS should analyze a wide range of options that address this issue. She is concerned about how federally permitted charter operators would be affected by regional management, and that warrants further analysis. NMFS must ensure that this is consistent with federal law and the rebuilding goals for red snapper. She predicts the assessment will show great progress has been made in rebuilding red snapper, but that they aren't there yet.

Vance Tice - FRA, Minnows and Monsters

He is still very upset that no Council member attended the last public hearing and he is concerned that Council members did not receive their testimony. He had a tackle shop that is closed because of draconian measures; 60% of his business was offshore fishing and there is no more offshore fishing. He's against catch shares but they keep trying to slide it in there; the majority in Florida is against catch shares. Congress has addressed it but they move on with it. The way effort is calculated is a big problem. He has called a lot of businesses and they report that business is down, but the data show effort is up so there is a problem there. At the boat ramps, you don't see the big trailers anymore, you see smaller bay boats. He knows guys who

have sold their offshore boats because it isn't worth it anymore. When FWC goes out and does mortality studies that show that the data are way off, their studies are ignored. Bob Shipp's paper says there is way more red snapper than the Gulf Council wants to admit. It's hard to feel a part of management when what they see is 180 degrees from what is being shoved down their throats. For red snapper, they used to have a 192-day season, 4-fish bag limit, and they never overfished the limit. Now with a 40 day season and 2 fish limit, they've somehow miraculously overfished the limit. Factors like weather, price of gas, and the economy are not taken into account. People are struggling. You're not just affecting people who fish, you're affecting every Florida citizen because when you take that money out of the state, the state still needs money to run.

Scott Moore

We don't even know how many people are fishing in federal waters. He doesn't like fishing licenses, but he knows why you have to have them. Magnuson was enacted to get information from the states on who was fishing in federal waters and he can't understand how to do this without knowing how many people are fishing in federal waters. He suggests that Florida implement the same thing as fish and wildlife did with federal regulations on migratory birds. The permits should be free because you're collecting the data and the feds should pay the states to do this. That's the first thing that should have been enacted. Just because a guy catches grouper onshore doesn't mean he fishes in federal waters. The only way to get this right is to permit the data. Another thing is poundage; Florida never went by pounds; they went by individual catch. Poundage is way too confusing, you want to simplify as much as possible. There are a lot of fish out there in trouble. There's no fishery in the world that has ever collapsed fishing on a slot [limit]; he feels slot limits should be used more.

Frank Bachelier - Captain, Hubbard's Marina

Since he came back to the area he's noticed an overwhelming change in the laws that have been imposed. For groupers, there's a big change in what you can't keep in federal waters. He gets gags year round and is not seeing the population decline like everyone is talking about. Out in 130 feet of water, red snapper are everywhere, and doesn't understand how people are getting these numbers. The FWC guys are there and they're awesome, but they are counting the number of runts coming on their boat, rather than figuring out other stuff out with their time. We're so limited with the season and we need to figure out what we're doing here. He's listening to everyone out here saying the way they collect the data is wrong, and everyone here at this meeting is against everything that's going on. No one here supports the 27-day season, they need better data.

Public Hearings were held in the following locations:

Thursday, August 1, 2013

Call-in session

Monday, August 5, 2013

Courtyard Marriott
11471 Cinema Drive
D'Iberville, MS

Wednesday, August 7, 2013

Holiday Inn Select
2001 N. Cove Boulevard
Panama City, FL

Thursday, August 8, 2013

Renaissance Mobile Riverview Plaza Hotel
64 South Water Street
Mobile, AL

Monday, August 12, 2013

Hilton St. Petersburg Carillon Parkway
950 Lake Carillon Drive
St. Petersburg, FL

Monday, August 12, 2013

Hilton Garden Inn
6717 South Padre Island Drive
Corpus Christi, TX

Tuesday, August 13, 2013

Hampton Inn & Suites
2320 Gulf Freeway South
League City, TX

Wednesday, August 14 2013

DoubleTree
4964 Constitution Avenue
Baton Rouge, LA

Summaries of Public Hearings

Call-in Session

August 1, 2013

Council/Staff

Kevin Anson
Ava Lasseter
Emily Muehlstein
Charlene Ponce

17 members of the public attended.

Tom Hilton - Recreational

Mr. Hilton believes that regional management puts the cart before the horse. The council is pushing for a concept that uses knowingly-flawed data that overestimates recreational landings by at least 70%. It would be better for the Council to help the Gulf states implement a state-based data collection system modeled after the existing Louisiana offshore landings permit. Second, the concept of sector separation has been slipped into the regionalization concept. It is irresponsible for the Council to give that type of decision-making power over to the states rather than tackle the issue Gulf-wide.

Dennis O’Hern- Fishing Rights Alliance

Mr. O’Hern wonders if there is no accountability measure for the recreational sector what is the 28-day season. The recreational sector is managed after the fact, due to the horrible mismanagement of data by NMFS. He also mentioned that people often submit false information to the Council and he asked for follow-up regarding the law and any past prosecutions under said law. He also expressed concerned that regional management was based on data that the Council knows to be wrong. The Gulf Council should be the management tool that we want, but NMFS influence and control over the Council must be removed. He stated that the Council should be run by the states with constituent input, and the members of the Council should be appointed by the Governors; not hand-picked by NMFS.

B.J. Burkette - Charter; Florida

Mr. Burkette does not think that regional management is going to help because the NMFS data is still a problem. There is no need to be so restrictive with the amount of fish and regional management won’t solve that problem.

George McKinney - Commercial, For-Hire, Private; Pensacola, Florida

Mr. McKinney wondered how enforcement would work in a place like Pensacola, Florida with Perdido Pass so close. He would like to see some sort of regional management. He wants small boats and private recreational anglers who are limited in days to be able to safely and effectively fish in the Gulf.

Bob Gill - Former Council member; Crystal River, Florida

Mr. Gill recommended that the Council require the states to come to full agreement on all points relative to regional management prior to the Council taking further consideration or action. He added that the Council ought to table the amendment until the states agree on all the issues. New issues seem to be cropping up and it’s going to be very difficult for the Council to find an endpoint if the states do not agree with every action and alternative.

Action 4 - Council should give serious consideration to a slot limit for red snapper. Spawning success is greater for large fish and preserving the older fish in the truncated population may have some merit. Mr. Gill acknowledges the discard problem and still believes a slot will be useful.

Bill Teehan - Former Council member; Tallahassee, Florida

Mr. Teehan thinks the entire concept is very interesting. He supports Action 4’s Alternative 7 which would allow individual regions to establish sub-allocations for for-hire and private anglers.

Corpus Christi, Texas
August 12, 2013

Council/Staff

Robin Riechers
Lance Robinson
Emily Muehlstein
Charlotte Schiaffo

20 members of the public attended (mostly Texas Parks and Wildlife and Harte Research Institute staff; about eight were members of the fishing public).

Cliff Strain - Port Aransas Boatmen Association

Mr. Strain commented that he understood the current data collection but believed that people were unsatisfied with the federal government because the regulations were not in line with what the people are seeing. He added that if a move toward regionally adjusting the data was not made, then regional management would not have the punch or be as effective as anglers wanted it to be. He noted that Texas had the structure and ability to manage red snapper, and while he did not think there needed to be a year round season which could deplete the resource, he did want to see a longer fishing season. He stated that he had not had to spend more than 30 minutes fishing to limit out. He expressed concern that eventually, the destruction of habitat would have an effect on fish populations and encouraged the Council to do what it could to control the removal of rigs. He stated that his association wants to support regional management.

Ron Moser - Port Aransas Boatmen Association

Mr. Moser favored individual states having control over their waters (Action 2, Alternative 3). He added that the data collected should be adjusted to account for the biomass of fish in the state of Texas, as Texas seemed to be penalized more than other states because of this not being taken into account. He supported Action 3, Alternative 1; do not apportion the quota based on historical landings. On Action 4, he recommended the Preferred Alternative 4, to allow individual regions to set recreational red snapper season start and end dates and season structure. On Action 5, he believes that for-hire vessels and federal permit restrictions should be left to Texas to manage the resource. On Action 6, he agreed a 2-year grace period (Option b) would be best so that the new program had opportunity for error without penalizing fishermen while the program adjusts.

Pat Harris - Private recreational angler

Mr. Harris would like to see as much effort from the Gulf Council to increase habitat quality as they did in forcing regulations on anglers. He added that trying to improve everything instead of concentrating on improving the fishery was the wrong path for the Council to take.

League City, Texas
August 13th, 2013

Council/Staff

Robin Riechers
Lance Robinson
Emily Muehlstein
Charlotte Schiaffo

21 members of the public attended.

Kristen McConnell - Senior Conservation Manager Environmental Defense Fund

Ms. McConnell expressed concern about the regional management proposal. She is cautiously supportive because Environmental Defense Fund agrees with the idea of increasing access and flexibility for anglers but finds it difficult to support an idea with so many outstanding issues. Regional management will present challenges to law enforcement; it may have unforeseen impacts on other species due to effort shifting. It is hard to move forward without a better understanding of what the states will do. States should provide details on what direction they will take and their proposals should include accountability measures in case of a quota overage. She fails to see the relative benefit of regional management for private and for-hire anglers in the long term because the concept simply promotes the use of the same management tools with the same pitfalls. A real solution that potentially uses regional management is needed, but the current amendment does not seem to provide that solution.

Bill Bahr - Charter Captain

Mr. Bahr is largely concerned with the health of the snapper fishery and properly assessing that population. He is a Texas native and he has confidence that Texas Parks and Wildlife will be able to manage red snapper. He is concerned about the discrepancy between Louisiana and NMFS landings data, and he would support Action 6, Option b which would create a 2-year grace period for the regions to establish their own programs without having the NMFS numbers shoved down their throats.

Scott Hickman - Charter Captain and owner of Commercial Red Snapper IFQ

Status quo is not working. The commercial IFQ program can be credited for success of some of the red snapper recovery and he would like a similar tool to be considered for the for-hire sector. Mr. Hickman can't participate in his own state waters, so he supports Action 5, Alternative 2 to remove the requirement for for-hire vessels to adhere to the strictest regulations. Mr. Hickman also supports Action 4, Alternative 7 which would allow for a separate sub-allocation for the private for-hire industry. Amendment 39 has a lot of holes in it and he is afraid that Texas will have a weekend season or something that will shut out the charter industry. He is tentative about supporting the amendment and wants the charter boat fleet to have assurance before he can move forward.

Paul Bitner - Charter Captain

There are a lot of holes in how the landings are calculated and he would like to see greater accountability in how those numbers are collected. Mr. Bitner does not think we can get a grip

on the numbers without implementing a tag program to keep better track of the fish. Mr. Bitner has limited days to catch fish and make business work and the current management does not allow for success. He supports Action 4, Alternative 7 because he would like the private and for-hire fishermen to be managed separately.

Johnny Williams - Headboat owner/operator

Mr. Williams thinks there are going to be winners and losers under a regional management program, and we are in a situation where we don't know who those winners or losers will be. Texas landings have decreased but it's not because the fishing is getting worse; he predicts that under status quo, the Texas proportion of the harvest will continue to decrease. He supports states' rights and wants the federal entities to stay out of his business. Mr. Williams has a hard time supporting the amendment without a better understanding of what the program would look like if delegation were given to Texas. He would be opposed to a situation where the red snapper fishing would be open only on Saturdays during the summer and he does not know where the State stands.

Tom Hilton

The data is showing that headboats are landing 68% of all the red snapper, so headboat operators have nothing to worry about. Mr. Hilton wants to Council to get a hard handle on exactly what we are doing before jumping off into the unknown using flawed data to determine allocation percentages in Action 3. There are no regional assessments of biomass and the feds have taken control of the commercial fishery without regional control. Off Texas the working allocation is not 51% commercial and 49% recreational. There are far more commercial harvesters off Texas, and here it may be closer to 70% commercial and 30% recreational. He says that there is nothing regional about this concept because the federal agencies will still hold critical control points. The Louisiana offshore landings permit should be a sounding bill for every Gulf state to implement their own data collection system. Louisiana didn't believe the feds and they proved them wrong. In Mr. Hilton's opinion, it is a dereliction of duty for all involved to move forward with this amendment with this flawed data.

He proposes a better solution:

1. Implement a data collection system across the Gulf for each state modeled after the Louisiana offshore permit.
2. Implement an 11 million pound annual catch limit over the next 3 years.
3. Give any increase in quota to the recreational fishermen because their season and bag limit has been slashed while commercial folks have had full access to their quota.
4. Reinstate the 149-day season.

Steve Cunningham - Charter Captain

Mr. Cunningham shares the other speakers' opinions. Caution is important and using only fishery dependent data needs to change. 30B needs to be removed so he can be successful as a charter operator. Mr. Cunningham supports Action 2, Alternative 4 which would create 5 regions, one for each state. He supports Action 3, Alternative 3 which would remove landings from 2006 and 2010 from the allocation decisions. He made it clear that biomass data needs to be included somehow even if it's not given the weight that the historical landings are given. We know there are more fish in the western Gulf and that needs to be accounted for. He supports Action 5, Alternative 2 which would create a 2-year grace period. A 3-year period may be even

better. He is slightly leaning towards having more faith in Texas than he does in NMFS. There are a lot of issues in the document so before any radical changes are made, we need to look at this idea very carefully. The fishermen on charter boats are recreational anglers and they, along with seafood consumers, are important contributors to the fishery.

Shane Cantrell - Charter owner/operator

Mr. Cantrell is disappointed that regional management does not allow for planning or provide for additional methods of data collection. He would prefer a multispecies IFQ program for the charter industry. The commercial program works well for commercial fishermen and he understands that changes would be made to accommodate his industry. He wants the real time accountability. He thinks harvest tags would work out very well for the private recreational anglers. As it is proposed, regional management is just a reshuffling of the deck with the same management tools and he would rather new novel approaches to management be considered.

David Conrad- Charter Captain

He fully supports Action 5, Alternative 2 to allow for-hire boats to participate in the state season. 30B needs to go away because recreational fishermen on their boat should be allowed to fish just like recreational boat owners. He sees issues with allocation for the states. He needs to see what's in the details before fully supporting this document.

**Baton Rouge, Louisiana
August 14, 2013**

Council/Staff

Camp Matens
Emily Muehlstein
Charlotte Schiaffo

24 members of the public attended.

Chris Macaluso - Theodore Roosevelt Conservation Partnership

As an organization, they are trying to work within the system to better manage the recreational fisheries. Trying to manage red snapper to a total allowable catch is destined for failure because the Marine Recreational Information Program does not reflect an accurate count of the fish that are being caught or how many people are fishing. For Action 3 he is concerned with basing the quotas on historical landings. Historical landings from Alabama and Florida will reflect more landings but that is a measure of fishing pressure not abundance of fish. He does not want to restrict pressure but if the target in MSA is to end overfishing and the Council allows states with less biological availability to out fish the areas with greater availability, we are going to fail. Managing the red snapper as one stock may be a problem. The fish don't migrate from west to east; there are fish in each region. Allowing an area with less fish to harvest more of the fish will not end overfishing. The only way we will successfully end this problem is to allow more fishing where there is more biological availability and less where there are less fish.

Ed Fike - Environmental Consultant and private recreational angler

He is supportive of what he has heard this evening. He is happy that Louisiana is taking the charge and that NMFS is working with fish. Biological availability of the fish is very important and he thinks that needs to be considered during allocation (Action 3). During the fall supplemental season, he fished every weekend and never saw anyone at one of the key landings sites. Based on his observations, he does not think that fishing is that important here in the fall.

Kenny Acostu - Private recreational angler

Mr. Acostu likes the opportunity to go fishing and he enjoys it, but opening June 1st with 2-3 foot waves is hard on him. Let the states manage using the weekend season and if it's recreational that's great because it will benefit him. There is no reason to go fishing for anything outside of red snapper season because you can't catch anything but red snapper; it makes his other fishing less enjoyable. He wants to fish without feeling like he is being wasteful and killing something by accident.

George Huye – CCA; Private Recreational Angler

He is in favor of regional management. For Action 3 he is concerned about the use of historical landings data because it does not fix the problem of inaccurate fisheries dependent data and it doesn't make much sense to perpetuate the current system forward. He sees enough alternatives for the Council to be able to make good decisions here. Regional management will give the people of Louisiana a better opportunity to have a chance to catch what they may have had in the past. We know the stocks are strong and this will give the Louisiana fishermen an opportunity to put their trust and faith in their own resource management department.

Rebecca Triche - Louisiana Wildlife Federation

Ms. Triche noted that red snapper is a hot topic for her members. The Federation submitted comment in January already. She would like to see a regional approach because the Louisiana Department of Wildlife and Fisheries has the capability to assess the stocks. She wants limits to be set based on biological availability because the western region can sustain more harvest than the east. There was lots of activity in legislation regarding the passion Louisiana anglers have. She urges the Council to continue moving forward with this idea to acknowledge the frustrations of recreational anglers.

Rad Trashe - CCA Louisiana

Mr. Trashe expressed his full support for regional management. We all know that we've had faulty science and poor management. This is an opportunity to do what everyone wants; what's best for the resource and what's better for the fishermen. The Department of Louisiana Wildlife has proven that they do better science than NMFS. This year there was someone at the ramp every single day. We should put the power in Louisiana's hands and let them run with it.

D'Iberville, MS
August 5, 2013

Council/Staff

Dale Diaz
Corky Perret
Ava Lasseter

7 members of the public attended.

Tom Becker - Mississippi Charter Captains Association

The Association discussed this the other night and decided that they need to go along with this and see what happens. There are problems with the data because they were never checked to see what they're catching on his headboat. He wants to see someone checking landings more often instead of telling him when they can get there. The Department of Natural Resources is hurting for people. There are so many places to unload your fish and that's what's happening.

Gary Smith - Recreational

Mr. Smith's first concern is the legality of regional management. There needs to be a non-biased person looking into it, in case in a couple of years it's determined they did something they shouldn't have done. He doesn't have a problem with regional management, but it needs more thought about how to divide the quota. Texas, the largest state, only got 12%, but Florida landed so much [2012 landings]; what's going to happen as the population changes? There are a lot of areas that need to be addressed: will there be annual adjustments, what process will be required, what happens when Texas demands more? The biggest issue is how you're going to count/estimate the data. Everyone agrees the data is flawed, but we're not addressing that. To fix it, got to count the number of boats. Don't worry about the number of fishermen, just the number of boats. Then each state could require a boat permit and you couldn't have red snapper aboard until you have the boat permit. Looking at Mississippi's data, it comes up to 22,000 fish they could catch. He has counted the number of boats and has never counted more than 50 boats. The most he's ever counted was 88; the boats just aren't there. You'll be back to 21 days even with regional management. Counting the boats is how you have got to correct the problem.

John Marquez Jr. - CCA Mississippi

He supports regional management and wants management taken to the state level, which allows them to control the fishery, best for their anglers. CCA wants to see the states have the ability to manage the commercial red snapper quota and be allowed to allocate among sectors. They would like red snapper removed from the reef fish FMP, as has been done for misty grouper and other species. He echoes Mr. Smith's comment that any plan needs to contain flexibility to allow for change within the states over time. Mississippi has concerns about how this would be funded, as they have a different sort of funding mechanism for data collection.

Panama City, FL
August 7, 2013

Council/Staff

Martha Bademan

Ava Lasseter

Ryan Rindone

7 members of the public attended.

Chris Niquet - Commercial

He noted the differences between the percentage of red snapper landed by state since the oil spill and the allocation under Alternative 4, which would be based on the ABCs [separate east Gulf and west Gulf stock assessments]. So recreational allocations would be 48.5% for the eastern Gulf and 51.5% for the western Gulf, which lands the least recreationally. He thinks this seems backward. It seems like Florida and Alabama would get the bulk of the ABC.

Bart Niquet - Commercial

He feels the charter and headboats are stepchildren in all of this; they get no consideration from the commercial side or the recreational, side and they are being put out of business. They need their own sector and own bag limits. For red snapper, the recreational sector should go to 60 days with a 2-fish limit and set that in stone. He thinks they should be given something they can depend on so they can make a living.

Bob Zales, II - Charter Captain

He is speaking for himself, as the PCBA has not taken a position yet. He is conditionally supportive of regional management if it is only being discussed for the recreational sector, and will have no impact on the commercial sector. He supports the preferred alternatives in Actions 1 and 2. For Action 3, he supports Alternative 2 Option d, which doesn't benefit Florida the most out of all the options, but seems like a fair allocation. For Action 4 he supports only the Preferred Alternatives 2, 3, and 4. He is a little confused by Action 5; he wants the provision removed so supports that. But even if regional management does not go forward, he wants this action to go forward and be finalized before the 2014 season. For Action 6, he prefers Preferred Alternative 3, Option b, to allow the longest grace period to adapt to the change in management. He's confused by Action 7 because he doesn't see how it's going to work. Under the Magnuson-Stevens Act, the fishery must be closed when the quota is met. What happens if Mississippi fishes a lot? They could effectively cause the closure of the rest of the Gulf. He recommends rescinding 406b of Magnuson-Stevens Act that includes that requirement. It may have been necessary in 1996; it's clearly no longer necessary. Finally, as a for-hire operator, he emphasized that his passengers are private recreational anglers, just like those fishing on their own boats.

Jim Clements - Commercial

Although CCA and RFA have criticized the IFQ program, Mr. Clements supports regional management if it will help the recreational fishers catch more fish and have more days to fish. But, this must not affect the commercial red snapper fishery.

Mike Eller – Charter and Commercial

Mr. Eller is speaking for himself and his own for-hire vessel. For Action 1 he prefers Alternative 3 [Council-implemented regional management]; for Action 2: he supports the preferred alternative for 5 regions. Action 3, he supports Alternative 2 Option d, combining the long and short time series.

Regional management is a slippery slope that could result in benefits or could turn into a total fiasco. He is asking himself, can his state can do a better job than what is going on now? If the states get together and make a big advance on data collection, it could be better. But if they don't do that first, then this is putting the cart in front of the horse. This is hard for him to support when he doesn't know the long-term ramifications. His state will make decisions dependent on the current political persuasion at the time. What if his state chooses to adopt a weekends only season? That would really hurt the for-hire fleet. At least with the Council, you have diverse opinions represented. He would like the individual states to have leeway in setting opening season dates, but maybe not to set different size limits. He supports increased flexibility but it is a slippery slope. He wants to see the regional plan for each state before he supports it and they don't have that yet because it is still new. He wants to hear from a state how it would actually manage red snapper better than the NMFS. He does not want the commercial sector to be impacted by this.

He supports the preferred alternative in Action 5 and thinks the 30B provision is unfair and unconstitutional. In Action 4, he supports Preferred Alternatives 2, 3, 4, 5, and 7. Anglers that fish on for-hire vessels should be protected and shouldn't be lumped in with private anglers who fish differently. He feels there should be the possibility for sub-allocations. In Action 6, he supports Alternative 4, Option b; establish a 2-year grace period before implementation of overage adjustments.

Don Whitecotton - Charter

We have all looked at how we are going to protect the life of the fish, but we are putting our industry at risk by setting the season in the middle of hurricane season. Even if the weather is bad, charter boats have to go out to make a living. We need a way for the for-hire boats to go out, and this is a big socio-economic issue. They have been lucky nothing has happened on the headboats yet [accidents]. He suggests a year round season with a number of days you can go out to fish. We can surely regulate ourselves [when we go out] if we can regulate these fish.

Warner Foster - Recreational

He is very interested in the quota issue and wants to know how they get the quota. He hears they just pull it out of somewhere. He has never had his fish counted and weighed checked on his boat. Commercial guys have to weigh in all their fish, but no one is ever at the ramp asking him what he caught. With the size of his boat, he's not going to go out in the rough weather and get beat up. The June 1 season start was during rough weather and they couldn't get out most of the season.

***The following comments were received in Panama City on August 6, 2013 at a hearing on Coastal Migratory Pelagics.**

BJ Burkett - Charter and commercial

Capt. Burkett thinks the whole program is going to be a logistical nightmare. Red snapper isn't being managed appropriately now, but they're going to throw 5 more leaders into it? It's going to be very complicated because the regulations change so often. On all the actions, except Action 5, he wants no action. He does not want regional management. The issue we should be fixing is the flawed data. Regional management will make regulations based on incorrect data instead of tackling the issue of getting more days. He has heard we're never going to get back to where we were just a few years ago [longer season], but that's what people want. Regional management might leave them with 25-30 day seasons, which doesn't take us anywhere close to what people want. Therefore, he doesn't see the benefit of doing it. Maybe one state can fish a few days longer, or keep one fish more than another region's bag limit, but he does not see benefits to the whole Gulf and for all anglers.

Randall Akins - Recreational, retired charter captain

Capt. Akins has a historical captain permit that he can't transfer to his children and that's not the way of doing things in America. His children should be able to receive his permit. When he was in the Coast Guard, he was told you couldn't sell permits, but now you can so he is confused. At least 50% of the time he has broken the law because he has to throw back red snapper that are not at least 16". He has to throw them back and the dolphins get them. Feeding dolphins is against the law and he knows someone who was fined for feeding dolphins. This can be solved by keeping the season open year round and you can keep your first five fish. He was told that would be culling the fish, but that's what he's doing now. He doesn't support setting seasons or size limits.

**Mobile, AL
August 8, 2013**

Council/Staff

Kevin Anson
Chris Blankenship
Ava Lasseter
Ryan Rindone

11 members of the public attended

Palmer Whiting - Recreational, Alabama CCA Chairman

Mr. Whiting thinks the state has done a good job of managing its inshore fisheries and can do a good job with offshore fisheries. They built this habitat and they can manage it. Alabama has a lot of habitat and a lot of snapper. CCA members are in favor of that and having it on a more local level, with local scientists, who are more than capable. Bring management down to the state level is preferred.

Captain Mike Thierry - Charter

Capt. Thierry thinks states can manage it better. The inconsistency of allocations needs to be addressed so everyone is on the same playing field, and the number of days each state is allowed to fish is not impacted because of another state's regulations. Basing allocations on landings when some states who were open while Alabama was closed is like rewarding them for not playing by the rules. Sub-allocations are needed because one size does not fit all. The weekends-only season that private vessel anglers prefer would not work for the charter fleet. There should be no more restrictions than the for-hire fleet already has compared to the private recreational anglers. He supports the states taking over management and feels they are up to the job. He would like to have states do their own stock assessment. They are here locally every day and could do a better job. Each region needs to be accountable to its own quota. For example, Destin's rodeo is in October and they'd like to have the season open then. We'd like our own rodeo season in July; so one size doesn't fit all. Texas wants to be open in the winter as it's a good time for them. Alabama has got some of the best people in the world working on this stuff right here.

Skipper Thierry - Charter

He supports state management of red snapper and the ability of a state to establish sub-allocations. He would like for the state to conduct its own stock assessment, eventually. He wants the accountability measure, but they need to be flexible because landings often fluctuate annually for all kinds of reasons beyond our control.

**St. Petersburg, FL
August 12, 2013**

Council/Staff

Martha Bademan

Ava Lasseter

Ryan Rindone

Doug Gregory

8 members of the public attended.

Buddy Bradham - Recreational Fishing Alliance, retired charter and commercial fisherman

The RFA has a lot of problems with this so for right now, they prefer No Action be taken on all actions. They're behind on getting data sets in place. Florida is working on it but it is unknown when this will be available. There is the potential for going over the quota. The season dates would have to come from each state. There was a meeting on Friday morning where it was said it may cost 2.5 million dollars per year, and that's funding Florida doesn't have. These are problems that need to be solved before we go into regional management. If the improved data collection is in place, they would support regional management with the following preferred alternatives:

Action 1: prefer no action until data is fixed. Action 2: support the preferred alternative of 5 regions. For the quota (Action 3), they have a big problem with the data sets that may be used.

Louisiana has just proved how bad the NMFS estimates are: 70% off from their catches. They would like any new data program to run for 3 years then base the quota allocations on that. Action 4: they support the Preferred Alternatives 2, 3, and 4. But, they strongly speak out against Preferred Alternative 7, as this is a form of sector separation. They are still against it and feel the Council is trying to push it into this amendment. For Action 5, they support the preferred alternative. They don't support 30B at all and it should be completely removed, not just for red snapper but also for all reef fish. For Action 6, they prefer Alternative 3, Option b, allowing a 2-year grace period. For Action 7, they support Preferred Alternative 3 for a state that opts out.

Libby Fetherston - Ocean Conservancy

The Ocean Conservancy supports the Council's attempt to consider alternative management for the recreational sector. They do not take positions on allocation decisions. They think data collection and validation is critical to the success of any regional management plan and will need minimum data standards. They encourage the Council to think about ways that the restoration funds could support these goals in terms of quality and quantity of sampling. They also encourage the use of ACTs because they provide a reasonable buffer based on past performance and warrant consideration.

Sharon McBreen - Pew Charitable Trusts

Pew recommends revising the amendment's purpose and need to reflect that rebuilding red snapper is the top priority. They recommend that the amendment include the following three key components needed for the program's success:

1. AMs are safeguards and should include payback provisions, to maintain rebuilding. So they support the preferred alternative in Action 6. They also encourage the states to set up a system to constrain catches to within their quota. They do not oppose the Option a for a 1-year grace period, to allow state programs time to adjust their management process. This will be a learning process between NOAA and the states.
2. The states will need to retool their data collection systems to avoid triggering AMs. States should consider the use of ACTs to build in a margin of error to avoid triggering AMs, especially while adjusting to the new management system. This includes the option to use an ACT.
- 3: They support Action 4's Preferred Alternative 7: establish sub-allocations. If a state chooses that this is right for them, they should be allowed to pursue it.

Stephen Furman - CCA Florida, Tampa chapter

CCA supports regional management. He found the example of regional management for king mackerel an interesting example, because it is a migratory fish, and red snapper is not migratory. We had no red snapper off this coast for a long time but they came back because of Hurricane Katrina. This is a good start but the states would do a good job figuring it out if the feds would step away from the table. The states should have that authority, and the data and law enforcement is available. NOAA is paying FWC for nice boats to patrol offshore and there is no reason to stop that.

APPENDIX D. DELEGATION PROVISION

Magnuson-Stevens Fishery Conservation and Management Act 16 U.S.C. §1856(a)(3), (b)

(3) A State may regulate a fishing vessel outside the boundaries of the State in the following circumstances:

(A) The fishing vessel is registered under the law of that State, and (i) there is no fishery management plan or other applicable Federal fishing regulations for the fishery in which the vessel is operating; or (ii) the State's laws and regulations are consistent with the fishery management plan and applicable Federal fishing regulations for the fishery in which the vessel is operating.

(B) The fishery management plan for the fishery in which the fishing vessel is operating delegates management of the fishery to a State and the State's laws and regulations are consistent with such fishery management plan. If at any time the Secretary determines that a State law or regulation applicable to a fishing vessel under this circumstance is not consistent with the fishery management plan, the Secretary shall promptly notify the State and the appropriate Council of such determination and provide an opportunity for the State to correct any inconsistencies identified in the notification. If, after notice and opportunity for corrective action, the State does not correct the inconsistencies identified by the Secretary, the authority granted to the State under this subparagraph shall not apply until the Secretary and the appropriate Council find that the State has corrected the inconsistencies. For a fishery for which there was a fishery management plan in place on August 1, 1996 that did not delegate management of the fishery to a State as of that date, the authority provided by this subparagraph applies only if the Council approves the delegation of management of the fishery to the State by a three-quarters majority vote of the voting members of the Council.

(C) [Pertains to Alaska, only.]

(b) EXCEPTION.—

(1) If the Secretary finds, after notice and an opportunity for a hearing in accordance with section 554 of title 5, United States Code, that—

(A) the fishing in a fishery, which is covered by a fishery management plan implemented under this Act, is engaged in predominately within the exclusive economic zone and beyond such zone; and

(B) any State has taken any action, or omitted to take any action, the results of which will substantially and adversely affect the carrying out of such fishery management plan; the Secretary shall promptly notify such State and the appropriate Council of such finding and of his intention to regulate the applicable fishery within the boundaries of such State (other than its internal waters), pursuant to such fishery management plan and the regulations promulgated to implement such plan.

(2) If the Secretary, pursuant to this subsection, assumes responsibility for the regulation of any fishery, the State involved may at any time thereafter apply to the Secretary for reinstatement of its authority over such fishery. If the Secretary finds that the reasons for which he assumed such regulation no longer prevail, he shall promptly terminate such regulation.

(3) If the State involved requests that a hearing be held pursuant to paragraph (1), the Secretary shall conduct such hearing prior to taking any action under paragraph (1).

APPENDIX E. FISHERY ALLOCATION POLICY

Gulf of Mexico Fishery Management Council Fishery Allocation Policy

This allocation policy was developed by the Gulf of Mexico Fishery Management Council to provide principles, guidelines, and suggested methods for allocation that would facilitate future allocation and reallocation of fisheries resources between or within fishery sectors.

Issues considered in this allocation policy include principles based on existing regulatory provisions, procedures to request and initiate (re)allocation, (re)allocation review frequency, tools and methods suggested for evaluating alternative (re)allocations.

1. Principles for Allocation

- a. Conservation and management measures shall not discriminate between residents of different states.
- b. Allocation shall:
 - (1) be fair and equitable to fishermen and fishing sectors;
 - (i) fairness should be considered for indirect changes in allocation
 - (ii) any harvest restrictions or recovery benefits be allocated fairly and equitably among sectors
 - (2) promote conservation
 - (i) connected to the achievement of OY
 - (ii) furtherance of a legitimate FMP objective,
 - (iii) promotes a rational, more easily managed use
 - (3) ensure that no particular individual, corporation, or other entity may acquire an excessive share.
- c. Shall consider efficient utilization of fishery resources but:
 - (1) should not just redistribute gains and burdens without an increase in efficiency
 - (2) prohibit measures that have economic allocation as its sole purpose.
- d. Shall take into account: the importance of fishery resources to fishing communities by utilizing economic and social data in order to:
 - (1) provide for the sustained participation of fishing communities
 - (2) minimize adverse economic impacts on fishing communities.

- e. Any fishery management plan, plan amendment, or regulation submitted by the Gulf Council for the red snapper fishery shall contain conservation and management measures that:
 - (1) establish separate quotas for recreational fishing (including charter fishing) and commercial fishing.
 - (2) prohibit a sector (i.e., recreational or commercial) from retaining red snapper for the remainder of the season, when it reaches its quota.
 - (3) ensure that the recreational and commercial quotas reflect allocation among sectors and do not reflect harvests in excess of allocations.

2. Guidelines for Allocation

- a. All allocations and reallocations must be consistent with the Gulf of Mexico Fishery Management Council's principles for allocation.
- b. An approved Council motion constitutes the only appropriate means for requesting the initiation of allocation or reallocation of a fishery resource. The motion should clearly specify the basis for, purpose and objectives of the request for (re)allocation.
- c. The Council should conduct a comprehensive review of allocations within the individual FMPs at intervals of no less than five years.
- d. Following an approved Council motion to initiate an allocation or reallocation, the Council will suggest methods to be used for determining the new allocation. Methods suggested must be consistent with the purpose and objectives included in the motion requesting the initiation of allocation or reallocation.
- e. Changes in allocation of a fishery resource may, to the extent practicable, account for projected future socio-economic and demographic trends that are expected to impact the fishery.
- f. Indirect changes in allocation, i.e., shifts in allocation resulting from management measures, should be avoided or minimized to the extent possible.

3. Suggested Methods for Determining (Re)Allocation

- a. Market-based Allocation
 - (1) Auction of quota
 - (2) Quota purchases between commercial and recreational sectors
 - (i) determine prerequisites and conditions:
 - (a) quota or tags or some other mechanism required in one or both sectors
 - (b) mechanism to broker or bank the purchases and exchanges

- (c) annual, multi-year, or permanent
- (d) accountability for purchased or exchanged quota in the receiving sector

b. Catch-Based (and mortality) Allocation

- (1) historical landings data
 - (i) averages based on longest period of credible records
 - (ii) averages based on a period of recent years
 - (iii) averages based on total fisheries mortality (landings plus discard mortality) by sector
 - (iv) allocations set in a previous FMP
 - (v) accountability (a sector's ability to keep within allocation)

c. Socioeconomic-based Allocation

- (1) socio-economic analyses
 - (i) net benefits to the nation
 - (ii) economic analysis limited to direct participants
 - (iii) economic impact analysis (direct expenditures and multiplier impacts)
 - (iv) social impact analysis
 - (v) fishing communities
 - (vi) participation trends
 - (vii) "efficiency" analysis
 - (a) lowest possible cost for a particular level of catch;
 - (b) harvest OY with the minimum use of economic inputs

d. Negotiation-Based Allocation

- (1) Mechanism for sectors to agree to negotiation and select representatives
- (2) Mechanism to choose a facilitator
- (3) Negotiated agreement brought to Council for normal FMP process of adoption and implementation.

APPENDIX F. RECREATIONAL RED SNAPPER LANDINGS BY STATE

Table F-1. Annual recreational red snapper landings by state (1986-2013), based on whole weight of fish.

Year	Alabama	Florida	Louisiana	Mississippi	Texas	Total
1986	394,610	1,936,214	631,294	3,483	525,242	3,490,843
1987	387,280	912,624	281,412	54,030	454,200	2,089,547
1988	516,944	939,638	1,038,395	21,783	622,381	3,139,142
1989	542,325	364,040	708,400	345,009	980,566	2,940,340
1990	641,710	292,327	274,814	55,440	360,242	1,624,534
1991	876,783	440,116	968,807	179,601	451,819	2,917,126
1992	1,512,196	371,268	1,129,185	764,794	840,845	4,618,289
1993	2,088,874	1,257,376	1,626,283	907,243	1,281,487	7,161,264
1994	1,950,637	846,390	1,284,748	491,146	1,502,841	6,075,762
1995	1,753,476	554,639	1,543,766	156,083	1,455,779	5,463,742
1996	1,754,990	995,650	885,325	212,843	1,490,081	5,338,889
1997	2,675,157	992,718	1,145,690	664,884	1,325,782	6,804,230
1998	1,435,965	1,402,409	721,783	189,014	1,104,927	4,854,099
1999	1,961,616	1,436,635	784,325	201,748	588,084	4,972,407
2000	1,400,506	1,706,823	881,480	53,551	707,746	4,750,107
2001	2,224,619	2,092,335	316,993	108,454	509,885	5,252,285
2002	2,633,929	2,515,232	404,563	238,012	743,411	6,535,147
2003	2,315,399	2,213,349	544,731	365,829	666,135	6,105,444
2004	1,936,445	3,485,296	376,280	25,571	636,651	6,460,243
2005	1,361,195	2,243,070	484,250	5,222	582,182	4,675,918
2006	838,612	2,094,879	504,844	32,809	659,988	4,131,132
2007	1,143,109	3,286,876	908,429	3,399	466,981	5,808,795
2008	698,227	2,329,830	638,159	39,193	350,466	4,055,876
2009	1,213,550	2,624,803	1,054,594	43,574	660,335	5,596,856
2010	567,453	1,479,310	133,602	10,834	459,653	2,650,851
2011	3,611,844	1,970,382	600,359	69,478	482,047	6,734,109
2012	2,714,675	2,432,569	1,446,106	314,154	616,736	7,524,239
2013	4,228,706	3,935,550	574,431	429,812	470,295	9,638,795

Source: Southeast Fisheries Science Center annual catch limit dataset, including the Calibrated Marine Recreational Information Program (MRIP) landings, Texas Parks and Wildlife Department, and Southeast Headboat Survey landings. Headboat landings from Alabama and the Florida Panhandle are initially reported to the same headboat fishing area. Landings have been assigned to each state based on the survey's vessel landing records (December 2014).

APPENDIX G. CURRENT FEDERAL REGULATIONS FOR GULF OF MEXICO RECREATIONAL RED SNAPPER MANAGEMENT

1. § 622.9 Prohibited gear and methods--general.

(e) Use of Gulf reef fish as bait prohibited. Gulf reef fish may not be used as bait in any fishery, except that, when purchased from a fish processor, the filleted carcasses and offal of Gulf reef fish may be used as bait in trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster.

2. § 622.20 Permits and endorsements.

(b) Charter vessel/headboat permits. For a person aboard a vessel that is operating as a charter vessel or headboat to fish for or possess Gulf reef fish, in or from the EEZ, a valid charter vessel/headboat permit for Gulf reef fish must have been issued to the vessel and must be on board.

(1) Limited access system for charter vessel/headboat permits for Gulf reef fish. No applications for additional charter vessel/headboat permits for Gulf reef fish will be accepted. Existing permits may be renewed, are subject to the restrictions on transfer in paragraph (b)(1)(i) of this section, and are subject to the renewal requirements in paragraph (b)(1)(ii) of this section.

(i) Transfer of permits--(A) Permits without a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that does not have a historical captain endorsement is fully transferable, with or without sale of the permitted vessel, except that no transfer is allowed to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred. An application to transfer a permit to an inspected vessel must include a copy of that vessel's current USCG Certificate of Inspection (COI). A vessel without a valid COI will be considered an uninspected vessel with an authorized passenger capacity restricted to six or fewer passengers.

(B) Permits with a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that has a historical captain endorsement may only be transferred to a vessel operated by the historical captain, cannot be transferred to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred, and is not otherwise transferable.

(C) Procedure for permit transfer. To request that the RA transfer a charter vessel/headboat permit for Gulf reef fish, the owner of the vessel who is transferring the permit and the owner of the vessel that is to receive the transferred permit must complete the transfer information on the reverse side of the permit and return the permit and a completed application for transfer to the RA. See § 622.4(f) for additional transfer-related requirements applicable to all permits issued under this part.

(ii) Renewal. (A) Renewal of a charter vessel/headboat permit for Gulf reef fish is contingent upon the permitted vessel and/or captain, as appropriate, being included in an active

survey frame for, and, if selected to report, providing the information required in one of the approved fishing data surveys. Surveys include, but are not limited to—

(1) NMFS' Marine Recreational Fishing Vessel Directory Telephone Survey (conducted by the Gulf States Marine Fisheries Commission);

(2) NMFS' Southeast Headboat Survey (as required by § 622.26(b)(1));

(3) Texas Parks and Wildlife Marine Recreational Fishing Survey; or

(4) A data collection system that replaces one or more of the surveys in paragraph (b)(1)(ii)(A),(1),(2), or (3) of this section.

(B) A charter vessel/headboat permit for Gulf reef fish that is not renewed or that is revoked will not be reissued. A permit is considered to be not renewed when an application for renewal, as required, is not received by the RA within 1 year of the expiration date of the permit.

(iii) Requirement to display a vessel decal. Upon renewal or transfer of a charter vessel/headboat permit for Gulf reef fish, the RA will issue the owner of the permitted vessel a vessel decal for Gulf reef fish. The vessel decal must be displayed on the port side of the deckhouse or hull and must be maintained so that it is clearly visible.

(2) A charter vessel or headboat may have both a charter vessel/headboat permit and a commercial vessel permit. However, when a vessel is operating as a charter vessel or headboat, a person aboard must adhere to the bag limits. See the definitions of "Charter vessel" and "Headboat" in § 622.2 for an explanation of when vessels are considered to be operating as a charter vessel or headboat, respectively.

(3) If Federal regulations for Gulf reef fish in subparts A or B of this part are more restrictive than state regulations, a person aboard a charter vessel or headboat for which a charter vessel/headboat permit for Gulf reef fish has been issued must comply with such Federal regulations regardless of where the fish are harvested.

3. § 622.26 Recordkeeping and reporting.

(b) Charter vessel/headboat owners and operators—(1) Reporting requirement. The owner or operator of a vessel for which a charter vessel/headboat permit for Gulf reef fish has been issued, as required under § 622.20(b), or whose vessel fishes for or lands such reef fish in or from state waters adjoining the Gulf EEZ, who is selected to report by the SRD must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD and must submit such record as specified in paragraph (b)(2) of this section.

(2) Reporting deadlines--(i) Charter vessels. Completed fishing records required by paragraph (b)(1) of this section for charter vessels must be submitted to the SRD weekly, postmarked not later than 7 days after the end of each week (Sunday). Information to be reported is indicated on the form and its accompanying instructions.

(ii) Headboats. Completed fishing records required by paragraph (b)(1) of this section for headboats must be submitted to the SRD monthly and must either be made available to an authorized statistical reporting agent or be postmarked not later than 7 days after the end of each month. Information to be reported is indicated on the form and its accompanying instructions.

4. § 622.27 At-sea observer coverage.

(a) Required coverage. A vessel for which a Federal commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued must carry a NMFS-approved observer, if the vessel's trip is selected by the SRD for observer coverage. Vessel permit renewal is contingent upon compliance with this paragraph (a).

(b) Notification to the SRD. When observer coverage is required, an owner or operator must advise the SRD in writing not less than 5 days in advance of each trip of the following:

- (1) Departure information (port, dock, date, and time).
- (2) Expected landing information (port, dock, and date).

(c) Observer accommodations and access. An owner or operator of a vessel on which a NMFS-approved observer is embarked must:

- (1) Provide accommodations and food that are equivalent to those provided to the crew.
- (2) Allow the observer access to and use of the vessel's communications equipment and personnel upon request for the transmission and receipt of messages related to the observer's duties.
- (3) Allow the observer access to and use of the vessel's navigation equipment and personnel upon request to determine the vessel's position.
- (4) Allow the observer free and unobstructed access to the vessel's bridge, working decks, holding bins, weight scales, holds, and any other space used to hold, process, weigh, or store fish.
- (5) Allow the observer to inspect and copy the vessel's log, communications logs, and any records associated with the catch and distribution of fish for that trip.

5. § 622.29 Conservation measures for protected resources.

(a) Gulf reef fish commercial vessels and charter vessels/headboats--(1) Sea turtle conservation measures. (i) The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under

§§ 622.20(a)(1) and 622.20(b), respectively, must post inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS.

(ii) Such owner or operator must also comply with the sea turtle bycatch mitigation measures, including gear requirements and sea turtle handling requirements, specified in §§ 635.21(c)(5)(i) and (ii) of this chapter, respectively.

(iii) Those permitted vessels with a freeboard height of 4 ft (1.2 m) or less must have on board a dipnet, tire, short-handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in §§ 635.21(c)(5)(i)(E) through (L) of this chapter with the following modifications: the dipnet handle can be of variable length, only one NMFS-approved short-handled dehooker is required (i.e., § 635.21(c)(5)(i)(G) or (H) of this chapter); and life rings, seat cushions, life jackets, and life vests or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives to

tires for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter. Those permitted vessels with a freeboard height of greater than 4 ft (1.2 m) must have on board a dipnet, tire, long-handled line clipper, a short-handled and a long-handled dehooker, a long-handled device to pull an inverted "V", long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in § 635.21(c)(5)(i)(A) through (L) of this chapter with the following modifications: only one NMFS-approved long-handled dehooker (§ 635.21(c)(5)(i)(B) or (C)) of this chapter and one NMFS-approved short-handled dehooker (§ 635.21(c)(5)(i)(G) or (H) of this chapter) are required; and life rings, seat cushions, life jackets, and life vests, or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter.

(2) Smalltooth sawfish conservation measures. The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under §§ 622.20(a)(1) and 622.20(b), respectively, that incidentally catches a smalltooth sawfish must--

- (i) Keep the sawfish in the water at all times;
 - (ii) If it can be done safely, untangle the line if it is wrapped around the saw;
 - (iii) Cut the line as close to the hook as possible; and
 - (iv) Not handle the animal or attempt to remove any hooks on the saw, except for with a long-handled dehooker.
- (b) [Reserved]

6. § 622.30 Required fishing gear.

For a person on board a vessel to fish for Gulf reef fish in the Gulf EEZ, the vessel must possess on board and such person must use the gear as specified in paragraphs (a) through (c) of this section.

(a) Non-stainless steel circle hooks. Non-stainless steel circle hooks are required when fishing with natural baits.

(b) Dehooking device. At least one dehooking device is required and must be used to remove hooks embedded in Gulf reef fish with minimum damage. The hook removal device must be constructed to allow the hook to be secured and the barb shielded without re-engaging during the removal process. The dehooking end must be blunt, and all edges rounded. The device must be of a size appropriate to secure the range of hook sizes and styles used in the Gulf reef fish fishery.

(c) Venting tool. At least one venting tool is required and must be used to deflate the abdominal cavities of Gulf reef fish to release the fish with minimum damage. This tool must be a sharpened, hollow instrument, such as a hypodermic syringe with the plunger removed, or a 16-gauge needle fixed to a hollow wooden dowel. A tool such as a knife or an ice-pick may not be used. The venting tool must be inserted into the fish at a 45-degree angle approximately 1 to 2 inches (2.54 to 5.08 cm) from the base of the pectoral fin. The tool must be inserted just deep enough to release the gases, so that the fish may be released with minimum damage.

7. § 622.32 Prohibited gear and methods.

Also see § 622.9 for additional prohibited gear and methods that apply more broadly to multiple fisheries or in some cases all fisheries.

(a) Poisons. A poison may not be used to take Gulf reef fish in the Gulf EEZ.

(b) [Reserved]

8. § 622.33 Prohibited species.

(d) Gulf reef fish exhibiting trap rash. Possession of Gulf reef fish in or from the Gulf EEZ that exhibit trap rash is prima facie evidence of illegal trap use and is prohibited. For the purpose of this paragraph, trap rash is defined as physical damage to fish that characteristically results from contact with wire fish traps. Such damage includes, but is not limited to, broken fin spines, fin rays, or teeth; visually obvious loss of scales; and cuts or abrasions on the body of the fish, particularly on the head, snout, or mouth.

9. § 622.34 Seasonal and area closures designed to protect Gulf reef fish.

(a) Closure provisions applicable to the Madison and Swanson sites and Steamboat Lumps, and the Edges-- (1) Descriptions of Areas. (i) The Madison and Swanson sites are bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	29°17'	85°50'
B	29°17'	85°38'
C	29°06'	85°38'
D	29°06'	85°50'
A	29°17'	85°50'

(ii) Steamboat Lumps is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°14'	84°48'
B	28°14'	84°37'
C	28°03'	84°37'
D	28°03'	84°48'
A	28°14'	84°48'

(iii) The Edges is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°51'	85°16'
B	28°51'	85°04'
C	28°14'	84°42'
D	28°14'	84°54'
A	28°51'	85°16'

(2) Within the Madison and Swanson sites and Steamboat Lumps, possession of Gulf reef fish is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section.

(3) Within the Madison and Swanson sites and Steamboat Lumps during November through April, and within the Edges during January through April, all fishing is prohibited, and possession of any fish species is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section. The provisions of this paragraph, (a)(3), do not apply to highly migratory species.

(4) For the purpose of paragraph (a) of this section, transit means non-stop progression through the area; fishing gear appropriately stowed means--

(i) A longline may be left on the drum if all gangions and hooks are disconnected and stowed below deck. Hooks cannot be baited. All buoys must be disconnected from the gear; however, buoys may remain on deck.

(ii) A trawl net may remain on deck, but trawl doors must be disconnected from the trawl gear and must be secured.

(iii) A gillnet must be left on the drum. Any additional gillnets not attached to the drum must be stowed below deck.

(iv) A rod and reel must be removed from the rod holder and stowed securely on or below deck. Terminal gear (i.e., hook, leader, sinker, flasher, or bait) must be disconnected and stowed separately from the rod and reel. Sinkers must be disconnected from the down rigger and stowed separately.

(5) Within the Madison and Swanson sites and Steamboat Lumps, during May through October, surface trolling is the only allowable fishing activity. For the purpose of this paragraph (a)(5), surface trolling is defined as fishing with lines trailing behind a vessel which is in constant motion at speeds in excess of four knots with a visible wake. Such trolling may not involve the use of down riggers, wire lines, planers, or similar devices.

(6) For the purpose of this paragraph (a), fish means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. Highly migratory species means tuna species, marlin (*Tetrapturus spp.* and *Makaira spp.*), oceanic sharks, sailfishes (*Istiophorus spp.*), and swordfish (*Xiphias gladius*).

10. § 622.35 Gear restricted areas.

(a) Reef fish stressed area. The stressed area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 2 in Appendix B of this part.

(1) A powerhead may not be used in the stressed area to take Gulf reef fish. Possession of a powerhead and a mutilated Gulf reef fish in the stressed area or after having fished in the stressed area constitutes prima facie evidence that such reef fish was taken with a powerhead in the stressed area. The provisions of this paragraph do not apply to hogfish.

(2) A roller trawl may not be used in the stressed area. Roller trawl means a trawl net equipped with a series of large, solid rollers separated by several smaller spacer rollers on a separate cable or line (sweep) connected to the footrope, which makes it possible to fish the gear over rough bottom, that is, in areas unsuitable for fishing conventional shrimp trawls. Rigid framed trawls adapted for shrimping over uneven bottom, in wide use along the west coast of Florida, and shrimp trawls with hollow plastic rollers for fishing on soft bottoms, are not considered roller trawls.

(b) Seasonal prohibitions applicable to bottom longline fishing for Gulf reef fish. (1) From June through August each year, bottom longlining for Gulf reef fish is prohibited in the portion of the Gulf EEZ east of 85°30' W. long. that is shoreward of rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°58.70'	85°30.00'
B	28°59.25'	85°26.70'
C	28°57.00'	85°13.80'
D	28°47.40'	85°3.90'
E	28°19.50'	84°43.00'
F	28°0.80'	84°20.00'
G	26°48.80'	83°40.00'
H	25°17.00'	83°19.00'
I	24°54.00'	83°21.00'
J	24°29.50'	83°12.30'
K	24°26.50'	83°00.00'

(2) Within the prohibited area and time period specified in paragraph (b)(1) of this section, a vessel with bottom longline gear on board may not possess Gulf reef fish unless the bottom longline gear is appropriately stowed, and a vessel that is using bottom longline gear to fish for species other than Gulf reef fish may not possess Gulf reef fish. For the purposes of paragraph (b) of this section, appropriately stowed means that a longline may be left on the drum

if all gangions and hooks are disconnected and stowed below deck; hooks cannot be baited; and all buoys must be disconnected from the gear but may remain on deck.

(3) Within the Gulf EEZ east of 85°30' W. long., a vessel for which a valid eastern Gulf reef fish bottom longline endorsement has been issued that is fishing bottom longline gear or has bottom longline gear on board cannot possess more than a total of 1000 hooks including hooks on board the vessel and hooks being fished and cannot possess more than 750 hooks rigged for fishing at any given time. For the purpose of this paragraph, “hooks rigged for fishing” means hooks attached to a line or other device capable of attaching to the mainline of the longline.

(c) Reef fish longline and buoy gear restricted area. A person aboard a vessel that uses, on any trip, longline or buoy gear in the longline and buoy gear restricted area is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5 percent, by weight, of all fish on board or landed. The longline and buoy gear restricted area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 1 in Appendix B of this part.

(d) Alabama SMZ. The Alabama SMZ consists of artificial reefs and surrounding areas. In the Alabama SMZ, fishing by a vessel that is operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, as required under § 622.20(a)(1), or a vessel with such a permit fishing for Gulf reef fish is limited to hook-and-line gear with three or fewer hooks per line and spearfishing gear. A person aboard a vessel that uses on any trip gear other than hook-and-line gear with three or fewer hooks per line and spearfishing gear in the Alabama SMZ is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5 percent, by weight, of all fish on board or landed. The Alabama SMZ is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	30°02.5'	88°07.7'
B	30°02.6'	87°59.3'
C	29°55.0'	87°55.5'
D	29°54.5'	88°07.5'
A	30°02.5'	88°07.7'

11. § 622.37 Size limits.

All size limits in this section are minimum size limits unless specified otherwise. A fish not in compliance with its size limit, as specified in this section, in or from the Gulf EEZ, may not be possessed, sold, or purchased. A fish not in compliance with its size limit must be released immediately with a minimum of harm. The operator of a vessel that fishes in the EEZ is responsible for ensuring that fish on board are in compliance with the size limits specified in this section. See § 622.10 regarding requirements for landing fish intact.

(a) Snapper—(1) Red snapper—16 inches (40.6 cm), TL, for a fish taken by a person subject to the bag limit specified in § 622.38 (b)(3) and 13 inches (33.0 cm), TL, for a fish taken by a person not subject to the bag limit.

12. § 622.38 Bag and possession limits.

(a) Additional applicability provisions for Gulf reef fish. (1) Section 622.11(a) provides the general applicability for bag and possession limits. However, § 622.11(a) notwithstanding, bag and possession limits also apply for Gulf reef fish in or from the EEZ to a person aboard a vessel that has on board a commercial permit for Gulf reef fish--

(i) When trawl gear or entangling net gear is on board. A vessel is considered to have trawl gear on board when trawl doors and a net are on board. Removal from the vessel of all trawl doors or all nets constitutes removal of trawl gear.

(ii) When a longline or buoy gear is on board and the vessel is fishing or has fished on a trip in the reef fish longline and buoy gear restricted area specified in § 622.35(c). A vessel is considered to have a longline on board when a power-operated longline hauler, a cable of diameter and length suitable for use in the longline fishery, and gangions are on board. Removal of any one of these three elements, in its entirety, constitutes removal of a longline.

(iii) For a species/species group when its quota has been reached and closure has been effected, provided that no commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, are on board as specified in paragraph (a)(2) of this section.

(iv) When the vessel has on board or is tending any trap other than a stone crab trap or a spiny lobster trap.

(2) A person aboard a vessel that has a Federal commercial vessel permit for Gulf reef fish and commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, may not possess Gulf reef fish caught under a bag limit.

(b) Bag limits--

(3) Red snapper--2. However, no red snapper may be retained by the captain or crew of a vessel operating as a charter vessel or headboat. The bag limit for such captain and crew is zero.

13. § 622.39 Quotas.

See § 622.8 for general provisions regarding quota applicability and closure and reopening procedures. This section, provides quotas and specific quota closure restrictions for Gulf reef fish.

(a) Gulf reef fish--

(2) Recreational quotas. The following quotas apply to persons who fish for Gulf reef fish other than under commercial vessel permits for Gulf reef fish and the applicable commercial quotas specified in paragraph (a)(1) of this section.

(i) Recreational quota for red snapper--4.145 million lb (1.880 million kg), round weight.

(c) Restrictions applicable after a recreational quota closure--

(1) After closure of the recreational quota for red snapper. The bag and possession limit for red snapper in or from the Gulf EEZ is zero.

Red Snapper Allocation



Public Hearing Draft for Amendment 28 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

Including Draft Environmental Impact Statement,
Fishery Impact Statement, Regulatory Impact Review,
and Regulatory Flexibility Act Analysis

January 2015



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.

This page intentionally blank

Gulf of Mexico Reef Fish Amendment 28

Draft Environmental Impact Statement (DEIS) Cover Sheet

Red Snapper Allocation Amendment 28 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including a Draft Environmental Impact Statement (DEIS), Fishery Impact Statement, Regulatory Impact Review, and Regulatory Flexibility Act Analysis.

Abstract:

This DEIS is prepared pursuant to the National Environmental Policy Act to assess the environmental impacts associated with a regulatory action. The DEIS analyzes the impacts of a reasonable range of alternatives intended to evaluate changing the current commercial: recreational red snapper allocation of 51:49 percent, respectively. The purpose of this amendment is to increase the net benefits from red snapper fishing and increase the stability of the red snapper component of the reef fish fishery, particularly the recreational sector which has experienced shorter and shorter seasons.

Responsible Agencies:

National Marine Fisheries Service
(Lead Agency)
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
727-824-5305
727-824-5308 (fax)
<http://sero.nmfs.noaa.gov>
Contact: Peter Hood
peter.hood@noaa.gov

Gulf of Mexico Fishery Management
Council
2203 North Lois Avenue, Suite 1100
Tampa, Florida 33607
813-348-1630
813-348-1711 (fax)
<http://www.gulfcouncil.org>
Contact: Assane Diagne
assane.diagne@gulfcouncil.org

Type of Action

() Administrative
(X) Draft

() Legislative
() Final

Filing Dates with EPA

Notice of intent (NOI) to prepare EIS published: November 9, 2013 (allocation)
Draft environmental impact statement (DEIS) filed with EPA: xx
DEIS comment period ended: xx
EPA comments on DEIS:

DEIS TABLE OF CONTENTS

Executive Summary ix

Purpose and Need 4

Management Alternatives 6

Affected Environment..... 12

Environmental Consequences 59

Cumulative Effects Analysis (CEA)..... 74

List of Preparers..... 105

List of Agencies, Organizations and Persons to whom a Copy of the EIS was sent 106

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	acceptable biological catch
ACL	annual catch limit
ALS	Accumulated Landings System
AM	accountability measure
Committee	Reef Fish Committee
Council	Gulf of Mexico Fishery Management Council
DEIS	Draft Environmental Impact Statement
EEZ	exclusive economic zone
EFH	Essential Fish Habitat
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
ESA	Endangered Species Act
FMP	Fishery Management Plan
FTE	full-time equivalent
HBS	Southeast Headboat Survey
IFQ	individual fishing quota
LAPP	Limited Access Privilege Program
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MRFSS	Marine Recreational Fisheries Survey and Statistics
MRIP	Marine Recreational Information Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
PDF	probability density function
RFFA	reasonably foreseeable future action
RQ	regional quotient
SAV	submerged aquatic vegetation
SEAMAP	Southeast Area Monitoring and Assessment Program
Secretary	Secretary of Commerce
SEDAR	Southeast Data Assessment and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office of NMFS
SESSC	Socioeconomic Scientific and Statistical Committee
SSBR	spawning stock biomass per recruit
SSC	Scientific and Statistical Committee
SPR	spawning potential ratio
TAC	total allowable catch
TL	total length
TPWD	Texas Parks and Wildlife Department
VEC	valued environmental components
VOC	volatile organic compounds
ww	whole weight

TABLE OF CONTENTS

DEIS Table of Contents	ii
Abbreviations Used in this Document	iii
List of Tables	vi
List of Figures	viii
Executive Summary	ix
Fishery Impact Statement	x
Chapter 1. Introduction	1
1.1 Background	1
1.3 Purpose and Need	4
1.4 History of Management	4
Chapter 2. Management Alternatives	6
2.1 Action 1 – Allocation of Red Snapper	6
Chapter 3. Affected Environment	12
3.1 Description of the Red Snapper Component of the Reef Fish Fishery	12
3.2 Description of the Physical Environment	19
3.3 Description of the Biological Environment	22
3.4 Description of the Social Environment	31
3.4.1 Fishing Communities	37
3.4.2 Environmental Justice Considerations	43
3.5 Description of the Economic Environment	46
3.5.1 Commercial Sector	46
3.5.2 Recreational Sector	49
3.6 Description of the Administrative Environment	57
3.6.1 Federal Fishery Management	57
3.6.2 State Fishery Management	58
Chapter 4. Environmental Consequences	59
4.1 Action 1 – Allocation of Red Snapper	59
4.1.1 Direct and Indirect Effects on the Physical Environment	59
4.1.2 Direct and Indirect Effects on the Biological Environment	61
4.1.3 Direct and Indirect Effects on the Social Environment	63
4.1.4 Direct and Indirect Effects on the Economic Environment	70
4.1.5 Direct and Indirect Effects on the Administrative Environment	73

4.3. Cumulative Effects Analysis (CEA).....	74
Chapter 5. Regulatory Impact Review.....	103
Chapter 6. Regulatory Flexibility Act Analysis.....	104
Chapter 7. List of Preparers	105
Chapter 8. List of Agencies, Organizations and Persons to whom a Copy of the EIS was sent	106
Chapter 9. References	107
Chapter 10. Index.....	121
Appendix A. Other Applicable Law	123
Appendix B. Bycatch Practicability Analysis.....	129
Appendix C. Summary of Habitat Utilization by Life History Stage for Species in the Reef Fish FMP.....	157
Appendix D. Summaries of Public Comments Received	160
Appendix E. Fishery Allocation Policy	199
Appendix F. Current Federal Regulations for Gulf of Mexico Recreational Red Snapper Management.....	202
Appendix G. Economic Analysis of Red Snapper Allocation Alternatives for Amendment 28 to the Gulf of Mexico Reef Fish FMP	211
Appendix H Recreational Red Snapper Average Weights	240

LIST OF TABLES

Table 2.1.1. Red snapper average percentages landed by the commercial and recreational sectors.	7
Table 2.1.2. Recreational and commercial red snapper landings, in million pounds whole weight and in percent of the total landings.	8
Table 2.1.3. Commercial and recreational red snapper allocations (mp, whole weight) and percent, based on the current 11.0 mp aggregate quota.	10
Table 3.1.1. Recreational red snapper landings in 2012 by state and mode.	12
Table 3.1.2. Red snapper landings and overage/underage by sector, 1986-2012.	Error! Bookmark not defined.
Table 3.1.3. Red snapper recreational landings vs. allocation/quota	Error! Bookmark not defined.
Table 3.1.4. Commercial red snapper harvest vs. days open, by sector, 1986-2012.	19
Table 3.3.1. Species of the Reef Fish FMP grouped by family.	26
Table 3.4.1.1. Percentage of total recreational red snapper landings by state for 2011.....	40
Table 3.4.1.2. Average community rank by total number of reef fish charter permits and divided by community population (SERO 2012).	41
Table 3.5.1.1.1. Summary of vessel counts, trips, and logbook landings (pounds gutted weight (lbs gw)) or vessels landing at least one pound of red snapper, 2008-2012.	47
Table 3.5.1.1.2. Summary of vessel counts and revenue (thousand 2012 dollars) for vessels landing at least one pound of red snapper, 2008-2012.	47
Table 3.5.1.2.1. Average annual business activity associated with the harvests of vessels that harvest red snapper, 2008-2012.	48
Table 3.5.2.1.1. Annual red snapper recreational effort, by state, 2008-2012.	51
Table 3.5.2.1.2. Annual red snapper recreational effort, by fishing mode, 2008-2012.	52
Table 3.5.2.1.3. Average (2008-2012) annual red snapper recreational effort, by state and mode.	52
Table 3.5.2.1.4. Average (2008-2012) annual red snapper recreational effort, by state and mode, excluding 2010.....	53
Table 3.5.2.1.5. Headboat angler days.	53
Table 3.5.2.4.1. Summary of red snapper target trips (2008-2009 and 2011-2012 average) and associated business activity (thousand 2012 dollars).....	56
Table 4.1.2.1. Average depth fished and estimated discard.....	62
Table 4.1.3.1. Comparison of the sector quotas resulting from Alternative 2 and Alternative 7, given various quota scenarios. The highlighted row represents the quota under Alternative 1 (status quo).....	69

Table 4.1.4.1. Red snapper allocations and estimated economic losses to the commercial sector.**Error! Bookmark not defined.**

Table 4.1.4.2. Red snapper recreational allocations and estimated average economic gains to the recreational sector.**Error! Bookmark not defined.**

Table 4.1.4.3. Recreational quota increases, economic losses to the commercial sector, gains to the recreational sector, and net changes in benefits. Quota increases are expressed in percentage of the red snapper quota.**Error! Bookmark not defined.**

Table 4.2.1. Number of Gulf of Mexico reef fish commercial (landing at least one pound of reef fish), for-hire, and historical captain permits by year. 82

Table 4.2.2. Number of Gulf of Mexico reef fish commercial trips catching at least one pound of reef fish and the number of offshore angler trips for the charter and private angler components of the reef fish recreational sector for the years 2008-1012. 82

Table 4.2.3. The cause and effect relationship of fishing and regulatory actions for red snapper within the time period of the CEA. 89

Table 4.2.4. VECs considered, consolidated, or not included for further evaluation. 91

LIST OF FIGURES

Figure 1.1. Season length (days) that the recreational red snapper season was open from 1996 through 2012 in the Gulf.....	2
Figure 2.1.1. Differences between annual red snapper landings and quotas by sector, 1990 – 2013.....	9
Figure 3.2.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (http://accession.nodc.noaa.gov/0072888).....	21
Figure 3.3.1. Fishery closure at the height of the Deepwater Horizon MC252 oil spill.....	30
Figure 3.4.1. Length of fishing season for commercial and recreational sectors, with changes in bag limit	33
Figure 3.4.2. Recreational and commercial landings (solid lines) and quotas (dotted lines).	34
Figure 3.4.3. Length of recreational red snapper season in days (red line, right axis) and landings divided by average weight of fish and number of days in the season (blue line, left axis), providing the average number of red snapper landed per day (1996-2012).	36
Figure 3.4.4. Red snapper recreational landings by private vessels and for-hire vessels (includes charter boats and headboats).....	37
Figure 3.4.1.1. Top 15 commercial red snapper fishing communities by RQ value for four years.	38
Figure 3.4.1.2. Top 18 red snapper fishing communities’ commercial engagement and reliance.	39
Figure 3.4.1.4. Top 16 recreational fishing communities’ engagement and reliance.	43
Figure 3.4.2.1. Social vulnerability indices for red snapper commercial fishing communities..	44
Figure 3.4.2.2. Social vulnerability indices for recreational fishing communities.	45

EXECUTIVE SUMMARY

[To be completed.]

FISHERY IMPACT STATEMENT

[To be completed. Not a part of the DEIS.]

CHAPTER 1. INTRODUCTION

1.1 Background

The red snapper stock in the Gulf of Mexico (Gulf) has been declared overfished based on the Status of U.S. Fisheries Report to Congress¹ and is in the 14th year of a 32-year rebuilding plan. The Gulf of Mexico Fishery Management Council (Council) has worked toward rebuilding the red snapper stock since 1997 and overfishing was projected to have ended in 2009. Overfishing was not officially declared to end in the Status of U.S. Fisheries Report until 2012 after the new overfishing definition developed in the Generic Annual Catch Limits and Accountability Measures (ACLs/AMs) Amendment was implemented (GMFMC 2011a).

Gulf of Mexico Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 17 voting members: 11 appointed by the Secretary of Commerce; 1 representative from each of the 5 Gulf States, the Southeast Regional Administrator of National Marine Fisheries Service (NMFS); and 4 non-voting members
- Responsible for developing fishery management plans and amendments, and recommends actions to NMFS for implementation

National Marine Fisheries Service

- Responsible for compliance with federal, state, and local laws and regulations
- Responsible for preventing overfishing while achieving optimum yield
- Approves, disapproves, or partially approves Council recommendations
- Implements regulations

Since 2007, the recreational red snapper season length has become progressively shorter (Figure 1.1) and overharvests have occurred in every year but one since 2007 (Figure 2.1.1). The commercial sector has the potential for a year-round season and has consistently harvested below its quota since the implementation of the Individual Fishing Quota (IFQ) program in 2007.

¹ http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/

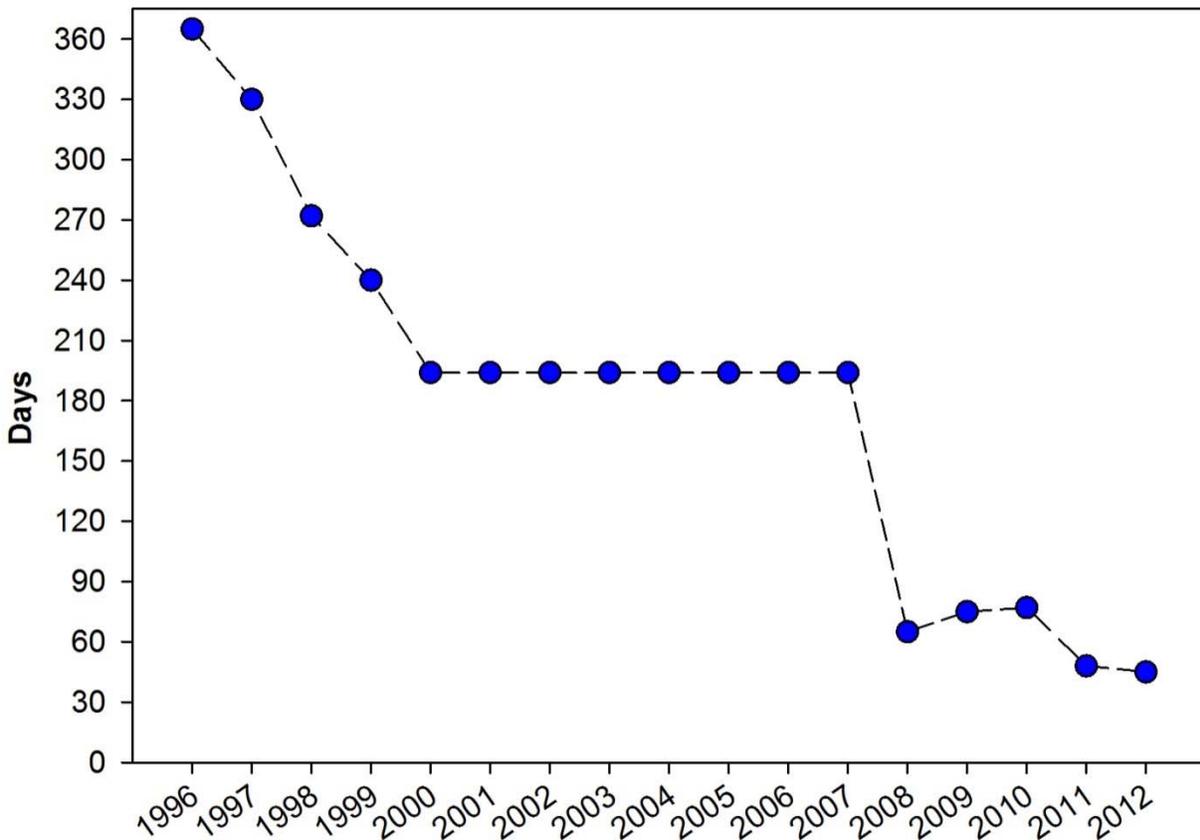


Figure 1.1. Season length (days) that the recreational red snapper season was open from 1996 through 2012 in the Gulf.

Current recreational fishing season length projections are dependent on estimated red snapper average weights and daily catch rates. As the daily catches and average weight of landed red snapper increases the season becomes progressively shorter (NMFS 2012a). Since 2007, when the rebuilding plan was revised, the estimated average weight of red snapper increased from 3.30 to 7.02 lbs whole weight (ww). Based on preliminary data, the average red snapper landed in 2013 weighed 7.02 lbs ww per fish (Appendix H). Following receipt of the 2013 benchmark assessment (SEDAR 31 2013) results, the 8.46 million pound (mp) quota was increased to 11.0 mp, and a supplemental fall recreational season was opened. Thus, the recreational harvest of red snapper was open 42 days in federal waters in 2013. In 2014, the season was open nine days in federal waters.

In January 2013, the Council convened a special meeting of their Reef Fish Committee (Committee) to focus on red snapper management issues. The Committee requested that Amendment 28 focus on red snapper allocation only and decided to address allocation of groupers (i.e., gag, red, and black) in a separate amendment. During the meeting, the Committee discussed and modified the goals and objectives of the Reef Fish FMP, including suggestions for

objectives that better focus the purpose and need of this amendment. The requested changes to the document were discussed and adopted by the Council at the April 2014 meeting (see Section 1.2).

The Council discussed the 2013 projected recreational red snapper fishing season and it was noted that the federal fishing season could become shorter, should any of the Gulf States choose not to adopt compatible federal regulations. Therefore, the Council requested staff develop an accountability measure that would give the National Marine Fisheries Service (NMFS) Regional Administrator the authority to shorten the federal fishing season off a state adopting incompatible regulations should any Gulf State choose not to adopt compatible federal regulations. Following the completion of the red snapper stock assessment, the Council elected to increase the red snapper quota to 11.0 mp, resulting in commercial and recreational quotas of 5.61 mp and 5.39 mp, respectively. The quota increase was distributed to the commercial sector as additional annual IFQ allocation and provided a fall recreational season from October 1 through 14 for the recreational sector. In addition to the evaluation and potential adjustments to the current red snapper allocation between the sectors and to recreational season lengths beyond 2013, the Council's discussions increasingly suggest that there is a need to explore alternative methods of managing the recreational harvest of red snapper.

Allocation

In recent years, the Council has expressed its intent to evaluate and possibly adjust the allocation of reef fish resources between the commercial and recreational sectors. These Council discussions have included consideration of comprehensive changes to the structure of the recreational sector and to sector allocations for red snapper and several grouper species.

The Council's evaluation of the allocations between the commercial and recreational sectors is consistent with NOAA's Catch Share Policy². The Policy recommends that, for all fishery management plans (FMPs), "the underlying harvest allocations to specific fishery sectors (i.e., commercial and recreational) should be revisited on a regular basis, and the basis for the allocation should include consideration of conservation, economic, and social criteria used in specifying optimum yield and in furtherance of the goals of the underlying FMP" (NOAA's Catch Share Policy 2010, page iii).

In response to the challenges inherent to allocating limited resources between competing interests, the Council established an Ad Hoc Allocation Committee composed of Council members to assist in drafting an allocation policy that would streamline future allocation decisions. The Council's allocation policy was adopted in early 2009 and provides principles, guidelines, and suggested methods for allocating fisheries resources between or within sectors. The principles and guidelines developed by the Council are provided in Appendix B. In February 2012, the National Marine Fisheries Service (NMFS) released a technical memorandum on the principles and practice of allocating fishery harvests, which provides additional guidance to the Council (Plummer et al. 2012).

² http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/index.htm

At the Council’s request, the Southeast Fishery Science Center (SEFSC) conducted a study evaluating the economic efficiency of the current allocation of red snapper resources between the commercial and recreational sectors. The study was discussed by the Socioeconomic Scientific and Statistical Committee (SESSC) during its October 2012 meeting. Conclusions of the study and recommendations provided by the SESSC were presented to the Council in October 2012. An economic evaluation of allocation alternatives proposed in this amendment was also requested. Drs. Agar and Carter of the SEFSC conducted the analyses and presented their findings to the SESSC during a November 2013 meeting and a January 2014 follow-up webinar. SESSC recommendations were discussed during the February 2014 Council meeting.

1.3 Purpose and Need

This regulatory action addresses red snapper allocation. Specifically, the purpose of this action is to reallocate, in a fair and equitable manner, red snapper resources between the commercial and recreational sectors to increase the net benefits from red snapper fishing and increase the stability of red snapper fishing, particularly for the recreational sector that has experienced shorter and shorter seasons.

The need for the proposed actions is to reduce the likelihood of overharvests in the recreational sector and to prevent overfishing while achieving optimum yield, particularly with respect to food production and recreational opportunities, while rebuilding the red snapper stock.

1.4 History of Management

This history of management covers events pertinent to red snapper allocation, setting quotas, and AMs. A complete history of management for the FMP is available on the Council’s website: http://www.gulfcouncil.org/fishery_management_plans/reef_fish_management.php and a history of red snapper management through 2006 is presented in Hood et al. (2007). The final rule for the Reef Fish FMP (with its associated environmental impact statement [EIS]) (GMFMC 1981) was effective November 8, 1984, and defined the Reef Fish fishery management unit to include red snapper and other important reef fish.

Currently, the commercial sector fishing for red snapper is regulated by a 13-inch total length (TL) minimum size limit and managed under an individual fishing quota program. Recreational fishing for red snapper is managed with a 16-inch TL minimum size limit, 2-fish bag limit, and a season beginning on June 1 and ending when the recreational quota is projected to be caught. Other reef fish fishery management measures that affect red snapper fishing include permit requirements for the commercial and for-hire sectors as well as season-area closures. These measures are discussed in more detail in Section 3.1.

Red snapper allocation and quotas: The final rule for **Amendment 1** (GMFMC 1989) to the Reef Fish FMP (with its associated environmental assessment (EA), regulatory impact review (RIR) was effective in February 1990. The amendment specified a framework procedure for

setting the total allowable catch (TAC) to allow for annual management changes. A part of that specification was to establish a species' allocation. These were based on the percentage of total landings during the base period of 1979-1987. For red snapper, the commercial sector landed 51% and the recreational sector landed 49% of red snapper over the base period, hence the current 51% commercial:49%: recreational allocation. **Amendment 1** also established a commercial quota allowing the Regional Administrator to close commercial red snapper fishing when the quota was caught. The recreational quota was established through a 1997 regulatory amendment (with its associated EA and RIR) (GMFMC 1995) with a final rule effective in October 1997. Prior to 1997, the recreational sector had exceeded its allocation of the red snapper TAC, though the overages were declining through more restrictive recreational management measures (Figure 2.1.1). With the establishment of a recreational quota, the Regional Administrator was authorized to close the recreational season when the quota is reached as required by the Magnuson-Stevens Act.

Red snapper accountability measures: For the commercial sector, an IFQ program was put in place for the 2007 fishing year through **Amendment 26** to the FMP. The program allocates pounds to IFQ shareholders based on the number of shares they have. This program allows shareholders to use their individual allocation as they see fit. Since the program has been in effect, the commercial sector has not exceeded its quota (See Section 3.1).

For the recreational sector, the accountability measure is an in-season closure based on annual projections of the season length. The season begins on June 1, as implemented through **Amendment 27** in 2008. This amendment also put in place the current 16-inch TL minimum size limit, 2-fish bag limit, and zero bag limit for captain and crew of for-hire vessels. Subsequent to Amendment 27, a series of framework actions and temporary rules have set the season length.

On March 26, 2014 the U. S. District Court for the District of Columbia ruled in favor of the plaintiffs in the case of *Guindon v. Pritzker*, 2014 WL 1274076 (D.D.C. Mar. 26, 2014) and found that the 2013 May Final Rule, June Temporary Rule, and October Final Rule challenged in this action were arbitrary and capricious, and not in accordance with the Magnuson-Stevens Act. The Court found in pertinent part that NMFS failed to require adequate AMs to prohibit the retention of fish after the recreational quota had been harvested, and failed to use the best scientific information available by not using the 2013 MRIP numbers to determine whether there should be a fall season. To address the court's findings, the Council requested NMFS put in place an emergency rule for the 2014 season that set a recreational ACT to base the season length on that was 20% less than the recreational quota (See Section 1.1). The resulting season length was nine days.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 – Allocation of Red Snapper

Alternative 1: No Action – Maintain the allocation set in Reef Fish Amendment 1. The commercial and recreational red snapper allocations remain at 51% and 49% of the red snapper quota³, respectively. Based on a red snapper quota of 11.0 million pounds (mp), resulting allocations to the commercial and recreational sectors are 5.610 mp and 5.390 mp, respectively.

Reallocation of Quota

Alternative 2: Increase the recreational sector’s allocation by **3 percent**⁴; allocate 48% of the red snapper quota to the commercial sector and 52% of the quota to the recreational sector.

Alternative 3: Increase the recreational sector’s allocation by **5 percent**; allocate 46% of the red snapper quota to the commercial sector and 54% of the quota to the recreational sector.

Alternative 4: Increase the recreational sector’s allocation by **10 percent**; allocate 41% of the red snapper quota to the commercial sector and 59% of the quota to the recreational sector.

Allocation of Quota Increases

Preferred Alternative 5: If the red snapper quota is less than or equal to 9.12 million pounds (mp), maintain the commercial and recreational red snapper allocations at 51% and 49% of the red snapper quota, respectively. If the red snapper quota is greater than 9.12 mp, allocate 75% of the amount in excess of 9.12 mp to the recreational sector and 25% to the commercial sector. Based on a red snapper quota of 11.0 mp, resulting allocations to the commercial and recreational sectors are 5.121 mp and 5.879 mp, respectively.

Alternative 6: If the red snapper quota is less than or equal to 9.12 million pounds (mp), maintain the commercial and recreational red snapper allocations at 51% and 49% of the red snapper quota, respectively. If the red snapper quota is greater than 9.12 mp, allocate 100% of the amount in excess of 9.12 mp to the recreational sector. Based on a red snapper quota of 11.0 mp, resulting allocations to the commercial and recreational sectors are 4.651 mp and 6.349 mp, respectively.

Alternative 7: If the red snapper quota is less than or equal to 10.0 million pounds (mp), maintain the commercial and recreational red snapper allocations at 51% and 49% of the red snapper quota, respectively. If the red snapper quota is greater than 10.0 mp, allocate 75% of the amount in excess of 10.0 mp to the recreational sector and 25% to the commercial sector. Based on a red snapper quota of 11.0 mp, resulting allocations to the commercial and recreational sectors are 5.350 mp and 5.650 mp, respectively.

³ The red snapper quota (commercial and recreational quotas) is functionally equivalent to a red snapper ACL.

⁴ Unless otherwise indicated, specified percentages refer to percentages of the red snapper quota.

Discussion

The Gulf of Mexico Fishery Management Council (Council) initially considered alternatives that increased the allocation above the commercial sector's current 51%. However, in considering the economic analyses conducted by the Southeast Fisheries Science Center (SEFSC) and the loss of fishing opportunities by the recreational sector, the Council concluded that such a reallocation would not meet the purpose and need of this action. Therefore, the Council limited the alternatives to either no action or increasing the recreational sector's allocation above 49%.

Alternative 1 would continue to allocate 49% of the red snapper quota to the recreational sector and 51% to the commercial sector. This allocation was established in 1990 through Reef Fish Amendment 1 (GMFMC 1989) and was based on the historical average red snapper landings by each sector for the base period of 1979-1987. Average percentages landed by each sector for various time series are provided in Table 2.1.1. Annual commercial and recreational red snapper landings between 1986 and 2013 are provided in Table 2.1.2.

Table 2.1.1. Red snapper average percentages landed by the commercial and recreational sectors.

Years	Commercial	Recreational
1986-2012	44.2%	55.8%
1991-2012	41.6%	58.4%
1996-2012	42.9%	57.1%
2001-2012	41.3%	58.7%
2006-2012	39.7%	60.3%

For the recreational and commercial sectors, the differences between the quotas and annual landings are provided in Figure 2.1.1. The Council has had limited success in consistently constraining the amounts harvested by the commercial and recreational sectors to their allotted share of the red snapper quota. As a result, the actual proportions of the aggregate quota harvested by each sector have fluctuated widely over time and consistently departed from the sector allocation set by the Council. Figure 2.1.2 compares the resource allocation established by the Council with the proportions of red snapper landings attributed to the recreational and commercial sectors.

Table 2.1.2. Recreational and commercial red snapper landings, in million pounds whole weight and in percent of the total landings.

	Recreational		Commercial	
	Pounds	Percent	Pounds	Percent
1986	3.491	48.55%	3.700	51.45%
1987	2.090	40.51%	3.069	59.49%
1988	3.139	44.22%	3.960	55.78%
1989	2.940	48.69%	3.098	51.31%
1990	1.625	38.01%	2.650	61.99%
1991	2.917	56.86%	2.213	43.14%
1992	4.618	59.79%	3.106	40.21%
1993	7.161	67.97%	3.374	32.03%
1994	6.076	65.35%	3.222	34.65%
1995	5.464	65.06%	2.934	34.94%
1996	5.339	55.31%	4.313	44.69%
1997	6.804	58.58%	4.810	41.42%
1998	4.854	50.91%	4.680	49.09%
1999	4.972	50.49%	4.876	49.51%
2000	4.750	49.55%	4.837	50.45%
2001	5.252	53.17%	4.625	46.83%
2002	6.535	57.76%	4.779	42.24%
2003	6.105	58.07%	4.409	41.93%
2004	6.460	58.14%	4.651	41.86%
2005	4.676	53.31%	4.096	46.69%
2006	4.131	47.05%	4.649	52.95%
2007	5.809	64.82%	3.153	35.18%
2008	4.056	62.24%	2.461	37.76%
2009	5.597	69.46%	2.461	30.54%
2010	2.651	44.09%	3.362	55.91%
2011	6.734	65.40%	3.562	34.60%
2012	7.524	65.29%	4.000	34.71%
2013	9.639	64.10%	5.399	35.90%

Sources: Recreational landings from the Southeast Fisheries Science Center including landings from the Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey. Commercial landings from the Southeast Data Assessment and Review 31 Data Workshop Report (1990-2006), commercial catch allowances report from the National Marine Fisheries Service /Southeast Regional Office IFQ landings website (2007-2013): <http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>. Commercial landings in gutted weight were multiplied by 1.11 to convert to ww.

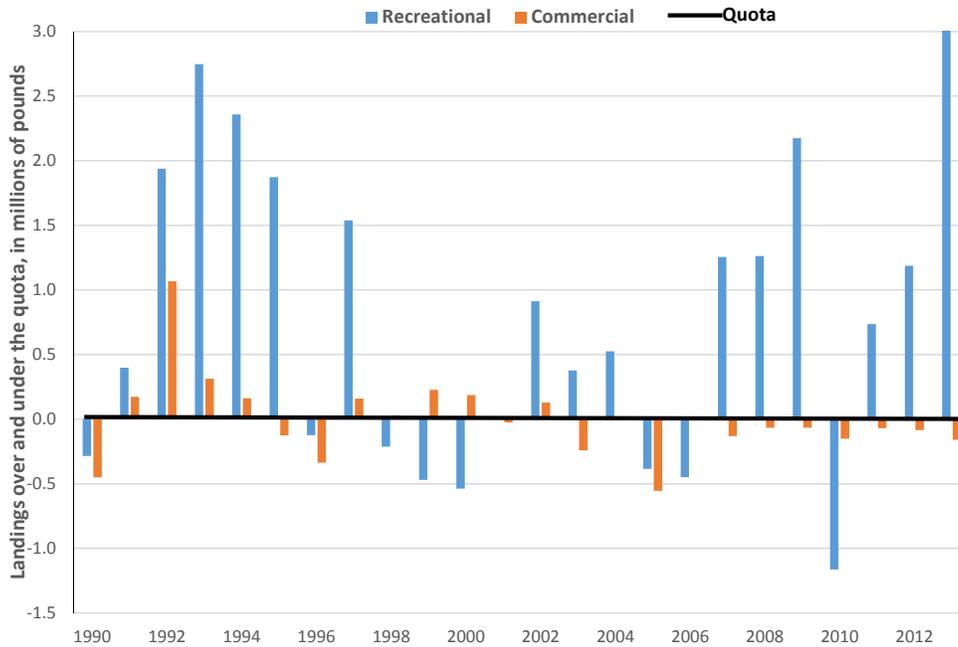


Figure 2.1.1. Differences between annual red snapper landings and quotas by sector, 1990 – 2013. For each sector, positive values indicate that landings are greater than the quota; negative values indicate that landings are less than the quota.

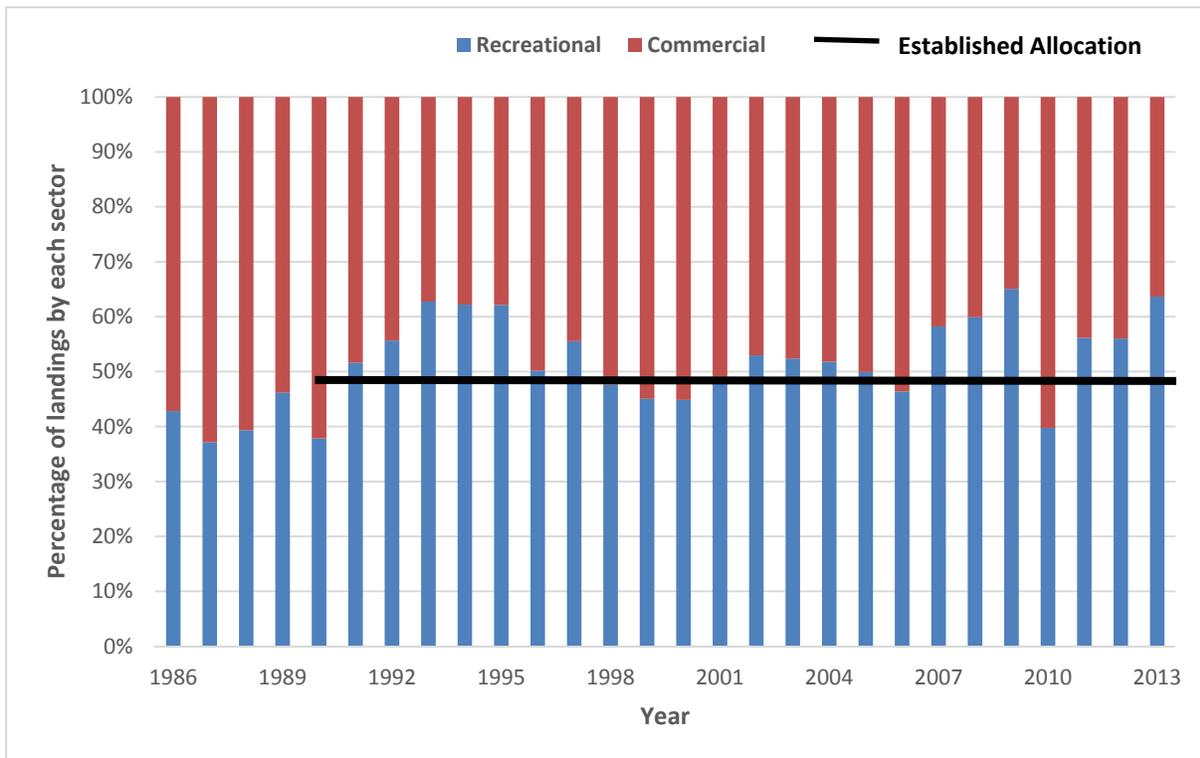


Figure 2.1.2. Comparison between the proportions of red snapper landed by each sector and the commercial/recreational split of the quota (established allocation of 51% and 49% to the commercial and recreational sectors, respectively).

Based on a status quo aggregate red snapper quota of 11.0 million pounds (mp), **Alternative 1** would allocate 5.610 mp and 5.390 mp to the commercial and recreational sectors, respectively. **Alternatives 2, 3, and 4** consider increases to the recreational red snapper allocation by 3%, 5%, and 10% from the status quo (**Alternative 1**), increasing the recreational allocation to 52%, 54%, and 59% of the red snapper quota, respectively. Table 2.1.3 provides a summary of the commercial and recreational red snapper quotas that would result from the alternative allocations included in this action. Based on a red snapper quota of 11.0 mp, recreational quotas that would correspond to **Alternatives 2, 3, and 4** would be equal to 5.720 mp, 5.940 mp, and 6.490 mp, respectively.

Table 2.1.3. Commercial and recreational red snapper allocations (mp, whole weight) and percent, based on the current 11.0 mp aggregate quota.

	Commercial Sector		Recreational Sector	
	MP	Percent	MP	Percent
Alternative 1	5.610	51.0	5.390	49.0
Alternative 2	5.280	48.0	5.720	52.0
Alternative 3	5.060	46.0	5.940	54.0
Alternative 4	4.510	41.0	6.490	59.0
Preferred Alternative 5	5.121	46.6	5.879	53.4
Alternative 6	4.651	42.3	6.349	57.7
Alternative 7	5.350	48.6	5.650	51.4

Preferred Alternative 5 would continue to allocate 51% of the red snapper quota to the commercial sector and 49% of the red snapper quota to the recreational sector as long as the aggregate red snapper quota is below or equal to 9.12 mp, which was the total allowable catch from 1996 through 2006. Once the threshold is reached, 75% of quota amounts in excess of 9.12 mp would be allocated to the recreational sector and 25% to the commercial sector. Based on an aggregate red snapper quota of 11.0 mp, **Preferred Alternative 5** would allocate 5.121 mp and 5.390 mp to the commercial and recreational sectors, respectively. In percentage points (based on a red snapper quota of 11.0 mp), **Preferred Alternative 5** would allocate 46.6% and 53.4% of the red snapper quota to the commercial and recreational sectors, respectively. Provided the quota is at least 9.12 mp, any increase or decrease from the 11.0 mp aggregate quota will result in different percentages allocated to each sector.

Like **Preferred Alternative 5**, **Alternative 6** would maintain the 51/49 commercial/recreational split of the red snapper quota as long as the red snapper quota is less than or equal to 9.12 mp. However, if the red snapper quota is greater than 9.12 mp, **Alternative 6** would allocate the totality of the quota greater than 9.12 mp to the recreational sector, rather than 75% of the quota above the baseline of 9.12 mp, as in **Preferred Alternative 5**. Based on an aggregate red snapper quota of 11.0 mp, **Alternative 6** would allocate 4.651 mp and 6.349 mp to the commercial and recreational sectors, respectively. In percentage points, **Alternative 6** would allocate 42.3% and 57.7% of the red snapper quota to the commercial and recreational sectors,

respectively. Again, provided the quota is at least 9.12 mp, any increase or decrease from the 11.0 mp aggregate quota will result in different percentages and estimated season length.

Alternative 7 would continue to allocate 51% of the red snapper quota to the commercial sector and 49% of the red snapper quota to the recreational sector as long as the aggregate red snapper quota is below or equal to 10.0 mp. However, if the red snapper quota is greater than 10.0 mp, 75% of quota amounts in excess of 10.0 mp would be allocated to the recreational sector and 25% to the commercial sector. Based on an aggregate red snapper quota of 11.0 mp, **Alternative 7** would allocate 5.350 mp and 5.650 mp to the commercial and recreational sectors, respectively. In percentage points, **Alternative 7** would allocate 48.6% and 51.4% of the red snapper quota to the commercial and recreational sectors, respectively. Provided the quota is at least 10.0 mp, any increase or decrease from the 11.0 mp aggregate quota will result in different percentages and estimated season length.

As illustrated in Figure 2.1.2, the percentages of the red snapper aggregate quota harvested by the commercial and recreational sectors do not reflect the established allocation of 51% and 49% assigned to the commercial and recreational sectors, respectively. Alongside allocation discussions and reallocation decisions, the Council has implemented management measures (accountability measures) intended to reduce the recreational quota overages, thereby minimizing the difference between the proportion of red snapper landings attributed to each sector and the allocation established by the Council.

Recent allocation studies completed by the SEFSC and reviewed by the Socioeconomic Scientific and Statistical Committee (SESSC) have concluded that existing allocations between the commercial and recreational sectors of several reef fish resources, including red snapper, are not economically efficient. In a 2012 study evaluating the economic efficiency of the allocation of red snapper resources, Agar and Carter⁵ compared estimated commercial and recreational marginal willingness to pay for red snapper and indicated that the relative magnitude of the estimates suggests that economic efficiency could potentially be improved by reallocating red snapper resources. The SESSC reviewed and accepted the methodology of the study. The SESSC further stated that although the study results indicated that the marginal value of a recreationally caught red snapper is likely higher than the marginal value of a commercially caught red snapper, given the data used, e.g., data collection time periods (recreational data collected from a 2003 survey; commercial data collected during the last 5 years of the red snapper IFQ program), it cannot specify the potential efficiency gains from possible quota shifts because it does not know how the marginal valuations would change with the switch. The SESSC also indicated that incentive-based approaches to reallocation would be more appropriate for increasing net benefits than mandated allocations. A study evaluating potential changes in net benefits expected to result from alternatives proposed in this amendment is provided in Appendix G.

⁵ Agar and Carter presentation to the SESSC in October 2012 titled “Are the 2012 allocations of red snapper in the Gulf of Mexico economically efficient?”

CHAPTER 3. AFFECTED ENVIRONMENT

The action considered in this environmental impact statement (EIS) would affect commercial and recreational fishing for red snapper in federal and state waters of the Gulf of Mexico (Gulf). Descriptions of the physical, biological, economic, social, and administrative environments were completed in the EISs for Reef Fish Amendments 27/Shrimp Amendment 14 (GMFMC 2007), 30A (GMFMC 2008a), 30B (GMFMC 2008b), 32 (GMFMC 2011b), the Generic Essential Fish Habitat (EFH) Amendment (GMFMC 2004a), and the Generic Annual Catch Limits/Accountability Measures (ACL/AM) Amendment (GMFMC 2011a). Below, information on each of these environments is summarized or updated, as appropriate.

3.1 Description of the Red Snapper Component of the Reef Fish Fishery

A description of the fishery and affected environment relative to red snapper was last fully discussed in joint Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007). This section updates the previous description to include additional information since publication of that EIS.

General Features

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). Currently, the commercial sector operates under an individual fishing quota (IFQ) program. In 2011, 362 vessels participated in the IFQ program (NMFS 2012c). The recreational sector operates in the following three modes: charter boats, headboats, and private vessels. In 2012 private vessels accounted for 61.1% of recreational red snapper landings, followed by charter boats (24.8%) and headboats (14.1%). On a state-by-state basis, Florida accounted for the most landings (41.5%), followed by Alabama (28.1%), Louisiana (14.8%), Texas (12.0%), and Mississippi (3.7%) (Table 3.1.1).

Table 3.1.1. Recreational red snapper landings in 2012 by state and mode.

State	Landings (lbs whole weight)				% by State
	Charter	Headboat	Private	All Modes	
FL (west)	641,437	205,114	1,289,253	2,135,804	41.5%
AL	359,469	72,199	1,013,460	1,445,128	28.1%
MS	997	5,894	182,767	189,658	3.7%
LA	236,302	21,999	501,704	760,005	14.8%
TX	39,128	419,671	157,726	616,525	12.0%
Total	1,277,333	724,077	3,144,911	5,147,120	
% by Mode	24.8%	14.1%	61.1%		100%

Source: NMFS 2013a.

The red snapper stock has been found to be in decline or in an overfished condition since the first red snapper stock assessment in 1986 (Parrack and McClellan 1986). The first red snapper rebuilding plan was implemented in 1990 through Amendment 1 (GMFMC 1989). From 1990 through 2009, red snapper harvest was managed through the setting of an annual total allowable catch (TAC). This TAC was allocated with 51% going to the commercial sector and 49% to the recreational sector. Beginning in 2010, TAC was phased out in favor of an ACL as a result of revisions to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The red snapper rebuilding plan has not formally adopted the use of the term ACL. However, by allocating the acceptable biological catch (ABC) between the commercial and recreational sectors, and then setting quotas for each sector that do not exceed those allocations, the terminology and approaches used in the red snapper rebuilding plan are consistent with the use of ACLs. Such alternative terminology is allowed under the guidelines.

Amendment 1 also established a 1990 commercial red snapper quota of 3.1 million pounds (mp) whole weight (ww) (Table 3.1.2). There was no explicit recreational quota or allocation specified in Amendment 1, only a bag limit of 7 fish and a minimum size limit of 13 inches total length. Beginning in 1991, an explicit recreational allocation in pounds was based on 49% of the TAC was specified, and this allocation was specified through Council action until 1997 when the recreational allocation was changed to a quota (Table 3.1.2). Based on the 51:49 commercial to recreational sector allocation, the commercial quota implied a TAC of about 5.2 mp in 1990, followed by explicit TACs of 4.0 mp in 1991 and 1992, 6.0 mp in 1993 through 1995, and 9.12 mp from 1996 through 2006 (Table 3.1.2). The TAC was reduced to 6.5 mp in 2007 and 5.0 mp in 2008 and 2009 as the Gulf of Mexico Fishery Management Council (Council) shifted from a constant catch rebuilding plan to a constant fishing mortality rebuilding plan (GMFMC 2007). Under a constant fishing mortality rate rebuilding plan, the ABC is allowed to increase as the stock rebuilds, thus the ABCs for 2010, 2011, and 2012 were increased to 6.945, 7.530, and 8.080 mp, respectively⁶.

In July 2013, the Council reviewed a new benchmark assessment (SEDAR 31 2013) which showed that the red snapper stock was rebuilding faster than projected, partly due to strong recruitment in some recent years. Initially in 2013, a scheduled increase in the ABC to 8.690 mp was cancelled due to an overharvest in 2012 by the recreational sector. After an analysis of the impacts of the overharvest on the red snapper rebuilding plan, the 2013 ABC was increased to 8.460 mp. However, once the new benchmark assessment was completed, the Scientific and Statistical Committee (SSC) increased the ABC for 2013 to 13.5 mp with the caveat that catch levels would have to be reduced in future years unless recruitment returned to average levels. After incorporating a buffer to reduce the possibility of having to later reduce the quota, the Council further increased the 2013 commercial and recreational quotas to a combined 11.0 mp (5.61 mp and 5.39 mp, respectively) (GMFMC 2013a). The Council plans to maintain the 11.0 mp combined quota for 2014 and 2015 based on SSC recommendations, though a 2014 stock assessment may lead to a revised combined quota for 2015.

⁶ Note the allocation for the commercial and recreational quotas shifted from the TAC to the ABC in 2010.

Table 3.1.2. Red snapper landings and overage/underage by sector, 1986-2013. Landings are in mp ww. Commercial quotas began in 1990. Recreational allocations began in 1991 and recreational quotas began in 1997. Summing the recreational allocation/quota and the commercial quota yields the total allowable catch (TAC) for the years 1991-2009 and the acceptable biological catch (ABC) for 2010-2013.

Year	Recreational			Commercial			Total		
	Allocation Quota	Actual landings	Difference	Quota	Actual landings	Difference	TAC/ABC	Actual landings	Difference
1986	na	3.491	na	na	3.700	na	na	6.470	na
1987	na	2.090	na	na	3.069	na	na	4.883	na
1988	na	3.139	na	na	3.960	na	na	6.528	na
1989	na	2.940	na	na	3.098	na	na	5.754	na
1990	na	1.625	na	3.1	2.650	-0.450	na	4.264	na
1991	1.96	2.917	+0.957	2.04	2.213	+0.173	4.0	5.130	+1.130
1992	1.96	4.618	+2.658	2.04	3.106	+1.066	4.0	7.724	+3.724
1993	2.94	7.161	+4.221	3.06	3.374	+0.314	6.0	10.535	+4.535
1994	2.94	6.076	+3.136	3.06	3.222	+0.162	6.0	9.298	+3.298
1995	2.94	5.464	+2.524	3.06	2.934	-0.126	6.0	8.398	+2.398
1996	4.47	5.339	+0.869	4.65	4.313	-0.337	9.12	9.652	+0.532
1997	4.47	6.804	+2.334	4.65	4.810	+0.160	9.12	11.614	+2.494
1998	4.47	4.854	+0.384	4.65	4.680	+0.030	9.12	9.534	+0.414
1999	4.47	4.972	+0.502	4.65	4.876	+0.226	9.12	9.848	+0.728
2000	4.47	4.750	+0.280	4.65	4.837	+0.187	9.12	9.587	+0.467
2001	4.47	5.252	+0.782	4.65	4.625	-0.025	9.12	9.877	+0.757
2002	4.47	6.535	+2.065	4.65	4.779	+0.129	9.12	11.314	+2.194
2003	4.47	6.105	+1.635	4.65	4.409	-0.241	9.12	10.514	+1.394
2004	4.47	6.460	+1.990	4.65	4.651	+0.001	9.12	11.111	+1.991
2005	4.47	4.676	+0.206	4.65	4.096	-0.554	9.12	8.772	-0.348
2006	4.47	4.131	-0.339	4.65	4.649	-0.001	9.12	8.780	-0.340
2007	3.185	5.809	+2.624	3.315	3.153	-0.162	6.5	8.962	+2.462
2008	2.45	4.056	+1.606	2.55	2.461	-0.089	5.0	6.517	+1.517
2009	2.45	5.597	+3.147	2.55	2.461	-0.089	5.0	8.058	+3.058
2010	3.403	2.651	-0.752	3.542	3.362	-0.180	6.945	6.013	-0.932
2011	3.866	6.734	+2.868	3.664	3.562	-0.102	7.53	10.296	+2.766
2012	3.959	7.524	+3.565	4.121	4.000	-0.121	8.08	11.524	+3.444
2013	5.390	9.639	+4.249	5.610	5.399	-0.211	11.00	15.038	+4.038

Sources: Recreational landings from the Southeast Fisheries Science Center including landings from the Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey. Commercial landings from the Southeast Data Assessment and Review 31 Data Workshop Report (1990-2006), commercial quotas/catch allowances report from the National Marine Fisheries Service /Southeast Regional Office IFQ landings website (2007-2013): <http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>. Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

Both the commercial and recreational sectors have had numerous allocation or quota overruns. Table 3.1.2 shows a comparison of quotas and actual harvests from 1990 through 2012. The recreational sector has had allocation/quota overruns in 14 out of 22 years in which an allocation or quota was specified, while the commercial sector has had quota overruns in 10 of 23 years. However, the commercial sector has not had overruns since 2005, including the years 2007 onward when the commercial harvest of red snapper has operated under an IFQ program.

Recreational Sector

Red snapper are an important component of the recreational sector's harvest of reef fish in the Gulf. Red snapper are caught from charter boats, headboats (or party boats), and private anglers fishing primarily from private or rental boats. Red snapper are primarily caught with hook-and-line gear in association with bottom structures. Recreational red snapper harvest allocations since 1991 have been set at 49% of the TAC, or 1.96 mp in 1991 and 1992, 2.94 mp for 1993 through 1995, and 4.47 mp in 1996. In 1997, a 4.47 mp recreational quota was created and it was maintained at this level through 2006. In 2007, the recreational quota was reduced to 3.185 mp. It was reduced again to 2.45 mp in 2008 and 2009. Since 2010, the recreational quota has been increased each year: 3.403 mp in 2010, 3.866 mp in 2011, and 3.959 mp in 2012 (Table 3.1.3).

Before 1984, there were no restrictions on the recreational harvest of red snapper. In November 1984, a 12-inch total length size limit was implemented, but with an allowance for five undersized fish per person. In 1990, the undersized allowance was eliminated, and the recreational sector was managed through bag and size limits with a year-round open season. In 1997, the recreational red snapper allocation was converted into a quota with accompanying quota closure should the sector exceed its quota. Recreational quota closures occurred in 1997, 1998, and 1999, becoming progressively shorter each year even though the quota remained a constant 4.47 mp.

A fixed recreational season of April 21 through October 31 (194 days) was established for 2000 through 2007. However, National Marine Fisheries Service (NMFS) returned to variable length seasons beginning in 2008. Under this management approach, due to a lag in the reporting of recreational catches, catch rates over the course of the season were projected in advance based on past trends and changes in the average size of a recreationally harvested red snapper. The recreational season opened each year on June 1 and closed on the date when the quota was projected to be reached. In 2008, the season length was reduced from 194 days to 65 days in conjunction with a reduction in quota to 2.45 mp. The season length then increased to 75 days in 2009. In 2010, the recreational red snapper season was originally projected to be 53 days. However, due to reduced effort and large emergency area closures resulting from the Deepwater Horizon MC252 oil spill, catches were below projections, and a one-time supplemental season of weekend only openings (Friday, Saturday, and Sunday) was established from October 1 through November 22. This added 24 fishing days to the 2010 season for a total of 77 days. In 2011, the season was reduced to 48 days despite an increase in the quota, due to an increase in the average size of a recreationally harvested fish. In 2012 the season was initially scheduled to be 40 days, but was extended to 46 days to compensate for the loss of fishing days due to storms (Table 3.1.3). For 2013, an increase in the ABC occurred too late to extend the June recreational

season, so the Council requested that NMFS reopen the recreational season on October 1 for whatever number of days would be needed to harvest the additional quota. NMFS estimated that the additional recreational quota would take 14 days to be caught, and therefore announced a supplemental season of October 1 through 14.

Table 3.1.3. Red snapper recreational landings vs. allocation/quota and days open, bag limit, and minimum size limits 1986-2013. Landings are in mp ww. Minimum size limits are in inches total length. Recreational allocations began in 1991, and became quotas in 1997.

Year	Allocation/ Quota	Actual landings	Difference	% over or under	Days open	Bag limit	Minimum size limit
1986	na	3.491	na		365	none	13
1987	na	2.090	na		365	none	13
1988	na	3.139	na		365	none	13
1989	na	2.940	na		365	none	13
1990	na	1.625	na		365	7	13
1991	1.96	2.917	+0.957	+49%	365	7	13
1992	1.96	4.618	+2.658	+136%	365	7	13
1993	2.94	7.161	+4.221	+144%	365	7	13
1994	2.94	6.076	+3.136	+107%	365	7	14
1995	2.94	5.464	+2.524	+86%	365	5	15
1996	4.47	5.339	+0.869	+19%	365	5	15
1997	4.47	6.804	+2.334	+52%	330	5	15
1998	4.47	4.854	+0.384	+9%	272	4	15
1999	4.47	4.972	+0.502	+11%	240	4	15
2000	4.47	4.750	+0.280	+6%	194	4	16
2001	4.47	5.252	+0.782	+17%	194	4	16
2002	4.47	6.535	+2.065	+46%	194	4	16
2003	4.47	6.105	+1.635	+37%	194	4	16
2004	4.47	6.460	+1.990	+45%	194	4	16
2005	4.47	4.676	+0.206	+5%	194	4	16
2006	4.47	4.131	-0.339	-8%	194	2	16
2007	3.185	5.809	+2.624	+82%	194	2	16
2008	2.45	4.056	+1.606	+66%	65	2	16
2009	2.45	5.597	+3.147	+128%	75	2	16
2010	3.403	2.651	-0.752	-22%	53 + 24 = 77	2	16
2011	3.866	6.734	+2.868	+74%	48	2	16
2012	3.959	7.524	+3.565	+90%	46	2	16
2013	5.390	9.639	+4.249	+79%	42	2	16

Sources: Southeast Fisheries Science Center including landings from the Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey (May 2013). Values highlighted in red are those where landings exceeded quotas.

During the six years when the recreational harvest was an allocation, not a quota (1991 – 1996), actual recreational harvests in pounds of red snapper exceeded the allocation every year except

1996. During the period when the recreational harvest was managed as a quota (1997 – 2012), actual recreational harvest in pounds of red snapper exceeded the quota in 9 out of 16 years, including 5 of the last 6 years (Table 3.1.3). It should also be noted that overages have been quite substantial when they occur (often 30% or greater than the quota) while underages are generally minor (often 12% or less of the quota). Historical recreational landings estimates have recently been revised to reflect changes in methodology under the Marine Recreational Information Program (MRIP).

For-hire vessels have operated under a limited access system with respect to the issuance of new for-hire permits for fishing reef fish or coastal migratory pelagics since 2003. A total of 3,340 reef fish and coastal migratory pelagic charter permits were issued under the moratorium, and they are associated with 1,779 vessels. Of these vessels, 1,561 have both reef fish and coastal migratory pelagics permits, 64 have only reef fish permits, and 154 have only coastal migratory pelagics permits.

Savolainen et al (2012) surveyed the charter and headboat fleets in the Gulf. They found that most charter boat trips occurred in the exclusive economic zone (68%) and targeted rig-reef species (64%; snappers and groupers). Pelagic (mackerel and cobia) trips accounted for 19% of trips. If examined by state, more trips targeted rig-reef species with the exception of Louisiana where rig-reef species and pelagic species had almost the same proportion of trips. In a similar survey conducted in 1998, Holland et al. (1999) found species targeted by Florida charter boat operators were king mackerel (41%), grouper (~37%), snapper (~34%), cobia (25%), and Spanish mackerel (20%). For the rest of the Gulf, Sutton et al. (1999) using the same survey reported that the majority of charter boats targeted snapper (91%), king mackerel (89%), cobia (76%), and tuna (55%).

For headboats, Savolainen et al (2012) reported that most head boats target offshore species and fish in federal waters (81% of trips), largely due to vessel size and consumer demand. On average, 84% of trips targeted rig-reef species, while only 10 % targeted inshore species and 6% pelagic species. Holland et al. (1999) reported approximately 40% of headboats did not target any particular species. The species targeted by the largest proportion of Gulf coast Florida headboats were snapper (60%), grouper (60%) and sharks (20%) with species receiving the largest percentage of effort red grouper (46%), gag 33%), black grouper (20%), and red snapper (7%). For the other Gulf States, Sutton et al. (1999) reported that the majority of headboats targeted snapper (100%), king mackerel (85%), shark (65%), tuna (55%), and amberjack (50%). The species receiving the largest percentage of total effort by headboats in the four-state area were snapper (70%), king mackerel (12%), amberjack (5%), and shark (5%).

Commercial Sector

In the Gulf, red snapper are primarily harvested commercially with hook-and-line and bandit gear, with bandit gear being more prevalent. Longline gear captures a small percentage of total landings (generally < 5%; SEDAR 31 2013). Current regulations prohibit longline gear for the harvest of reef fish inside of 50 fathoms west of Cape San Blas. East of Cape San Blas, longline gear is prohibited for harvest of reef fish inside of 20 fathoms from September through May.

From June through August, the longline boundary is shifted out to 35 fathoms to protect foraging sea turtles.

Between 1990 and 2006, the principal method of managing the commercial sector for red snapper was with quotas set at 51% of TAC and seasonal closures after each year's quota was filled. The result was a race for fish in which fishermen were compelled to fish as quickly as possible to maximize their catch of the overall quota before the season was closed. The fishing year was characterized by short periods of intense fishing activity with large quantities of red snapper landed during the open seasons. The result was short seasons and frequent quota overruns (Table 3.1.4). From 1993 through 2006, trip limits, limited access endorsements, split seasons and partial monthly season openings were implemented in an effort to slow the race for fish. At the beginning of the 1993 season, 131 boats qualified for red snapper endorsements on their reef fish permits that entitled them to land 2,000 lbs of red snapper per trip.

In 2007, an IFQ program was implemented for the commercial red snapper sector. Each vessel that qualified for the program was issued shares of the commercial quota. The amount of shares was based on historical participation. At the beginning of each year, each shareholder is issued allocation in pounds based on the amount of shares they have. Each shareholder is then allowed to harvest or their allocation to other fishermen, or purchase allocation from other fishermen. In addition, shares can be bought and sold. As a result of this program, the commercial red snapper season has not closed since 2007, but a commercial vessel cannot land red snapper unless it has sufficient allocation in its vessel account to cover the landing poundage. Thus, the IFQ program has ended quota overruns (Table 3.1.4). Recently, a 5-year review of the IFQ program was completed (GMFMC 2013b) and the Council is working to determine if changes are needed to the program.

Table 3.1.4. Commercial red snapper harvest vs. days open, by sector, 1986-2012.

Year	Quota	Actual landings	Days Open (days that open or close at noon are counted as half-days) (“+” = split season)
1986	na	3.700	365
1987	na	3.069	365
1988	na	3.960	365
1989	na	3.098	365
1990	3.1	2.650	365
1991	2.04	2.213	235
1992	2.04	3.106	52½ + 42 = 94½
1993	3.06	3.374	94
1994	3.06	3.222	77
1995	3.06	2.934	50 + 1½ = 51½
1996	4.65	4.313	64 + 22 = 86
1997	4.65	4.810	53 + 18 = 71
1998	4.65	4.680	39 + 28 = 67
1999	4.65	4.876	42 + 22 = 64
2000	4.65	4.837	34 + 25 = 59
2001	4.65	4.625	50 + 20 = 70
2002	4.65	4.779	57 + 24 = 81
2003	4.65	4.409	60 + 24 = 84
2004	4.65	4.651	63 + 32 = 95
2005	4.65	4.096	72 + 48 = 120
2006	4.65	4.649	72 + 43 = 115
2007	3.315	3.183	IFQ
2008	2.55	2.484	IFQ
2009	2.55	2.484	IFQ
2010	3.542	3.392	IFQ
2011	3.664	3.594	IFQ
2012	4.121	4.036	IFQ

Sources: Southeast Data Assessment and Review 31 Data Workshop Report (1990-2011 landings), commercial quotas/catch allowances report from National Marine Fisheries Service/Southeast Regional Office Individual Fishing Quota landings website (2012 landings): <http://sero.nmfs.noaa.gov/sf/ifq/CommercialQuotasCatchAllowanceTable.pdf>.

Commercial quotas/landings in gutted weight were multiplied by 1.11 to convert to ww. Values highlighted in red are those where landings exceeded quotas.

3.2 Description of the Physical Environment

The Gulf has a total area of approximately 600,000 square miles (1.5 million km²), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel (Figure 3.2.1). Oceanographic conditions are affected by the Loop Current, discharge of freshwater into the

northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf. The Gulf includes both temperate and tropical waters (McEachran and Fechhelm 2005). Gulf water temperatures range from 54° F to 84° F (12° C to 29° C) depending on time of year and depth of water. Mean annual sea surface temperatures ranged from 73 ° F through 83° F (23-28° C) including bays and bayous (Figure 3.2.1) between 1982 and 2009, according to satellite-derived measurements (NODC 2012: <http://accession.nodc.noaa.gov/0072888>). In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

The physical environment for Gulf reef fish, including red snapper, is also detailed in the EIS for the Generic EFH Amendment and the Generic ACL/AM Amendment (refer to GMFMC 2004a; GMFMC 2011a). In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. A planktonic larval stage lives in the water column and feeds on zooplankton and phytoplankton (GMFMC 2004a). Juvenile and adult reef fish are typically demersal and usually associated with bottom topographies on the continental shelf (<100m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. For example, juvenile red snapper are common on mud bottoms in the northern Gulf, particularly off Texas through Alabama. Also, some juvenile snapper (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and grouper (e.g. Goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems.

In the Gulf, fish habitat for adult red snapper consists of submarine gullies and depressions; coral reefs, rock outcroppings, and gravel bottoms; oilrigs; and other artificial structures (GMFMC 2004a). Detailed information pertaining to the closures and preserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010).

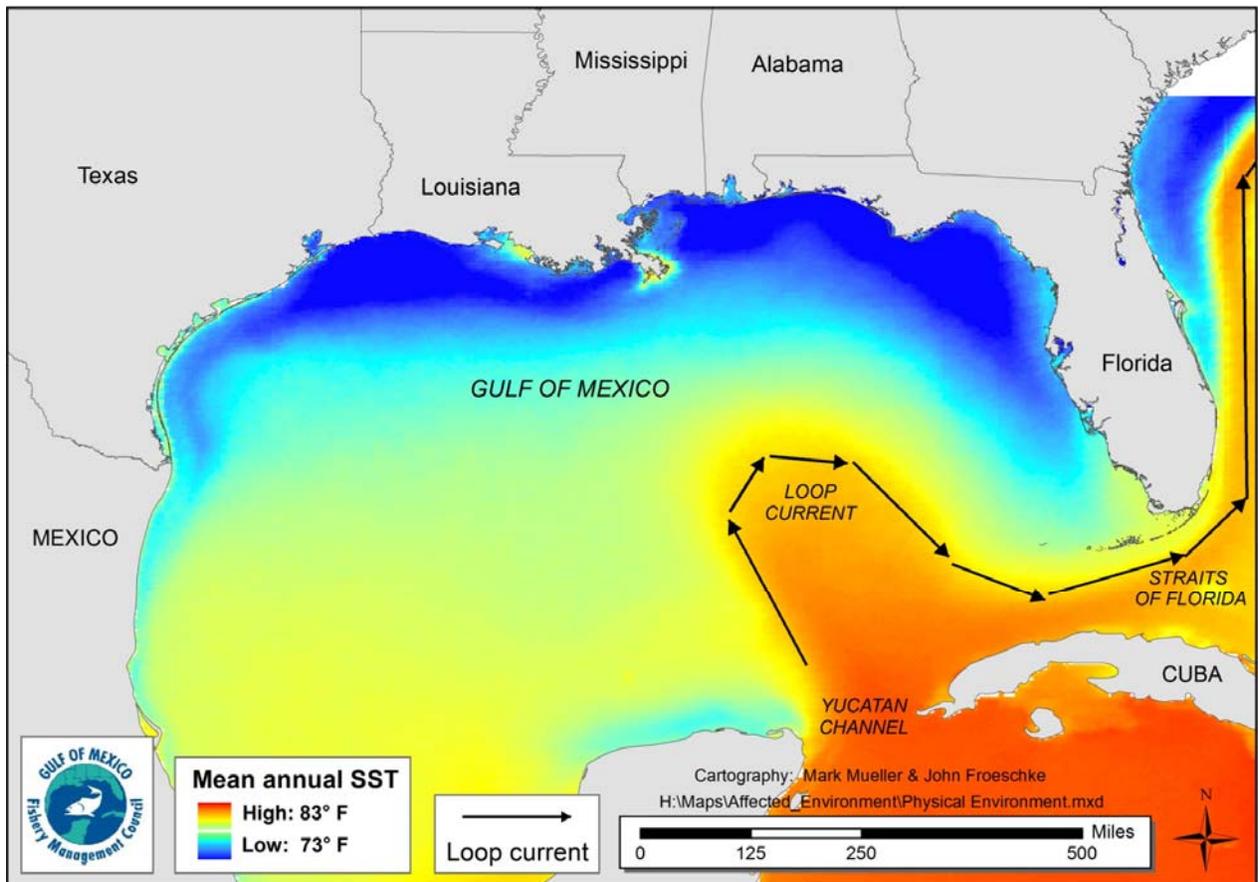


Figure 3.2.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (<http://accession.nodc.noaa.gov/0072888>)

3.3 Description of the Biological Environment

The biological environment of the Gulf, including the species addressed in this amendment, is described in detail in the final EIS for the Generic EFH Amendment (GMFMC 2004a) and is incorporated here by reference.

Red Snapper Life History and Biology

Red snapper demonstrate the typical reef fish life history pattern (Appendix C). Eggs and larvae are pelagic while juveniles are found associated with bottom features or over barren bottom. Spawning occurs over firm sand bottom with little relief away from reefs during the summer and fall. Most females are mature by age two and almost all are mature by age 5 (Woods et al. 2003). Red snapper have been aged up to 57 years (Wilson and Nieland 2001). In the late 1990s, most caught by the directed fishery were 2- to 4-years old (Wilson and Nieland 2001), but a recently completed stock assessment suggests that the age and size of red snapper in the directed fishery has increased in recent years (SEDAR 31 2013). A more complete description of red snapper life history can be found in the EIS for the Generic EFH Amendment (GMFMC 2004a).

Status of the Red Snapper Stock

Southeast Data Assessment and Review (SEDAR) 31 Benchmark Stock Assessment

Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). The first stock assessment conducted by NMFS in 1986 suggested that the stock was in decline (Parrack and McLellan 1986) and since 1988 (Goodyear 1988) the stock biomass has been in an overfished condition.

The most recent red snapper stock assessment was completed in 2013 (SEDAR 31 2013). The primary assessment model selected for the Gulf red snapper stock evaluation assessment was Stock Synthesis (Methot 2010). Stock Synthesis is an integrated statistical catch-at-age model which is widely used for stock assessments in the United States and throughout the world. Commercial landings data included commercial handline and longline landings from the accumulated landings system from 1964 through 2011. For landings between 1880 and 1963, previously constructed historical landings were used. Total annual landings from the IFQ program for years 2007-2011 were used to reapportion 2007-2011 accumulated landings system data across strata. Recreational landings data included the MRIP/Marine Recreational Fishery Statistics Survey (MRFSS) from 1981-2011, Southeast Headboat Survey for 1981-2011, and Texas Parks and Wildlife Department survey for 1983-2011. For the years 2004-2011, MRIP landings are available. For earlier years, MRFSS data were calibrated to MRIP estimates using a standardized approach for calculating average weight that accounts for species, region, year, state, mode, wave, and area.

Standardized indices of relative abundance from both fishery dependent and independent data sources were included in the model. The fishery dependent indices came from the commercial

handline fleet, recreational headboats, and recreational private/for-hire sectors. Fishery independent indices came from the Southeast Area Monitoring and Assessment Program (SEAMAP) bottom trawl survey, SEAMAP reef fish video survey, NMFS bottom longline survey, and the SEAMAP plankton survey.

Red snapper discards in the Gulf were calculated from data collected by the self-reported commercial logbook data and the NMFS Gulf reef fish observer program. In addition to these directed fisheries discards, estimates of red snapper bycatch from the commercial shrimp fleet were also generated.

The results of the SEDAR 31 assessment, including an assessment addendum that was prepared after a review of the SEDAR Assessment Panel Report by the SEDAR Review Panel, was presented to the SSC in May 2013. Under the base model, it was estimated that the red snapper stock has been overfished since the 1960s.

The stock status as of 2011, as estimated relative to SSC's preferred proxy of $F_{SPR26\%}$ (i.e., the fishing mortality rate that would produce an equilibrium spawning potential ratio (SPR) of 26%) was found to be still overfished, but not undergoing overfishing (GMFMC 2013a). Based on an evaluation to the Tier 1 P* spreadsheet used for the ABC control rule, the SSC determined that the P* (probability of overfishing) should equal 0.427. This P* is applied to a probability density function (PDF) to determine an ABC that takes into account scientific uncertainty in the setting of the overfishing limit (OFL). In order to capture more of the scientific uncertainty, the SSC decided to use a weighted average of PDFs constructed for the base model (50% weighting), a high natural mortality model that assumed a higher natural mortality rate for age-0 and age-1 red snapper (25% weighting), and a lower M model that assumed a lower natural mortality rate for age-0 and age-1 red snapper (25% weighting). These model runs were selected because they bracket the range of plausible results obtained from the base run and 15 alternative state model runs. Based on the results of the $P^* = 0.427$ applied to the weighted average PDF, the SSC set the following ABCs: 13.5 mp ww in 2013; 11.9 mp in 2014; 10.6 mp in 2015. A red snapper update assessment scheduled for 2014 is expected to re-evaluate the ABC for 2015 and beyond.

Definition of Overfishing

In January 2012, the Generic ACL/AM Amendment (GMFMC 2011a) became effective. One of the provisions in this amendment was to redefine overfishing. In years when there is a stock assessment, overfishing is defined as the fishing mortality rate exceeding the maximum fishing mortality threshold. In years when there is no stock assessment, overfishing is defined as the catch exceeding the OFL. Even though the recreational harvest exceeded its quota in 2012, the total catch (recreational and commercial combined) remained below the OFL. Therefore, as of 2012, overfishing is no longer occurring in the red snapper stock. Note that, because the overfishing threshold is now re-evaluated each year instead of only in years when there is a stock assessment, this status could change on a year-to-year basis.

General Information on Reef Fish Species

The National Ocean Service collaborated with NMFS and the Council to develop distributions of reef fish (and other species) in the Gulf (SEA 1998). The National Ocean Service obtained fishery-independent data sets for the Gulf, including SEAMAP, and state trawl surveys. Data from the Estuarine Living Marine Resources Program contain information on the relative abundance of specific species (highly abundant, abundant, common, rare, not found, and no data) for a series of estuaries, by five life stages (adult, spawning, egg, larvae, and juvenile) and month for five seasonal salinity zones (0-0.5, 0.5-5, 5-15, 15-25, and >25 parts per thousand). National Ocean Service staff analyzed these data to determine relative abundance of the mapped species by estuary, salinity zone, and month. For some species not in the Estuarine Living Marine Resources Program database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

In general, reef fish are widely distributed in the Gulf, occupying both pelagic and benthic habitats during their life cycle. Habitat types and life history stages are summarized in Appendix C and can be found in more detail in GMFMC (2004a). In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation. Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf (<328 feet; <100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are found over sand and soft-bottom substrates. Juvenile red snapper are common on mud bottoms in the northern Gulf, particularly from Texas to Alabama. Also, some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath grouper, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981). More detail on hard bottom substrate and coral can be found in the Fishery Management Plan (FMP) for Corals and Coral Reefs (GMFMC and SAFMC 1982).

Status of Reef Fish Stocks

The Reef Fish FMP currently encompasses 31 species (Table 3.3.2). Eleven other species were removed from the FMP in 2012 through the Generic ACL/AM Amendment (GMFMC 2011a). Stock assessments and stock assessment reviews have been conducted for 13 species and can be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) websites. The assessed species are:

- Red Snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013)
- Vermilion Snapper (Porch and Cass-Calay 2001; SEDAR 9 2006c; SEDAR 9 Update 2011a)
- Yellowtail Snapper (Muller et al. 2003; SEDAR 3 2003; O’Hop et al. 2012)
- Mutton Snapper (SEDAR 15A 2008)
- Gray Triggerfish (Valle et al. 2001; SEDAR 9 2006a; SEDAR 9 Update 2011b)
- Greater Amberjack (Turner et al. 2000; SEDAR 9 2006b; SEDAR 9 Update 2010)
- Hogfish (Ault et al. 2003; SEDAR 6 2004b)
- Red Grouper (NMFS 2002; SEDAR 12 2007; SEDAR 12 Update 2009)
- Gag (Turner et al. 2001; SEDAR 10 2006; SEDAR 10 Update 2009)
- Black Grouper (SEDAR 19 2010)
- Yellowedge Grouper (Cass-Calay and Bahnick 2002; SEDAR 22 2011b)
- Tilefish (Golden) (SEDAR 22 2011a)
- Atlantic Goliath Grouper (Porch et al. 2003; SEDAR 6 2004a; SEDAR 23 2011)

The NMFS Office of Sustainable Fisheries updates its Status of U.S. Fisheries Report to Congress on a quarterly basis utilizing the most current stock assessment information. The most recent update can be found at: <http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>. The status of both assessed and unassessed stocks as of the writing of this report is shown in Table 3.3.1.

Table 3.3.1. Species of the Reef Fish FMP grouped by family.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
Gray Triggerfish	<i>Balistes capriscus</i>	Overfished, no overfishing
Family Carangidae – Jacks		
Greater Amberjack	<i>Seriola dumerili</i>	Overfished, no overfishing
Lesser Amberjack	<i>Seriola fasciata</i>	Unknown
Almaco Jack	<i>Seriola rivoliana</i>	Unknown
Banded Rudderfish	<i>Seriola zonata</i>	Unknown
Family Labridae - Wrasses		
Hogfish	<i>Lachnolaimus maximus</i>	Unknown
Family Malacanthidae - Tilefishes		
Tilefish (Golden)	<i>Lopholatilus chamaeleonticeps</i>	Not overfished, no overfishing
Blueline Tilefish	<i>Caulolatilus microps</i>	Unknown
Goldface Tilefish	<i>Caulolatilus chrysops</i>	Unknown
Family Serranidae - Groupers		
Gag	<i>Mycteroperca microlepis</i>	Overfished, no overfishing
Red Grouper	<i>Epinephelus morio</i>	Not overfished, no overfishing
Scamp	<i>Mycteroperca phenax</i>	Unknown
Black Grouper	<i>Mycteroperca bonaci</i>	Not overfished, no overfishing
Yellowedge Grouper	* <i>Hyporthodus flavolimbatus</i>	Not overfished, no overfishing
Snowy Grouper	* <i>Hyporthodus niveatus</i>	Unknown
Speckled Hind	<i>Epinephelus drummondhayi</i>	Unknown
Yellowmouth Grouper	<i>Mycteroperca interstitialis</i>	Unknown
Yellowfin Grouper	<i>Mycteroperca venenosa</i>	Unknown
Warsaw Grouper	* <i>Hyporthodus nigritus</i>	Unknown
**Atlantic Goliath Grouper	<i>Epinephelus itajara</i>	Unknown
Family Lutjanidae - Snappers		
Queen Snapper	<i>Etelis oculatus</i>	Unknown
Mutton Snapper	<i>Lutjanus analis</i>	Not overfished, no overfishing
Blackfin Snapper	<i>Lutjanus buccanella</i>	Unknown
Red Snapper	<i>Lutjanus campechanus</i>	Overfished, no overfishing
Cubera Snapper	<i>Lutjanus cyanopterus</i>	Unknown
Gray Snapper	<i>Lutjanus griseus</i>	Unknown
Lane Snapper	<i>Lutjanus synagris</i>	Unknown
Silk Snapper	<i>Lutjanus vivanus</i>	Unknown
Yellowtail Snapper	<i>Ocyurus chrysurus</i>	Not overfished, no overfishing
Vermilion Snapper	<i>Rhomboplites aurorubens</i>	Not overfished, no overfishing
Wenchman	<i>Pristipomoides aquilonaris</i>	Unknown

Notes: * In 2013 the genus for yellowedge grouper, snowy grouper, and warsaw grouper was changed by the American Fisheries Society from *Epinephelus* to *Hyporthodus* (American Fisheries Society 2013).

**Atlantic goliath grouper is a protected grouper and benchmarks do not reflect appropriate stock dynamics. In 2013 the common name was changed from goliath grouper to Atlantic goliath grouper by the American Fisheries Society to differentiate from the Pacific goliath grouper, a newly named species (American Fisheries Society 2013).

Protected Species

There are 38 species protected by federal law that may occur in the Gulf. Thirty-seven of these are under the jurisdiction of NMFS, while the West Indian manatee (*Trichechus manatus*) is managed by the U.S. Fish and Wildlife Service. Of the species under NMFS's jurisdiction, 28 are marine mammals that are protected under the Marine Mammal Protection Act. Six of these marine mammal species are also listed as endangered under the Endangered Species Act (ESA) (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales). In addition to those six marine mammals, five sea turtle species (Kemp's ridley, loggerhead, green, leatherback, and hawksbill), two fish species (Gulf sturgeon and smalltooth sawfish), and two coral species (elkhorn coral and staghorn coral) are also protected under the ESA. Designated critical habitat for *Acropora* corals, smalltooth sawfish, and Gulf sturgeon also occur within nearshore waters of the Gulf. Further, designated critical habitat for the Northwest Atlantic Distinct Population Segment of loggerhead sea turtles has been proposed for some nearshore waters of the Gulf. Information on the distribution, biology, and abundance of these protected species in the Gulf is included in the final EIS to the Generic EFH Amendment (GMFMC 2004a) and the February 2005, October 2009, and September 2011 ESA biological opinions on the reef fish fishery (NMFS 2005; NMFS 2009; NMFS 2011a). Marine Mammal Stock Assessment Reports and additional information are also available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/sspecies/>.

The gear used by the Gulf reef fish fishery is classified in the Marine Mammal Protection Act 2014 List of Fisheries as a Category III fishery (79 FR 14418). This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. Dolphins are the only species documented as interacting with these fisheries. Bottlenose dolphins prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery. They are also a common predator around reef fish vessels, feeding on the discards.

All five species of sea turtles are adversely affected by the Gulf reef fish fishery. Incidental captures are relatively infrequent, but occur in all commercial and recreational hook-and-line and longline components of the reef fish fishery. Captured sea turtles can be released alive or can be found dead upon retrieval of the gear as a result of forced submergence. Sea turtles released alive may later succumb to injuries sustained at the time of capture or from exacerbated trauma from fishing hooks or lines that were ingested, entangled, or otherwise still attached when they were released. Sea turtle release gear and handling protocols are required in the commercial and for-hire reef fish fisheries to minimize post-release mortality.

Smalltooth sawfish are also affected by the Gulf reef fish fishery, but to a much lesser extent. Smalltooth sawfish primarily occur in the Gulf off peninsular Florida. Incidental captures in the commercial and recreational hook-and-line components of the reef fish fishery are rare events, with only eight smalltooth sawfish estimated to be incidentally caught annually, and none are expected to result in mortality (NMFS 2005). Fishermen in this fishery are required to follow

smalltooth sawfish safe handling guidelines. The long, toothed rostrum of the smalltooth sawfish causes this species to be particularly vulnerable to entanglement in fishing gear.

On September 30, 2011, the Protected Resources Division released a biological opinion, which concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (NMFS 2011a). An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. The Council addressed measures to reduce take in the reef fish fishery's longline component in Amendment 31 (GMFMC 2009). Other listed species and designated critical habitat in the Gulf were determined not likely to be adversely affected.

On December 7, 2012, NMFS published a proposed rule to list 66 coral species under the ESA and reclassify *Acropora* from threatened to endangered (77 FR 73220). In a memo dated February 13, 2013, NMFS determined the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora* where they are most likely to occur. None of the new information regarding population level concerns would affect those determinations.

Deepwater Horizon MC252 Oil Spill

On April 20, 2010 an explosion occurred on the Deepwater Horizon MC252 oil rig approximately 36 nautical miles (41 statute miles) off the Louisiana coast. Two days later the rig sank. An uncontrolled oil leak from the damaged well continued for 87 days until the well was successfully capped by British Petroleum on July 15, 2010. The Deepwater Horizon MC252 oil spill affected at least one-third of the Gulf area from western Louisiana east to the Florida Panhandle and south to the Campeche Bank in Mexico (Figure 3.3.1).

As reported by the National Oceanic and Atmospheric Administration Office of Response and Restoration (NOAA 2010), the oil from the Deepwater Horizon MC252 spill is relatively high in alkanes, which can readily be used by microorganisms as a food source. As a result, the oil from this spill is likely to biodegrade more readily than crude oil in general. The Deepwater Horizon MC252 oil is also relatively much lower in polyaromatic hydrocarbons. Polyaromatic hydrocarbons are highly toxic chemicals that tend to persist in the environment for long periods of time, especially if the spilled oil penetrates into the substrate on beaches or shorelines. Like all crude oils, MC252 oil contains volatile organic compounds (VOCs) such as benzene, toluene, and xylene. Some VOCs are acutely toxic but because they evaporate readily, they are generally a concern only when oil is fresh.⁷

In addition to the crude oil, 1.4 million gallons of the dispersant, Corexit 9500A[®], was applied to the ocean surface and an additional 770,000 gallons of dispersant was pumped to the mile-deep well head (National Commission 2010). No large-scale applications of dispersants in deep water had been conducted until the Deepwater Horizon MC252 oil spill. Thus, no data exist on the

⁷ Source: http://sero.nmfs.noaa.gov/sf/deepwater_horizon/OilCharacteristics.pdf

environmental fate of dispersants in deep water. However, a study found that, while Corexit 9500A[®] and oil are similar in their toxicity, when Corexit 9500A[®] and oil were mixed in lab tests, toxicity to microscopic rotifers increased up to 52-fold (Rico-Martínez et al. 2013). This suggests that the toxicity of the oil and dispersant combined may be greater than anticipated.

Oil could exacerbate development of the hypoxic “dead” zone in the Gulf as could higher than normal input of water from the Mississippi River drainage. For example, oil on the surface of the water could restrict the normal process of atmospheric oxygen mixing into and replenishing oxygen concentrations in the water column. In addition, microbes in the water that break down oil and dispersant also consume oxygen; this could lead to further oxygen depletion.

Changes in the amount and distribution of fishing effort in the Gulf in response to the oil spill and area closures has required a reanalysis of the number of days needed for the recreational sector to fill its quota in 2010. The continuing but unknown effects of the oil spill on both fishing effort and red snapper abundance are being monitored. Nevertheless, substantial portions of the red snapper population are found in the northwestern and western Gulf (western Louisiana and Texas) and an increasing population of red snapper is developing off the west Florida continental shelf. Thus, spawning by this segment of the stock may not be impacted, which would mitigate the overall impact of a failed spawn by that portion of the stock located in oil-affected areas.

As a result of the Deepwater Horizon MC252 spill, a consultation pursuant to ESA Section 7(a)(2) was reinitiated. As discussed above, on September 30, 2011, the Protected Resources Division released a biological opinion, which after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC252 oil release event in the northern Gulf), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of green, hawksbill, Kemp’s ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011a).

For additional information on the Deepwater Horizon MC252 oil spill and associated closures, see:

http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm.

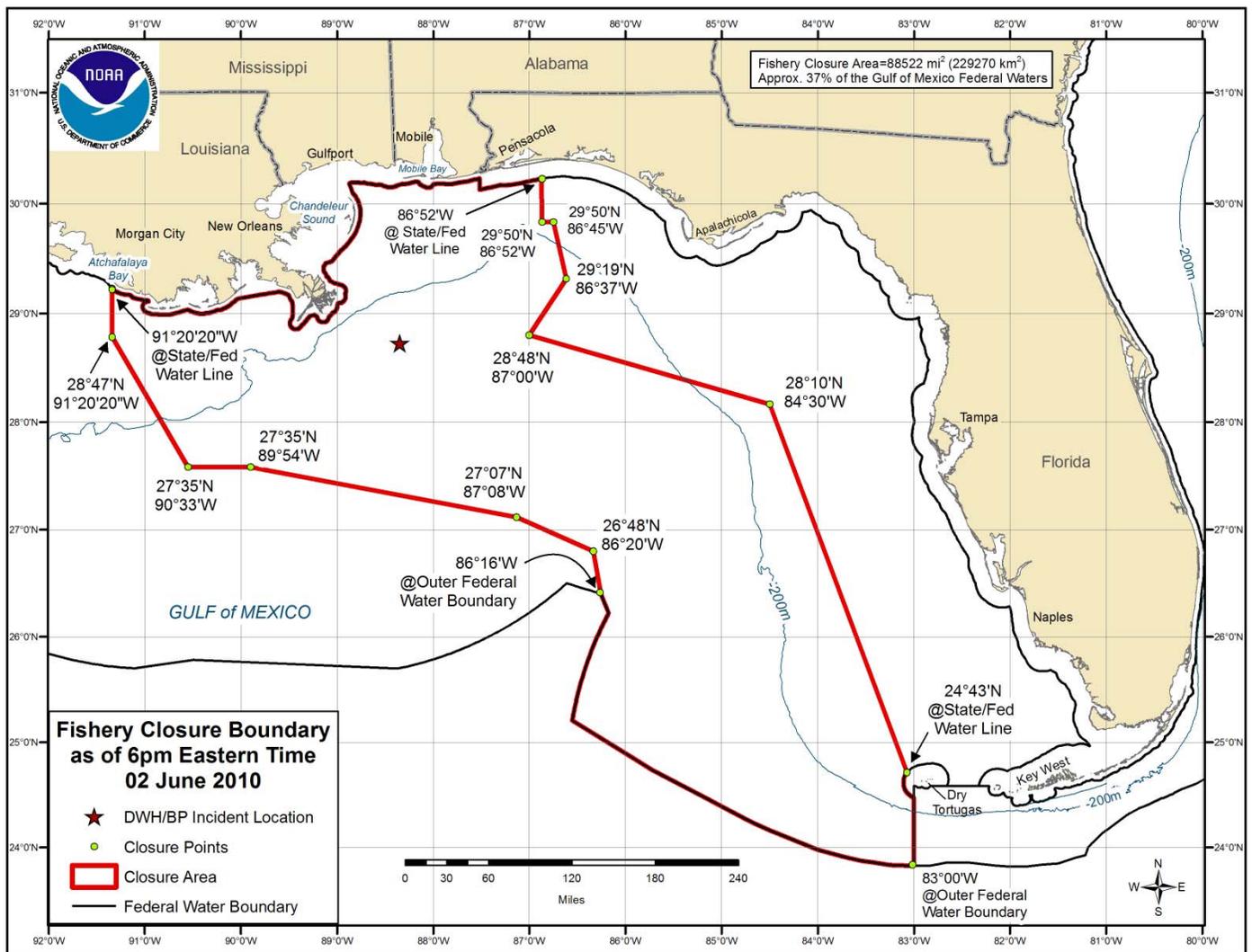


Figure 3.3.1. Fishery closure at the height of the Deepwater Horizon MC252 oil spill.

3.4 Description of the Social Environment

This section provides the conceptual and historical background for the proposed actions which will be evaluated in Chapter 4.

Allocation is a social issue of assigning access to a scarce resource. Reallocation is inherently controversial when the result will benefit some and be detrimental to others. When considering allocations of fishing privileges, the Magnuson-Stevens Act requires fishery managers to examine social and economic factors as laid out in the National Standards. These include National Standard 4 which states if it becomes necessary to allocate fishing privileges among fishermen, the allocation will be fair and equitable, will promote conservation, and be carried out such that no particular entity receives an excessive share; National Standard 5 which states conservation and management measures will consider efficiency in the utilization of fishery resources except that no such measure will have economic allocation as its sole purpose; and National Standard 8 which states that conservation and management measures shall take into account the importance of fishery resources to fishing communities.

NMFS' technical memorandum on the principles and practice of allocation (Plummer et al. 2012) identifies two main criteria for the national standard mandates. Each criterion is based on a conceptual approach from distinct social sciences: economic efficiency and social equity. While a quantitative framework exists for analyzing economic efficiency, there is no such quantitative framework for evaluating fairness and equity (Plummer et al. 2012). This section provides information on the social context for the evaluation of fairness for the two purposes of this action: to increase net benefits and increase the stability of red snapper fishing, particularly for the recreational sector that has experienced shorter and shorter seasons.

Plummer et al.'s (2012) review of approaches to evaluate fairness focuses on critiques of the application of efficiency analyses to policy. Specifically, efficiency is critiqued for the decision to ignore issues of equity by reducing such social concerns to assumptions of "other things being equal" (Dietz and Atkinson 2010, Copes 1997, Bromley 1977), when in fact, they are not. Dietz and Atkinson (2010) argue efficiency and fairness are often presented as a trade-off in environmental policy, but show that "public preferences do not support making efficiency the only goal of policy, at the expense of equity" (2010:440). Bromley (1977) also addresses the tension between requirements that policy consider economic efficiency and social fairness, arguing that allocation fairness in the distribution of fishing rights is just as important as efficiency for making policy decisions. Bromley further critiques efficiency analyses for their lack of attention to distributional effects and questions assumptions that an "efficiency analysis is scientific and value free" (1977).

Copes (1997) echoes Bromley's critique of economic efficiency, repeating the concerns on the use of "other things being equal" in efficiency analyses "to exclude from consideration interdependencies that may be important for their distributional repercussions" (1997:65). While such assumptions simplify the economic analysis, both Copes and Bromley argue that efficiency analyses ignore the social costs that underlie the direct and indirect social impacts (Copes 1997, Bromley 1977, 1990). That other things are *not* equal, precisely reflects those components of the human environment that are at the center of equity considerations. Furthermore, from the social

perspective, willingness-to-pay studies measure ideology of respondents more than actual behavior (Andreoni 1990), undermining any potential net benefits.

A review of the allocation decisions made by regional fishery management councils can provide insight into how allocation decisions have been made elsewhere around the country (Plummer et al. 2012). Nearly all allocation decisions have been based on historical or current landings ratios. Following initial establishment of a sector allocation, seven stocks have undergone a revision to the original allocation; five of these examples are in the Gulf. One, vermilion snapper, had its sector allocation removed entirely.

Of the remaining four examples from the Gulf, Plummer et al. (2012) cite two stocks as having had their allocations shifted in favor of the recreational sector: greater amberjack (Amendment 30A, GMFMC 2008a) and red grouper (Amendment 30B, GMFMC 2008b). Although Plummer et al. describe the respective actions as reallocations, each amendment specifically avoided labeling the action as an allocation. For greater amberjack, the adopted management measures were intended to reduce recreational effort less (by 18-26%) than commercial effort (by 38%). However, the actual allocation decision was moved to the considered but rejected section of the amendment; no reallocation was adopted.

For red grouper, the initial allocation decision in Amendment 1 (GMFMC 1989) set an aggregate grouper allocation at 35% recreational and 65% commercial; no allocations were established for individual grouper species. Secretarial Amendment 1 (GMFMC 2004b) created a commercial red grouper quota, but specifically stated that no allocation decision was being made. The commercial quota represented 81% of the total allowable catch. In Amendment 30B (GMFMC 2008b), an “interim” allocation was established for red grouper at 24% recreational and 76% commercial. Thus, the two actions affected the distribution of access to the resource while avoiding the formal declaration of a sector allocation.

The other two Gulf examples concern species for which management is shared between the Gulf and South Atlantic Councils: king and Spanish mackerel. Since it was first established in 1987, the allocation for the Atlantic stock of Spanish mackerel has been changed twice, once toward the recreational sector and once toward the commercial sector. Initially established at 76% commercial and 24% recreational, the allocation was changed in 1989 to 50%:50%, due to a determination that the allocation was based on a time period of overfishing and low recreational participation. In 1998, the commercial allocation was increased because the recreational sector was not harvesting its quota. The 2% change in the king mackerel allocation towards the commercial sector was an adjustment to account for the sale of recreational catches that counted against the commercial quota. The allocations of both these species are scheduled to be reviewed in Coastal Migratory Pelagics Amendment 24, currently under development.

Finally, the remaining two cases come from the Pacific Fishery Management Council’s management of salmon, Amendments 7 (PFMC 1986) and 9 (PFMC 1988). In contrast to nearly all allocation decisions that have been based on landings ratios, the rationale for these two cases was to provide more stability to the recreational sector. For both stocks, the recreational component is a directed fishery while the commercial component is provided for bycatch. In both examples, the reallocation was based on the recommendations from a working group of

commercial and recreational fishermen and is an example of negotiation-based allocation. Also in this case, the sector allocations shift depending on the size of the quota, similar in design to Alternatives 5 and 6 of Action 1.

Context of red snapper management in the Gulf

Historical patterns of harvest by both sectors is an important consideration for the distributional effects of allocation (Plummer et al. 2012). In the Gulf, the commercial and recreational sectors are managed differently and separately. Allocating between sectors is difficult to determine because the “characteristics, motivations, and output measures for participants differ dramatically” (Gislason 2006).

The existing allocation for red snapper was implemented alongside the establishment of a total allowable catch, and corresponding management measures intended to reduce landings by 20% for each sector (GMFMC 1989). Thus, at the time the allocation was established, there was already great demand for red snapper by both sectors. A minimum size limit of 13” was adopted for both sectors, alongside a recreational bag limit of 7 fish per angler per day, and a commercial quota of 3.1 mp. Since then, both sectors have been subject to additional measures to reduce harvests and effort (Figure 3.4.1) which have been insufficient to restrict harvests before reaching the quota for either sector (Figure 3.4.2).

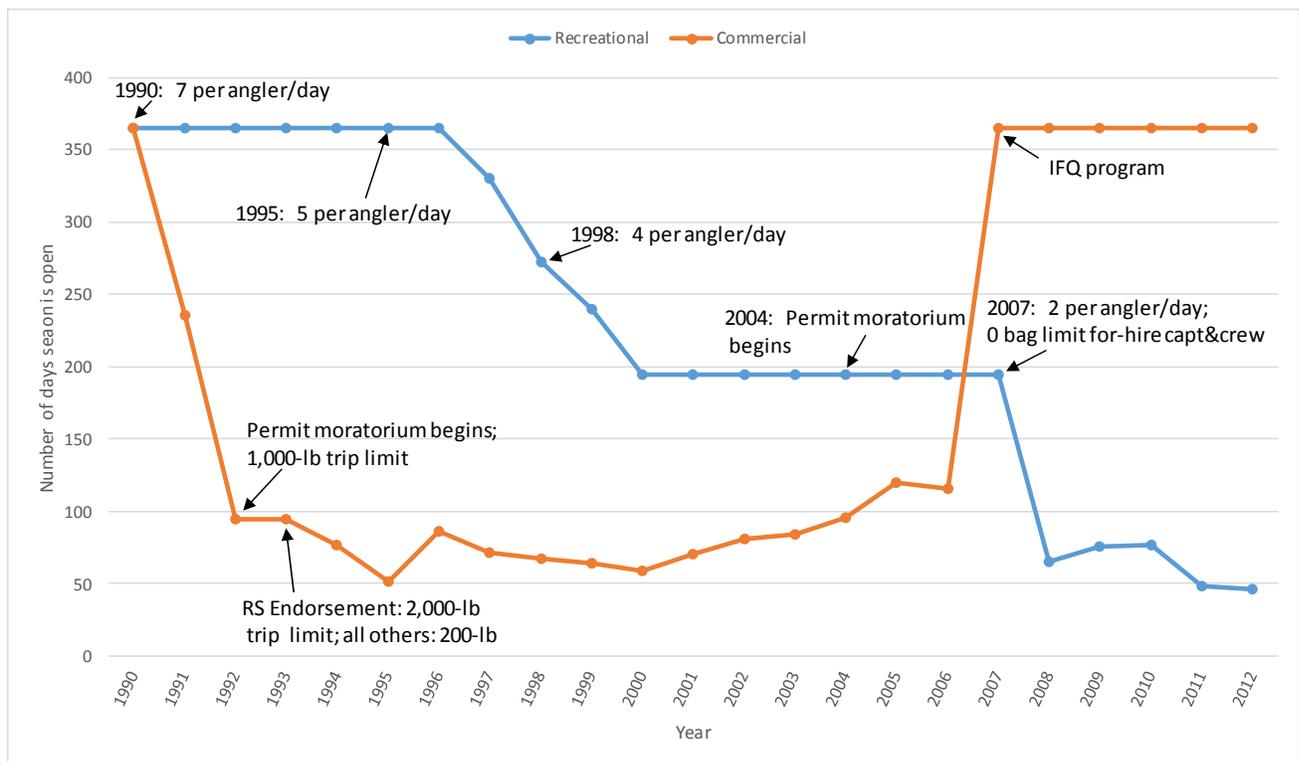


Figure 3.4.1. Length of fishing season for commercial and recreational sectors, with changes in bag limits, trip limits, and implementation dates of limited access regulations. The timeline does not include minimum size limits or additional requirements such as use of a vessel monitoring system.

For the **commercial sector**, the year the allocation was established (1990) was the last year commercial fishing was open year round until implementation of the IFQ program in 2007 (Figure 3.4.1). Entry to the commercial sector was capped in 1992, when the commercial reef fish permit moratorium began. No additional commercial permits have been available since that time, effectively capping sector participation. The following year, the system of red snapper endorsements for commercial permit holders was adopted. A red snapper endorsement allowed the holder a 2,000-lb trip limit, while all other commercial permit holders were allowed a 200-lb trip limit.

Despite the adoption of endorsements and trip limits to constrain harvests, from the early 1990's until implementation of the IFQ program, the commercial fishing seasons were best described as “derbies,” where vessels raced to fish before each harvest closure. During this time, the commercial harvest was usually open only 10 days at a time. The IFQ program was implemented in 2007 to address two identified problems in commercial red snapper fishing: the derby fishing conditions and “overcapacity” in the commercial sector.

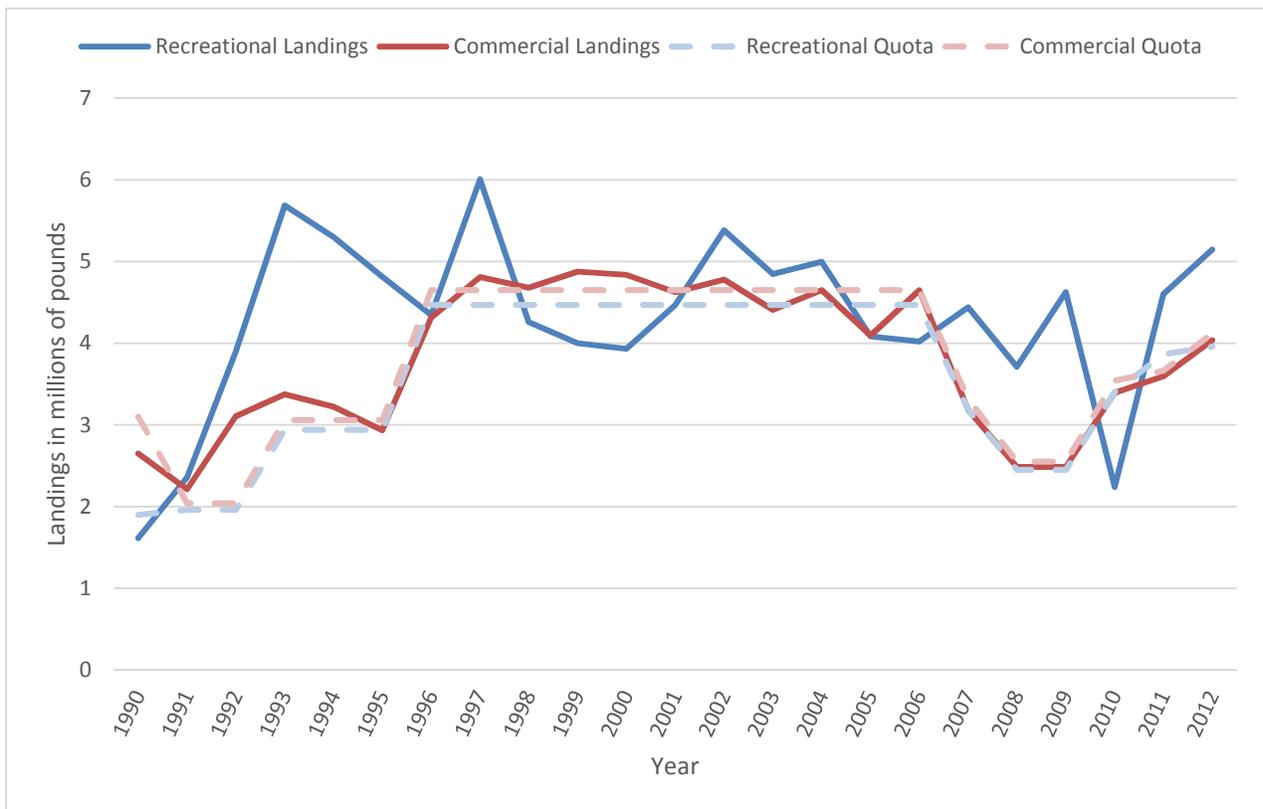


Figure 3.4.2. Recreational and commercial landings (solid lines) and quotas (dotted lines).

The IFQ program fundamentally restructured commercial fishing for red snapper. The opportunity for any permitted commercial vessel to harvest a trip limit of red snapper during a short open season was replaced by a system in which a vessel’s crew must obtain access to a quantity of red snapper prior to being harvested. Thus, the system of attempting to constrain commercial harvest to a quota using trip limits and closed seasons was replaced by a system

based on the distribution and exchange of portions of the red snapper commercial quota. This has effectively eliminated the occurrence of quota overages. From the sector-wide perspective, this has enabled the fishing season to remain open year round and for total landings to remain within the quota. The implementation of the IFQ program has resolved both issues of subtractability and excludability, within the sector. Though these controls appear to have improved the problems they were designed to address, the program has benefited some fishermen and been a detriment to others.

Although the **recreational sector** is often described as “open access,” open entry is more accurate as a true open access resource lacks rules of usage (Feeny et al. 1990). For the recreational sector, harvest constraints are implemented primarily by reductions to the bag limit and shortening of the fishing season. The bag limit has been reduced from seven red snapper per angler per day in 1990 (when the sector allocation was established), to five fish in 1995, four fish in 1998, and two fish in 2007 (Figure 3.4.1). In 1997, the recreational season was shortened for the first time from year round and has been getting shorter ever since. From 2008 through 2012, the recreational season averaged 62 days in length.

The practice in recent years of projecting season length for a given quota based on past effort has not prevented the quota from being exceeded (Figure 3.4.2). Without attending measures to actually stop harvest when the quota is met, a quota does not on its own constitute an output control. There is a disjunction between management measures used to constrain the rate of recreational harvest, and attempts to estimate the rate of harvest under such measures, as anglers modify their fishing activity in response to new access restrictions. Even with additional quota, continuing to rely on existing management measures to slow harvest may allow two problems to continue. First, the harvest coming from the recreational sector will continue to face the problems of “subtractability” and “excludability,” where the resource is open to anyone able to access it during a particular time. Without rules governing who has access to the resource (excludability), the effects of smaller returns are shared among all participants (subtractability; Feeny et al. 1990; McCay and Acheson 1987).

The second problem concerns the quota overages. Alongside the short seasons and lag time to calculate landings from MRIP, quota overages are likely to continue under the system of predicting season length based on past fishing effort. Faced with a shorter season for a desired target species, individual anglers rationally adjust their effort and fishing activity. With no restrictions on entry to the fishery (excludability), new participants join as well. This has resulted in an inverse relationship between season length and effort, where the shorter the length of the recreational fishing season, the more red snapper have been landed per day (Figure 3.4.3). However, it cannot be assumed that the pattern would reverse, where an increase in the length of the season would correspond with a proportional reduction in effort. An increasing proportion of the total recreational quota has been landed outside of the federal season under less restrictive state regulations. Compounding this problem, the average weight of a red snapper has increased under the rebuilding plan meaning that each angler’s bag limit weighs more. Thus, the rate at which the quota is caught accelerates. That recreational anglers as a sector are said to “exceed the quota” is not a reflection of individual angler compliance, but rather, reflects rational changes to fishing activity under situations of decreased access, and the inability of the existing management system to close harvest before the quota is met. Thus, the adoption of

accountability measures to reduce the likelihood of quota overages (Action 2.1) and to make adjustments to the quota in the event it is exceeded (Action 2.2) are included in this plan amendment.

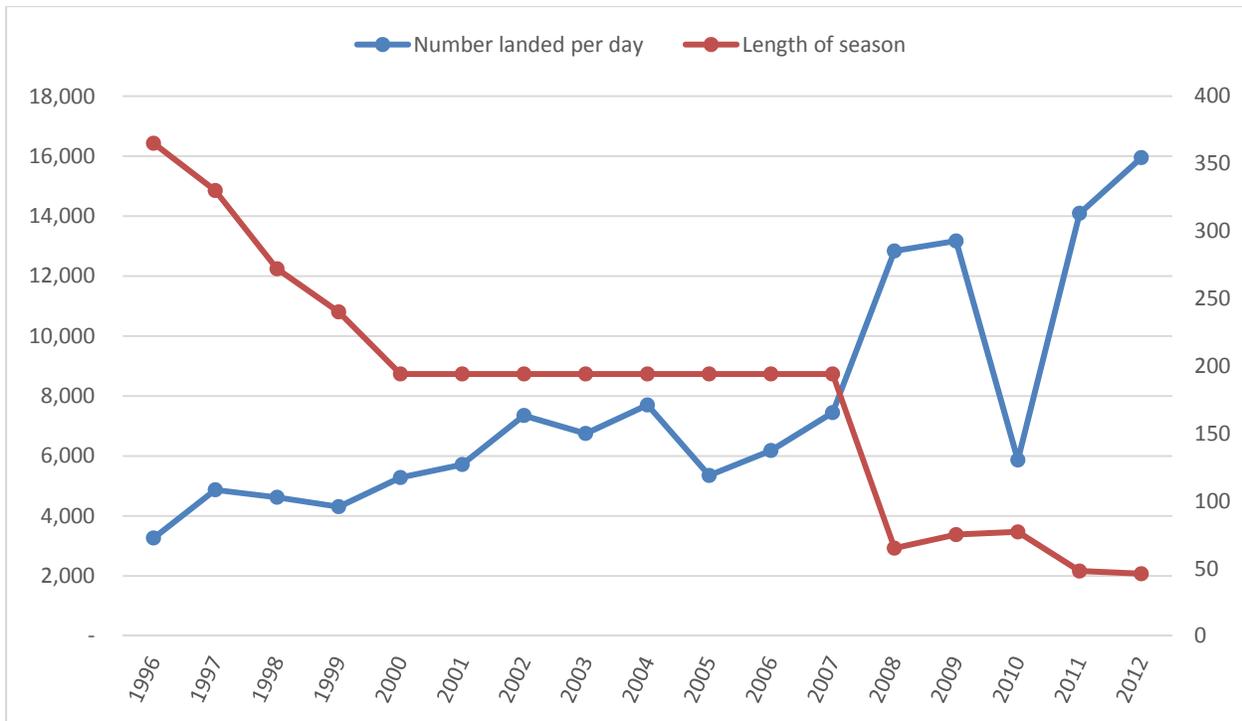


Figure 3.4.3. Length of recreational red snapper season in days (red line, right axis) and landings divided by average weight of fish and number of days in the federal season (blue line, left axis), providing an average number of red snapper landed per day the federal season was open (1996-2012). This includes red snapper landed outside of the federal season under less restrictive state regulations. Source: Southeast Fisheries Science Center, recreational ACL dataset (Sept 2013).

Recreational anglers can access red snapper fishing by private vessels and for-hire vessels. Both modes share the same bag limit and fishing season; however, additional restrictions are placed on the for-hire fleet, to which private vessels are not subject. Since 2007, captain and crew of for-hire vessels have been prohibited from retaining a bag limit, and there are mandatory reporting requirements for headboats to report all landings and discards. In 2004, a moratorium was put in place on the issuance of federal for-hire permits. As with commercial permits, no new federal for-hire permits may be issued, but existing permits may be transferred. There is no mechanism to limit entry by private recreational vessels. Also, since 2009, federally permitted for-hire vessels are prohibited from landing red snapper outside of the federal season, such as during extended state water seasons.

Thus, the issue of excludability described above reflects private recreational vessels only. During the open season, participation is limited to a finite number of for-hire vessels, but there is no restriction to the number of private vessels that may harvest red snapper. Since the permit moratorium became effective, the number of federally permitted for-hire vessels has decreased,

while the number of private fishing licenses has increased. The proportion of red snapper landed by each component of the recreational sector has shifted toward private vessel landings representing a greater proportion of the recreational quota (Figure 3.4.4). For the years 1991-2011, private-angler landings of red snapper represent 45.5% of recreational landings, but represent 56% for just the last 6 years. For-hire vessel landings of red snapper have decreased proportionally for these same years, from 54.5% to 44% of the recreational landings.

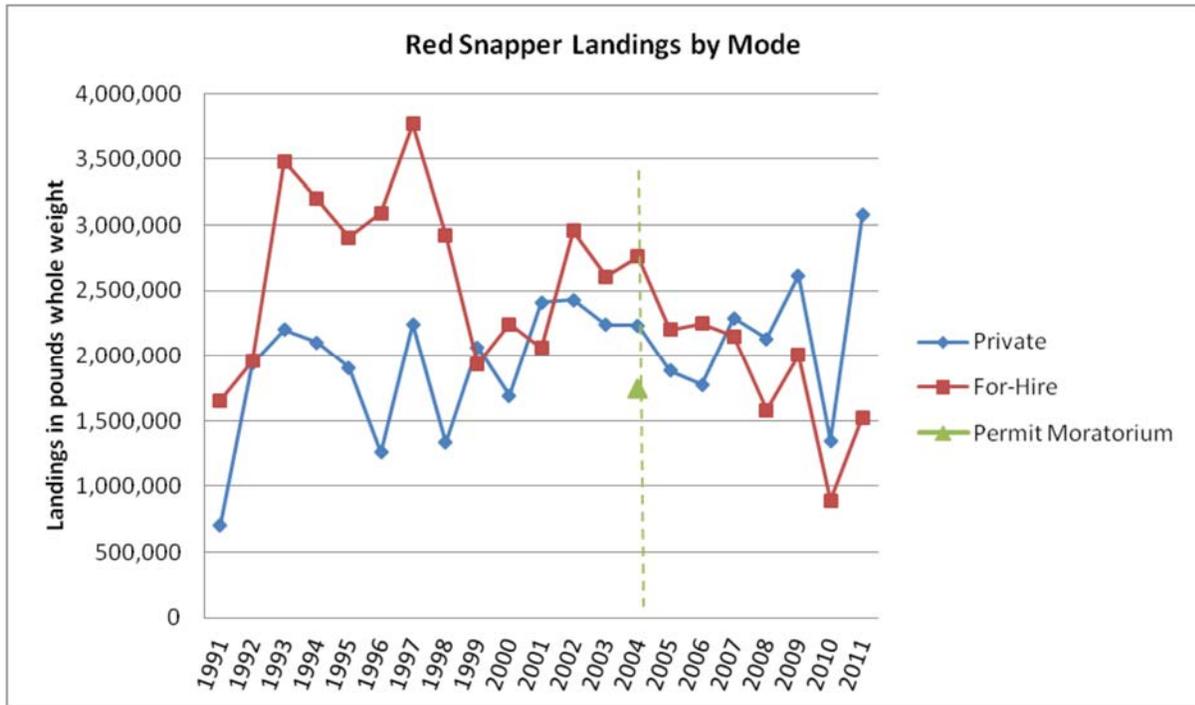


Figure 3.4.4. Red snapper recreational landings by private vessels and for-hire vessels (includes charter boats and headboats). Source: Southeast Fisheries Science Center, recreational ACL dataset (4/2012).

3.4.1 Fishing Communities

This section provides a description of where recreational and commercial fishing for red snapper occurs. The description is based on the geographical distribution of landings and the relative importance of red snapper for commercial and recreational communities. This spatial approach enables discussion of fishing communities and the importance of fishery resources to those communities, as required by National Standard 8.

Commercial Fishing Communities

To identify commercial reliance, a regional quotient (RQ) measure was used. The RQ measures the relative importance of a given species across all communities in the region and represents the proportional distribution of commercial landings of a particular species. This proportional measure does not provide the number of pounds or the value of the catch; data that might be confidential at the community level for many places. The RQ is calculated by dividing the total pounds (or value) of a species landed in a given community, by the total pounds (or value) for

that species for all communities in the region. The measure is a way to quantify the importance of red snapper to communities around the Gulf coast and suggest where impacts from management actions are more likely to be experienced. The data used for the RQ measure were assembled from the accumulated landings system (ALS), which includes commercial landings of all species from both state and federal waters and is based on dealers' reports. Because of this, the address of a dealer may not be the coastal community where the dealer's facility is located.

Commercial red snapper fishing is prosecuted throughout the Gulf region with the majority of landings occurring in the northern Gulf. Based on the RQ measure, the top 15 commercial red snapper fishing communities are identified in Figure 3.4.1.1. A community's proportion of total landings is not static and changes over time. Thus, the figure provides rankings by RQ value for four years: 2000, 2005, 2008, and 2011. The top three communities in terms of commercial landings are Galveston, Texas; Destin, Florida; and Golden Meadow, Louisiana (Figure 3.4.1.1). While in 2000, Panama City, Florida ranked first for commercial red snapper landings Gulf-wide, the community has since been replaced by Destin, Florida in terms of commercial landings of red snapper.

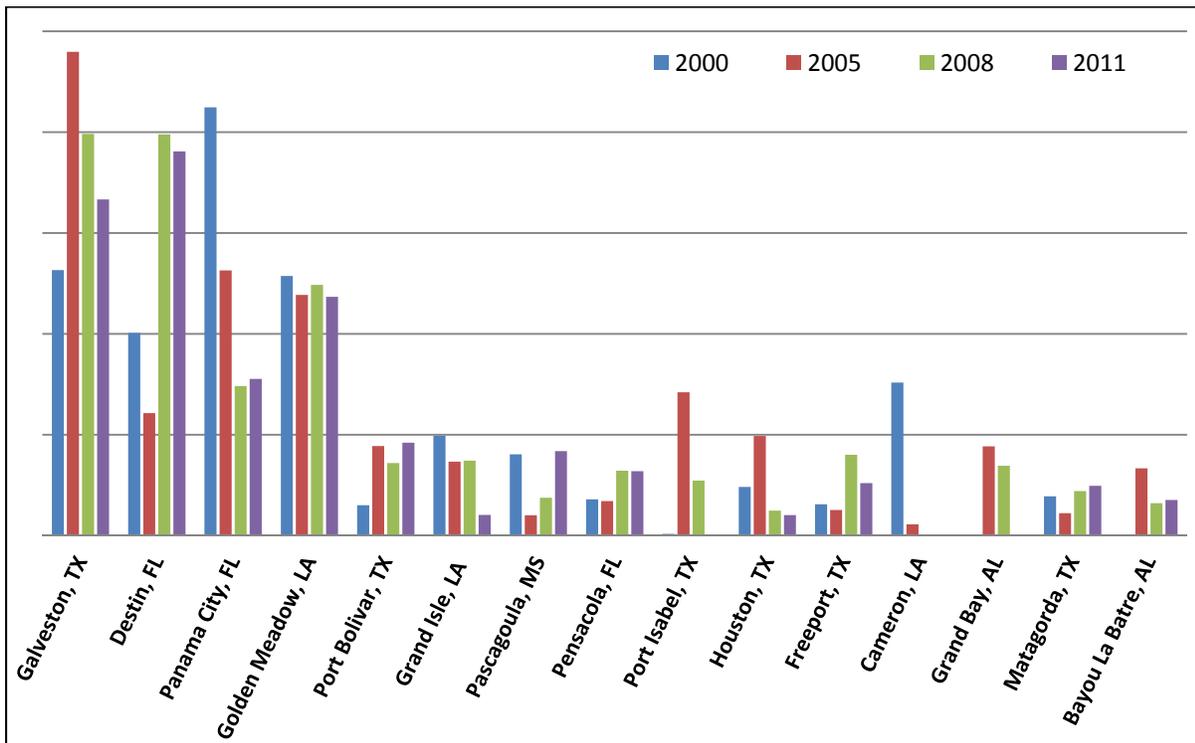


Figure 3.4.1.1. Top 15 commercial red snapper fishing communities by RQ value for four years. Source: Southeast Fisheries Science Center, accumulated landings system (2011).

To better understand how Gulf fishing communities are engaged and reliant on fishing, indices were created using secondary data from permit and landings information for the commercial and recreational sectors (Jepson and Colburn 2013; Jacob et al. 2012). Fishing engagement is primarily the absolute numbers of permits, landings, and value. Fishing reliance has many of the

same variables as engagement divided by population to give an indication of the per capita impact of this activity.

Using a principal component and single solution factor analysis each community receives a factor score for each index to compare to other communities. With the selected communities from both sectors, factor scores of both engagement and reliance were plotted onto bar graphs. Factor scores are denoted by colored bars and are standardized, therefore the mean is zero. Two thresholds of one and ½ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. Because the factor scores are standardized a score above 1 is also above one standard deviation. Using the thresholds of fishing dependence of ½ and one standard deviation, Figure 3.4.1.2 suggests that several communities are substantially engaged or reliant or both on commercial fishing.

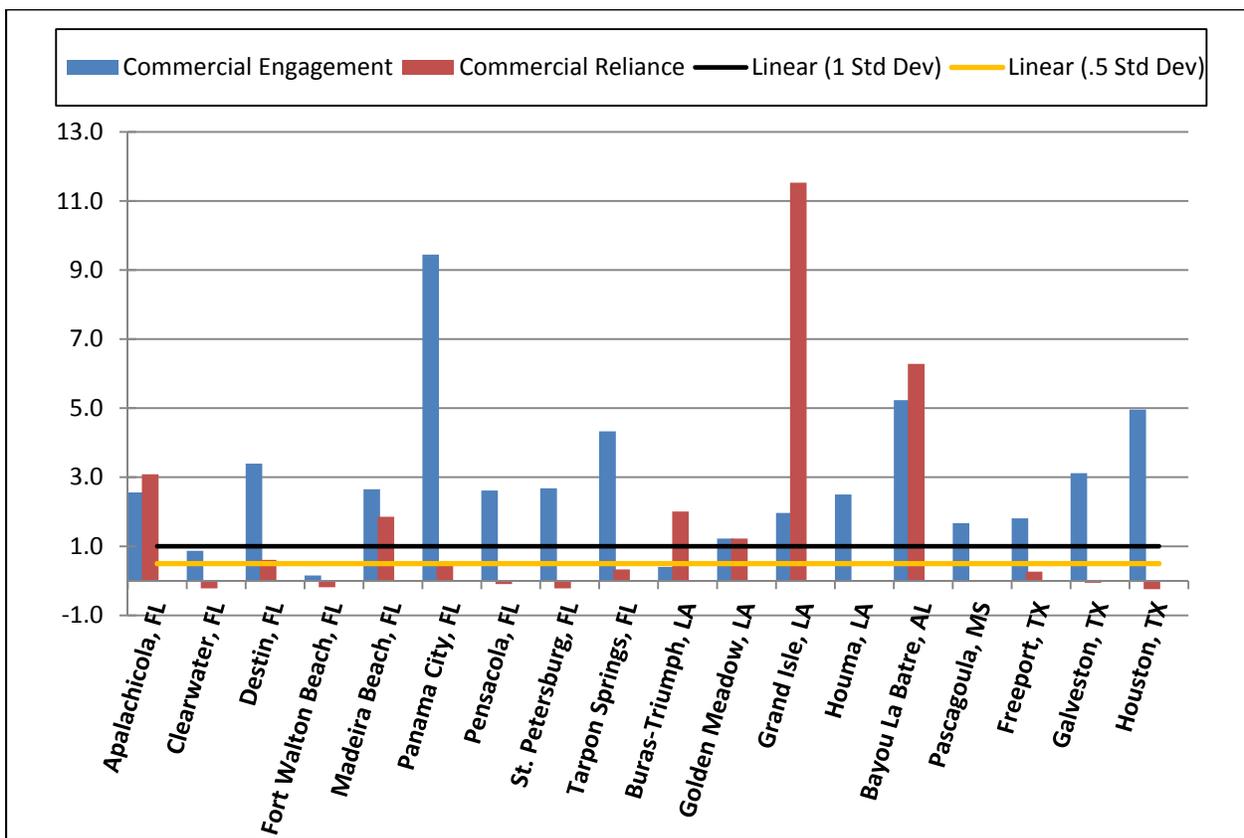


Figure 3.4.1.2. Top 18 red snapper fishing communities’ commercial engagement and reliance. Source: Southeast Regional Office, social indicators database (2012).

Recreational Fishing Communities

Red snapper is harvested recreationally in all states in the Gulf. However, as the red snapper stock has continued to rebuild, the proportion of landings made up by the eastern Gulf States (Alabama and western Florida) has increased compared to the western Gulf States (Texas and Louisiana). Most of the recreational catch is now landed in the eastern Gulf (Table 3.4.1.1). Fishermen in other Gulf States are also involved in recreational red snapper fishing, but these states represent a smaller percentage of the total recreational landings.

Table 3.4.1.1. Percentage of total recreational red snapper landings by state for 2013.

State	Landings
AL	43.9%
FL (Gulf Coast)	40.8%
LA	6.0%
MS	4.5%
TX	4.9%

Source: SERO Calibrated MRIP landings (Dec 2014).

Red snapper landings for the recreational sector are not available at the community level, making it difficult to identify communities as dependent on recreational fishing for red snapper. Data reflecting commercial landings of red snapper may or may not reflect areas of importance for recreational fishing of red snapper. It cannot be assumed that the proportion of commercial red snapper landings among other species in a community would be similar to its proportion among recreational landings within the same community because of sector differences in fishing practices and preferences.

While there are no landings data at the community level for the recreational sector, Table 3.4.1.2 offers a ranking of communities based upon the number of reef fish charter permits and reef fish charter permits divided by population. This is a crude measure of the reliance upon recreational reef fish fishing and is general in nature and not specific to red snapper. Ideally, additional variables quantifying the importance of recreational fishing to a community would be included (such as the amount of recreational landings in a community, availability of recreational fishing related businesses and infrastructure, etc.); however, these data are not available at this time. Because the analysis used discrete geo-political boundaries, Panama City and Panama City Beach had separate values for the associated variables. Calculated independently, each still ranked high enough to appear in the list suggesting a greater importance for recreational fishing in that region. At this time it is impossible to examine the intensity of recreational fishing activity at the community level for a specific species. However, it is likely that those communities that have a higher rank in terms of charter activity and have a dynamic commercial fishery for red snapper will likely have a vigorous recreational red snapper fishery. The communities that meet those criteria are: Destin, Panama City, and Pensacola, Florida; Port Bolivar and Freeport, Texas; and Venice and Grand Isle, Louisiana.

Table 3.4.1.2. Average community rank by total number of reef fish charter permits and divided by community population (SERO 2012).

State	Community	Reef Fish charter permits	Permit Rank	Pop	Permit/Pop	Permit/Pop rank	Combined rank
AL	Orange Beach	105	2	5185	0.0203	3	5
LA	Venice	36	7	202	0.1782	1	8
FL	Destin	114	1	12307	0.0093	10	11
AL	Dauphin Island	19	12	1375	0.0138	5	17
TX	Port Aransas	33	9	3444	0.0096	9	18
LA	Grand Isle	14	17	597	0.0235	2	19
TX	Freeport	40	5	12183	0.0033	15	20
TX	Port O'Connor	15	15	1253	0.0120	7	22
FL	Panama City	60	3	36795	0.0016	20	23
FL	Steinhatchee	13	19	1047	0.0124	6	25
FL	Pensacola	43	4	52903	0.0008	22	26
FL	Panama City Beach	32	10	11364	0.0028	16	26
FL	Apalachicola	17	14	2357	0.0072	12	26
FL	Naples	35	8	20405	0.0017	19	27
LA	Chauvin	15	15	3220	0.0047	13	28
TX	Galveston	38	6	49990	0.0008	23	29
FL	Cedar Key	8	27	463	0.0173	4	31
TX	Matagorda	8	27	710	0.0113	8	35
MS	Biloxi	26	11	43921	0.0006	25	36
FL	Mexico Beach	9	25	1181	0.0076	11	36
FL	Carrabelle	10	23	2612	0.0038	14	37
FL	Sarasota	18	13	52877	0.0003	26	39
FL	Madeira Beach	11	21	4335	0.0025	18	39
FL	Port St Joe	10	23	3560	0.0028	17	40
FL	Tarpon Springs	14	17	23071	0.0006	24	41
FL	St Petersburg	12	20	245715	0.0000	27	47
FL	Treasure Island	8	27	6847	0.0012	21	48
TX	Houston	11	21	2068026	0.0000	29	50
TX	Corpus Christi	9	26	299324	0.0000	28	54

Destin and Panama City are likely more reliant with regard to recreational fishing as they have numerous charter operations. When visiting charter service websites from these two communities photos of red snapper are very prominent and advertised as a key target species (<http://www.fishdestin.com/fishinggallery.html>; and <http://www.jubileefishing.com/>). Panama City is less reliant upon red snapper and located in a more rural area than the other communities. In terms of occupation it has the lowest percentage working in farming, forestry, and fishing, yet it does have the largest percentage class of worker in that category. All of these communities are considered to be primarily involved in fishing based upon their community profiles (Impact Assessment, Inc. 2005).

The Orange Beach Red Snapper World Championship Tournament, billed as “Alabama’s state celebration of recreational saltwater fishing,”⁸ was an annual event in March. Dauphin Island, Alabama also has a number of charter services that specialize in bottom fishing, especially for red snapper⁹. All three Alabama communities are considered primarily involved in fishing as noted in their fishing communities’ profiles (Impact Assessment, Inc. 2006). Red snapper fishing is featured at Pascagoula charter websites¹⁰ and the community is regarded as primarily involved in fishing according to its community profile (Impact Assessment, Inc. 2006).

Venice and Grand Isle, Louisiana, are also ranked among the top recreational fishing communities. A sampling of charter service websites from these communities indicates they do feature red snapper as a target species but not as prominently as charter services from other states.

Red snapper are also an important species for charter fishing in Galveston and Freeport, Texas. Many of the charter services include photos of red snapper catches on their website and note that this species is one of their prime target species.¹¹ Although many inshore species like trout and redfish are more prominently displayed. Matagorda and Freeport are noted as being primarily involved in fishing while Galveston is secondarily involved.

The following figure was produced from the indicator database as described above for the commercial sector. Figure 3.4.1.4 identifies recreational communities engaged and reliant upon fishing in general. Using thresholds of fishing dependence of ½ standard deviation and one standard deviation, Figure 3.4.1.4 suggests that several communities are substantially engaged in recreational fishing.

⁸ http://www.cityoforangebeach.com/pages_2007/pdfs/events/2009/2009_Snapper_Tournament.pdf

⁹ <http://gulfinfo.com/fishing.htm>

¹⁰ <http://www.jkocharters.com/1938863.html>

¹¹ <http://www.texassaltwaterfishingguide.com/> or <http://www.matagordabay.com/>

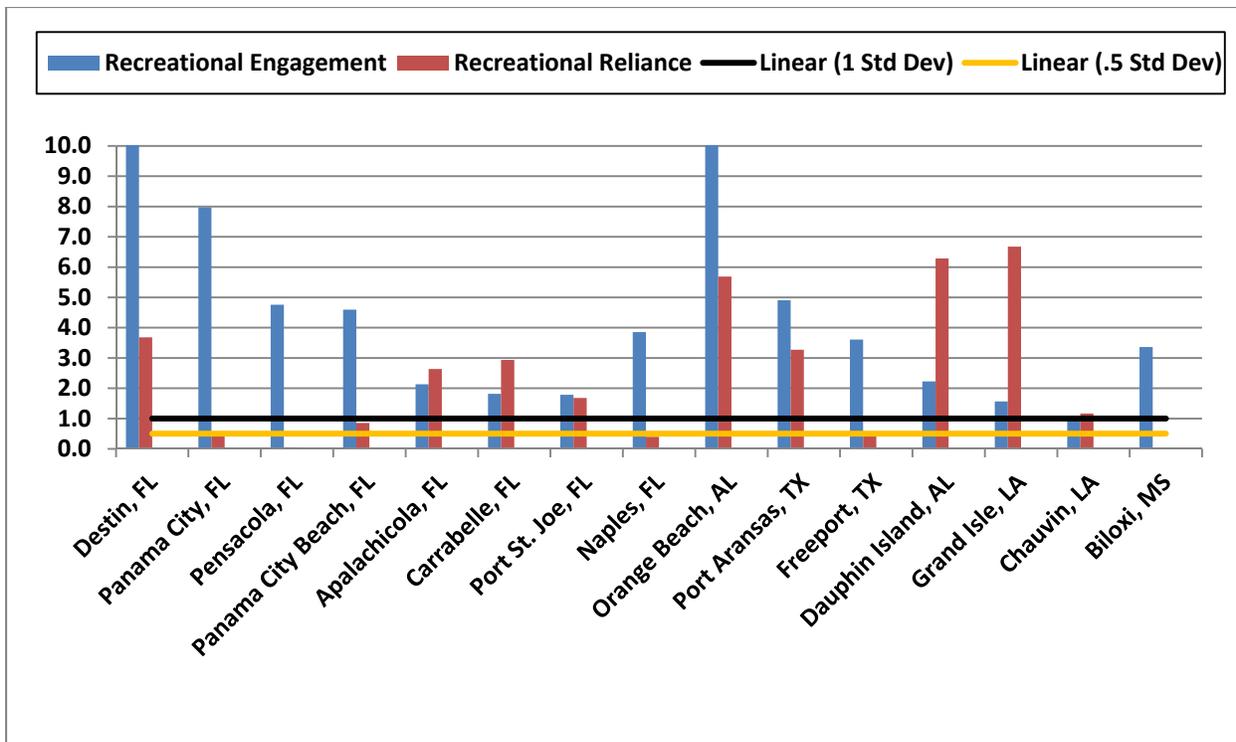


Figure 3.4.1.4. Top 16 recreational fishing communities’ engagement and reliance. Source: Southeast Regional Office, social indicators database (2012).

3.4.2 Environmental Justice Considerations

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider “the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories...” This executive order is generally referred to as environmental justice (EJ).

Commercial red snapper fishermen and associated businesses and communities along the coast are likely to be impacted by this proposed action. However, information on race, ethnicity, and income status for groups at the different participation levels and roles is not available. To identify potential areas of EJ concern, this analysis uses a suite of indices created to examine the social vulnerability of coastal communities (Jepson and Colburn 2013). The three indices are poverty, population composition, and personal disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community’s vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households and households with children under the

age of five, disruptions such as higher separation rates, higher crime rates, and unemployment all are signs of populations experiencing vulnerabilities. Communities that exceed the threshold for one or more of the indices would be expected to exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change.

Figure 3.4.2.1 shows how the commercial communities most engaged and reliant on red snapper fishing (Figure 3.4.1.2) score for the three social vulnerability indices. The communities of Apalachicola and Panama City, Florida; Golden Meadow, Grand Isle, and Houma, Louisiana; Bayou La Batre, Alabama; Pascagoula, Mississippi; and Freeport, Galveston, and Houston, Texas exceed the threshold of ½ standard deviation above the mean for at least one of the social vulnerability indices. It would be expected that these communities may exhibit vulnerabilities to social or economic disruption because of regulatory change, and would be the communities most likely subject to EJ concerns. Those communities that exhibit several index scores exceeding the threshold would be the most vulnerable. These include Apalachicola, Florida; Golden Meadow, Louisiana; Bayou La Batre, Alabama; Pascagoula, Mississippi; and Freeport, Galveston, and Houston, Texas. Five communities exceed the threshold of ½ standard deviation for all three indices (Bayou La Batre, Alabama; Pascagoula, Mississippi; and Freeport, Galveston, and Houston, Texas). Social effects resulting from action taken in this plan amendment are likely to be greatest in these communities.

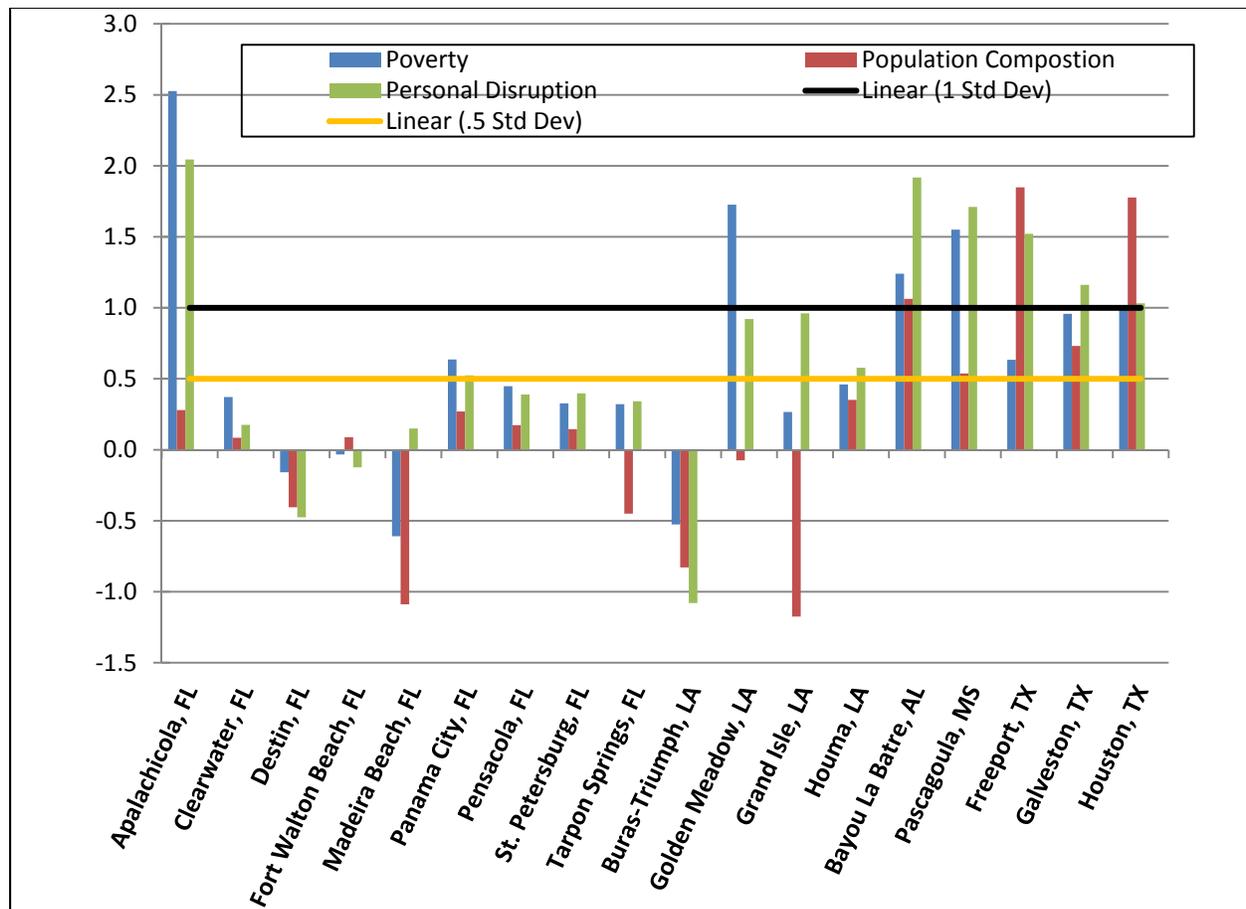


Figure 3.4.2.1. Social vulnerability indices for red snapper commercial fishing communities
Source: Southeast Regional Office, social indicators database (2012).

Recreational red snapper fishermen and associated businesses and communities along the coast are expected to benefit from this proposed action. Thus, no EJ concerns are expected for participants in the recreational sector. Figure 3.4.2.2 provides the scores of the social vulnerability indices for the top recreational fishing communities identified in Figure 3.4.1.4. Communities that exceed the threshold for one or more indices would be expected to exhibit vulnerabilities to sudden changes or social disruption that might accrue from regulatory change, and greater vulnerability is suggested by exceeding the thresholds for multiple indices. However, regulatory change that would impact recreational participants in these communities is not expected.

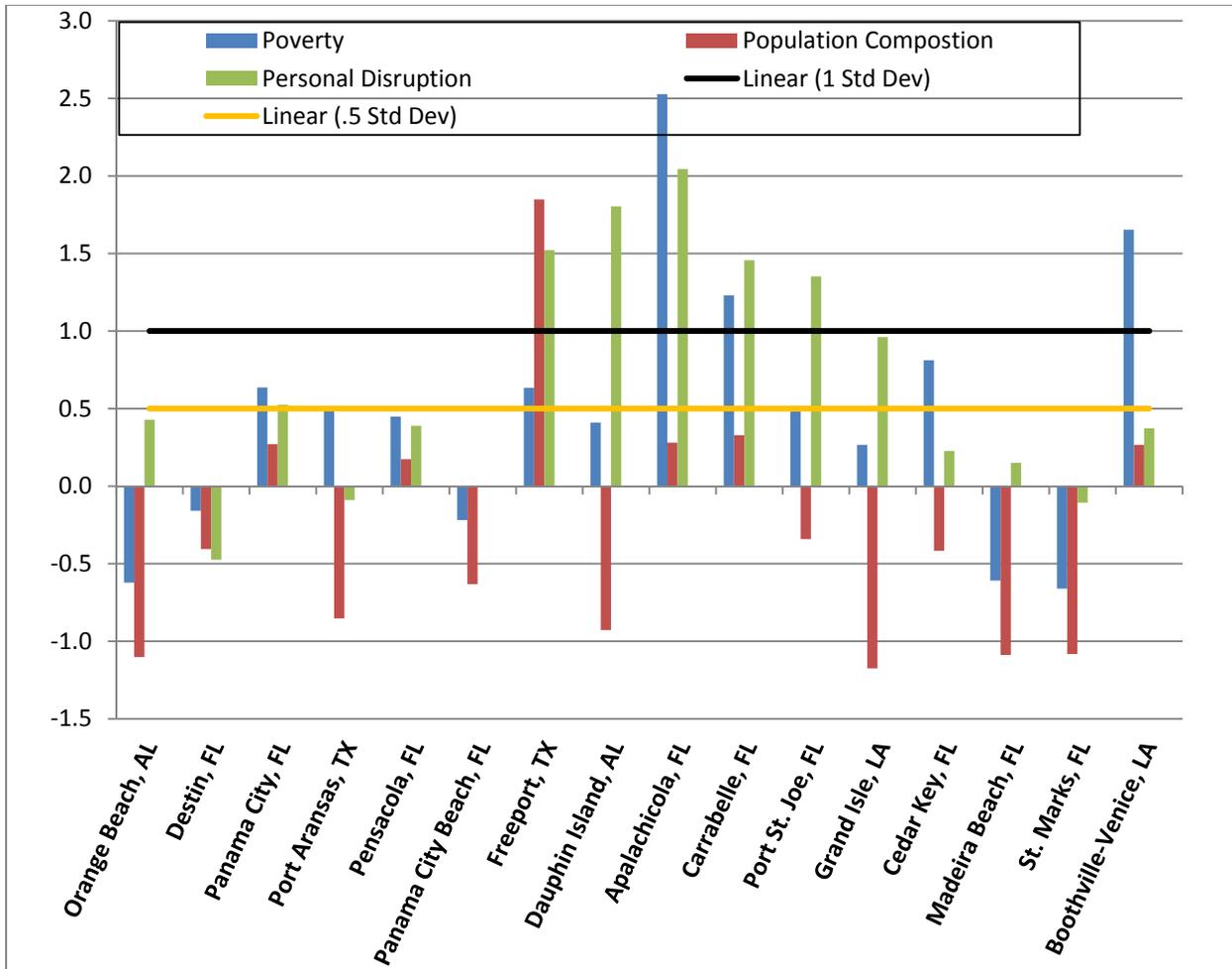


Figure 3.4.2.2. Social vulnerability indices for recreational fishing communities.

Source: Southeast Regional Office, social indicators database (2012).

3.5 Description of the Economic Environment

3.5.1 Commercial Sector

3.5.1.1 Vessel Activity

A description of the red snapper IFQ program is contained in GMFMC (2013b). This description is incorporated herein by reference. Tables 3.5.1.1.1 and 3.5.1.1.2 contain summary vessel and trip counts, landings, and revenue information from vessels landing at least one pound of red snapper from 2008 through 2012. Data from years prior to the implementation of the IFQ program are not representative of current conditions.

The tables contain vessel counts from the NMFS Southeast Fisheries Science Center (SEFSC) logbook (logbook) data (vessel count, trips, and landings) and the NMFS Southeast Regional Office (SERO) Limited Access Privilege Program (LAPP) data (vessel count). Dockside values were generated using landings information from logbook data and price information from the SEFSC ALS data. The logbook and LAPP data programs serve different purposes and use different data collection methods. Consequently, comparative analysis of data from these programs may produce different results, as evidenced by the vessel counts provided in Table 3.5.1.1.1. However, this assessment utilizes logbook data because the logbook program collects data on all species harvested on trips on which red snapper are harvested, as well as harvests by these vessels on trips without red snapper.

On average, 342 vessels per year landed red snapper (Table 3.5.1.1.1). These vessels averaged 2,871 trips per year on which red snapper was landed and 2,125 trips without red snapper (Table 3.5.1.1.1). The average annual total dockside revenue (2012 dollars) was approximately \$10.29 million from red snapper, approximately \$12.43 million from other species co-harvested with red snapper (on the same trip), and approximately \$10.42 million from other species harvested on trips on which no red snapper were harvested (Table 3.5.1.1.2). Total average annual revenues were approximately \$33.14 million, or approximately \$97,000 per vessel (Table 3.5.1.1.2).

Table 3.5.1.1.1. Summary of vessel counts, trips, and logbook landings (pounds gutted weight (lbs gw)) or vessels landing at least one pound of red snapper, 2008-2012.

Year	Number of Vessels, Logbook Data	Number of Vessels, LAPPs Data	Number of Trips that Caught Red Snapper, Logbook Data	Red Snapper Landings (lbs gw)*	“Other Species” Landings Jointly Caught with Red Snapper (lbs gw)	Number of Trips that Only Landed “Other Species”	“Other Species” Landings on Trips without Red Snapper (lbs gw)
2008	308	297	2,274	2,163,312	3,755,670	2,552	4,085,616
2009	296	289	2,329	2,163,632	3,753,024	2,425	3,964,434
2010	376	384	2,970	2,939,254	3,955,422	1,717	2,807,661
2011	368	362	3,389	3,073,697	5,467,639	1,959	4,160,800
2012	363	371	3,391	3,446,987	5,392,126	1,971	4,210,523
Average	342	341	2,871	2,757,377	4,464,776	2,125	3,845,807

Source: NMFS SEFSC Logbook and NMFS SERO LAPPs data.

*Red snapper harvest totals from logbook records for 2008-2012 ranged from 3.4% (2009) to 5.5% (2011) lower than IFQ reported landings for these years.

Table 3.5.1.1.2. Summary of vessel counts and revenue (thousand 2012 dollars) for vessels landing at least one pound of red snapper, 2008-2012.

Year	Number of Vessels, Logbook Data	Dockside Revenue from Red Snapper	Dockside Revenue from “Other Species” Jointly Caught with Red Snapper	Dockside Revenue from “Other Species” Caught on Trips without Red Snapper	Total Dockside Revenue	Average Total Dockside Revenue per Vessel
2008	308	\$8,504	\$10,101	\$10,796	\$29,402	\$95
2009	296	\$8,088	\$9,208	\$9,716	\$27,012	\$91
2010	376	\$10,563	\$10,903	\$7,427	\$28,893	\$77
2011	368	\$11,139	\$15,689	\$11,594	\$38,422	\$104
2012	363	\$13,145	\$16,239	\$12,585	\$41,969	\$116
Average	342	\$10,288	\$12,428	\$10,424	\$33,140	\$97

Source: NMFS SEFSC Logbook and ALS data.

Commercial fishing for red snapper in 2010 appeared to be unaffected, from a landings and revenue perspective, by conditions associated with the Deepwater Horizon MC252 oil spill. As a result, 2010 data were included in the information provided in Tables 3.5.1.1.1 and 3.5.1.1.2. As discussed below, this was not the case for the recreational sector.

3.5.1.2 Commercial Sector Business Activity

Estimates of the business activity (economic impacts) in the U.S. associated with the Gulf red snapper commercial harvests were derived using the model developed for and applied in NMFS (2011b) and are provided in Table 3.5.1.2.1. Business activity for the commercial sector is characterized in the form of full-time equivalent (FTE) jobs, income impacts (wages, salaries, and self-employed income), and output (sales) impacts (gross business sales). Income impacts should not be added to output (sales) impacts because this would result in double counting. The estimates of economic activity include the direct effects (effects in the sector where an expenditure is actually made), indirect effects (effects in sectors providing goods and services to directly affected sectors), and induced effects (effects induced by the personal consumption expenditures of employees in the direct and indirectly affected sectors).

Table 3.5.1.2.1. Average annual business activity associated with the harvests of vessels that harvest red snapper, 2008-2012.

Species	Average Annual Dockside Revenue (thousands) ¹	Total Jobs	Harvester Jobs	Output (Sales) Impacts (thousands) ¹	Income Impacts (thousands) ¹
Red snapper	\$10,288	1,818	237	\$135,456	\$57,730
All species ²	\$33,140	5,857	764	\$436,332	\$185,961

¹2012 dollars.

²Includes dockside revenues and economic activity associated with the average annual harvests of all species, including red snapper, harvested by vessels that harvested red snapper.

In addition to red snapper harvests, as discussed above, vessels that harvested red snapper also harvested other species on trips where red snapper were harvested. These vessels also took trips during the year where only species other than red snapper were caught. All revenues from all species on all these trips contributed towards making these vessels economically viable and contribute to the economic activity associated with these vessels. The average annual total ex-vessel revenues from all species (including red snapper) harvested during this period (2008-2012) by vessels that harvested red snapper was approximately \$33.14 million (2012 dollars). In terms of business activity, these revenues are estimated to support 5,857 FTE jobs (764 in the harvesting sector) and are associated with approximately \$436.33 million in output (sales) impacts and approximately \$185.96 million in income impacts.

3.5.1.3 Dealers

Commercial vessels landing reef fish, including red snapper, can only sell their catch to federally permitted fish dealers. On December 20, 2013, 160 dealers possessed a reef fish dealer permit and the IFQ endorsement necessary to receive Gulf LAPP species (SERO Permits and LAPP

data). Because there are no income or sales requirements to acquire a federal dealer permit or IFQ endorsement, the total number of dealers can vary over the course of the year and from year to year. In addition to red snapper, grouper and tilefish are Gulf LAPP species and not all dealers authorized to receive Gulf LAPP species purchase red snapper. The following results are based on assessment of ALS data. In 2011, 88 dealers purchased red snapper. Sixty-six of these dealers were in Florida, eight in Texas, six in Louisiana, and four each in Alabama and Mississippi. Total red snapper purchased by these dealers in 2011 had an ex-vessel value of approximately \$11.42 million (2011 dollars), or approximately 10.6% of the total revenues, approximately \$108.21 million (2011 dollars), from all marine resource purchases by these dealers. Dependency on red snapper sales varies by dealer, with the percentage of red snapper purchases (value, not pounds) to total purchases varying from less than 1% to 100%. Red snapper purchases in 2011 comprised 10% or more of total purchases for 40 of these dealers, between 5% and 10% for 13 dealers, and 5% or less for 35 dealers. Average red snapper dependency (measured as the percentage of red snapper value to total value of all purchases) was highest for Texas and Mississippi dealers, approximately 20.83% in both states, followed by Florida (approximately 5.73%), Louisiana (approximately 4.78%), and Alabama (approximately 2.33%).

3.5.1.4 Imports

Information on the imports of all snapper and grouper species, either fresh or frozen, are available at: http://www.st.nmfs.noaa.gov/st1/trade/cumulative_data/TradeDataProduct.html. Information on the imports of individual snapper or grouper species is not available. In 2012, imports of all snapper and grouper species (fresh and frozen) were approximately 44.51 million pounds valued at approximately \$128.20 million (2012 dollars). These amounts are contrasted with the domestic harvest of all snapper and grouper in the U.S. in 2012 of approximately 19.60 million pounds valued at approximately \$60.53 million (data available at: http://www.st.nmfs.noaa.gov/Assets/commercial/fus/fus12/02_commercial2012.pdf). Although the levels of domestic production and imports are not totally comparable for several reasons, including considerations of different product form such as fresh versus frozen, and possible product mislabeling, the difference in the magnitude of imports relative to amount of domestic harvest is indicative of the dominance of imports in the domestic market.

3.5.2 Recreational Sector

3.5.2.1 Angler Effort

Recreational effort derived from the MRFSS/MRIP database can be characterized in terms of the number of trips as follows:

1. Target effort - The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or second primary target for the trip. The species did not have to be caught.

2. Catch effort - The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
3. Total recreational trips - The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

Other measures of effort are possible, such as the number of harvest trips (the number of individual angler trips that harvest a particular species regardless of target intent), and directed trips (the number of individual angler trips that either targeted or caught a particular species), among other measures, but the three measures of effort listed above are used in this assessment. Because of the Deepwater Horizon MC252 oil spill, 2010 was not a typical year for recreational fishing due to the extensive closures and associated decline in fishing in much of the Gulf. For information on the Deepwater Horizon MC252 oil spill and associated closures, see: http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm. Estimates of the average annual red snapper effort (in terms of individual angler trips) for the shore, charter, and private/rental boat modes in the Gulf for 2008-2012 with and without 2010 data are provided in Table 3.5.2.1.1. The average annual red snapper target effort for 2008-2012 was approximately 8% less than the average for this period excluding 2010. For red snapper catch effort, the difference was approximately 7%. This difference indicates the importance of the effort data for 2010 when assessing the socio-economic implications of the actions in this amendment.

Table 3.5.2.1.2 contains estimates for the average annual red snapper recreational effort for 2008-2012 by mode (shore, charter, and private/rental boat only). Although the private/rental mode accounted for a greater portion of angler trips (about 83% to 84% of target trips and 75% to 76% of catch trips), percentage-wise the charter mode was affected by the 2010 oil spill incident more than the private/rental mode. The average annual red snapper target effort for 2008-2012 was less than the average for this period excluding 2010 by approximately 13% for the charter mode and 7% for the private mode. For red snapper catch effort, the difference was approximately 11% for the charter mode and 6% for the private mode.

Tables 3.5.2.1.3 and 3.5.2.1.4 provide some details on the 2008-2012 average annual recreational effort by state and mode. Percentage-wise, recreational effort for Alabama and Louisiana was affected by the 2010 oil spill incident more than that for Florida. This holds true for both the charter (target and catch effort) and private modes (target and catch effort).

Table 3.5.2.1.1. Annual red snapper recreational effort, by state, 2008-2012.

	Alabama	West Florida	Louisiana	Mississippi	Texas	Total
	Target Trips					
2008	39,325	160,466	31,864	8,877	*	240,532
2009	75,854	222,035	42,112	7,622	*	347,623
2010	23,548	146,738	3,338	5,659	*	179,283
2011	136,704	142,663	21,324	16,790	*	317,481
2012	90,278	161,247	50,751	13,589	*	315,865
Avg (full)	73,142	166,630	29,878	10,507	*	280,157
Avg (w/o 2010)	85,540	171,603	36,513	11,720	*	305,375
	Catch Trips					
2008	80,042	407,477	55,393	10,362	*	553,274
2009	98,005	399,309	60,119	13,035	*	570,468
2010	56,170	266,485	5,635	7,225	*	335,515
2011	134,346	261,454	32,451	6,390	*	434,641
2012	95,389	332,921	49,938	2,410	*	480,658
Avg (full)	92,790	333,529	40,707	7,884	*	474,911
Avg (w/o 2010)	101,946	350,290	49,475	8,049	*	509,760

*Unavailable

Source: NOAA Fisheries Office of Science and Technology website,
<http://www.st.nmfs.noaa.gov/recreational-fisheries/index#>

Table 3.5.2.1.2. Annual red snapper recreational effort, by fishing mode, 2008-2012.

	Charter	Private/ Rental	Shore	Total
	Target Trips			
2008	51,766	188,766	0	240,532
2009	53,797	293,555	271	347,623
2010	19,463	159,296	524	179,283
2011	50,076	266,597	808	317,481
2012	48,540	265,686	1,639	315,865
Avg (full)	44,728	234,780	811	280,157
Avg (w/o 2010)	51,045	253,651	680	305,375
	Catch Trips			
2008	145,193	403,047	5,034	553,274
2009	133,938	435,245	1,285	570,468
2010	59,208	273,875	2,432	335,515
2011	121,628	313,013	0	434,641
2012	109,450	370,637	571	480,658
Avg (full)	113,883	359,163	2,331	474,911
Avg (w/o 2010)	127,552	380,486	1,723	509,760

*Unavailable

Source: NOAA Fisheries Office of Science and Technology website,
<http://www.st.nmfs.noaa.gov/recreational-fisheries/index#>

Table 3.5.2.1.3. Average (2008-2012) annual red snapper recreational effort, by state and mode.

	Charter	Private/ Rental	Shore	Total
	Target Trips			
Alabama	13,526	59,072	544	73,142
West Florida	26,183	140,342	105	166,630
Louisiana	4,963	24,915	0	29,878
Mississippi	56	10,451	0	10,507
Texas	*	*	*	*
	Catch Trips			
Alabama	24,169	68,278	343	92,790
West Florida	84,048	247,960	1,521	333,529
Louisiana	5,496	35,211	0	40,707
Mississippi	170	7,714	0	7,884
Texas	*	*	*	*

*Unavailable

Source: NOAA Fisheries Office of Science and Technology website:
<http://www.st.nmfs.noaa.gov/recreational-fisheries/index#>

Table 3.5.2.1.4. Average (2008-2012) annual red snapper recreational effort, by state and mode, excluding 2010.

	Charter	Private/ Rental	Shore	Total
	Target Trips			
Alabama	16,211	68,650	680	85,540
West Florida	28,612	142,991	0	171,603
Louisiana	6,204	30,309	0	36,513
Mississippi	19	11,701	0	11,720
Texas	*	*	*	*
	Catch Trips			
Alabama	27,388	74,236	321	101,946
West Florida	93,198	255,691	1,401	350,290
Louisiana	6,819	42,657	0	49,475
Mississippi	147	7,902	0	8,049
Texas	*	*	*	*

*Unavailable

Source: NOAA Fisheries Office of Science and Technology website,
<http://www.st.nmfs.noaa.gov/recreational-fisheries/index#>

Headboat data do not support the estimation of target or catch effort because target intent is not collected and the harvest data (the data reflect only harvest information and not total catch) are collected on a vessel basis and not by individual angler. Table 3.5.2.1.5 contains estimates of the number of headboat angler days for all Gulf States for 2008-2012.

Table 3.5.2.1.5. Headboat angler days.

Year	W Florida/Alabama	Louisiana	Mississippi	Texas	Total
2008	130,176	2,945	0	41,188	174,309
2009	142,438	3,268	0	50,737	196,443
2010	111,018	217	*	47,154	158,389
2011	157,025	1,886	1,771	47,284	207,966
2012	161,973	1,839	1,840	51,771	217,423
Average all	140,526	2,031	903	47,627	190,906
Average w/o 2010	147,903	2,485	903	47,745	199,035

*Confidential. **Because the average totals are used to represent expectations of future activity, the 2011 and 2012 numbers of trips are provided as best representative of the emergent headboat fishery in Mississippi.

Source: NMFS Southeast Region Headboat Survey (HBS).

3.5.2.2 Permits

The for-hire sector is comprised of charter boats and headboats (party boats). Although charter boats tend to be smaller, on average, than headboats, the key distinction between the two types of

operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

A federal for-hire vessel permit has been required for reef fish since 1996 and the sector currently operates under a limited access system. On December 20, 2013, there were 1,190 valid (non-expired) or renewable Gulf of Mexico Charter/Headboat Reef Fish Permits. A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration. Although the for-hire permit application collects information on the primary method of operation, the resultant permit itself does not identify the permitted vessel as either a headboat or a charter boat, operation as either a headboat or charter boat is not restricted by the permitting regulations, and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (HBS). Participation in the HBS is based on determination by the SEFSC that the vessel primarily operates as a headboat. Seventy vessels were registered in the SHRS as of March 1, 2013 (K. Brennen, NMFS SEFSC, pers. comm.).

Information on Gulf charter boat and headboat operating characteristics, including average fees and net operating revenues, is included in Savolainen et al. (2012), is incorporated herein by reference, and is summarized below.

There are no specific federal permitting requirements for recreational anglers to fish for or harvest reef fish. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed amendment. (Note: although it is not a federal permit, Louisiana has developed an offshore angler permit. Tabulation of these permits would be expected to provide an estimate of only a small portion of the total number of individual anglers expected to be affected by this proposed amendment.)

3.5.2.3 Economic Value

Economic value can be measured in the form of consumer surplus per red snapper trip for anglers (the amount of money that an angler would be willing to pay for a fishing trip in excess of the cost of the trip) and producer surplus per passenger trip for for-hire vessels (the amount of money that a vessel owner earns in excess of the cost of providing the trip). The estimated mean value of consumer surplus per two red snapper (current bag limit) kept on a trip ranges from \$142.11 to \$154.16 in 2012 dollars (Appendix G: Agar and Carter 2013). On a per pound basis, the estimated mean consumer surplus ranges from \$11.21 to \$12.16 per pound in 2012 dollars.

Estimates of the producer surplus per for-hire passenger trip are not available. Instead, net operating revenues, which are the return used to pay all labor wages, returns to capital, and owner profits, are used as the proxy for producer surplus. The estimated net operating revenue is \$164.88 per target charter angler trip and \$54.59 (2012 dollars) per target headboat angler trip

regardless of species targeted or catch success (C. Liese, NMFS SEFSC, pers. comm.). Estimates of net operating revenue by target species are not available.

3.5.2.4 Recreational Sector Business Activity

Estimates of the business activity (economic impacts) associated with recreational angling for red snapper were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the MRFSS to collect economic expenditure information, as described and utilized in NMFS (2011a). Estimates of these coefficients for target or catch behavior for individual species are not available. Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011a) and are incorporated herein by reference.

Business activity for the recreational sector is characterized in the form of fulltime equivalent (FTE) jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Job and output (sales) impacts are equivalent metrics across both the commercial and recreational sectors. Income impacts (commercial sector) and value-added impacts (recreational sector) are not equivalent, though similarity in the magnitude of multipliers generated and used for the two metrics may result in roughly equivalent values. Similar to income impacts, value-added impacts should not be added to output (sales) impacts because this would result in double counting.

Estimates of the average red snapper effort (2008-2009 and 2011-2012) and associated business activity (2012 dollars) are provided in Table 3.5.2.4.1. Red snapper target effort (trips) was selected as the measure of red snapper effort. More individual angler trips catch red snapper than target red snapper, however, as shown in Tables 3.5.2.1.1 and 3.5.2.1.2. Estimates of the business activity associated with red snapper catch trips can be calculated using the ratio of catch trips to target trips because the available estimates of the average impacts per trip are not differentiated by trip intent or catch success. For example, if the estimated number of catch trips is three times the number of target trips for a particular state and mode, the estimate of the business activity associated with these catch trips would equal three times the estimated impacts of target trips.

The estimates of the business activity associated with red snapper recreational trips are only available at the state level. Addition of the state-level estimates to produce a regional or national total will underestimate the actual amount of total business activity because summing the state estimates will not capture business activity that leaks outside the individual states. A state estimate only reflects activities that occur within that state and not related activity that occurs in another state. For example, if a good is produced in Alabama but sold in Florida, the measure of business activity in Florida associated with the its sale in Florida does not include the production process in Alabama. Assessment of business activity at the national (or regional) level would capture activity in both states and include all activity except that which leaks into other nations.

It is noted that these estimates do not, and should not be expected to, represent the total business activity associated with a specific recreational harvest sector in a given state or in total. For example, these results do not state, or should be interpreted to imply, that there are only 154 jobs

associated with the charter sector in Alabama. Instead, as previously stated, these results relate only to the business activity associated with target trips for red snapper. Because of the seasonal nature of red snapper fishing, few, if any businesses or jobs, would be expected to be devoted solely to red snapper fishing. The existence of these businesses and jobs, in total, is supported by the fishing for, and expenditures on, the variety of marine species available to anglers throughout the year.

Table 3.5.2.4.1. Summary of red snapper target trips (2008-2009 and 2011-2012 average) and associated business activity (thousand 2012 dollars). Output and value added impacts are not additive.

	Alabama	West Florida	Louisiana	Mississippi	Texas
Shore Mode					
Target trips	680	0	0	0	*
Output impact	\$53,049	\$0	\$0	\$0	*
Value added impact	\$28,538	\$0	\$0	\$0	*
Jobs	1	0	0	0	*
Private/Rental Mode					
Target trips	68,650	142,991	30,309	11,701	*
Output impact	\$4,259,249	\$6,922,865	\$2,635,702	\$355,841	*
Value added impact	\$2,331,842	\$4,116,595	\$1,296,330	\$170,544	*
Jobs	42	65	23	3	*
Charter Mode					
Target trips	16,211	28,612	6,204	19	*
Output impact	\$9,000,468	\$9,580,658	\$3,149,447	\$6,295	*
Value added impact	\$4,954,456	\$5,680,344	\$1,788,250	\$3,547	*
Jobs	113	92	31	0	*
All Modes					
Target trips	85,541	171,603	36,513	11,720	*
Output impact	\$13,312,766	\$16,503,524	\$5,785,149	\$362,136	*
Value added Impact	\$7,314,836	\$9,796,939	\$3,084,581	\$174,091	*
Jobs	155	157	54	3	*

*Because target information is unavailable, associated business activity cannot be calculated.

Source: Effort data from NOAA Fisheries Science and Technology website, economic impact results calculated by NMFS SERO using the model developed for NMFS (2011b).

Estimates of the business activity (impacts) associated with headboat red snapper effort are not available. The headboat sector in the Southeast is not covered in the MRFSS/MRIP, so estimation of the appropriate impact coefficients for the headboat sector has not been conducted. While appropriate impact coefficients are available for the charter sector, potential differences in certain factors, such as the for-hire fee, rates of tourist versus local participation, and expenditure

patterns, may result in significant differences in the business impacts of the headboat sector relative to the charter sector.

3.6 Description of the Administrative Environment

3.6.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 *et seq.*), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the exclusive economic zone, an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the exclusive economic zone.

Responsibility for federal fishery management is shared by the Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Appendix A. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the Gulf coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through Council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative Procedures Act, in the form of “notice and comment” rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of the National Oceanic and Atmospheric Administration’s Office of Law Enforcement, the United States Coast Guard, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council’s Law Enforcement Advisory Panel

and the Gulf States Marine Fisheries Commission's Law Enforcement Committee, which have developed joint enforcement agreements and cooperative enforcement programs (www.gsmfc.org).

The red snapper stock in the Gulf is classified as overfished, but no longer undergoing overfishing. A rebuilding plan for red snapper was first implemented under Amendment 1 (GMFMC 1989), and has undergone several revisions. The current rebuilding plan was established in Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), and calls for rebuilding the stock to a level capable of supporting maximum sustainable yield on a continuing basis by 2032. Periodic adjustments to the ACL and other management measures needed to affect rebuilding are implemented through regulatory amendments.

3.6.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf States exercises legislative and regulatory authority over their respective state's natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states' natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each state's primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004c).

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action 1 – Allocation of Red Snapper

4.1.1 Direct and Indirect Effects on the Physical Environment

Sections 3.1, 3.2, and GMFMC (2004a, 2004c, and 2007) describe the physical environment and habitat used by red snapper. In summary, adult red snapper are found around low relief bottom structure, hard bottom, and artificial structures; eggs and larvae are pelagic; and juveniles are found associated with bottom inter-shelf habitat (Szedlmayer and Conti 1998) and prefer shell habitat over sand (Szedlmayer and Howe 1997). Adult red snapper are closely associated with artificial structures in the northern Gulf of Mexico (Gulf) (Szedlmayer and Shipp 1994; Shipp and Bortone 2009) and larger individuals have been found to use artificial habitats, but move further from the structure as they increase in size and based on the time of day (Topping and Szedlmayer 2011). In terms of red snapper fishing, most commercial red snapper fishermen use handlines (mostly bandit rigs and electric reels, occasionally rod-and-reel) with a small percentage (generally <5% annually) caught with bottom longlines (see section 3.1). Recreational red snapper fishing almost exclusively uses vertical-line gear, most frequently rod-and-reel (See section 3.1). The following describes the effects of common fishing gear on the physical environment.

Handline gear (bandit gear, rod-and-reel, and electric reels) used in fishing for reef fish is generally suspended over hard bottom because many managed reef fish species occur higher over this type of substrate than over sand or mud bottoms (GMFMC 2004a). Handline gear is less likely to contact the bottom than longlines, but still has the potential to snag and entangle bottom structures and cause tear-offs or abrasions (Barnette 2001). In using bandit gear, a weighted line is lowered to the bottom, and then the lead is raised slightly off the bottom (Siebenaler and Brady 1952). The gear is in direct contact with the bottom for only a short period of time. Barnette (2001) suggests that physical impacts may include entanglement and minor degradation of benthic species from line abrasion and the use of weights (sinkers). Commercial or recreational fishing with rod-and-reel also lays gear on the bottom. The terminal part of the gear is either lifted off the bottom like fishing with bandit gear, or left contacting the bottom. Sometimes the fishing line can become entangled on coral and hard bottom outcroppings. The subsequent algal growth can foul and eventually kill the underlying coral (Barnette 2001). Researchers conducting studies in the restricted fishing area at Madison-Swanson reported seeing lost fishing line on the bottom, much of which appeared to be fairly old and covered with growth (A. David, Southeast Fisheries Science Center, pers. comm.), a clear indication that bottom fishing has had an impact on the physical environment prior to fishing being prohibited in the area (GMFMC 2003).

Anchor damage is also associated with handline fishing vessels, particularly by the recreational sector where fishermen may repeatedly visit well marked fishing locations. Hamilton (2000) points out that “favorite” fishing areas such as reefs are targeted and revisited multiple times, particularly with the advent of global positioning technology. The cumulative effects of repeated anchoring could damage the hard bottom areas where fishing for red snapper occurs.

Bottom longline gear is deployed over hard bottom habitats using weights to keep the gear in direct contact with the bottom. Its potential for adverse impact is dependent on the type of habitat it is set on, the presence or absence of currents, and the behavior of fish after being hooked. In addition, this gear upon retrieval can abrade, snag, and dislodge smaller rocks, corals, and sessile invertebrates (Hamilton 2000; Barnette 2001). Direct underwater observations of longline gear in the Pacific halibut fishery by High (1998) noted that the gear could sweep across the bottom. Some halibut were observed pulling portions of longlines 15 to 20 feet over the bottom. Although the gear was observed in contact with or snagged on a variety of objects including coral, sturdy soft corals (e.g., gorgonians) usually appeared unharmed while stony corals often had portions broken off. However, in a different study where deployed bottom longline gear was directly observed (Atlantic tilefish fishery), no evidence of gear movement was documented, even when placed in strong currents (Grimes et al. 1982). This was attributed to anchors set at either end of the bottom longline as well as sash weights along the line to prevent movement. Based on these direct observations, it is logical to assume that bottom longline gear would have a minor impact on sandy or muddy habitat areas. However, due to the vertical relief that hardbottom and coral reef habitats provide, it would be expected that bottom longline gear may become entangled, resulting in potential negative impacts to habitat (Barnette 2001). Because bottom longlines are a minor gear type used in harvesting red snapper by the commercial sector, any effects to the physical environment by this gear as a result of this action would likely be minor.

The action would have no direct effect on the physical environment. This action could indirectly affect the physical environment if changes in allocation result in an increase or decrease in the amount of fishing gear used to harvest the respective commercial and recreational quotas. However, any effects under **Alternatives 2-7** would likely be minimal. One reason is the overall red snapper combined quota, currently 11.0 million pounds (mp), would remain the same. Thus any beneficial effects from reducing the commercial quota would likely be offset by adverse effects from increasing the recreational quota. Additionally, changes in overall fishing effort is likely to be small because fishermen target other species besides red snapper. Thus, for example, an angler who could schedule additional red snapper fishing trips under an alternative that increases the recreational quota (more red snapper fishing days), could still take those fishing trips under a smaller quota. The fishing trips would target some other species besides red snapper (e.g., gag). Conversely, a commercial fisherman who might not take a trip targeting red snapper because of less IFQ allocation based on a lower commercial quota, might schedule another trip targeting some other species. An example would be a trip targeting vermilion snapper, which is not managed under an IFQ program.

The no action (**Alternative 1**) would continue the current allocation. **Alternatives 2-7** would reduce the commercial red snapper allocation and increase the recreational red snapper allocation. Assuming that commercial vessels in general are more efficient at catching red snapper due to vessel type, experience, and equipment, then a likely result of having greater recreational allocation could be an increase in overall red snapper effort as a result of lower recreational efficiency. Thus, **Alternative 4** that increases the recreational allocation the most (by 10% totaling 59%), would have the greatest indirect effect on the physical environment compared to **Alternative 1**, no action (49%). Moving this logic forward, then **Alternative 6**

(58%) would have the next greatest effect, followed by **Alternative 3** (54%), **Preferred Alternative 5** (53%), **Alternative 2** (52%), and **Alternative 7** (51.4%) when compared to **Alternative 1**.

4.1.2 Direct and Indirect Effects on the Biological Environment

The action in this amendment is not expected to have any direct effects on the biological environment because the Council is not considering changes to the total quota. The SSC recommends the acceptable biological catch, the management metric that the Council cannot exceed, therefore, any biological effects from these alternatives are expected to be indirect. Indirect effects on the biological environment could occur if there are significant changes in the total number of red snapper killed (landed or discarded dead) by either sector, or any changes to the frequency or magnitude of any quota overages due to modifications to the red snapper allocation. Gear types used by the commercial and recreational sectors and their expected effects are discussed in Sections 3.1 and 4.1.1 of this document.

The most recent red snapper stock assessment (SEDAR 31 2013) estimated dead discard rates separately for each sector. Based on the commercial observer program, dead discard rate estimates were based on average depths, gear type (handline or longline), region (eastern or western Gulf), and season (open or closed). The assessment defined open season discard rates as those occurring on commercial fishing trips with IFQ allocation, while discards from trips without IFQ allocation were considered closed season dead discard rates. For the recreational sector, average depths at which discards occurred for each region (eastern or western Gulf) and season (open or closed) were calculated using self-reported discard data from the iSnapper program and reflected fishing depths, in general, reported by recreational anglers (SEDAR 31 2013). The stock assessment also estimated discard mortality rates before and after the implementation of the circle hook and venting tool requirement in 2008 for both sectors (GMFMC 2007). In August 2013, the Council decided to remove the venting tool requirement due to questions of its efficacy (GMFMC 2013c).

For purposes of comparing these alternatives, only the discard mortality rates estimates by sector, region (east and west), and fish venting are cited and discussed from Tables 5.1 and 5.2 in SEDAR 31 (2013). Regardless of whether the recreational red snapper season is open or closed, the recreational sector reported fishing at shallower depths and typically used hook and line gear that results in lower rates of dead discards (Table 4.1.2.1). The commercial sector is estimated to have higher estimates of dead discard rates than the recreational sector due to gear types and depth fished (GMFMC 2007; SEDAR 7 2005; SEDAR 31 2013). This is especially true in the western Gulf when commercial fishers did not possess IFQ allocation (closed season).

Because **Alternatives 2** through **7** would increase the recreational quota and decrease the commercial quota relative to **Alternative 1 (no action)**, the following discussion will only focus on this direction of allocation change. For the recreational sector, the average rate of red snapper discarded dead is lower based on information in the stock assessment for depths fished and gear types (Table 4.1.2.1). Additionally, as a result of increased allocation and subsequently longer fishing season, some red snapper caught could now be retained instead of discarded dead. However, the magnitude of this reduction in dead discards is expected to be minimal based on

the number recreational anglers compared to commercial fishermen. **Alternative 4** has the greatest allocation shift and is expected to increase the recreational season the most compared to **Alternative 1 (no action)**.

Table 4.1.2.1. Average depth fished and estimated discard mortality rates of red snapper by sector during the closed and open seasons in the eastern and western Gulf. The associated discard mortality estimates for the recreational and commercial sector listed are based on use of circle hooks and the venting tool requirement.

Recreational sector		Commercial handline		Commercial bottom longline	
Open		Open		Open	
East	West	East	West	East	West
102 ft	105 ft	135 ft	159 ft	186 ft	312 ft
10%	10%	56%	60%	64%	81%
Closed		Closed		Closed	
East	West	East	West	East	West
99 ft	108 ft	126 ft	252 ft	198 ft	396 ft
10%	10%	55%	74%	66%	88%

Source: Tables 5.1 and 5.2 in SEDAR 31 2013

For the commercial sector, estimates of dead discard rates are higher compared to the recreational sector and a decrease in the allocation would likely lead to increased dead discards as a result of a reduced commercial quota (Table 4.1.2.1). Since the implementation of the red snapper IFQ program, the overall rates of dead discards by the commercial sector have been reduced (GMFMC 2013b), which may minimize any increases in discarded fish from this action. However, SEDAR 31 (2013) reported that in the western Gulf, where most of the red snapper are commercially caught, the discard mortality rate for vessels using handline gear without IFQ shares was greater than the discard mortality rate for handline vessels with IFQ shares (Table 4.1.2.1). Handline gear is the predominant gear used to harvest red snapper (see Section 4.1.1). Thus in the western Gulf, a decrease in allocation could result in more trips without red snapper shares and more dead discards. In eastern Gulf, even though there did not seem to be a different discard mortality rates between commercial vessels with IFQ shares and those without; as allocation is shifted away from the commercial sector, it is likely that the number of dead discards would increase (Table 4.1.2.1). As the red snapper stock expands into the eastern Gulf, the incidence of red snapper being encountered should increase as catch rates increase (Boen and Keithly 2012). As a result, fewer red snapper could be kept and more fish would need to be discarded because of the reduced allocation and subsequent quota reduction from **Alternatives 2** through **7**. Additionally, the reef fish fishery is a multispecies fishery and commercial fishermen may shift fishing effort to others species due to the reduction in red snapper quota so they could compensate for lost income.

With the introduction of the IFQ program, no overages of the commercial quota have occurred and are not likely to occur in the near future. However, for the recreational sector, quota overages have occurred frequently in recent years and could adversely affect the stock's recovery if they continue (NMFS 2013d; SEDAR 31 2013). Recreational quota overages have occurred because of difficulties assessing past fishing patterns and projecting them into the future to estimate season length (NMFS 2013). Because **Alternatives 2** through **7** provide additional

recreational fishing days, is it possible that the additional allocation may increase the model's predictive capability.

Given the discussion above, if the recreational quota were increased as a result of **Alternative 2** through **Alternative 7**, the number of recreational dead discards would likely decrease. However, this benefit to the red snapper stock would likely be offset by increases in dead discards as a result of a reduced commercial quota. Therefore, it is difficult to assess whether these alternatives, in terms of dead discards, would be beneficial, adverse, or have no effect on the red snapper stock. These effects need to be qualified in that they are largely based upon behavior of fishermen and this behavior could change in response to changing allocation. Current monitoring of harvests and discards could provide insights into these effects in the future.

Based on the information discussed above, **Alternative 4** would be expected to have the greatest beneficial effect on the biological environment compared to **Alternative 1 (no action)**, if in fact discard mortality rates are reduced when the recreational sector has more quota. Whereas, **Alternative 4** would be expected to have the greatest adverse effect on the biological environment compared to **Alternative 1 (no action)**, if in fact dead discard mortality rates are increased when the commercial sector has less quota. The comparison of these alternatives to no action, whether beneficial or adverse depends on fishermen behavior, and based on these behaviors any potential effects on the biological environment could end up canceling each other out. **Alternative 3** and **Alternative 2** would be expected to have the next greatest effects (either beneficial or adverse) on the biological environment after **Alternative 4** compared to **Alternative 1 (no action)**. Given the 11.0 mp combined quota, **Preferred Alternative 5** and **Alternative 6** are expected to have intermediate impacts compared to **Alternative 3** and **Alternative 4**. Similarly, **Alternative 7** is expected to have intermediate impacts compared to **Alternatives 3** and **4**. If the total quota is decreased, but does not reach the given threshold, the indirect effects under **Preferred Alternatives 5**, **Alternative 6**, and **Alternatives 7** would be reduced as the allocations get closer to **Alternative 1 (no action)**. However, if the total quota increases, effects of **Preferred Alternative 5**, and **Alternatives 6** and **7** could be greater than **Alternative 4**.

4.1.3 Direct and Indirect Effects on the Social Environment

Alternative 1 (no action) would retain the current sector allocations for red snapper and would have no impact upon the commercial sector as their allocation would remain the same. The shortened recreational fishing seasons over the past few years have been exacerbated by differential management between some states and their adjoining federal waters. This varied management has allowed for continued harvest, including when federal waters are closed, which then translates into shortened seasons because season length is based on total harvest in state and federal waters.

A direct result of the shortened seasons has been dissatisfaction with current management for the recreational sector. This dissatisfaction has, in part, prompted the Council to revisit the red snapper allocation to potentially provide some relief to the shortening seasons, which in turn has increased tension among the recreational and commercial sectors. While the red snapper stock

has rebounded, the appearance of good year classes has resulted in an abundance of larger fish which has allowed the recreational quota to be caught faster, as each angler's bag limit weighs more and thus represents more of the quota. Without addressing the problem of shortened seasons, there will continue to be dissatisfaction with management and continued quota overages by the recreational sector. Modifying the red snapper allocation could potentially provide some temporary relief to the shortened recreational fishing seasons (although, with the current federal season only nine days, allocating the total red snapper quota to the recreational sector would still allow less than one month of red snapper harvest in federal waters); however, the scope of this action is to evaluate reallocation, rather than addressing the broader issues of managing the recreational harvest of red snapper.

Alternative methods of allowing for transfer of quota between the sectors, such as incentive-based mechanisms, rather than the regulatory-based alternatives provided in this amendment might avoid some of the disparities that occur with the regulatory approach used here, and have been recommended by the Socio-economic Scientific and Statistical Committee (SESSC). With the commercial sector already under an IFQ program, such incentive-based mechanisms would allow for trading of quota between the two sectors, thereby allowing market mechanisms to determine efficiency. Incentive-based approaches would more likely result in actual increases in efficiency and net benefits, but would face similar concerns for social impacts resulting from unequal distributional effects (see Section 3.4). Reallocation of quota through the regulatory-based approaches in **Alternatives 2-7** would be the quickest manner of providing some additional fishing opportunities to the recreational sector; yet, the season is extended only nominally and would be matched by negative impacts in the commercial sector, as discussed below.

Because **Alternatives 2-7** all transfer a certain percentage of quota from the commercial sector to the recreational sector, the types of effects on the social environment would be similar among the alternatives. The effects would vary in scope and strength relative to the amount of quota that is reallocated. It is difficult to quantify social effects because a comparable social net benefits analysis has not been developed to accompany an economic efficiency analysis used to quantify net benefits. As a result, the discussion that follows will be qualitative in its approach and identify possible direct and indirect effects that might accrue from reallocation under the different alternatives. Most generally, the quality of social impacts differs between the sectors, in that a loss of commercial access to red snapper could affect the livelihoods of commercial fishermen, especially small-scale owner-operators, hired captains and crew who do not own red snapper shares, and the well-being of commercial communities. The gains in recreational quota would provide additional recreational opportunities to retain red snapper.

From a social perspective, the potential economic gains estimated in an economic efficiency analysis assume certain aspects of the economy are equal, which may not be the case. The distributional effects of how dollars lost and gained from reallocation move through the various value chains and other targeted fisheries, including fishing communities and the larger Gulf coast economy, should be taken into consideration. While it might be expected that any net benefits from a purely economic efficiency standpoint should continue to provide net gains, there is concern that gains and losses may be experienced differently and appear with other types of analysis (Copes 1997). This point was made by the SEFSC as there are other aspects within the

current economic and social climate that are not taken into consideration in the analysis. Some of the factors that might contribute to resulting impacts and how impacts are distributed through the economy include differential value chains, a sluggish economy, a high unemployment rate, the recovery from the recent Deepwater Horizon MC252 oil spill, different property rights structures, and the general differences in community well-being that currently exist.

The net benefits estimated by an economic efficiency analysis are not actual economic gains, but potential gains that do not consider other distributional effects (Bromley 1977). Should net gains in economic efficiency be realized as a result of reallocation, there is no reason to expect that the gains or losses would be equally distributed among fishing communities. Jacob et al. (2013) found that when shifting allocation between recreational and commercial fishing communities, highly dependent fishing communities experienced greater positive or negative effects on well-being than those communities that were less dependent. Although this research was not specific to red snapper or the Gulf coast, it did look at reallocation and reinforces the idea that any shift may have unintended consequences not accounted for in an economic efficiency analysis (Appendix G). Current measures of community well-being (Section 3.3) also suggest that commercial dependent fishing communities exhibit greater vulnerability than recreational-dependent fishing communities, in that more index thresholds are exceeded for commercially dependent communities than recreationally dependent communities (Figures 3.4.2.1 & 3.4.2.2). Of the commercially dependent communities discussed in Section 3.3, five exceed the social vulnerability threshold on all three measures and three exceed the thresholds for two social vulnerability measures. For the recreationally dependent communities discussed in Section 3.3, only one community exceeds the social vulnerability threshold for all three measures and three communities exceed at least two measures of social vulnerability. Again, these social vulnerability measures are not specific to red snapper but suggest the nature of differences among other parts of the economy outside of red snapper fishing. The communities that are experiencing higher social vulnerabilities may be less able to absorb negative social effects from a change in resource access resulting from reallocation due to having higher levels of poverty, unemployment, and a higher proportion of vulnerable populations. The losses to commercial fishing communities may be compounded because of increased vulnerabilities that are not captured in the economic efficiency analysis, as discussed above.

The remainder of this discussion assumes current conditions, including an aggregate quota of 11.0 mp. This discussion of the expected social effects would need to be revised if the quota changes or one or more states adopt additional regulations that are inconsistent with federal regulations. Because of the short season projected for 2014 (nine days), it is difficult to project reliable estimates of the additional number of fishing days that would result from each of the alternatives. The difficulty arises from uncertainty whether historical harvest patterns, notably daily effort and harvest rates, will continue or change (and, if so, change how much) as a result of the short season. These rates could change in either direction; they could increase as a result of a race to fish, or decrease if, for example, adverse weather conditions reduce the ability to fish on a given day or be rescheduled for another day. Reallocating 3% of the red snapper quota to the recreational sector (**Alternative 2**) would result in 330,000 lbs more red snapper compared to **Alternative 1**. Assuming an average 210,166 lbs of red snapper were caught by recreational anglers per day (2013 fishing season average; NMFS 2014), **Alternative 2** would provide the recreational sector with one to two additional fishing days. With a larger shift in allocation of

10% (**Alternative 4**), 1.10 mp of red snapper would be moved from the commercial sector to the recreational sector, which given the daily rate of harvest in 2013, the projected season could possibly be extended by five days. Although these additional fishing opportunities for recreational fishing communities are proportionately large given the short duration of the season, they do not extend the season near the six months advocated by many anglers (<https://docs.google.com/spreadsheet/ccc?key=0Atgbk2rxQkqhdHByby1ad0F0THZiMGtoVTdlVDJ6cWc#gid=0>). Furthermore, assuming the daily rate of harvest will increase as the season becomes shorter (Figure 3.4.3), and the increasing proportion of the recreational quota caught during extended state water seasons, these estimations of additional fishing days may be over generous, as changes in effort or participation are likely for an open entry sector.

Conversely, the increase in fishing opportunities provided to the recreational sector from reallocation would correspond with negative impacts to the commercial sector by reducing their access to the red snapper resource. A purpose of this amendment is to increase the stability of red snapper fishing, particularly for the recreational sector; however, **Alternatives 2-7** will not increase the stability of red snapper fishing for the commercial sector but, instead, each of these alternatives would be expected to trigger some instability in the IFQ market as a result of restructuring existing property rights. Although the commercial harvest of red snapper has been open year round since inception of the IFQ program, a commercial fisherman's ability to harvest red snapper depends on the ability to acquire quota. The commercial sector consists of numerous participation roles that may incur differential impacts from this management action. For example, some captains own and fish from their own vessel, and other captains work vessels for owners, including dealers. Commercial red snapper allocation can cost upwards of 75% of ex-vessel price (GMFMC 2013b; Appendix G) for those who must purchase allocation from others. Although IFQ shares were initially distributed based on historical landings, since implementation of the program, red snapper IFQ shares have been bought by fishermen who did not initially receive them representing direct economic investment in the IFQ program. Because frustration has been expressed in public testimony by those opposed to the sale of red snapper quota allocation in the IFQ program, it must be noted that for every pound of allocation sold, another commercial fisherman paid to land that red snapper.¹²

One concern about reallocation under current management is that the quota has been increasing, but may not continue to do so in the future. If the quota decreases, the losses and benefits that accrue would be much different and could shift the direction of how those benefits accrue. Even with a stable quota, net benefits could change over time as other factors related to either sector or other parts of the economy can change.

The concerns discussed above highlight many of the issues that might be raised with this choice of reallocation alternatives. As mentioned earlier, the shortened seasons and quota overages occurring in the recreational sector suggest the need for a revision to current management. Reallocation is one method of addressing the overages of one sector, but does not provide a mechanism for avoiding overages in the future. This is evident as with even a 100% shift, the season is only extended by 18 days. As discussed, other alternative management strategies have

¹² In the IFQ program, 'shares' refer to a percentage of the entire commercial quota; shares may be bought and sold by any U.S. citizen. 'Allocation' refers to the pounds of red snapper represented by those shares, based on the current year's quota. Allocation may only be purchased and landed by a permitted commercial vessel.

been suggested that include incentive-based mechanisms that would require a more complex management regime. The various reallocation alternatives under consideration may provide some temporary relief to a problem in the recreational sector that needs a long-term solution.

Another aspect of reallocation is the effect on perceptions of management. Existing management has led to considerable dissatisfaction among the recreational sector. However, with a reallocation of quota from the commercial sector, considerable dissatisfaction and instability in commercial participants' confidence in the IFQ market would be expected to result, because there would be no mitigation to the commercial sector for the loss of access to red snapper quota. Although the efficiency analysis suggests potential net gains from a shift in allocation, all losses accrue to the commercial sector. Prior to implementation of the IFQ program for the commercial sector, there were many years during which commercial fishermen experienced similar dissatisfaction with management due to trip limits and shortened seasons that led to derby fishing (Figure 3.4.1). Doubtless, painful social impacts accompanied the transition to the incentive-based management regime, including reductions in participation; however, seven years later, commercial red snapper fishing has stabilized, both in terms of the season length (year round), prices, and avoiding quota overages. Nevertheless, the commercial red snapper IFQ program is still considered overcapitalized (GMFMC 2013b). A reallocation from the commercial quota would be expected to negatively affect the stability of the commercial sector in terms of long-term access to red snapper allocation and confidence in the IFQ program. These effects are different than would be expected from a quota decrease deemed necessary for biological concerns, which would also result in less quota availability, but would not be expected to negatively affect participants' confidence in the IFQ market and their ability to continue participating. Given the history of the commercial sector's derby seasons prior to the IFQ program's implementation, reallocating commercial quota to the recreational sector may be seen as unfair and create new tensions with management, as quota overages and shortened seasons would be expected to continue in the recreational sector.

Although the allocation is currently at 51% commercial, 49% recreational, the proportion of actual landings by each sector has consistently departed from the established allocation (Tables 2.1.1 and 2.1.2). That is, since the allocation was established in 1990, in all but five years the recreational sector's annual landings have represented a larger proportion of total landings than their allocation. In fact, the proposed allocation increase of 10% to the recreational sector (**Alternative 4**) approximates the actual average recreational landings for the years 2001-2012 (Table 2.1.1). Thus, the proportion of actual recreational landings is roughly equivalent or less than the quota that would result from some of the proposed increases in allocation.

With a 3% reallocation, **Alternative 2** would have the least negative direct or indirect social effects upon the commercial sector while providing the fewest additional opportunities for the recreational sector to retain red snapper among **Alternatives 2-6**. Assuming the quota remains the same, the effects resulting from **Alternative 2** would be most similar to **Alternative 7**, as discussed below. With a 5% reallocation, **Alternative 3** would extend the recreational season by 2-3 days; **Alternative 3** would also result in slightly more negative direct and indirect social effects upon the commercial sector compared with **Alternative 2**, assuming that any gains and losses move through all sectors proportionately in strength and scope. With a 10% reallocation, **Alternative 4** would provide the most fishing opportunities to the recreational sector of the

alternatives, but also result in the greatest negative direct and indirect social effects on the commercial sector. Given the discussion above, **Alternative 4** has the potential to have the greatest impact on the commercial sector and social aspects of the IFQ program, as described above.

Given the progress of red snapper rebuilding, as evidenced by larger fish and quota increases, the preceding discussion largely focused on impacts assuming a stable or increasing quota. However, it is possible the quota may decrease in future years, for example, if recruitment declines. Under **Alternatives 2-4**, quota decreases would compound the problems of the commercial sector's loss of access to red snapper from reallocation. **Preferred Alternative 5** and **Alternative 6** propose reallocations only on any quota above 9.12 mp, and **Alternative 7** would reallocate only that portion of the quota above 10.0 mp. As a result, these alternatives (**Alternatives 5-7**) result in different sector allocations depending on the total amount of the quota. If the red snapper quota drops below 9.12 mp, the effects of **Preferred Alternative 5** and **Alternative 6** would be similar to **Alternative 1**, as the 51% commercial, 49% recreational allocation would be maintained. This also holds true for **Alternative 7** if the red snapper quota drops below 10.0 mp. Thus, these alternatives provide some protection to the commercial sector's share of the quota in the event the red snapper quota declines in the future, compared with **Alternatives 2-4**.

By limiting reallocation of 75% of any quota over 9.12 mp to the recreational sector (**Preferred Alternative 5**), no negative social effects on the commercial sector would occur when the quota is at or below 9.12 mp, because the sectors' proportions of the quota would remain the same as under **Alternative 1**. However, with the current quota of 11.0 mp, the increased benefits associated with the increased quota (488,800 lbs) under **Preferred Alternative 5** to the recreational sector would be minimal in the short term compared to **Alternative 1**. In turn, the commercial quota would be decreased by this same amount, and attending adverse impacts would result from decreased access to the red snapper resource. Yet, if the red snapper stock continues to rebuild, any quota increases would benefit both sectors, but provide three times the additional quota to the recreational sector as the commercial sector. For example, if the quota is increased to 13.0 mp, under **Preferred Alternative 5**, the respective sector quotas would be 5.620 mp commercial and 7.380 mp recreational, or 43.24% for the commercial sector and 56.77% for the recreational sector. Thus, under **Preferred Alternative 5**, if the red snapper quota is 13.0 mp, the commercial quota would be 0.10 mp more than its current quota of 5.610 mp (**Alternative 1**).

By allocating 100% of all quota above 9.12 mp to the recreational sector (**Alternative 6**), the negative social effects to the commercial sector would be greater than under **Preferred Alternative 5**, but remain the same as **Alternative 1** when the quota is equal or less than 9.12 mp. For the current quota, the benefits to the recreational sector from **Alternative 6** would be second only to **Alternative 4**, resulting in an additional 958,800 lbs of red snapper. In turn, the commercial sector would not benefit from quota increases above 9.12 mp, and would share in any future decreases to the quota below 9.12 mp. Compared with the current quota of 11.0 mp (**Alternative 1**), **Alternative 6** would result in approximately twice the amount of reduction to the commercial quota (0.970 mp) compared to **Preferred Alternative 5** (0.490 mp). With a

larger, hypothetical 13.0 mp quota, resulting sector quotas would be 4.650 mp commercial and 8.350 mp recreational, or 35.8% commercial and 64.2% recreational, under **Alternative 6**.

Setting the baseline above which to reallocate at 10.0 mp, **Alternative 7** would reallocate the least amount of quota compared with **Alternatives 2-6**. **Alternative 7** would be expected to provide the least benefits to the recreational sector among these alternatives by providing only an additional 260,000 lbs of red snapper quota. **Alternative 1**, would result in the least adverse effects for the commercial sector. By setting the baseline at 10.0 mp, some recovery benefits are provided to the commercial sector from the rebuilding stock before the threshold at which the quota would be reallocated is reached. However, the baseline is 1.0 mp lower than the current quota (**Alternative 1**), meaning that adverse impacts would still be expected for the commercial sector.

Table 4.1.3.1. Comparison of the sector quotas resulting from Alternative 2 and Alternative 7, given various quota scenarios. The highlighted row represents the quota under Alternative 1 (status quo).

Quota	Alternative 2 (3% shift)		Alternative 7 (25%:75% shift above 10 mp quota)	
	Commercial	Recreational	Commercial	Recreational
8.0 mp	3.840 mp	4.160 mp	4.080 mp	3.920 mp
9.12 mp	4.378 mp	4.742 mp	4.651 mp	4.469 mp
10.0 mp	4.800 mp	5.200 mp	5.100 mp	4.900 mp
11.0 mp	5.280 mp	5.720 mp	5.350 mp	5.650 mp
13.0 mp	6.240 mp	6.760 mp	5.850 mp	7.150 mp

When compared with **Alternative 1**, the effects of **Alternative 2** and **Alternative 7** would be expected to be the most similar to one another in terms of the amount of quota that would be reallocated. As shown in Table 4.1.3.1, however, the benefits and impacts to each sector would change according to the size of the quota. While the structure of **Alternative 7** would not lower the commercial quota if the aggregate quota decreases below the baseline at which the reallocation would apply, the benefits to the commercial sector of a rebuilding stock and associated quota increases would be lessened. The inverse would apply under **Alternative 2**, which would reallocate a fixed 3% of the quota. As the red snapper stock rebuilds and continues to expand eastward, this trade-off between the structure of these alternatives may warrant further consideration.

This section has primarily addressed the recreational sector as a whole; however, fishing opportunities are not distributed evenly Gulf-wide. Prior to 2014, three of the five Gulf States allowed some additional harvest of red snapper in their state waters when the retention of red snapper from federal waters was prohibited. In 2014, all five Gulf States allowed additional fishing days for red snapper in state waters. The result is fewer red snapper fishing opportunities for 1) all anglers in federal waters during the federal season, 2) all anglers in states with compatible regulations, and 3) federal for-hire vessels operating from states with incompatible regulations. It is unknown whether a reallocation decision will affect the practice of states adopting incompatible regulations, by either increasing compliance, or resulting in greater state regulatory inconsistency. Nevertheless, those states with incompatible regulations provide

additional fishing opportunities for anglers in their state waters, which shortens the recreational fishing season for other anglers. For the 2014 red snapper fishing season, an estimated 2.04 mp of the recreational red snapper quota is expected to be harvested in state waters outside of the federal season. This is approximately half of the 4.312 mp ACT implemented by emergency rule for the 2014 recreational red snapper season (NMFS 2014). Thus, it cannot be assumed that additional fishing opportunities provided through reallocation would benefit all recreational anglers through a longer federal season, as some portion of the quota would be expected to be landed in state waters outside of the federal season.

4.1.4 Direct and Indirect Effects on the Economic Environment

This action considers alternative reallocations of the red snapper quota between the recreational and the commercial sectors. The current partition of the resource grants 49 percent of the quota to the recreational sector and 51 percent to the commercial sector. Reallocation alternatives considered in this action vary the recreational share of the quota from 49 percent (**Alternative 1**) to 59 percent in **Alternative 4**. Conversely, the commercial share of the red snapper quota ranges from a minimum of 41 percent to a maximum of 51 percent for **Alternative 4** and **Alternative 1**, respectively. The commercial and recreational red snapper allocations, in pounds and percentage of the quota, are provided in Table 2.1.3.

Alternative 1 (no action) would maintain the current split of the red snapper quota between the commercial and recreational sectors (51% commercial and 49% recreational¹³). Therefore, direct economic effects are not expected to result from **Alternative 1** because changes to harvests or other customary uses of red snapper are not expected to result from the no action alternative. However, in a study evaluating the economic efficiency of red snapper allocation between the commercial and recreational sectors, Agar and Carter (2013, Appendix G) concluded that the existing allocation was not economically efficient. Based on this finding, the continued apportionment of red snapper resources according to the status quo allocation between the sectors could potentially be expected to result in indirect adverse economic effects that would stem from forgone opportunities to enhance economic efficiency and thus generate more economic benefits. Improvements in economic efficiency would increase the economic value derived from the red snapper resources if the current allocation is moved closer to the optimal allocation, which is unknown.

All remaining alternatives (**Alternatives 2-7**) considered in this amendment would increase the percentage of the red snapper quota allocated to the recreational sector (and decrease the commercial sector's share by an equivalent percentage). Therefore, the implementation of any one of these alternatives would be expected to result in economic losses to the commercial sector and potentially generate economic benefits for the recreational sector. For each reallocation alternative, the relative magnitude of the expected losses to the commercial sector and potential gains to the recreational sector would determine the net economic effects.

Alternatives 2, 3, and 4 would add 3%, 5%, and 10% of the red snapper quota to the recreational allocation, respectively. Adjustments proposed in **Preferred Alternative 5** and **Alternative 6**

¹³ The status quo allocation was established in Amendment 1 (GMFMC, 1989) and was based on historical landings during the base period 1979-1987.

would only reapportion quota amounts in excess of 9.12 mp and would either grant 75% of the amounts in excess of 9.12 mp (**Preferred Alternative 5**) or 100% of the amount in excess of 9.12 mp (**Alternative 6**) to the recreational sector. The status quo allocation ratio would apply if the quota were 9.12 mp or lower. **Alternative 7** would allocate 75% of quota amounts in excess of 10.0 mp to the recreational sector, and the remaining 25% to the commercial sector. The status quo allocation ratio would apply if the quota were 10.0 mp or lower. Resulting percentages allocated to each sector would be fixed in **Alternatives 2-4** but would fluctuate in **Preferred Alternative 5** and **Alternatives 6-7** based on the magnitude of the red snapper quota. **Preferred Alternative 5** and **Alternatives 6-7** could potentially result in the reallocation of very large portions of the red snapper quota as the red snapper stock recovers and red snapper quotas are increased.

Estimates for mean net economic benefit per pound of red snapper are provided by Agar and Carter (2013, Appendix G). Aggregate net benefits estimates are also provided in Appendix G. In general, for commercial fisheries managed under an IFQ program, e.g., red snapper, changes in economic value in the commercial sector could be evaluated using IFQ allocation prices because for well-functioning IFQ markets, allocation prices can be used to measure net economic benefits. The estimates of economic value to the commercial sector provided in Appendix G were derived following the approach suggested in Newell et al. (2005a and 2005b), which provide discussions on IFQ markets and on the determinants of allocation prices in individual fishing quota markets. For commercial red snapper harvesters, the mean net benefit per pound of red snapper is estimated to range from \$2.75 to \$2.95, for a commercial red snapper quota of 5.06 mp and 4.06 mp, respectively (Agar and Carter, 2013, Appendix G). These net benefit estimates are limited to red snapper IFQ participants, including harvesters and individuals/entities who elect to lease their annual allocation. Producer surplus received by economic agents operating between the harvest and the final consumption of red snapper, e.g., dealers and retailers, were not included. The consumer surplus enjoyed by red snapper consumers was also not included in the estimates provided. However, if there are many substitutes for red snapper (e.g., other domestic or imported reef fish), then the surplus to the retail consumer would be expected to be small. For a discussion on substitution between red snapper and imports, see, for example, Norman-López (2009).

In the recreational sector, due to the absence of market transactions for recreationally-caught fish, the evaluation of economic benefits typically relies on non-market valuation techniques such as revealed preference methods or stated preference approaches. Following Carter and Liese (2012), estimates of economic value cited in this analysis were derived based on a 2003 stated preference choice experiment survey administered by the SEFSC. For recreational anglers who prefer to fish for red snapper, the estimated benefit of keeping 2 red snapper per trip instead of keeping 2 of the next preferred species is \$142.11 (in 2012 dollars). On a per pound basis, this estimate corresponds to a mean net benefit of \$11.21 per pound (based on an average weight of 6.34 lbs per red snapper). This estimate does not include producer surplus to the for-hire entities (charter and headboat owners and operators).

The economic effects expected to result from reallocations of the red snapper quota between the recreational and commercial sectors are usually evaluated based on aggregate (sum of recreational and commercial) changes in economic benefit relative to a baseline allocation (51%

commercial and 49% recreational). Although it logically follows that the allocation of greater proportions of the red snapper quota to a given sector would be expected to result in greater economic benefits for that sector and lower economic benefits for the other sector, inferences about overall changes in economic efficiency are not provided here because it cannot be assumed that the resource allocation within each sector is efficient. The resource allocation within the commercial sector, which is managed under an IFQ system, would constitute a reasonable approximation for an efficient resource allocation (despite the limitations to the transfer of IFQ shares and allocation due, for example, to ownership caps). However, the open access management approach in the recreational sector cannot be conducive to an efficient allocation of red snapper within the recreational sector. As suggested by Holzer and McConnell (2014), by Abbott (2015) and in a recent report (OECD 2014), changes in net benefit estimates based on the generally accepted application of the equimarginal principle and associated inferences about economic efficiency are erroneous when each sector's quota is not efficiently allocated within the sector. As a result, policy prescriptions based on such inferences would be invalid, and therefore, not useful. Therefore, it is not possible to provide policy-relevant rankings of the reallocation alternatives in this amendment based on the expected net economic outcome, i.e., the sum of the change in economic benefits to the recreational and commercial sectors. It can only be stated that greater percentages of the red snapper quota allocated to the recreational sector would be expected to increase economic benefits to the recreational sector and decrease benefits to the commercial sector.

In addition to the preceding discussion relative to the economic changes of the proposed alternatives, several other factors should be considered in the evaluation of the potential economic effects that would be expected to result. These factors include the Magnuson-Stevens Act mandates, discrepancies between Council-determined allocations and actual percentages of total red snapper landings attributed to each sector, potential impacts of increased scarcity of IFQ allocation, and considerations relative to which sectors may be better or worse off following a reallocation.

Provisions of the Magnuson-Stevens Act prohibit management measures, including allocation decisions, from having economic efficiency as their sole purpose (National Standard 5). Other factors that must be considered include the promotion of conservation, the prevention from acquiring an excessive share, and the fairness and equity of the measure (National Standard 4). Relative to fairness and equity considerations, the Magnuson-Stevens Act also stipulates that, should the reallocation maximize overall benefits, fairness and equity does not mean that the status quo allocation should be maintained. A concise summary of the Magnuson-Stevens Act considerations as they relate to allocation is provided by Plummer et al (2012). The purpose and need for this proposed action indicates that economic efficiency does not constitute the sole purpose for this amendment. It would not be expected that the range of allocation shifts considered would grant any one sector, entity, or individual an excessive share of the resource. However, it is not clear that the proposed reallocation alternatives would promote conservation, in light of the repeated and sizeable harvest overages recorded for the recreational sector. It is noted that recently implemented accountability measures for the recreational sector, i.e., annual catch target (ACT) are expected to mitigate the occurrence and size of overages (GMFMC, 2014). Fairness and equity considerations are discussed in the social effects section (Section 4.1.3).

The frequency and magnitude of recorded overages have resulted in sizeable discrepancies between the Council-mandated allocation (51% commercial and 49% recreational) and the percentages of red snapper landings attributed to each sector (Figure 2.1.2). Given the Council's limited success in constraining landings to the mandated allocation, the relevance of reallocation efforts may be improved by management measures ensuring that a mandated apportionment would be reached and, as stated by the Socioeconomic SSC¹⁴, by giving more consideration to management approaches that would strengthen the property rights structure within the recreational sector and foster the use of rights-based instruments.

The decrease in the amount of IFQ allocation available to IFQ participants following a reallocation could be expected to put upward pressure on the price of allocation. The model explaining the variability of allocation prices as a function of the commercial quota and other explanatory variables presented in Appendix G suggests that a one million pound drop in commercial red snapper quota would result in approximately a \$0.20 increase in the per pound price of allocation. However, the extent to which the decreased availability of red snapper IFQ annual allocation would impact the behavior of participants in the market for IFQ allocation is not known. For example, the willingness to sell allocation could be reduced, especially in the Eastern gulf, possibly contributing to increased discards. Additional challenges to small IFQ shareholders who typically purchase allocation during the year and to potential new entrants could also result from the limited availability. All of the proposed alternatives to the status quo (**Alternative 1**) consider increases in the recreational red snapper quota. However, because none of the proposed alternatives would allow or require actual compensation to the commercial sector, recreational anglers would be better off and commercial fishermen worse off.

4.1.5 Direct and Indirect Effects on the Administrative Environment

The setting of an allocation is an administrative action and it will have direct effects on the administrative environment through additional rulemaking. Because **Alternative 1** (no-action) would not require rulemaking, it would have no effect on the administrative environment. The act of setting the allocation under **Alternatives 2-4** is a one-time event, and thus these alternatives would have an equivalent burden though the minor direct administrative impacts associated with rulemaking to implement the new allocations. **Preferred Alternative 5** and **Alternatives 6-7** would require the allocations to be changed each time the red snapper allowable biological catch (ABC) is changed. Therefore, it will trigger an additional administrative burden to the Council and NMFS to set the revised allocations and associated quotas. Under these conditions, **Preferred Alternative 5** and **Alternatives 6-7** would have the greatest negative direct effect on the administrative environment, followed by **Alternatives 2, 3, and 4**. **Alternative 1** would have no effect.

Indirect effects of setting allocations require monitoring of the resultant quotas, enforcement of the quotas, and setting management measures to minimize the risk of quotas being exceeded (as are being proposed under Action 2). However, regardless of which alternative is selected, these

¹⁴ For example, during its November 2013 meeting, the SESSC unanimously approved a motion to encourage the Council to look at first best i.e., incentive based mechanisms vs. second best, i.e. regulatory actions when making allocation decisions away from the current allocation.

management and enforcement activities need to continue. Therefore, the indirect effects from each alternative should be similar.

4.3. Cumulative Effects Analysis (CEA)

As directed by NEPA, federal agencies are mandated to assess not only the indirect and direct impacts, but cumulative impacts of actions as well. NEPA defines a cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

This section uses an approach for assessing cumulative effects that was initially used in Amendment 26 to the Reef Fish FMP and is based upon guidance offered in CEQ (1997). The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

Cumulative effects on the biophysical environment, socio-economic environment, and administrative environments are analyzed below.

1. Identify the significant cumulative effects issues associated with the proposed actions and define the assessment goals.

The CEQ cumulative effects guidance states this step is accomplished through three activities as follows:

- I. The direct and indirect effects of the proposed actions (Section 4.1-4.3);

- II. Which resources, ecosystems, and human communities are affected (Section 3 and Appendix C); and
- III. Which effects are important from a cumulative effects perspective (information revealed in this CEA).

2. Establish the geographic scope of the analysis.

The primary effects of the actions in this amendment would affect the social, economic, and administrative environments of the Gulf. The physical and biological/ecological environments would be less affected as described in Sections 4.1-4.3.

The geographic scope affected by these actions is described in detail in Reef Fish Amendments 22 and 27 (GMFMC 2004c and 2007) and pertains directly to the Gulf. Red snapper are one of the most sought after species in the reef fish fishery. This species occurs on the continental shelves of the Gulf and the U. S. Atlantic coast to Cape Hatteras, N. C. (Moran 1988). Eggs and larvae are pelagic and juveniles are found associated with bottom features or bare bottom. In the Gulf, adults are found in submarine gullies and depressions; natural vertical relief structures such as coral reefs, rock outcroppings, and gravel bottoms; and artificial structures such as oilrigs and artificial reefs (GMFMC 2004c).

Commercial reef fish vessels and dealers are primarily found in Gulf States (GMFMC 2008b, 2013b). Based on mailing addresses or home ports given to the Southeast Regional Office (SERO) as of January 6, 2014,¹⁵ 100% of historical charter captain reef fish, 97% of for-hire reef fish, 98.5% of commercial reef fish permitted vessels, and 100% of vessels with reef fish longline endorsements are found in Gulf States. For permitted reef fish dealers, 94.5 percent are found in Gulf States. All dealers who are able to process IFQ transactions are located in Gulf States (Section 3.5.1.3). With respect to eligible red snapper individual fishing quota shareholders actually holding red snapper shares, 98% have mailing addresses in Gulf States (GMFMC 2013b). According to NMFS (2013b), the Gulf accounted for approximately 35% of trips and 42% of the catch in 2012 for U. S. marine recreational fishing trips by approximately 3.1 million Gulf anglers catching, with visitors, 161 million fish.

3. Establish the timeframe for the analysis

The timeframe for this analysis is 1984 through 2016. Red snapper have been managed in the Gulf since the implementation of the Reef Fish Fishery Management Plan in **1984** which put in place a 13-inch minimum size limit total length (TL). The red snapper stock has been periodically assessed since 1988. The 2013 SEDAR 31 red snapper stock assessment was the last benchmark assessment. The assessment included reconstructed data for analysis for the commercial sector from 1872 through 1962 (Porch et al. 2004), data from 1963-2011 for commercial landings, and data from 1981-2011 for recreational landings (SEDAR 31 2013). In addition, catch effort for the Gulf shrimp fishery (SEDAR 31 2013), including reconstructed data from 1948-1972 (Porch and Turner 2004), was used to estimate juvenile red snapper discards from this fishery.

¹⁵http://sero.nmfs.noaa.gov/operations_management_information_services/constituency_services_branch/freedom_of_information_act/common_foia/index.html

The following is a list of reasonably foreseeable future management actions. These are described in more detail in Step 4. Note that the next red snapper assessment is scheduled for 2015. Should new regulations be needed for the management of this stock, they will likely not be implemented until **2016** at the earliest, or the end of the timeframe discussed in this analysis.

- The next assessment for red snapper through SEDAR is an update scheduled to occur in 2014 and a standard assessment is scheduled for 2015. Other reef fish species scheduled for assessments include gag, greater amberjack, hogfish, and mutton snapper in 2014, red grouper, vermilion snapper, gray triggerfish, scamp, and black grouper in 2015, and gag, greater amberjack, yellowedge grouper, gray snapper, and yellowtail snapper in 2016.
- The Council is currently developing several actions that will affect the reef fish fishery. Actions affecting red snapper include: Amendment 36 (IFQ program revision), Amendment 39 (red snapper regional management), Amendment 40 (sector separation of the recreational sector), and a generic status determination criteria amendment (update ACL language). In addition, the Council is working on reef fish actions that update ACLs with new MRIP numbers, look at gag regional management, and require electronic reporting for charter boats. These actions are described in more detail in Step 4 of this CEA.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.

a. Past actions affecting red snapper fishing are summarized in Sections 1.4 and 3.1. The following list identifies more recent actions (Note actions taken prior to Amendment 32, the last EIS done for the Reef Fish FMP are described in detail in that amendment (GMFMC 2011b) and are incorporated here by reference).

- The following are past actions are specific to red snapper:
 - In January 2011, the Council submitted a framework action (GMFMC 2011c) to NMFS to increase the red snapper total allowable catch to 7.185 mp, with a 3.521 mp recreational quota and a 3.664 mp commercial quota. The final rule from this action established a 48-day recreational red snapper season was June 1 through July 18.
 - On August 12, 2011, NMFS published an emergency rule that, in part, increased the recreational red snapper quota by 345,000 pounds for the 2011 fishing year and provided the agency with the authority to reopen the recreational red snapper season later in the year, if the recreational quota had not been filled by the July 19 closing date. However, in August of that year, based on headboat data plus charter boat and private recreational landings through June, NMFS calculated that 80% of the recreational quota had been caught. With the addition of July landings data plus Texas survey data, NMFS estimated that 4.4 to 4.8 mp were caught, well above the 3.865 mp quota. Thus, no unused quota was available to reopen the recreational fishing season.
 - On May 30, 2012, NMFS published a final rule in response to a framework

action submitted by the Council to increase the commercial and recreational quotas and establish the 2012 recreational red snapper fishing season (GMFMC 2012a). The recreational season opened on June 1 through July 11. However, the north-central Gulf experienced extended severe weather during the first 26 days of the 2012 recreational red snapper fishing season, including Tropical Storm Debby. Due to the severe tropical weather, the season was extended by six days and closed on July 17.

- On May 29, 2013, NMFS published a final rule in response to a framework action submitted by the Council to increase the commercial and recreational quotas (GMFMC 2013d). The combined quotas were raised from 8.080 million pounds whole weight to 8.460 lbs whole weight. The recreational fishing season was set differently for waters off different states because of non-compatible regulations. However, a federal court ruled against different seasons, so the season for federal waters was from June 1 through July 5. Later in 2013, NMFS approved a framework action (GMFMC 2013a) to increase the combined quotas from 8.46 mp to 11 mp. This allowed an additional recreational fishing season from October 1 through October 15.
- In response to a decision by the U.S. District Court for the District of Columbia (Court) in *Guindon v. Pritzker*, 2014 WL 1274076 (D.D.C. Mar. 26, 2014), NMFS took emergency action May 15, 2014 (79 FR 27768) to address recent recreational red snapper quota overages. At their April 2014 meeting, the Council requested an emergency rule to implement an in-season accountability measure for the recreational harvest of red snapper in the Gulf that would apply to the 2014 season that opened on June 1, 2014. The action set an ACT equal to 80% of the 5.390 mp quota (ACT = 4.312 mp). The resultant 9-day season was based on the ACT and has only a 15% probability of exceeding the quota.

b. The following are recent reef fish actions not summarized in Section 1.4 or 3.1 but are important to the reef fish fishery in general (Note actions taken prior to Amendment 32 are described in detail in that amendment (GMFMC 2011b) and incorporated here by reference).

- A rule effective April 2, 2012, that adjusted the 2012 commercial quota for greater amberjack, based on final 2011 landings data. For 2011, the commercial quota was exceeded by 265,562 pounds. Therefore, NMFS adjust the 2012 commercial quota to account for the overage resulting in a quota of 237,438 pounds.
- A temporary rule effective May 14, 2012, reduced the gray triggerfish annual catch limits and commercial and recreational annual catch targets. The temporary rule was put in place to reduce overfishing while the Council worked on long-term measures to end overfishing and rebuild the stock in Amendment 37.
- A framework action effective on November 19, 2012, eliminated the earned income qualification requirement for the renewal of Gulf commercial reef fish permits and increased the maximum number of crew members for dual-permitted (commercial and charter) vessels. The Council determined the existing earned income requirement in the reef fish fishery is no longer necessary and relaxing the number of crew on dual-permitted vessels increased the safety on commercial trips, particularly for commercial

spear fishermen.

- Amendment 38 (GMFMC 2012c), effective March 1, 2013, allows NMFS to shorten the season for gag and red grouper if landings exceeded the catch limit in the previous year. The amendment also changed the trigger method for recreational accountability measures to an annual comparison of landings to the catch limit rather than using a three-year moving average. Finally, the amendment allows the establishment or modification of accountability measures through the faster framework procedure rather than through slower plan amendments.
- Amendment 37 (GMFMC 2012b), rulemaking effective June 10, 2013, was developed to end overfishing of gray triggerfish and rebuild the gray triggerfish stock. The amendment adjusted the commercial and recreational gray triggerfish annual catch limits and annual catch targets, established a 12-fish commercial gray triggerfish trip limit and a 2-fish recreational daily bag limit, established an annual fishing season closure from June 1 through July 31 for the commercial and recreational sectors, and established an overage adjustment for the recreational sector.
- A framework action effective July 5, 2013, adjusted the recreational gag season to July 1 through December 3, 2013, the time projected to harvest the recreational annual catch target of 1.287 mp. The framework action also restricted the geographical extent of the fixed February 1 through March 31 shallow-water grouper closed season to apply only to waters seaward of the 20-fathom boundary. This allows grouper fishing to occur year-round while providing some protection to species that spawn during February and March.
- A framework action effective September 3, 2013, set a 10-vermilion snapper bag limit within the 20-fish aggregate reef fish bag limit as a precautionary measure to reduce the chance of overfishing for this species. The action also increased the Gulf yellowtail snapper annual catch limit from 725,000 pounds to 901,125 pounds based on a recent stock assessment. Finally, the action eliminated the requirement to use venting tools when fishing for reef fish as 1) some scientific studies have questioned the usefulness of venting tools in preventing barotrauma in fish and 2) the action would give more flexibility to fishermen on when to vent or to use some other device like fish descenders.
- A framework action effective August 30, 2013, simplified for-hire permit renewals and transfers as well as allow more flexibility to the for-hire industry in how they use their vessels.
- Accountability measures for red grouper and gray triggerfish were implemented. For red grouper recreational fishing, the bag limit was reduced from four to three fish on May 5, 2014, and a season closure was projected for September 16, 2014. For gray triggerfish, the recreational season was closed on May 1, 2014.

c. The following are reasonably foreseeable future actions (RFFA) important to red snapper and the reef fish fishery in general¹⁶.

- The Council is currently developing the following actions for red snapper.
 - Amendment 36 would revise the IFQ program based on recommendations from the red snapper IFQ program. These recommendations would be based on a

¹⁶ Information on these developing actions can be found on the Council's website at www.gulfcouncil.org.

review of the program completed in 2013 (GMFMC 2013b).

- Amendment 39 would allow regional management of red snapper for the recreational sector. This regional management could be set at the state level or be based on broader regions (e.g., eastern and western Gulf).
- Amendment 40 that would separate the federally permitted for-hire component from the private angler/non-federally permitted for-hire component. The purpose for this action is to provide flexibility in the management of the recreational red snapper component of the reef fish fishery by reorganizing the red snapper sector.
- A generic status determination criteria amendment proposes to update the current red snapper quota-based language for setting commercial and recreational allocations with ACL-based language in accordance with the Magnuson-Stevens Act.
- An amendment to allow for inter-sector trading of red snapper allocation has been proposed by the Council. The amendment will evaluate the buying of commercial red snapper allocation by components of the recreational sector for recreational harvest.
- The Council is working on other reef fish actions. These are as follow:
 - A framework action to update ACLs with new MRIP numbers for grouper and tilefish stocks managed under IFQ programs. The action proposes to update ACLs developed in the Generic ACL/AM Amendment that used MRFSS landings data with the new MRIP landing estimates.
 - An abbreviated framework action for definition & intent of for-hire fishing in the EEZ.
 - An amendment for regional management for the recreational harvest of gag to provide greater flexibility in regionally managing this species.
 - An amendment to require electronic reporting for charter boats to improve the quality and timeliness of landings data for this sector.
- Congress has proposed HR 3099 and S 1161 which directs the Gulf States Marine Fisheries Commission to: (1) prepare and adopt a data collection strategy for the Gulf red snapper fishery, including interstate collaboration measures and a plan for annual stock assessments; and (2) prepare, adopt, and submit to the Secretary of Commerce a fishery management plan providing for the conservation and management of Gulf red snapper and describing the standards of compliance for Gulf coastal states to use in developing fishery management measures.

d. The following are non-FMP actions which can influence the reef fish fishery.

Amendment 30B (GMFMC 2008b) describes in detail non-FMP actions relating liquefied natural gas terminals, hurricanes, fuel prices, and imports and were reiterated in Amendment 32. To summarize:

- Some liquefied natural gas terminals use sea water to heat the gas back to its gaseous phase. For open systems, high volumes of sea water are required and are likely to result in large mortalities of marine organism eggs and larvae.
- For hurricanes, direct losses to the fishing industry and businesses supporting fishing activities occur ranging from loss of vessels to destruction of fishery infrastructure (Walker et al. 2006). However, while these effects may be temporary, those fishing

related businesses whose profitability is marginal may be put out of business should a hurricane strike.

- Rising fuel costs have negative impacts on communities by increasing business costs and lowering profits.
- Most seafood consumed in the United States is imported and the quantity of imports has been steadily increasing. The effects of imports on domestic fisheries can cause fishermen to lose markets through commercial sector closures as dealers and processors use imports to meet demand, and limit the price fishermen can receive for their products through competitive pricing of imports.

In addition, Amendment 32 (GMFMC 2011b) discussed in detail a 2005 red tide event on the west-Florida shelf and the resultant oil spill from the explosion on the Deepwater Horizon MC252 oil rig. The red tide event may have impacted reef fish, including red snapper populations. It has only been in the last 10 years that mortalities of higher vertebrates have been indisputably demonstrated to be due to acute red tide blooms and their brevetoxins (Landsberg et al. 2009). The extent of this event and possible effects of fish community structure has been described in Gannon et al. (2009).

An estimated 4.9 million barrels of oil was released into the Gulf from the Deepwater Horizon MC252 event (see <http://response.restoration.noaa.gov/deepwaterhorizon>). The effects on the environment on reef fish and the reef fish fisheries may not be known for several years until affected year classes of larval and juvenile fish enter the adult spawning population and are caught by the fishery. For red snapper, this occurs at approximately 3 years of age, so a year class failure in 2010 may not be detected in the spawning populations or by harvesters of red snapper until 2013 at a minimum. The results of the studies detecting these impacts on recruitment should be available soon and will be taken into consideration in the next SEDAR assessment. In addition to impacts on recruitment, adult reef fish may also have been negatively affected by the oil spill. For example, Weisberg et al. (2014) suggested the hydrocarbons associated with Deepwater Horizon MC252 oil spill did transit onto the Florida shelf and may be associated with the occurrences of reef fish (including red snapper) with lesions and other deformities. The overall impact of the oil spill may not be realized for quite some time and study results are just now becoming available.

There is a large and growing body of literature on past, present, and future impacts of global climate change induced by human activities (Kennedy et al. 2002). Some of the likely effects commonly mentioned in relation to marine resources are sea level rise, ocean acidification, coral bleaching, increased frequency of severe weather events, and change in air and water temperatures (Kennedy et al. 2002; Osgood 2008). The Environmental Protection Agency's climate change Web page provides basic background information on these and other measured or anticipated effects. In addition, Intergovernmental Panel on Climate Change has numerous reports addressing their assessments of climate change (http://www.ipcc.ch/publications_and_data/publications_and_data.shtml). Additional reports are provided on the Global Climate Change website <http://climate.nasa.gov/scientific-consensus>.

Global climate changes could affect Gulf fisheries; however, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine

ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (Kennedy et al. 2002; Osgood 2008). It is unclear how climate change would affect reef fishes, and likely would affect species differently. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Hollowed et. al (2013) provided a review of projected effects of climate change on the marine fisheries and dependent communities. Integrating the potential effects of climate change into the fisheries assessment is currently difficult due to the time scale differences (Hollowed et. al 2013). The fisheries stock assessments rarely project through a time span that would include detectable climate change effects. While climate change may significantly impact Gulf reef fish species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts would occur. Actions from this amendment are not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing.

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.

This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components. According to the CEQ guidance describing stress factors, there are two types of information needed. The first are the socioeconomic driving variables identifying the types, distribution, and intensity of key social and economic activities within the region. The second are the indicators of stress on specific resources, ecosystems, and communities.

Reef Fish Fishery

Data used to monitor commercial reef fish effort includes the number of vessels with landings, the number of trips taken, and trip duration. Declines in effort may be a signal of stress within the fishery. For the red snapper component of the commercial sector, the number of vessels and trips did decline after the red snapper IFQ program was first implemented. However, the number of vessels and trips with red snapper landings have increased from 2007 to 2012 (GMFMC 2013b). These trends are described in Sections 3.1, 5.0, 6.0 and in GMFMC (2013b). The commercial IFQ program recently underwent a 5-year review (GMFMC 2013b). The stated goals of this program, implemented through Amendment 26 (GMFMC 2006) were to reduce overcapacity and eliminate problems associated with overcapacity. The review found the program was moderately to highly successful in meeting the program goals; however, further improvements were identified regarding overcapacity, discard mortality price reporting, and social and community impacts. Therefore, the red snapper component of the commercial sector does not seem to be stressed.

Within the commercial reef fish sector as a whole, the number of commercial vessels has been declining as evidenced by the number of permits (Table 4.2.1). The number of permits has declined from 1,099 in 2008 to 917 in 2012 and the number landing at least one pound of reef fish has declined from 681 to 557 over the same time period. Although this could be an indicator of stress in the fishery, the commercial sector has undergone several changes in the past few years with the IFQ programs for red snapper, grouper, and tilefish. Given that a primary goal of these programs is to reduce overcapacity, the reduction in permits may just reflect this expected change.

Table 4.2.1. Number of Gulf of Mexico reef fish commercial (landing at least one pound of reef fish), for-hire, and historical captain permits by year.

Sector	Year				
	2008	2009	2010	2011	2012
Commercial	1099 (681)	998 (696)	969 (580)	952 (561)	917 (557)
For-hire	1458	1417	1385	1353	1336
Historical captain	61	56	47	43	42

Source: Southeast Regional Office, Limited Access Permit Program Branch.

Table 4.2.2. Number of Gulf of Mexico reef fish commercial trips catching at least one pound of reef fish and the number of offshore angler trips for the charter and private angler components of the reef fish recreational sector for the years 2008-2012.

Sector	Year				
	2008	2009	2010	2011	2012
Commercial	8,079	8,177	5,991	6,541	6,629
Charter	326,868	319,768	229,679	300,668	355,413
Private angler	1,434,875	1,011,948	767,080	782,989	1,017,007

Sources: Commercial trip data from the Southeast Regional Office, Limited Access Permit Program Branch and recreational angler trip data from NOAA Office of Science and Technology's Recreational Fisheries Statistics web page at <https://www.st.nmfs.noaa.gov/recreational-fisheries/index>.

Social and economic characteristics of recreational anglers are collected periodically as an add-on survey to MRIP. Data used to monitor recreational reef fish effort in the sector primarily comes from MRIP and includes the number of trips and number of catch trips. Declines in effort may be a signal of stress within the sector. Private and charter fishing modes accounted for most of red snapper target trips, with the private angler mode the most common mode (Table 3.5.2.1.2). By state, Florida accounts for the greater percentage of landings (Table 3.5.2.1.1). For red snapper, changes in angler trips between 2008 and 2012 do not appear to show this segment of the fishery is stressed. Both targeted angler trips and trips that caught red snapper by the sector were highest in 2009 and lowest in 2010 (Table 3.5.2.1.2). The low harvest in 2010 was likely due to the Deepwater Horizon MC252 oil spill when large areas of the northern Gulf were closed to fishing. Although the number of annual angler trips for 2011 and 2012 has not reached the high of 2009 since the spill, the annual number of trips for these years is closer to the 2009 level than the 2010 level. This trend is also apparent in the number of private/rental angler and for-hire trips (Table 3.5.2.1.2).

For the reef fish recreational sector, the number of angler trips in offshore waters (Table 4.2.2; used as a proxy for recreational reef fish fishing) and on headboats (Table 3.5.2.1.5) show a similar trend as noted above for recreational red snapper fishing with a decline in 2010 from 2008 and 2009 values followed by an increase in trips in 2011 and 2012. This suggests the sector is recovering from the 2010 Deepwater Horizon MC252 oil spill. Within the for-hire component, the number of for-hire and historical captain permitted vessels has declined from 2008 to 2012 (Table 4.2.1; 1458 to 1336 permits and 61 to 42 permits, respectively) and could be viewed as an indicator of stress. However, the number of offshore trips by the charter component has increased above 2008 and 2009 values suggesting economic conditions for this component are improving.

Red Snapper

Major stresses to the red snapper stock have primarily come from overfishing, which has been occurring at least since the first stock assessment in 1988 and only recently ended. It is likely that quota overruns by both commercial and recreational sectors have slowed the recovery of the stock. Trends in landings and the status of red snapper stock are based on NMFS and SEDAR stock assessments (summarized in Sections 3.1 and 3.3) and incorporated here by reference. The most recent stock assessment indicates the stock is continuing to rebuild. It is likely the red snapper stock was adversely affected by the Deepwater Horizon MC252 oil spill in 2010. However, these effects may not be known for several years until recruits born in 2010 onward start to enter the red snapper fishery as described in 4d of this CEA.

Ecosystem

With respect to stresses to the ecosystem from actions in this amendment, changes in the red snapper allocation are not likely to create additional stress. Handline gear, the primary gear used by the fishery, and longlines can damage habitat through snagging or entanglement; however, as described in Section 4.1.1, these impacts are minimal. Changes in the population size structure as a result of shifting red snapper fishing selectivities and increases in stock abundance could lead to changes in the abundance of other reef fish species that compete with red snapper for shelter and food. Predators of red snapper could increase if red snapper abundance is increased, while species competing for similar resources as red snapper could potentially decrease in abundance if food and/or shelter are less available. Efforts to model these interactions are still ongoing [e.g., Ecopath (Walters et al. 2006) and Atlantis¹⁷], and so predicting possible stresses on the ecosystem in a meaningful way is not possible at this time. As described in Part 4d of this cumulative effects analysis, the Deepwater Horizon MC252 incident has affected more than one-third of the Gulf area from western Louisiana east to the panhandle of Florida and south to the Campeche Bank in Mexico. The impacts of the oil spill on the physical and biological environments are expected to be significant and may be long-term. Stressors to the ecosystem could include such factors as year-class failures and damage to reef fish EFH.

Administrative Environment

The stresses to the administrative environment from these actions would likely focus on the setting of annual quotas, ACTs, as well as monitoring landings to determine if AMs have been triggered. However, these stresses are not expected to significantly differ from the current stresses. In 2013,

¹⁷ NOAA's Integrated Ecosystem Assessment Program (<https://www.st.nmfs.noaa.gov/iea/gulfofmexico.html>)

several states established recreational red snapper regulations that were inconsistent with federal regulations. This caused additional stress on the administrative environment requiring additional regulations, analysis, presence of law enforcement, and increased confusion among the fishing public. The actions in this amendment would allow regions to adjust regulations to meet their regional needs while maintaining consistency with the FMP and likely reduce stress in this environment. It is unknown whether the regions would be able to constrain harvest to the quota. However, with the current federal management, the recreational sector has exceeded the allocation in 14 of 22 years in which an allocation was specified. The stock could likely withstand some overages without jeopardizing the rebuilding plan; however, continuous overages could result in a change of the stock status. However, the regions have indicated they intend to establish new monitoring procedures, which could improve the estimations for landings, but the SEFSC would need to review the sampling designs and data to insure compatibility with the current methods.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

This section examines whether resources, ecosystems, and human communities are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold (CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed actions to other cumulative activities affecting resources.

Reef Fish Fishery

As indicated above, both commercial and for-hire fisheries are subject to stress as a result of increases in fishing costs, increases in harvesting efficiency, more restrictive regulations (particularly for red snapper), and changes in the stock status of certain species (effort shifting). Reductions in dollars generated by these entities would likely be felt in the fishery infrastructure. For the reef fish fishery, an indicator of stress would be a decline in the number of permitted vessels. For the commercial sector, the number of vessels and trips landing red snapper initially declined after the IFQ program went into effect in 2007 (419 vessels and 4,714 trips in 2006 compared to 319 vessels and 2,578 trips in 2007; GMFMC 2013b). However, the number of vessels and trips landing red snapper has increased in recent years (368 vessels and 3,389 trips in 2011) demonstrating that conditions in commercial red snapper sector are improving. GMFMC (2013b) also cites other factors such as pricing, fleet and effort consolidation, and market conditions that also support an improved socioeconomic environment. As mentioned in Step 5 of this CEA, the number of vessels in the commercial sector has declined (Table 4.2.1); however, with the shift towards IFQ management, it is difficult to determine if this reflects stress in the sector or is a result of overcapacity reduction - an expected result of IFQ management. Five-year reviews similar to the one conducted for red snapper are planned for the grouper and tilefish IFQ programs after the 2014 fishing year (year 5 of the) is complete.

Analyses conducted on the effects of a limited access program for for-hire vessels indicated operations were generally profitable (GMFMC 2005a). However, testimony from for-hire

operators in light of recent red snapper regulations have suggested some for-hire operators may go out of business, particularly in the northeastern Gulf. This may be reflected in the declines in the numbers of permitted vessels shown in Table 4.2.2. However, Action 1 would increase the recreational allocation and support more red snapper fishing days. As a result, more red snapper trips would likely be booked unless any gains derived from shifting the allocation are minimized through the Action 2 buffers used to estimate the red snapper season length. Other reasonably foreseeable actions listed in Step 4c of this analysis are not expected to adversely affect the for-hire component and so should not place additional stress to the recreational sector. Non-FMP actions (see Step 4d) may place added stress on the for-hire component of the recreational sector (e.g., hurricanes and higher fuel costs). However, timing and magnitude of the potential negative cumulative the effects from these events are difficult to predict.

Red Snapper

Amendment 1 to the Reef Fish FMP (GMFMC 1989), implemented in 1990 before the Sustainable Fisheries Act (SFA) was passed, established the minimum spawning stock biomass at 20 percent SPR for all reef fish species. A 1991 regulatory amendment (GMFMC 1991) established a commercial quota and a 1997 regulatory amendment established a recreational quota. The quotas were set based on the 51:49 commercial:recreational allocation being applied to the total allowable catch. The Generic Sustainable Fisheries Act (SFA) Amendment (GMFMC 1999) proposed SFA definitions for optimum yield, minimum stock size threshold and maximum fishing mortality threshold for three reef fish species and generic definitions for all other reef fish. The definition of maximum fishing mortality threshold for red snapper, $F_{26\%SPR}$, was approved and implemented. Definitions for optimum yield and minimum stock size threshold were disapproved because they were not biomass-based. ACLs were not implemented for red snapper as the commercial and recreational quotas were considered functional equivalents; however, ACLs are currently being developed by the Council in a Generic Status Determination Criteria Amendment (see 4c of this CEA).

A benchmark assessment was conducted for red snapper in 2013 under the SEDAR stock assessment process (see Section 3.3 for a summary of the assessment). Based on the parameter estimates through 2011, the red snapper stock was found to be overfished, but that overfishing had ended. A brief description of the stock and its status can be found in Section 3.3 and step 5 of this CEA. Recreational AMs proposed in this amendment are designed to keep landings from exceeding the recreational quota and mitigate any damage to the stock should the quota be exceeded. Changing the how the ABC is allocated should not affect total landings. Thus, these actions are not likely to adversely affect the red snapper stock status.

Ecosystem

The stresses associated with the proposed actions in relation to regulatory thresholds are not likely to cause beneficial or adverse effects on the ecosystem. The actions would not change the way the fishery is prosecuted. Thus, significant effects on the ecosystem are not expected. The overall Gulf-wide fishing effort would remain constrained by the recreational quota.

Administrative Environment

The stresses associated with the proposed actions in relation to regulatory thresholds are not likely to cause beneficial or adverse effects on the administrative environments. Activities such

as monitoring landings, setting quotas, and enforcing fisheries regulations will continue as before. If the AMs reduce the frequency of quota overages as expected, this should reduce stresses on managers to respond with further regulations to control the harvest. However, if the AMs do not constrain the recreational harvest, then the stress in relation to regulatory thresholds could increase as corrective action would be required.

7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed actions is to establish a point of reference for evaluating the extent and significance of expected cumulative effects.

Reef Fish Fishery

As noted in Section 3.1, a description of the fishery and affected environment relative to red snapper was last fully discussed in joint Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007). Red snapper landings for the recreational sector are not available at the community level, making it difficult to identify communities as dependent on recreational fishing for red snapper. Data reflecting commercial landings of red snapper may or may not reflect areas of importance for recreational fishing of red snapper. It cannot be assumed that the proportion of commercial red snapper landings among other species in a community would be similar to its proportion among recreational landings within the same community because of sector differences in fishing practices and preferences. Thus, in addition to communities with the greatest commercial red snapper landings, the referenced analysis identifies communities with the greatest recreational fishing engagement, based on numbers of: 1) federal for-hire permits, 2) vessels designated recreational by owner address, and 3) vessels designated recreational by homeport, plus availability of recreational fishing infrastructure. The Gulf communities to score highest for recreational fishing engagement based on the described analysis are listed in Figures 3.4.1.1 and 3.4.1.2, and Table 3.4.1.2. Because the analysis used discrete geo-political boundaries, Panama City and Panama City Beach had separate values for the associated variables. Calculated independently, each still ranked high enough to appear in the top 30 list suggesting a greater importance for recreational fishing in that region.

Information is lacking on the social environment of these fisheries, although some economic data are available, although primarily for the commercial sector. Fishery-wide ex-vessel revenues are available dating to the early 1960s, and individual vessel ex-vessel revenues are available from 1993 when the logbook program was implemented for all commercial vessels.

Red Snapper

The first stock assessment of red snapper was conducted in 1986 and has been assessed periodically since then (see Section 3.1). The most recent assessment (see Section 3.3 for a summary) occurred in 2013 through the SEDAR process and included data through 2011. The assessment shows trends in biomass, fishing mortality, fish weight, and fish length dating to the earliest periods of data collection. For this assessment, reliable commercial landings data were estimated back to 1963 and projected landings were estimated back to 1872 (Porch et al. 2004). Recreational data were available since 1981. Beginning with the 1988 assessment (Goodyear 1988), red snapper have been considered overfished and undergoing overfishing. However, the

most recent assessment (SEDAR 31 2013) showed that overfishing had ended and that the stock condition, although still overfished, was improving. At this time, it is unknown what affects non-FMP actions (beneficial or adverse) such as the Deepwater Horizon MC252 oil spill or climate change may have on the health of red snapper stocks.

Ecosystem

A baseline for analysis of the physical environment, as discussed in Section 3.2, was conducted in the EIS for the Generic EFH Amendment (GMFMC 2004a). Detailed information pertaining to the closures and preserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010). In the Gulf, fish habitat for adult red snapper consists of submarine gullies and depressions; natural vertical relief structures such as coral reefs, rock outcroppings, and gravel bottoms; and artificial structures such as oilrigs and artificial reefs (GMFMC 2004a). Many of these vertical relief areas are identified as protected areas.

Other species in the ecosystem are discussed in Section 3.3. The Reef Fish FMP currently encompasses 31 species (Table 3.3.2). Eleven other species were removed from the FMP in 2012 through the Generic ACL/AM Amendment (GMFMC 2011a). Stock assessments and stock assessment reviews have been conducted for 13 species and can be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) websites.

Administrative Environment

The administrative environment is described in Section 3.6. Responsibility for federal fishery management is shared by the Secretary of Commerce (Secretary) and the Council for the federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf states exercise legislative and regulatory authority over their respective state's natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states' natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources.

Regulations contained within FMPs are enforced through actions of NOAA's Office of Law Enforcement, the United States Coast Guard, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council's Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission's Law Enforcement Committee, which have developed a 5-year "Gulf of Mexico Cooperative Law Enforcement Strategic Plan – 2008-2012."

The ability of the regions to constrain harvest causes uncertainty surrounding the effects of implementing regional management. The federal management has experienced overages of the quota or allocation in 14 of the last 22 years. However, the methods for estimating landings and projecting the season have improved consistently over time. The question remains if regions could constrain the harvest within the regional quotas; however, the regions have indicated they intend to improve monitoring for their specific regions under this plan, which should ameliorate

any concerns about overages being worse. Nevertheless, NMFS would need to continue analyzing the catch rates and landings to determine whether the regional management measures constrain the harvest. If the quota is exceeded for Gulf recreational red snapper harvest, then NMFS would be required to prohibit harvest in the EEZ regardless of the regional management plans.

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

Cause-and-effect relationships are presented in Tables 4.2.3.

Table 4.2.3. The cause and effect relationship of fishing and regulatory actions for red snapper within the time period of the CEA.

Time periods	Cause	Observed and/or expected effects
1800-2016	Climate change	Changes ocean acidity and temperature modifies fish and prey distributions and productivity; threaten fishing communities through sea level rise and changing weather patterns
1962-1983	Growth and recruitment overfishing	Declines in mean size and weight
1984	13-inch minimum size limit for the recreational and commercial fisheries	Slowed rate of overfishing
1990	3.1 mp quota for commercial fishery and 7 fish bag limit	Further slow rate of overfishing
1991-1992	2.04 mp commercial quota	Continue to slow rate of overfishing
1992	Establish red snapper Class 1 and 2 endorsements and respective trip limits	Begin derby fishery
1993-1998	3.06 mp commercial quota	Continue to slow rate of overfishing
1994	Increase minimum size to 14 inches in the commercial and recreational fisheries	Increase yield per recruit, increase the chance for spawning, and slow rate of overfishing
1995-1997	Increase minimum size to 15 inches in the commercial and recreational fisheries and reduce the bag limit to 5 fish	Increase yield per recruit, increase the chance for spawning, and slow rate of overfishing
1997-2005	Reduce recreational season length	Constrain harvest in recreational fishery
1998	Shrimp trawls in the EEZ required to use NMFS-certified BRDs west of Cape San Blas	Reduce fishing mortality rate on age 0 and age 1 red snapper
1998-2005	Reduce bag limit to 4 fish	Reduce fishing mortality rate in recreational fishery
1999-2005	Raise total quota to 9.12 mp	Reduce rebuilding rate for fishery
2000-2016	Raise recreational minimum size limit to 16 inches	Increase yield per recruit, increase the chance for spawning, slow rate of overfishing
2004	Shrimp trawls in the EEZ required to use NMFS-certified BRDs east of Cape San Blas	Further reduce fishing mortality rate on age 0 and age 1 red snapper
2004	Implement red snapper rebuilding plan	Provide mechanism to monitor harvest for rebuilding
2007-2016	Commercial- Established Individual Fishing Quota Program (IFQ)	Constrain commercial harvests within the limits set by the rebuilding plan; IFQ to further control commercial sector to prevent overages; increase in administrative work to manage the IFQ.
2007-2016	Recreational - Reduction of bag limit to 2 fish and adjustment of season length	Constrain recreational harvest to the quota. Progressively shorter seasons as average size of landed fish increases.

2013	Overfishing has ended, but the stock remains overfished.	Continue stock rebuilding
------	--	---------------------------

9. Determine the magnitude and significance of cumulative effects.

The primary objectives of this amendment and associated EIS is to reallocate red snapper resources between the commercial and recreational sectors as well as add accountability measures to reduce the probability of exceeding the recreational quota with the intent to increase the net benefits from red snapper fishing as well as increase the stability of the red snapper component. The short- and long-term direct and indirect effects of each these actions are provided in Section 4.1.

To examine the magnitude and significance of the cumulative effects, important valued environmental components (VECs) were identified for the overall actions to be taken with this amendment. VECs are “any part of the environment that is considered important by the proponent, public, scientists and government involved in the assessment process. Importance may be determined on the basis of cultural values or scientific concern” (EIP 1998). For purposes of this analysis, an initial 22 VECs were identified, and the consequences of each alternative proposed in this amendment on each VEC were evaluated. Some of these VECs were combined into a revised VEC because many of the past, current, and reasonably foreseeable future actions (RFFA) were similar. Based on this analysis, seven VECs were determined to be the most important for further consideration. These are shown in Table 4.2.4.

VECs not included for further analysis were sharks and protected resources. Many longline vessels that target reef fish also target sharks. However, sharks were not considered as an important VEC because, as shark stocks have declined, the shark fishery has become more and more regulated, limiting the effects of this fishery and the stock on reef fish stocks. There may be some effort shifting from the shark fishery to the reef fish fishery due to increased restrictions, however, this effect will likely be minor because only a minority of vessels have dual federal reef fish and shark permits. Protected resources were also eliminated from further analyses in this section. As described in Section 3.3, biological opinions have concluded the primary reef fish gear (longline and hook-and-line) were not likely to jeopardize sea turtles or small tooth sawfish. Because actions considered in this amendment are not expected to change how reef fish fishing gear is used in the prosecution of the reef fish fishery, any take associated with reef fish fishing should not exceed that considered in biological opinions. All other Endangered Species Act (ESA)-listed species have been found not likely to be adversely affected or not affected by the reef fish fishery. For marine mammals, gear used in the reef fish fishery were classified in the as Category III fisheries (see Section 3.3). This means this fishery has minimal impacts on marine mammals.

Table 4.2.4. VECs considered, consolidated, or not included for further evaluation.

VECs considered for further evaluation	VECs consolidated for further evaluation	VECs not included for further evaluation
Habitat	Hard bottom EFH	
Managed resources - red snapper - other reef fish species	Red snapper Other reef fish Prey species Competitors Predators	Sharks Protected species
Vessel owner, captain and crew - Commercial - For-hire	Vessel owner Captain Crew	
Wholesale/retail	Dealers Consumers	
Anglers		
Infrastructure	Fishing Communities Fishing support businesses (ice and gear suppliers, marinas, fuel docks)	
Administration	Federal Rulemaking Federal Permitting Federal Education State Rulemaking/Framework State Education	

The following discussion refers to the effects of past, present, and RFFAs on the various VECs. These effects are summarized in Table 5.14.4.

Habitat

Essential fish habitat, as defined in the GMFMC (2004a), for the Reef Fish FMP consists of all Gulf estuaries; Gulf waters and substrates extending from the US/Mexico border to the boundary between the areas covered by the Gulf of Mexico and the South Atlantic fishery management councils from estuarine waters out to depths of 100 fathoms. Section 3.2 and GMFMC (2004a) describe the physical environment inhabited by red snapper as well as reef fish in general. Red snapper is a carnivorous bottom dweller, generally associated (as adults) with hard-bottom substrates, submarine gullies and depressions, and oilrigs and other artificial structures (GMFMC 2004a). Eggs and larvae are pelagic while juveniles are found associated with bottom features or over barren bottom.

From fishing, the most sensitive gear/habitat combinations include EFH for reef fish species. These include fish otter trawls, shrimp otter trawls, roller frame trawls, and pair trawls over coral reefs; crab scrapes over coral reefs; oyster dredges over submerged aquatic vegetation (SAV), oyster reefs, or coral reefs; rakes over coral reefs; and patent tongs over SAV, oyster reefs, or coral reefs (GMFMC 2004a). Some of these gear/habitat interactions are unlikely to occur in actual practice (e.g., shrimp trawls towed through hard bottom areas can destroy shrimp nets and so are avoided). In general, gears that are actively fished by towing have the highest potential to alter habitats. However, some habitats, such as coral reefs and hard bottoms are sensitive to interactions with passive gears (e.g. traps) as well. Most directed reef fish fishing activities, as

described in Section 4.1.1, use longlines and handlines, although a few fish are taken by spearfishing gear. These have low levels of impacts compared to other gears.

In the past, some fishing practices have had detrimental effects on the physical environment. Gears such as roller trawls and fish traps damaged habitats while harvesting fish species. As a result of these effects, the Council developed stressed areas to reduce these impacts. Further protections have been developed, primarily by either prohibiting fishing or limiting fishing activities that can occur within certain areas. Detailed information on the closures and preserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010). In addition, regulatory changes through Generic EFH Amendment 3 (GMFMC 2005b; implemented in 2006) prohibited bottom anchoring and the use of trawling gear, bottom longlines, buoy gear, and all traps/pots to protect coral reefs in several HAPCs, and required a weak link in the tickler chain of bottom trawls on all habitats throughout the Gulf EEZ to minimize damage done to habitats should the chain get hung up on natural bottom structures.

Current allowable gear types can adversely affect hard bottom areas; however, these impacts are not considered great (See Section 4.1.1). Handline gear and longlines used in the reef fish fishery can damage habitat through snagging or entanglement. Longlines can also damage hard bottom structures during retrieval as the line sweeps across the seafloor. Additionally, anchoring over hard-bottom areas can also affect benthic habitat by breaking or destroying hard bottom structures. However, these gears are not believed to have much negative impact on bottom structures and are considerably less destructive than other commercial gears, such as traps and trawls, which are not allowed for reef fish fishing.

Damage caused from reef fish fishing, although minor, is associated with the level of fishing effort (see Section 4.1.1). Therefore, actions reducing levels of effort would result in greater benefits to the physical environment because fishing related interactions with habitat would be reduced. Thus, actions described in steps 3 and 4 of this CEA which have reduced fishing effort for some species, and possibly the fishery on the whole, have had a positive effect on hard bottom habitats. RFFAs, such as Amendments 39 and 40, should also benefit these habitats as they would also reduce or limit fishing effort.

Reef fish EFH, particularly coral reefs and SAVs, are particularly susceptible to non-fishing activities (GMFMC 2004a). The greatest threat comes from dredge-and-fill activities (ship channels, waterways, canals, and coastal development). Oil and gas activities as well as changes in freshwater inflows can also adversely affect these habitats. As described in Step 4d of this cumulative effects analysis, the potential harm to reef fish habitat was highlighted by the Deepwater Horizon MC252 incident (<http://response.restoration.noaa.gov/deepwaterhorizon>). Essential fish habitat and HAPC designations cited in Section 3.2, GMFMC (2005b), and GMFMC (2010) and are intended to promote careful review of proposed activities that may affect these important habitats to assure that the minimum practicable adverse impacts occur on EFH. However, NMFS has no direct control over final decisions on such projects. The cumulative effects of these alternatives depend on decisions made by agencies other than NMFS, as NMFS and the Gulf Council have only a consultative role in non-fishing activities. Decisions made by other agencies that permit destruction of EFH in a manner that does not allow recovery, such as bulkheads on former mangrove or marine vegetated habitats, would constitute

irreversible commitments. However, irreversible commitments should occur less frequently as a result of EFH and HAPC designations. Accidental or inadvertent activities such as ship groundings on coral reefs or propeller scars on seagrass could also cause irreversible loss.

At this time, it is unclear what effects climate change will have on red snapper EFH. Factors associated with climate change such as ocean acidification could negatively affect important biotic components of red snapper EFH such as corals (IPCC 2014).

Managed Resources

There are 31 species of reef fish managed in the Gulf EEZ, and of the species where the stock status is known, four of the eleven species are considered overfished (gag, greater amberjack, gray triggerfish, and red snapper; see Section 3.3). Recent actions for these overfished stocks were intended to end overfishing and set or continued rebuilding plans (e.g., Amendments 27, 32, 35, and 37).

In the past, the lack of management of reef fish allowed many stocks to undergo both growth and recruitment overfishing. This has allowed some stocks to decline as indicated in numerous stock assessments (Section 3.3). Red snapper have been considered overfished since the first stock assessment in 1986. For red snapper, management measures including a minimum size limit, commercial quota, and aggregate bag limit were put in place as part of the initial Reef Fish FMP or Amendment 1 (Section 3.1). None of these measures halted increases in landings (Table 3.1.2). However, over time, management measures have become more restrictive and held landings more closely to the quotas.

The present harvest levels are based on a rebuilding plan put in place by Amendment 27 which shifted the plan from a constant catch to a constant fishing mortality plan. The current plan, after an initial reduction in the total allowable catch from 9.12 mp to 5 mp, has allowed harvests to increase as the stock rebuilds. These measures have also limited the red snapper harvest sufficiently to end overfishing on the stock. In addition, the red snapper IFQ program has successfully held landings by the commercial sector below its quota. However, these measures, along with other IFQ programs for grouper and tilefish (Amendment 29) may have, at least for the commercial sector, redirected effort towards other non-IFQ managed reef fish species such as gray triggerfish and greater amberjack by fishermen without IFQ shares or allocation. Landings of these non-IFQ managed species are closely managed to prevent them from exceeding their ACLs and protects them from overharvest. In fact, measures for gray triggerfish and greater amberjack allow the fishery to be closed if the harvest is projected to meet their respective commercial and recreational quotas.

Fishery management RFFAs are expected to benefit managed species. These actions are expected to manage the stocks at OY per National Standard 1 and are described in steps 3 and 4 of this CEA. Although this amendment and Amendments 36, 39, and 40 do not specifically address overfishing of red snapper, they are intended to improve the management of the commercial and recreational sectors in ways that are likely to better keep harvests within the quotas. Other RFFAs described in steps 3 and 4 similarly do not specifically address overfishing

but are intended to improve the management of reef fish stocks either through revising ACLs, improving data reporting, or allowing more flexibility in management.

Non-fishing activities are likely to adversely affect reef fish stocks as listed in Step 4d. For example, LNG facilities are being proposed in the western and northern Gulf. As described in Step 4d, these facilities can have a negative effect on species with pelagic larvae, like most reef fish species. To mitigate the effects of these facilities, closed- rather than open-loop systems are being called for. At this time, the effect of LNG facilities is unknown and is likely to be less for reef fish species than other more coastal species such as red drum. Other factors such as climate change, hurricanes, and oil and gas extraction could have detrimental effects on reef fish species.

Vessel Owner, Captain, and Crew (Commercial and For Hire)

Adverse or beneficial effects of actions on vessel owners, captains, and crew are tied to the ability of a vessel to make money. In commercial fisheries, these benefits are usually derived from shares awarded after fishing expenses are accounted for. The greater the difference between expenses and payment (revenue) for harvested fish, the more profit is generated by the fishing vessel. For-hire businesses generate revenue by selling either at the vessel level (charter businesses) or passenger level (headboats)

The commercial fishery has benefited from past actions in the reef fish fishery relative to this action. Prior to 1990, entry into the reef fish fishery was unhindered by regulation. To constrain harvest in order to prevent overexploitation of reef fish in general and red snapper specifically, the Council implemented size limits, quotas, seasonal closures, and a permit moratorium. These measures have produced limited success. For red snapper, the commercial quota was overrun 10 times until the IFQ program established in 2007 (Table 3.1.2).

Current management measures have had an overall positive, short-term impact on the red snapper component of the commercial sector. Landing restrictions were needed to keep the commercial red snapper harvest within its quota and primarily took the form of short mini-seasons (Hood et al. 2007). The mini-seasons kept many commercial vessels from taking more fishing trips during these years limiting fishing effort. With the advent of the IFQ program, fishermen with red snapper allocation were able to have flexibility in when and where they could fish. It also stopped the commercial quota from being exceeded. However, this program adversely affected fishermen who did not qualify for the initial distribution of IFQ shares. These fishermen have been required to purchase IFQ shares or allocation if they wished to harvest red snapper.

For other overfished reef fish stocks other than red snapper, rebuilding measures required to end this condition and rebuild stocks have constrained the harvest for these species over the short-term and likely increased competition within the commercial sector to harvest other stocks. However, by using constant fishing mortality rebuilding plans, harvests have been allowed to increase as the stocks recover.

Non-FMP factors have adversely affected the reef fish commercial and for-hire sectors. Imports can cause fishermen to lose markets when fishery closures occur as dealers and processors use

imports to meet consumer demand. Consumer comfort with imports can then limit the price fishermen receive when harvest is allowed. Other factors that have had an adverse effect on the commercial fishery include hurricanes and increases in fishing costs, such as fuel, which may have pushed marginal fishing operations out of business (see step 4d). Hurricanes are unpredictable and localized in their effects. Increases in fishing costs, unless accompanied by an increase in prices or harvest quantity, decrease the profitability of fishing.

The for-hire component has benefited from past actions in the reef fish fishery relative to this action. This increase has been fueled by increased interest by the public to go fishing (i.e., more trips sold) as evidenced by an almost three-fold increase in recreational fishing effort since 1986 (SEDAR 12 2007). To constrain harvest in order to prevent overexploitation of reef fish in general and red snapper specifically, NMFS, through the Council, implemented minimum size and bag limits for most species prior to 2000. In addition, a recreational red snapper quota was implemented in 1997 and a permit moratorium to constrain the recreational effort from the for-hire industry in 2003. These measures have met with limited success toward ending overfishing.

Current management measures may have had a negative, short-term impact on the for-hire component of the reef fish fishery. Landing restrictions have been needed to keep the recreational red snapper harvest within its quota. These restrictions include a reduced bag limit and seasonal closures. These measures may have reduced interest by the public to take for-hire fishing trips and possibly resulted in a reduction in the number of trips taken, as shown in Table 3.5.2.1.1 (although the Deepwater Horizon MC252 oil spill may also be partly responsible for the decrease in trips). Other factors that have had an adverse effect on the for-hire component of the reef fish fishery include increases in fishing costs, such as fuel, and hurricanes which may have pushed marginal fishing operations out of business (see step 4d). However, these factors may be less important than may seem apparent. For the red snapper for-hire sector, reductions in charter fishing from more restrictive regulations, increased costs, and effects from hurricanes were claimed by the industry (GMFMC 2007). But red snapper data for 2007 found only lingering effects of the 2005 hurricanes; annual average effort for 2004 through 2005 were only slightly greater than in 2007. Although the available data cannot address claims of severe economic losses by individual entities, this data does not support contentions of widespread industry harm. However, for red snapper, effort may have shifted to other species or other charter businesses.

Many RFFAs are likely to have a short-term negative impact on the for-hire component. Red snapper, gray triggerfish, greater amberjack, and gag have experienced overfishing, are considered overfished, and are being managed under stock rebuilding plans. Measures required to end overfishing and rebuild these stocks have constrained the harvest for these species. If these measures result in less interest by the fishing public to take fishing trips on for-hire vessels, then this will adversely affect this sector. However, as mentioned above, this effect has not been apparent for red snapper because the for-hire component has the ability to shift to other species. The ability to shift to other species would be expected to continue in response to subsequent RFFAs, though the flexibility would be reduced the more species that become subject to increased restrictions. Some short-term beneficial actions include an increase in TAC and relaxation of management measures for red grouper and vermilion snapper, as these stocks have recovered from overfishing and harvest restrictions have been relaxed.

Because many management RFFAs are designed to manage stocks at OY, these actions should be beneficial to the for-hire component. As discussed for the commercial sector, stocks would be harvested at a sustainable level, and at higher levels for those stocks being rebuilt. If reallocation, as proposed in this amendment, favors the recreational sector, this could provide additional red snapper fishing days and allow for more trips by the for-hire sector. Non-management-related RFFAs that could affect the for-hire sector include hurricanes, oil and gas extraction, and increases in fishing costs. Hurricanes are unpredictable and localized in their effects. Oil spills, which are also unpredictable, can have extensive adverse impacts over large areas as evidenced by the Deepwater Horizon MC252 spill. Increases in fishing costs, unless accompanied by an increase in the price charged per trip or the number of trips, decrease the profitability of fishing.

Wholesale/retail

Reef fish dealers are primarily found in Gulf States (step 2). As of January 6, 2014, there were 202 reef fish dealer permits. In 2012, there were 82 dealers involved in buying and selling red snapper through the IFQ program (NMFS 2013c). These dealers may hold multiple types of permits. Average employment information per reef fish dealer is unavailable. The profit profile for dealers or processors is not known.

Relative to past actions, dealers have benefitted from actions that have allowed the commercial fishery to expand, as described above. However, the effect of measures constraining commercial landings both in the past, present, and RFFAs may not have negative effects on dealers. As described in step 4d, the amount of snapper and grouper imports have doubled between 1994 and 2005. In terms of pounds, 2012 imports (44.5 mp) were more than twice domestic annual Gulf snapper and grouper landings (19.6 mp; see Section 3.5.1.4). This means dealers have some ability to substitute domestic product with imports. In addition, dealers also have the ability to substitute other domestic seafood products for red snapper in order to satisfy public demand for seafood. Therefore, the negative effects from management actions for the fishery may not necessarily translate into significant negative effects for dealers, though it is recognized that foreign product is less desirable because, if not, dealers would be substituting imports instead of domestic harvest when domestic harvest is available. As domestic fish stocks are rebuilt and management programs like IFQs are instituted, a more stable supply of domestic reef fish will be available to dealers. This should improve their ability to market these products and improve the profit they receive from selling these fish. However, if a consequence of these actions is a reduction in the amount of domestically harvested red snapper, this would reduce any improvements in their ability to market red snapper.

In general, consumers of seafood may be somewhat sheltered from fluctuations in the domestic seafood supply by the availability of imported seafood. Therefore, if harvest is restricted for specific species of reef fish due to management change, there is likely some imported product that can be substituted for that species. However, the higher prices that domestically harvested reef fish generally receive compared to imports demonstrates the preference many consumers have for domestic harvest. This preference and the importance of red snapper to consumers is also supported by comments submitted during scoping. Here, they voiced their concern about

the availability of red snapper in markets and restaurants if the commercial sector's allocation is decreased

(<https://docs.google.com/spreadsheet/ccc?key=0Atgbk2rxQkqhdHByby1ad0F0THZiMGtoVTdlVDJ6cWc#gid=0>).

Anglers

It is estimated that 3.1 million residents of Gulf States participated in marine recreational fishing (NMFS 2013b). Red drum and spotted sea trout are the species most commonly reported as target species by these anglers, with approximately 35 percent and 33 percent of interviewed anglers reporting targeting these species, respectively. The most commonly caught non-bait species across all waters of the Gulf were spotted seatrout, red drum, sand seatrout, Atlantic croaker, and gray snapper. In federal waters, the most commonly harvested species are white grunt, red grouper, red snapper, gag, and yellowtail snapper. As summarized in Holiman (2000), the typical angler in the Gulf is 44 years old, male (80%), white (90%), and employed full-time (92%). They have a mean income of \$42,700, and have fished in the state for an average of 16 years. The average number of trips taken in the 12 months preceding the interview was about 38 and these were mostly (75%) one-day trips with average expenditure of less than \$50. Seventy-five percent of interviewed anglers reported that they held salt-water licenses, and 59 percent owned boats used for recreational saltwater fishing. More recent comparable statistics are not available.

The effects of various past, present, and RFFAs on anglers are measured through levels of participation in the fishery. Measures that reduce participation are negative and measures that increase participation are positive. However, it is difficult to assess what affects past and present management measures have had on anglers because available data indicates the amount of effort by the private sector has increased. This increase has been from approximately 6.8 million trips in 1981 to over 14 million trips from in 2003 to 2009 (Rios 2013). The number of angler trips declined from 14,356,523 angler trips in 2009, to 13,548,899 in 2010, and 13,874,314 in 2011. The decline in 2010 and 2011 is likely due to the Deepwater Horizon MC252 oil spill. The effects of various management measures on the participation by anglers is likely similar to the effects on the for-hire industry discussed above. This includes factors unrelated to management, such as hurricanes and increasing fuel and other costs.

Infrastructure

Infrastructure refers to fishing-related businesses and includes marinas, rentals, snorkel and dive shops, boat dockage and repair facilities, tackle and bait shops, fish houses, and lodgings related to recreational fisheries industry. This infrastructure is tied to the commercial and recreational fisheries and can be affected by changes in those fisheries. Therefore, the effects of past, present, and RFFAs should reflect responses by the fisheries to these actions. Past actions allowing the recreational and commercial fisheries to expand have had a beneficial effect by providing business opportunities to service the needs of these industries. Present actions which have constrained the commercial fisheries likely have had a negative effect because lower revenues generated from the fishery would be available to support the infrastructure. However, as conditions improve for the fishery, as described above, through RFFAs, benefits should be

accrued by the businesses comprising the infrastructure. For the recreational sector, as stated above, it is difficult to assess the impact of present and RFFAs because angler participation has increased until recently. Actions enhancing this participation should be beneficial to the infrastructure. However, it should be noted the Council has been receiving public testimony that participation may be declining due to fuel price increases and this decline may be reflected in the decline in the number of angler trips taken. Non-FMP factors, such as the Deepwater Horizon MC252 oil spill (IAI 2012) and climate change (http://www.nefsc.noaa.gov/ecosys/climate_change/implications.html) may adversely affect fishing communities, particularly those communities considered more vulnerable.

Administration

Administration of fisheries is conducted by federal (including the Council) and state agencies that develop and enforce regulations, collect data on various fishing entities, and assess the health of various stocks. As more regulations are required to constrain stock exploitation to sustainable levels, greater administration of the resource is needed. The NMFS Office of Law Enforcement, in cooperation with state agencies, would continue to monitor regulatory compliance with existing regulations and NMFS would continue to monitor both recreational and commercial landings to determine if landings are meeting or exceeding specified quota levels. Further, stock status needs to be periodically assessed to ensure stocks are being maintained at proper levels. Some present actions have assisted the administration of fisheries in the Gulf. In 2007, an IFQ program was implemented for the commercial red snapper fishery, requiring NMFS to monitor the sale of red snapper IFQ shares. The recordkeeping requirements of the IFQ programs have improved commercial quota monitoring and prevented or limited overages from occurring. A vessel monitoring system was also implemented for all commercial reef fish vessels in 2007 and is helping enforcement identify vessels violating various fishing closures. The recent implementation of ACLs and AMs for most federally managed species has required close monitoring of landings. For some species, harvest is closed if landings are projected to exceed the ACL within the season. For others, quotas or ACLs need to be adjusted during the following season to account for any ACL overages that occur in the preceding year.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects of the allocation and AMs for red snapper on the biophysical environment is likely neutral because it should not have much effect on overall fishing effort. For the socioeconomic environment, depending on the sector, some effects would be likely be positive and some negative. However, short-term negative impacts on the fisheries' socioeconomic environment may occur due to the need to limit directed harvest and reduce bycatch mortality. These negative impacts can be minimized for the recreational sector by using combinations of bag limits, size limits and closed seasons and for the commercial sector through individual fishing quota programs, size limits, and season-area closures.

11. Monitor the cumulative effects of the selected alternative and modify management as necessary.

The effects of the proposed actions are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. Landings data for the recreational sector in the Gulf is collected through MRIP, NMFS' Headboat Survey, and the Texas Marine Recreational Fishing Survey. MRIP replaced the previous MRFSS program. Commercial data is collected through trip ticket programs, port samplers, and logbook programs. Currently, SEDAR assessments of Gulf red snapper are scheduled for 2014 and 2015¹⁸.

Unavoidable Adverse Effects

Unavoidable adverse effects are described in detail in the cumulative effects analysis of Amendment 30B (GMFMC 2008b) and 32 (GMFMC 2011b) and is incorporated here by reference. Catch quotas, minimum size limits, bag limits, and seasonal closures, are generally effective in limiting total fishing mortality, the type of fish targeted, the number of targeted fishing trips, and/or the time spent pursuing a species. However, these management tools have the unavoidable adverse effect of creating regulatory discards. Discard mortality must be accounted for in a stock assessment as part of the allowable biological catch, and thus restricts total allowable catches.

Many of the current participants in the reef fish fishery may never recuperate losses incurred from the more restrictive management actions imposed in the short-term to end overfishing of red snapper. Because red snapper is but one of the reef fish species managed in the Reef Fish FMP, short-term losses are not expected to be significant, and other species may be substituted to make up for losses to the fishery. With the anticipated recovery of the stock, future participants in the reef fish fishery will benefit. Overall, short-term impacts of actions would be offset with much higher allowable catch levels as the stock recovers and is rebuilt.

The actions considered in this amendment should not have an adverse effect on public health or safety because these measures should not alter actual fishing practices, just 1) which sector can harvest what percentage of the overall allowable harvest and 2) reduce the probability of the recreational sector exceeding its allocation. Unique characteristics of the geographic area are highlighted in Section 3. Adverse effects of fishing activities on the physical environment are described in detail in Section 4.1. This section concludes the impact on the physical environment should be minor from actions proposed in this document. Uncertainty and risk associated with the measures are described in detail in the same sections as well as assumptions underlying the analyses.

¹⁸ SEDAR Web page <http://www.sefsc.noaa.gov/sedar/>

Relationship between Short-term Uses and Long-term Productivity

The primary objectives of this amendment and associated EIS are to 1) reallocate red snapper resources between the commercial and recreational sectors with the intent to increase the net benefits from red snapper fishing as well as increase the stability of the red snapper component, and 2) establish buffers and payback provisions as additional accountability measures for the recreational red snapper sector to support management efforts to maintain landings within the recreational quota and mitigate quota overages should they occur. The relationship between short-term economic uses and long-term economic productivity are discussed in the preceding section. However, because red snapper is but one species in the reef fish complex, these effects may be mitigated through effort shifting to other species and may not be significant.

No alternatives are being considered that would avoid these short-term negative effects because they are a necessary cost associated with rebuilding and protecting the red snapper stock. The range of alternatives has varying degrees of economic costs and administrative burdens. Some alternatives have relatively small short-term economic costs and administrative burdens, but would also provide smaller and more delayed long-term benefits. Other alternatives have greater short-term costs, but provide larger and more immediate long-term benefits.

Mitigation, Monitoring, and Enforcement Measures

Mitigation, monitoring and enforcement measures are described in detail in the cumulative effects analysis of Amendment 30B (GMFMC 2008b) and is incorporated here by reference. The process of reallocating the red snapper resource between sectors in favor of the recreational sector is expected to have a negative short-term effect on the social and economic environment for the commercial sector, and will create a burden on the administrative environment. Given the negative effects described in Sections 4.1 and 4.4, it is difficult to mitigate these measures and managers must balance the costs and benefits when choosing management alternatives for the reef fish fishery. The establishment of buffers and payback provisions as additional accountability measures for the recreational red snapper sector supports management efforts to maintain landings within the recreational quota and mitigate quota overages should they occur. These additional accountability measures, as discussed in Sections 4.2, 4.3, and 4.4 may have negative short-term effects on this sector, but are expected to have long-term benefits by helping the red snapper stock recover more quickly.

To ensure the red snapper stock recovers to a level that supports harvests at the optimum yield, periodic reviews of stock status are needed. These reviews are designed to incorporate new information and to address unanticipated developments in the respective fisheries and would be used to make appropriate adjustments in the reef fish regulations should harvest not achieve optimum yield objectives. The details for how assessments are developed, reviewed, and applied are described in Amendment 30B, as are the rule-making options the Council and NMFS have for taking corrective actions (GMFMC 2007).

Current reef fish regulations are labor intensive for law enforcement officials. NMFS law enforcement officials work cooperatively with other federal and state agencies to keep illegal

activity to a minimum. Violators are penalized, and for reef fish commercial and reef fish for-hire operators, permits required to operate in their respective fisheries can be sanctioned.

Reef fish management measures include a number of area-specific regulations where reef fish fishing is restricted or prohibited in order to protect habitat or spawning aggregations of fish, or to reduce fishing pressure in areas that are heavily fished. To improve enforceability of these areas, the Council has established a vessel monitoring system program for the commercial reef fish sector to improve enforcement. Vessel monitoring systems allows NMFS enforcement personnel to monitor compliance with these area-specific regulations, and track and prosecute violations.

Irreversible and irretrievable Commitments of Resources

There are no irreversible or irretrievable commitments of resources proposed herein. The actions to change the red snapper allocation and accountability measures are readily changeable by the Council in the future. There may be some loss of immediate income (irretrievable in the context of an individual not being able to benefit from compounded value over time) to some sectors from the restricted fishing seasons.

Any Other Disclosures

CEQ guidance on environmental consequences (40 CFR §1502.16) indicates the following elements should be considered for the scientific and analytic basis for comparisons of alternatives. These are:

- a) Direct effects and their significance.
- b) Indirect effects and their significance.
- c) Possible conflicts between the proposed actions and the objectives of federal, regional, state, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned.
- d) The environmental effects of alternatives including the proposed action.
- e) Energy requirements and conservation potential of various alternatives and mitigation measures.
- f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- h) Means to mitigate adverse environmental impacts.

Items a, b, d, e, f, and h are addressed in Sections 2, 3, 4, and 5. Items a, b, and d are directly discussed in Sections 2 and 4. Item e is discussed in economic analyses (Sections 4.1.3, 4.2.3, and 4.3.3). Alternatives that encourage fewer fishing trips would result in energy conservation. Item f is discussed throughout the document as fish stocks are a natural and depletable resource. A goal of this amendment is to make this stock a sustainable resource for the nation. Mitigation

measures are discussed in Section 4.4. Item h is discussed in Section 4, with particular mention in Section 4.4.

The other elements are not applicable to the actions taken in this document. Because this amendment concerns the management of a marine fish stock, it is not in conflict with the objectives of federal, regional, state, or local land use plans, policies, and controls (Item c). Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures (Item g) is not a factor in this amendment. The actions taken in this amendment will affect a marine stock and its fishery, and should not affect land-based, urban environments. The exception would be the *U.S.S. Hatteras*, located in federal waters off Texas, which is listed in the National Register of Historic Places. The proposed actions are not likely to increase fishing activity and so no additional impacts to the *U.S.S. Hatteras* would be expected.

With regards to the Endangered Species Act (ESA), the most recent biological opinion for the Reef Fish Fishery Management Plan, completed on September 30, 2011, concluded authorization of the Gulf reef fish fishery managed under this management plan is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (See Section 3.2 for more information on ESA species). An incidental take statement was issued specifying the amount of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. Other listed species and designated critical habitat in the Gulf were determined not likely to be adversely affected. NMFS also determined that the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora* where they are most likely to occur.

With regards to the Marine Mammal Protection Act, fishing activities under the Reef Fish Fishery Management Plan should have no adverse impact on marine mammals (See Section 3.2). The proposed actions are not expected to substantially change the way the fishery is currently prosecuted (e.g., types of methods, gear used, etc.). Gear used by the reef fish fishery was still classified in the 2014 List of Fisheries as a Category III fishery (79 FR 14418, April 14, 2014) because it is prosecuted primarily with longline and hook-and-line gear. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to one percent of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock, while allowing that stock to reach or maintain its optimum sustainable population.

CHAPTER 5. REGULATORY IMPACT REVIEW

CHAPTER 6. REGULATORY FLEXIBILITY ACT ANALYSIS

CHAPTER 7. LIST OF PREPARERS

PREPARERS

Name	Expertise	Responsibility	Agency
Assane Diagne	Economist	Co-Team Lead – Amendment development, economic analyses	GMFMC
Peter Hood	Fishery biologist	Co-Team Lead – Amendment development, biological analyses, cumulative effects analysis	SERO
Stephen Holiman	Economist	Economic analyses	SERO
Tony Lamberte	Economist	Economic analyses	SERO
Mike Jepson	Anthropologist	Social analyses	SERO
Ava Lasseter	Anthropologist	Social analyses	GMFMC
Carrie Simmons	Fishery biologist	Biological analyses	GMFMC

REVIEWERS (Preparers also serve as reviewers)

Name	Expertise	Responsibility	Agency
Noah Silverman	Natural resource management specialist	National Environmental Policy Act review	SERO
Mara Levy	Attorney	Legal review	NOAA GC
Steve Branstetter	Biologist	Review	SERO
Scott Sandorf	Technical writer and editor	Regulatory writer	SERO
Adam Brame	Biologist	Protected Resources review	SERO
David Dale	Biologist	Essential Fish Habitat review	SERO
Neil Baertlein	Biologist	Review	SEFSC
Juan Agar	Economist	Review	SEFSC
David Carter	Economist	Review	SEFSC

GMFMC = Gulf of Mexico Fishery Management Council; NOAA GC = National Oceanic and Atmospheric Administration General Counsel; SEFSC = Southeast Fisheries Science Center; SERO = Southeast Regional Office of the National Marine Fisheries Service.

CHAPTER 8. LIST OF AGENCIES, ORGANIZATIONS AND PERSONS TO WHOM A COPY OF THE EIS WAS SENT

National Marine Fisheries Service

- Southeast Fisheries Science Center
- Southeast Regional Office
- Office for Law Enforcement

NOAA General Counsel

Environmental Protection Agency

United States Coast Guard

United States Fish and Wildlife Services

Texas Parks and Wildlife Department

Alabama Department of Conservation and Natural Resources/Marine Resources Division

Louisiana Department of Wildlife and Fisheries

Mississippi Department of Marine Resources

Florida Fish and Wildlife Conservation Commission

CHAPTER 9. REFERENCES

- Abbott, J.K. 2015. Fighting Over a Red Herring: The Role of Economics in Recreational-Commercial Allocation Disputes. *Marine Resource Economics* 30(1)1-20
- American Fisheries Society. 2013. Common and Scientific Names of Fishes from the United States, Canada, and Mexico. Seventh Edition. Special Publication 34. Bethesda, MD.
- Ault, J. S., S. G. Smith, G. A. Diaz, and E. Franklin. 2003. Florida hogfish fishery stock assessment. University of Miami, Rosenstiel School of Marine Science. Contract No. 7701 617573 for Florida Marine Research Institute, St. Petersburg, Florida.
- Barnette, M. C. 2001. A review of the fishing gear utilized within the Southeast Region and their potential impacts on essential fish habitat. NOAA Technical Memorandum. NMFS-SEFSC-449. National Marine Fisheries Service. St. Petersburg, Florida.
- Boen, C. and W. Keithly. 2012. Gulf of Mexico Red Snapper IFQ Program: Survey Results and Analysis.
- Bromley, Daniel W. 1977 "Distributional implications of the extended economic zone," *American Journal of Agricultural Economics*. 59:887-8921.
- Bromley, Daniel W. 1990. The Ideology of Efficiency: Searching for a Theory of Policy Analysis, *Journal of Environmental Economics and Management* 19:86-107.
- Carter, D. W., and C. Liese. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. *North American Journal of Fisheries Management*, 32:4, 613-625. Available at: <http://dx.doi.org/10.1080/02755947.2012.675943>
- Cass-Calay, S. L., and M. Bahnick. 2002. Status of the yellowedge grouper fishery in the Gulf of Mexico. Contribution SFD 02/03 – 172. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
- CEQ. 1997. Considering cumulative effects under the National Environmental Policy Act. Council on Environmental Policy, Executive Office of the President. 64 pp. + appendices. Available at <http://ceq.eh.doe.gov/nepa/ccenepa/ccenepa.htm>.
- Chester, W. 2001. Full box! One hundred years of fishing and boat building in Bay County. Fire in the Water Publishing Company, South port, Florida. 314 p.
- Copes, Parzival. 1997. Social impacts of fisheries management regimes based on individual quotas. In *Social Implications of Quota Systems in Fisheries*. Gisli Palsson and Gudrun Petursdottir, editors. Nordic Council of Ministers, Copenhagen.

Dietz, Simon and Giles Atkinson. 2010. The Equity-Efficiency Trade-off in Environmental Policy: Evidence from Stated Preferences. *Land Economics* 86(3):423-443.

Edwards, S.F. 1990. An Economics Guide to Allocation of Fish Stocks between the Commercial and Recreational Fisheries. U.S. Dept. of Commer. NOAA Tech. Memo. NMFS 94, 29 p.

Feeny, David, Fikret Berkes, Bonnie J. McCay, and James M. Acheson. 1990. The Tragedy of the Commons: Twenty-Two Years Later, *Human Ecology* 18:1-19.

Gannon, D. P., E. J. Berens McCabe, S. A. Camilleri, J. G., Gannon, M. K. Brueggen, A. A. Barleycorn, V. I. Palubok, G. J. Kirkpatrick, and R. S. Wells. 2009. Effects of *Karenia brevis* harmful algal blooms on nearshore fish communities in southwest Florida. *Mar. Ecol. Prog. Ser.* 378:171–186.

Gislason, Gordon. 2006. Commercial vs Recreational Fisheries Allocation in Canada: Pacific Herring, Salmon and Halibut. Sharing the Fish Conference, Fremantle, Western Australia. February 26-March 2, 2006.

GMFMC. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico and environmental impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20FMP%20and%20EIS%201981-08.pdf>

GMFMC. 1989. Amendment 1 to the reef fish fishery management plan including environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20Amend-01%20Final%201989-08-rescan.pdf>

GMFMC. 1991. Regulatory amendment to the reef fish fishery management plan for setting the 1991 red snapper total allowable catch. Gulf of Mexico Fishery Management Council, Tampa, Florida. 46 p.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Reef%20Fish%20Reg%20Amend%20-%201991-03.pdf>

GMFMC. 1995. Regulatory amendment to the reef fish fishery management plan to set 1996 red snapper total allowable catch. Gulf of Mexico Fishery Management Council, Tampa, Florida. 49 p.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20RegAmend%20-%201995-12.pdf>

GMFMC. 1997. Amendment 15 to the fishery management plan for the reef fish resources of the Gulf of Mexico, includes regulatory impact review, initial regulatory flexibility analysis, and environmental assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/AMEND15.pdf>

GMFMC. 1999. Generic Sustainable Fisheries Act Amendment to the Following FMPS: Gulf Coral and Coral Reef Resources, Coastal Migratory Pelagics, Red Drum, Reef Fish, Shrimp, Spiny Lobster, and Stone Crab. Gulf of Mexico Fishery Management Council. Tampa, Florida.

GMFMC. 2003. Amendment 21 to the reef fish fishery management plan, environmental assessment, regulatory impact review, and initial regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend21-draft%203.pdf>

GMFMC. 2004a. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

GMFMC. 2004b. Secretarial amendment 1 to the reef fish management plan to set a 10-year rebuilding plan for red grouper, with associated impacts on gag and other groupers includes environmental assessment, regulatory impact review and final regulatory flexibility analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Secretarial-Amendment-1-RF.pdf>

GMFMC. 2004c. Amendment 22 to the fishery management plan for the reef fish fishery of the Gulf of Mexico, U.S. waters, with supplemental environmental impact statement, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend%2022%20Final%2070204.pdf>

GMFMC. 2005a. Final amendment 18A to the fishery management plan for the reef fish resources of the Gulf of Mexico, including environmental assessment, regulatory impact review, and initial regulatory flexibility analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida. http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amendment_18A_Final.pdf

GMFMC. 2005b. Generic Amendment Number 3 for Addressing Essential Fish Habitat Requirements, Habitat Areas of Particular Concern, and Adverse Effects of Fishing in the following Fishery Management Plans of the Gulf of Mexico: Shrimp Fishery of the Gulf of Mexico, United States Waters, Red Drum Fishery of the Gulf of Mexico, Reef Fish Fishery of the Gulf of Mexico, Coastal Migratory Pelagic Resources (Mackerels) in the Gulf of Mexico, and South Atlantic, Stone Crab Fishery of the Gulf of Mexico, Spiny Lobster in the Gulf of Mexico and South Atlantic, and Coral and Coral Reefs of the Gulf of Mexico.

GMFMC. 2006. Final amendment 26 to the Gulf of Mexico reef fish fishery management plan to establish a red snapper individual fishing quota program, including supplemental environmental

impact statement, initial regulatory flexibility analysis, and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend26031606FINAL.pdf>

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008a. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%20208.pdf>

GMFMC. 2008b. Final Amendment 30B: gag – end overfishing and set management thresholds and targets. Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance including environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 261 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2010. Final regulatory amendment the reef fish fishery management plan to set total allowable catch for red snapper including revised environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Regulatory%20Amendment%203_26_10.pdf

GMFMC. 2011a. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2011b. Final reef fish amendment 32 – gag grouper – rebuilding plan, annual catch limits, management measures, red grouper – annual catch limits, management measures, and grouper accountability measures. Gulf of Mexico Fishery Management Council. Tampa, Florida. [http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

GMFMC. 2011c. Regulatory amendment to the reef fish fishery management plan to set 2011 total allowable catch for red snapper. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%202011%20Regulatory%20Amendment%20-%201-11.pdf>

GMFMC. 2012a. Final regulatory amendment to the fishery management plan for the reef fish resources of the Gulf of Mexico, revise fall recreational fixed closed season and set 2012 and 2013 quotas for red snapper. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Red%20Snapper%20Fall%20Season%20and%20Quota%20RegAmend%20-%2003-20-2012.pdf>

GMFMC. 2012b. Final amendment 37 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – Modifications to the gray triggerfish rebuilding plan including adjustments to the annual catch limits and annual catch targets for the commercial and recreational sectors. Gulf of Mexico Fishery Management Council. Tampa, Florida. [http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12\[1\].pdf](http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12[1].pdf)

GMFMC. 2012c. Final amendment 38 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – modifications to the shallow-water grouper accountability measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Final%20Amendment%2038%2009-12-2012.pdf>

GMFMC. 2013a. Red snapper 2013 quota increase and supplemental recreational season, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Framework%20Action%20Set%202013%20Quotas%2008-01-13.pdf>

GMFMC. 2013b. Red snapper individual fishing quota program 5-year review. Jointly prepared by Gulf of Mexico Fishery Management Council and NMFS Southeast Regional Office. Tampa and St. Petersburg, FL. <http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%205-year%20Review%20FINAL.pdf>

GMFMC. 2013c. Framework action to set the annual catch limit and bag limit for vermilion snapper, set annual catch limit for yellowtail snapper, and modify the venting tool requirement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 171 p.

<http://www.gulfcouncil.org/docs/amendments/2013%20Vermilion-Yellowtail-Venting%20Tool%20Framework%20Action.pdf>

GMFMC. 2013d. Framework action to set the 2013 red snapper commercial and recreational quotas and modify the recreational bag limit, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://gulfcouncil.org/docs/amendments/Red%20Snapper%20Framework%20Action%20to%20Set%202013%20Quotas.pdf>

GMFMC. 2014. Recreational Accountability Measures for Red snapper, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Final%20Recreational%20AMs%20for%20Red%20Snapper%2010-6-2014.pdf>

GMFMC and SAFMC. 1982. Fishery management plan final environmental impact statement for coral and coral reefs. Gulf of Mexico Fishery Management Council. Tampa, Florida; and South Atlantic Fishery Management Council. Charleston, South Carolina.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Coral%20FMP.pdf>

Goodyear, C. P. 1988. The Gulf of Mexico fishery for reef fish species, a descriptive profile. Unpublished report. National Marine Fisheries Service, Southeast Fisheries Center, Miami Laboratory, CRD 87/88-19.

https://grunt.sefsc.noaa.gov/P_OryLDS/DisplayDocuments.jsp?min_series_code=CR&min_record_id=935&direction=next&total_rows=2955&description=SEFSC%20Technical%20Memorandum#

Gore, R. H. 1992. The Gulf of Mexico: A treasury of resources in the American Mediterranean. Pineapple Press. Sarasota, Florida.

Grimes, C. B., K. W. Able, and S. C. Turner. 1982. Direct observation from a submersible vessel of commercial longlines for tilefish. Transactions of the American Fisheries Society 111:94-98.

Hamilton, A. N., Jr. 2000. Gear impacts on essential fish habitat in the Southeastern Region. , National Marine Fisheries Service, Southeast Fisheries Science Center. Pascagoula, Mississippi.

High, W. L. 1998. Observations of a scientist/dicer on fishing technology and fisheries biology. AFSC Processed Report 98-01. National Marine Fisheries Service, Alaska Fisheries Science Center. Seattle, Washington.

Hollowed, A. B., Barange, M., Beamish, R., Brander, K., Cochrane, K., Drinkwater, K., Foreman, M., Hare, J., Holt, J., Ito, S-I., Kim, S., King, J., Loeng, H., MacKenzie, B., Mueter, F., Okey, T., Peck, M. A., Radchenko, V., Rice, J., Schirripa, M., Yatsu, A., and Yamanaka, Y. 2013. Projected impacts of climate change on marine fish and fisheries. *ICES Journal of Marine Science* 70: 1023–1037.

Holzer, J. and K. McConnell. 2014. Harvest Allocation without Property Rights. *Journal of the Association of Environmental and Resource Economics* 1(1):209-232

Hood, P. B., A. J. Strelcheck, and P. Steele. 2007. A history of red snapper management in the Gulf of Mexico. Pages 267-284. in W. F. Patterson, III, J. H. Cowan, G. R. Fitzhugh, and D. L. Nieland, editors. *Red snapper ecology and fisheries in the U.S. Gulf of Mexico*. AFS, Symp 60, Bethesda, MD.

Impact Assessment, Inc. 2005. *Identifying Communities Associated with the Fishing Industry Along the Florida Gulf Coast*. Impact Assessment, Inc. La Jolla, CA. Volumes 1-3 646 pp.

Impact Assessment, Inc. 2006. *Identifying Communities Associated with the Fishing Industry in Alabama and Mississippi -Final Report*. Prepared under Contract WC133F-03-SE-0603.

http://sero.nmfs.noaa.gov/sf/socialsci/pdfs/AlaMiss_PublicReleaseVersion_pdf_Feb06.pdf

Impact Assessment, Inc. 2012. *Small Business Impacts Associated with the 2010 Oil Spill and Drilling Moratorium in the Gulf of Mexico - Final Technical Report*. Prepared for the U.S. Small Business Administration, Office of Advocacy. La Jolla, CA. 134 p.

IPCC. 2014. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2012. Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. *Marine Policy* 26(10): 16-22.

Jacob, S., J. Landau, B. Blount, H. McIlvaine-Newsdad, and P. Weeks. 2013. *Social Impacts of the Allocation/Reallocation of Marine Fisheries Resources on Communities in the Gulf of Mexico and South Atlantic: Development of an Empirical Predictive Model* NOAA/NMFS MARFIN Grant Number NA09NMF4330149. Gulf and South Atlantic Fisheries Foundation, Tampa, FL. p.158

Jepson, M. and L.L. Colburn. 2013. *Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions*. U.S. Dept. of Commerce, NOAA Technical Memorandum NMFS-F/SPO-129, 64 p.

Keithly, W. R. and A. Martin. 1997. Southeast finfish processing activities of federally managed species, particularly reef fish, and potential impacts of regulations. MARFIN Project No. NA47FD0290, May 1997.

Kennedy, V. S., R. R. Twilley, J. A. Kleypas, J. H. Cowan, Jr., S. R. Hare. 2002. Coastal and Marine Ecosystems and Global Climate Change: Potential Effects on U.S. Resources. Pew Center on Global Climate Change.

Landsberg, J.H., L.J. Flewelling, and J. Naar. 2009. *Karenia brevis* red tides, brevetoxins in the food web, and impacts on natural resources: Decadal advancements. Harmful Algae 8:598–607.

McCay, Bonnie J., and James M. Acheson. 1987. Human Ecology of the Commons In The Question of the Commons: The Culture and Ecology of Communal Resources. B.J. McCay and J.M. Acheson, eds. Pp. 1-34. Tucson: The University of Arizona Press.

McEachran, J.D. and J.D. Fechhelm. 2005. Fishes of the Gulf of Mexico, Vol. 2. University of Texas Press. Austin, Texas.

Methot, R. D. 2010. User manual for stock synthesis, model version 3.10b. Seattle, Washington
The most recent version of this manual and software is available at
<http://nft.nefsc.noaa.gov/Download.html> .

Moran, D. 1988. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico) -- Red Snapper. Species Profiles: Life Histories and Environmental Requirements of Coastal Fishes and Invertebrates (Gulf of Mexico), U.S. Army Corps of Engineers. U.S. Fish and Wildlife Service Biological Report 82(11.83): 19.

Muller, R. G., M. D. Murphy, J. de Silva, and L. R. Barbieri. 2003. Final report submitted to the national marine fisheries service, the Gulf of Mexico fishery management council, and the South Atlantic fishery management council as part of the southeast data, assessment, and review (SEDAR) iii. Florida Fish and Wildlife Conservation Commission, FWC-FMRI Report: IHR 2003-10. Florida Fish and Wildlife Research Institute. St. Petersburg, Florida.

National Commission. 2010. The use of surface and subsea dispersants during the BP Deepwater Horizon oil spill. National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (National Commission). Staff Working Paper No. 4.
<http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Dispersants%20Working%20Paper.pdf>

Newell, R.G., J.N. Sanchirico and S. Kerr. 2005a. Fishing Quotas Markets. Journal of Environmental Economics and Management 4:437-462.

Newell, R.G., K.L. Papps and J.N. Sanchirico. 2005b. Asset Pricing in Created Markets for Fishing Quotas. Resources for the Future. RFF DP 05-46. 30pp.

NMFS. 2002. Status of red grouper in United States waters of the Gulf of Mexico during 1986-2001, revised. Contribution No. SFD-01/02-175rev. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

NMFS. 2005. Endangered Species Act – Section 7 consultation on the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan and proposed amendment 23. February 15, 2005. National Marine Fisheries Service. St. Petersburg, Florida.

NMFS. 2009. Biological Opinion - the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan, including Amendment 31, and a rulemaking to reduce sea turtle bycatch in the Eastern Gulf bottom longline component of the fishery. October 13, 2009. National Marine Fisheries Service. St. Petersburg, Florida. Available at: <http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/2009%20GOM%20Reef%20Fish%20Re-in%20BO.pdf>

NMFS. 2011a. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at: <http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

NMFS. 2011b. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118. Available at: http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2009.html

NMFS. 2012a. 2013 Recreational Red Snapper Quota Closure Analysis. SERO-LAPP-2012-10. Southeast Regional Office, St. Petersburg, FL. http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/documents/pdfs/gulf_red_snapper_quota_closure.pdf

NMFS. 2012b. Five year projections of the recreational red snapper fishing season length. SERO-LAPP-2012-12. Southeast Regional Office, St. Petersburg, FL.

NMFS. 2012c. Gulf of Mexico 2011 red snapper individual fishing quota annual report. SERO-LAPP-2012-04. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701. 42 pp. http://sero.nmfs.noaa.gov/sf/ifq/2011_RS_AnnualReport_Final.pdf.

NMFS. 2013a. Updated 2013 Gulf of Mexico Red Snapper Recreational Season Length Estimates. SERO-LAPP-20913-02-Addendum. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701. http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/documents/pdfs/2013_red_snapper_emergency_regs.pdf

NMFS. 2013b. Fisheries of the United States 2012. National Marine Fisheries Service, Silver Spring, MD. 124 pp.

NMFS. 2013c. 2012 Gulf of Mexico Red Snapper Individual fishing quota annual report. SERO-LAPP-2013-6. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701.

http://sero.nmfs.noaa.gov/sustainable_fisheries/lapp_dm/documents/pdfs/2013/2012_rs_annualreport.pdf

NMFS. 2013d. 2014 Gulf of Mexico red snapper recreational season length estimates. SERO-LAPP-2013-10. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701. 15 pp.

http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/index.html

NMFS. 2014. Emergency action to set red snapper accountability measures for the recreational sector of the Gulf of Mexico reef fish fishery. Southeast Regional Office, National Marine Fisheries Service, 263 13th Avenue South, St. Petersburg, FL 33701.

NOAA. 2010. Deepwater Horizon Oil: Characteristics and Concerns. NOAA Office of Response and Restoration, Emergency Response Division. 2 pp.

http://www.noaa.gov/deepwaterhorizon/publications_factsheets/documents/OilCharacteristics.pdf

Norman-Lopez, A. 2009. Competition between Different Farmed and Wild Species: The US Tilapia Market. *Marine Resource Economics* 24:237-251.

OECD. 2014. Integrating Recreational Fisheries into Fisheries Management: Challenges and Opportunities – Report prepared for the Organization for Economic Cooperation and Development by Joshua Abbott. TAD/FI(2014)5, 39 pp.

O’Hop, J., M. Murphy, and D. Chagaris. 2012. The 2012 stock assessment report for yellowtail snapper in the south Atlantic and Gulf of Mexico. Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute. St. Petersburg, Florida.

Osgood, K. E. (editor). 2008. Climate Impacts on U.S. Living Marine Resources: National Marine Fisheries Service Concerns, Activities and Needs. U.S. Dep. Commerce, NOAA Tech. Memo. NMFSF/SPO-89, 118 pp.

Parrack, N.C. and D.B. McClellan. 1986. Trends in Gulf of Mexico red snapper population dynamics, 1979-85. National Marine Fisheries Service, Southeast Fisheries Center, Miami, Florida. Coastal Resources Division Contribution No. CRD-86/87-4. 116 pp.

PFMC. 1986. Seventh Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California Commencing in 1978. Pacific Fishery Management Council. Portland, Oregon.

PFMC. 1988. Ninth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California Commencing in 1978. Pacific Fishery Management Council. Portland, Oregon.

Plummer, M.L., W. Morrison, and E. Steiner. 2012. Allocation of fishery harvests under the Magnuson-Stevens Fishery Conservation and Management Act: Principles and practice. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-115, 84 pp.

Porch, C. E., and S. L. Cass-Calay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico – assessment 5.0. Sustainable Fisheries Division Contribution No. SFD-01/01-129. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Porch, C. E., A. M. Eklund, and G. P. Scott. 2003. An assessment of rebuilding times for goliath grouper. Contribution: SFD 2003-0018. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Porch, C. E. and S. C. Turner. 2004. Reconstructed time series of shrimp trawl effort in the Gulf of Mexico and the associated bycatch of red snapper from 1948 to 1972. Southeast Fisheries Science Center, Miami, FL. SFD-2004-055. 13 pp.

Porch, C. E., S. C. Turner and M. J. Schirripa. 2004. The commercial landings of red snapper in the Gulf of Mexico from 1872 to 1962. Southeast Fisheries Science Center, Miami, FL. SFD-2004-054. 12 pp.

Rico-Martínez, R., T.W. Snell, and T.L. Shearer. 2013. Synergistic toxicity of Macondo crude oil and dispersant Corexit 9500A[®] to the *Brachionus plicatilis* species complex (Rotifera). Environmental Pollution 173:5-10.

Rios, A. 2013. Estimating historical recreational angler effort in the Gulf of Mexico for the private, charter, and headboat fishing modes. SEDAR31-AW11. SEDAR, North Charleston, SC. 11 pp.

Savolainen, M. A., R. H. Caffey, and R. F. Kazmierczak, Jr. 2012. Economic and Attitudinal Perspectives of the Recreational For-hire Fishing Industry in the U.S. Gulf of Mexico. Center for Natural Resource Economics and Policy, LSU AgCenter and Louisiana Sea Grant College Program, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, LA. 171 p. Available at: <http://www.laseagrant.org/pdfs/Gulf-RFH-Survey-Final-Report-2012.pdf>

SEA (Strategic Environmental Assessment Division, NOS). 1998. Product overview: Products and services for the identification of essential fish habitat in the Gulf of Mexico. NOS, Page 7-62 DEIS for EFH for the Gulf of Mexico FMPs July 2003 Silver Spring MD; National Marine Fisheries Service, Galveston, Texas; and Gulf of Mexico Fishery Management Council. Tampa, Florida.

SEDAR 3. 2003. Complete stock assessment report of yellowtail snapper in the southeastern United States – SEDAR 3, Assessment report 1. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004a. SEDAR report 1 the goliath grouper in southern Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004b. SEDAR report 2 the hogfish in Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7 Update. 2009. Update stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006a. Stock assessment report 1 of SEDAR 9: Gulf of Mexico gray triggerfish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006b. Stock assessment report 2 of SEDAR 9: Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006c. Stock assessment report 3 of SEDAR 9: Gulf of Mexico vermilion snapper assessment report 3. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011a. SEDAR update stock assessment of vermilion snapper in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011b. SEDAR update stock assessment of gray triggerfish in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10. 2006. Gulf of Mexico Gag Grouper Stock Assessment Report 2. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10 Update. 2009. Stock assessment of gag in the Gulf of Mexico. – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12 Update. 2009. Stock assessment of red grouper in the Gulf of Mexico – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 15A. 2008. Stock assessment report 3 (SAR 3) South Atlantic and Gulf of Mexico mutton snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

Shipp, R.L. 2001. The snapper fishery in the Gulf of Mexico, an historical perspective, and management implications. PowerPoint presentation to the Gulf of Mexico Fishery Management Council, January 2001.

Shipp, R. L. and S. A. Bortone. 2009. A prospective of the importance of artificial habitat on the management of red snapper in the Gulf of Mexico. *Reviews in Fisheries Science* 17: 41-47.

Siebenaler, J. B. and Winfield Brady. 1952. A high speed annual commercial fishing reel. Technical series no. 4. University of Miami Marine Laboratory: Coral Gables, FL.

Sutton, S. G., R. B. Ditton, J. R. Stoll, and J. W. Milon. 1999. A cross-sectional study and longitudinal perspective on the social and economic characteristics of the charter and party boat fishing industry of Alabama, Mississippi, Louisiana, and Texas. Report by the Human Dimensions of Recreational Fisheries Research Laboratory, Texas A&M University, MARFIN program grant number NA77FF0551.

Szedlmayer, S. T. and R. L. Shipp. 1994. Movement and growth of red snapper, *Lutjanus campechanus*, from an artificial reef area in the northeastern Gulf of Mexico. *Bulletin of Marine Science* 55: 887-896.

Szedlmayer, S. T. and J. C. Howe. 1997. Substrate preference in age-0 red snapper, *Lutjanus campechanus*. *Environmental biology of fishes* 50: 203-207.

Szedlmayer, S. T. and J. Conti. 1998. Nursery habitat, growth rates, and seasonality of age-0 red snapper, *Lutjanus campechanus*, in the northeast Gulf of Mexico. *Fishery Bulletin*. 97:626-635.

Topping, D.T. and S.T. Szedlmayer. 2011. Home range and movement patterns of red snapper (*Lutjanus campechanus*) on artificial reefs. *Fisheries Research*. 112: 77-84.

Turner, S. C., N. J. Cummings, and C. P. Porch. 2000. Stock assessment of Gulf of Mexico greater amberjack using data through 1998. SFD-99/00-100. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Turner, S. C., C. E. Porch, D. Heinemann, G. P. Scott, and M. Ortiz. 2001. Status of the gag stocks of the Gulf of Mexico: assessment 3.0. August 2001. Contribution: SFD-01/02-134. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Valle, M., C. Legault, and M. Ortiz. 2001. A stock assessment for gray triggerfish, *Balistes capricus*, in the Gulf of Mexico. Contribution: SFD-01/02-124. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.

Walker, B. M., R. F. Zales II, and B. W. Rockstall. 2006. Charter fleet in peril: losses to the Gulf of Mexico charter fleet from hurricane storms during 2005. National Association of Charterboat Operators. 208 pp.

Walters, C., S. J. D. Martell, and B. Mahmoudi. 2006. An Ecosim model for exploring ecosystem management options for the Gulf of Mexico: implications of including multistanza life history models for policy predictions. *Mote Symp.* #6.

Wilson, C.A. and D.L. Nieland. 2001. Age and growth of red snapper, *Lutjanus campechanus*, from the northern Gulf of Mexico off Louisiana. *Fishery Bulletin* 99:653-664.
<http://fishbull.noaa.gov/994/wil.pdf>

CHAPTER 10. INDEX

- Accountability measure, iii, 3, 37, 68, 81, 110, 111, 149
- Allowable biological catch, 77, 99
- Annual catch limit, iii, 81, 82, 111, 112, 148, 157
- Bag limit, vii, ix, 3, 6, 15, 18, 35, 37, 38, 56, 66, 81, 82, 89, 93, 95, 98, 99, 112, 130, 141, 142, 143, 156, 162, 168, 169, 175, 177, 180
- Biomass, iii, 4, 24, 87, 88
- Bycatch mortality, 98, 129, 142, 150
- Bycatch reduction, 130, 148
- Circle hooks, 148
- Climate change, 84, 88, 93, 94, 98
- Closed season, 141, 142
- Commercial allocation, x, 34, 149
- Compliance, 98
- Council on Environmental Quality (CEQ), 78, 84, 86, 101, 107
- Cumulative effects, xii, 31, 62, 78, 86, 88, 90, 92, 98, 99, 100, 105, 107, 124
- Deepwater Horizon MC252 oil spill, ix, 17, 30, 31, 32, 50, 52, 67, 83, 85, 86, 92, 95, 96, 97, 98, 114, 116, 124
- Direct effects, 50, 63, 77
- Discard, vii, 63, 64, 65, 84, 134, 136, 145, 146, 151, 160
- Discard mortality, vii, 63, 64, 65, 84, 134, 136, 145, 146, 151, 160
- Economic benefits, xii, 4, 72, 74, 75, 77, 150, 171, 172, 174, 175, 177, 181
- Economic efficiency, x, 3, 13, 33, 66, 67, 72, 76, 181, 182
- Environmental impact statement (EIS), i, 5, 14, 108, 109, 110, 111, 112, 128
- Environmental justice, 45, 126
- Essential fish habitat (EFH), 91, 92, 107, 109, 112, 117, 128
- Fishing mortality, x, 4, 15, 25, 87, 88, 89, 93, 94, 99, 130, 143, 148, 149
- Fishing mortality (F), 149
- Fuel, 95, 97, 98
- IFQ, 130, 142
- Indirect effects, xi, xii, 50, 65, 66, 77, 78, 90
- Individual fishing quota, iii, x, xii, 6, 9, 14, 63, 72, 79, 98, 110, 112, 115, 130, 150
- Individual fishing quota (IFQ), 98
- Marine mammals, 29, 90, 102, 125, 129, 140, 149, 166
- Maximum sustainable yield, 4, 60
- National Environmental Policy Act (NEPA), i, iii, 78, 107
- Natural mortality, 25, 144
- Optimum yield (OY), x, 1, 4, 5, 87, 96, 100, 110
- Overfished, x, 2, 15, 24, 25, 28, 60, 88, 89, 93, 94, 95, 130, 140, 141, 149, 156
- Overfishing, iii, x, 2, 5, 25, 28, 34, 60, 81, 82, 86, 88, 89, 93, 95, 99, 110, 140, 141, 149, 156
- Quota, iii, vii, viii, x, xi, xii, 2, 3, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 25, 31, 34, 35, 36, 37, 38, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 82, 86, 87, 89, 93, 94, 95, 98, 110, 111, 112, 115, 130, 141, 142, 144, 148, 150, 155, 156, 157, 159, 160, 169, 171, 172, 173, 174, 175, 177, 178, 181, 183, 191
- Reallocation, xii, 8, 13, 34, 38, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 96, 158, 159, 171, 172, 175, 176
- Rebuilding plan, x, 2, 3, 15, 37, 60, 70, 89, 93, 94, 95, 109, 110, 111, 130, 141, 149
- Recreational allocation, viii, x, xi, 6, 15, 16, 63, 70, 72, 74, 82, 87, 148, 171
- Sea turtles, 19, 29, 30, 31, 90, 102, 110, 124, 140, 145, 149, 163
- Shrimp fishery, 142
- Size limit, vii, x, 6, 15, 17, 18, 35, 62, 79, 88, 89, 93, 94, 98, 99, 130, 141, 142, 143, 144, 146, 148, 156, 168, 176
- Stock assessment, 3, 15, 24, 25, 27, 63, 64, 79, 82, 83, 86, 88, 93, 99, 107, 116, 117, 118, 120, 125, 134, 135, 148
- Stock recovery, 142, 144, 150

TAC, 6, 148

Total allowable catch, iii, 6, 11, 15, 16, 34,
35, 80, 87, 93, 99, 108, 110, 111

Total allowable catch (TAC), 94, 95

Venting tool, 148

APPENDIX A. OTHER APPLICABLE LAW

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the exclusive economic zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making are summarized below.

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, the National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that affect any land or water use or natural resource of a state’s coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NMFS regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state’s coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary, NMFS will determine if this plan amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, Mississippi, and Texas to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Data Quality Act

The Data Quality Act (DQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the DQA directs the Office of Management and Budget to issue government wide guidelines that “provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies.” Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to Office of Management and Budget on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the Act, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. Section 1531 et seq.) requires federal agencies use their authorities to conserve endangered and threatened species. The ESA requires NMFS, when proposing a fishery action that “may affect” critical habitat or endangered or threatened species, to consult with the appropriate administrative agency (itself for most marine species, the U.S. Fish and Wildlife Service for all remaining species) to determine the potential impacts of the proposed action. Consultations are concluded informally when proposed actions may affect but are “not likely to adversely affect” endangered or threatened species or designated critical habitat. Formal consultations, including a biological opinion, are required when proposed actions may affect and are “likely to adversely affect” endangered or threatened species or adversely modify designated critical habitat. If jeopardy or adverse modification is found, the consulting agency is required to suggest reasonable and prudent alternatives.

On September 30, 2011, the Protected Resources Division released a biological opinion which, after analyzing best available data, the current status of the species, environmental baseline (including the impacts of the recent Deepwater Horizon MC 252 oil release event in the northern Gulf of Mexico), effects of the proposed action, and cumulative effects, concluded that the continued operation of the Gulf of Mexico reef fish fishery is also not likely to jeopardize the continued existence of green, hawksbill, Kemp’s ridley, leatherback, or loggerhead sea turtles, nor the continued existence of smalltooth sawfish (NMFS 2011a). On December 7, 2012, NMFS published a proposed rule to list 66 coral species under the ESA and reclassify *Acropora* from threatened to endangered (77 FR 73220). In a memorandum dated February 13, 2013, NMFS determined the reef fish fishery was not likely to adversely affect *Acropora* because of where the fishery operates, the types of gear used in the fishery, and that other regulations protect *Acropora* where they are most likely to occur.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, and on the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is responsible for walruses, sea and marine otters, polar bears, manatees, and dugongs.

Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as “depleted,” and a conservation plan is developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction, development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries, and studies of pinniped-fishery interactions.

Under Section 118 of the MMPA, NMFS must publish, at least annually, a List of Fisheries that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. The categorization of a fishery in the List of Fisheries determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, observer coverage, and take reduction plan requirements. The primary gears used in the Gulf of Mexico reef fish fishery are still classified in the proposed 2014 MMPA List of Fisheries as Category III fishery (December 6, 2013; 78 FR 73477). The conclusions of the most recent List of Fisheries for gear used by the reef fish fishery can be found in Section 3.3.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501 et seq.) regulates the collection of public information by federal agencies to ensure the public is not overburdened with information requests, the federal government’s information collection procedures are efficient, and federal agencies adhere to appropriate rules governing the confidentiality of such information. The PRA requires NMFS to obtain approval from the Office of Management and Budget before requesting most types of fishery information from the public. Setting red snapper allocation would likely not have PRA consequences.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The National Oceanic and Atmospheric Administration Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12866: Regulatory Planning and Review

Executive Order 12866: Regulatory Planning and Review, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that either implement a new fishery management plan or significantly amend an existing plan (See Chapter 5). RIRs provide a comprehensive analysis of the costs and benefits to society of proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Analysis. A regulation is significant if it a) has an annual effect on the economy of \$100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments and communities; b) creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency; c) materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or d) raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

E.O. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

This Executive Order mandates that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions. The Executive Order is described in more detail relative to fisheries actions in Section 3.5.1.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for developing, in cooperation with federal agencies, States and Tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental Federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes, and local entities (international, too).

E.O. 13158: Marine Protected Areas

This Executive Order requires federal agencies to consider whether their proposed action(s) will affect any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural or cultural resource within the protected area. There are several marine protected areas, habitat areas of particular concern, and gear-restricted areas in the eastern and northwestern Gulf of Mexico.

Essential Fish Habitat

The amended Magnuson-Stevens Act included a new habitat conservation provision known as essential fish habitat (EFH) that requires each existing and any new FMPs to describe and identify EFH for each federally managed species, minimize to the extent practicable impacts from fishing activities on EFH that are more than minimal and not temporary in nature, and identify other actions to encourage the conservation and enhancement of that EFH. To address these requirements the Council has, under separate action, approved an Environmental Impact Statement (GMFMC 2004a) to address the new EFH requirements contained within the Magnuson-Stevens Act. Section 305(b)(2) requires federal agencies to obtain a consultation for any action that may adversely affect EFH. An EFH consultation will be conducted for this action.

References

GMFMC. 2004. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

NMFS. 2011. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at:

<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

APPENDIX B. BYCATCH PRACTICABILITY ANALYSIS

Introduction

Bycatch is defined as fish harvested in a fishery, but not sold or retained for personal use. This definition includes both economic and regulatory discards, and excludes fish released alive under a recreational catch-and-release fishery management program. Economic discards are generally undesirable from a market perspective because of their species, size, sex, and/or other characteristics. Regulatory discards are fish required by regulation to be discarded, but also include fish that may be retained but not sold.

Agency guidance provided at 50 CFR 600.350(d)(3) identifies ten factors to consider in determining whether a management measure minimizes bycatch or bycatch mortality to the extent practicable. These are:

1. Population effects for the bycatch species;
2. Ecological effects due to changes in the bycatch of that species (effects on other species in the ecosystem);
3. Changes in the bycatch of other species of fish and the resulting population and ecosystem effects;
4. Effects on marine mammals and birds;
5. Changes in fishing, processing, disposal, and marketing costs;
6. Changes in fishing practices and behavior of fishermen;
7. Changes in research, administration, and enforcement costs and management effectiveness;
8. Changes in the economic, social, or cultural value of fishing activities and non-consumptive uses of fishery resources;
9. Changes in the distribution of benefits and costs; and
10. Social effects.

The Regional Fishery Management Councils are encouraged to adhere to the precautionary approach outlined in Article 6.5 of the Food and Agriculture Organization of the United Nations Code of Conduct for Responsible Fisheries when uncertain about these factors.

Bycatch practicability analyses of the reef fish fishery have been provided in several reef fish amendments and focused to some degree on the component of the fishery affected by the actions covered in the amendment. For red snapper, bycatch practicability analyses were completed for Amendments 22 and 27 to the Fishery Management Plan (FMP) for the Reef Fish Resources of the Gulf of Mexico (GMFMC 2004a and 2007). Other bycatch practicability analyses were conducted in the following amendments (component of the fishery affected by the actions): Amendment 23 (vermillion snapper; GMFMC 2004b), Amendment 30A (greater amberjack and gray triggerfish; GMFMC 2008a), Amendment 30B (gag, red grouper, and other shallow-water grouper; GMFMC 2008b), Amendment 31 (longline sector; GMFMC 2009), Amendment 32 (gag and red grouper; GMFMC 2011a), Amendment 35 (greater amberjack; GMFMC 2012a); Amendment 37 (gray triggerfish; GMFMC 2012b), and Amendment 38 (shallow-water grouper;

GMFMC 2012c). In addition, a bycatch practicability analysis was conducted for the Generic Annual Catch Limits/Accountability Measures Amendment (GMFMC 2011b) that covered the Reef Fish, Coastal Migratory Pelagics, Red Drum, and Coral FMPs. In general, these analyses found that reducing bycatch provides biological benefits to managed species as well as benefits to the fishery through less waste, higher yields, and less forgone yield. However, in some cases, actions are approved that can increase bycatch through regulatory discards such as increased minimum sizes and closed seasons. In these cases, there is some biological benefit to the managed species that outweighs any increases in discards.

Red Snapper Bycatch

The Gulf of Mexico (Gulf) reef fish fishery directed at red snapper has been regulated to limit harvest in order for the stock to recover from an overfished condition. Regulations for the recreational sector include catch quotas, minimum size limits, bag limits, and seasonal closures. These are used to limit the harvest to levels allowed under the rebuilding plan. For the commercial sector, regulations previously included quotas, minimum size limits, seasonal closures, and trip limits. Now the sector is managed under an individual fishing quota (IFQ) program that was established in 2007. The program eliminates the need for seasonal closures and trip limits. Red snapper regulations have been generally effective in limiting fishing mortality, the size of fish targeted, the number of targeted fishing trips, and/or the time fishermen spend pursuing a species. However, these management tools have the unavoidable adverse effect of creating regulatory discards, which makes reducing bycatch challenging, particularly in the recreational sector.

An important aspect to red snapper bycatch is the penaeid shrimp fishery as previously described in Amendment 27/14 (GMFMC 2007). The shrimp fishery catches primarily 0-2 year old red snapper. To reduce red snapper bycatch, the Gulf of Mexico Fishery Management Council (Council) implemented regulations requiring the use of bycatch reduction devices (GMFMC 2002) and setting bycatch reduction targets (currently a 67% reduction from the baseline years 2001-2003; GMFMC 2007). Between the use of bycatch reduction devices and reductions in shrimp effort due to economic factors (Figure 1), the target reductions have been met.

Although red snapper bycatch in the shrimp fishery is an important source of mortality for this stock, this bycatch practicability analysis will focus on the directed reef fish fishery managed under the FMP for Reef Fish Resources of the Gulf of Mexico. Bycatch from the shrimp fishery has been and will be analyzed in the FMP for the Shrimp Fishery of the Gulf of Mexico, U.S. Waters.

Figures 2 and 3 show the relative number of discards for the recreational and commercial sectors as estimated by SEDAR 31 (2013). For the recreational sector, open season discards estimated through the Marine Recreational Information Program (MRIP) (charter and private angler) declined around 2007 as the recreational season got shorter due lower quotas. This trend is also apparent in the headboat data for the western Gulf. However, with shorter seasons of the past few years, the number of discards during the longer closed seasons increased (Figure 2). For the commercial sector, discards in the eastern handline and longline sectors have increased since the implementation of the IFQ program relative to the western Gulf (Figure 3). This may reflect a

shift in fishing effort that has resulted in the program. Note that for the commercial sector, closed season discards after the IFQ program was implemented refers to vessels with little or no red snapper allocation (see SEDAR 31 2013).

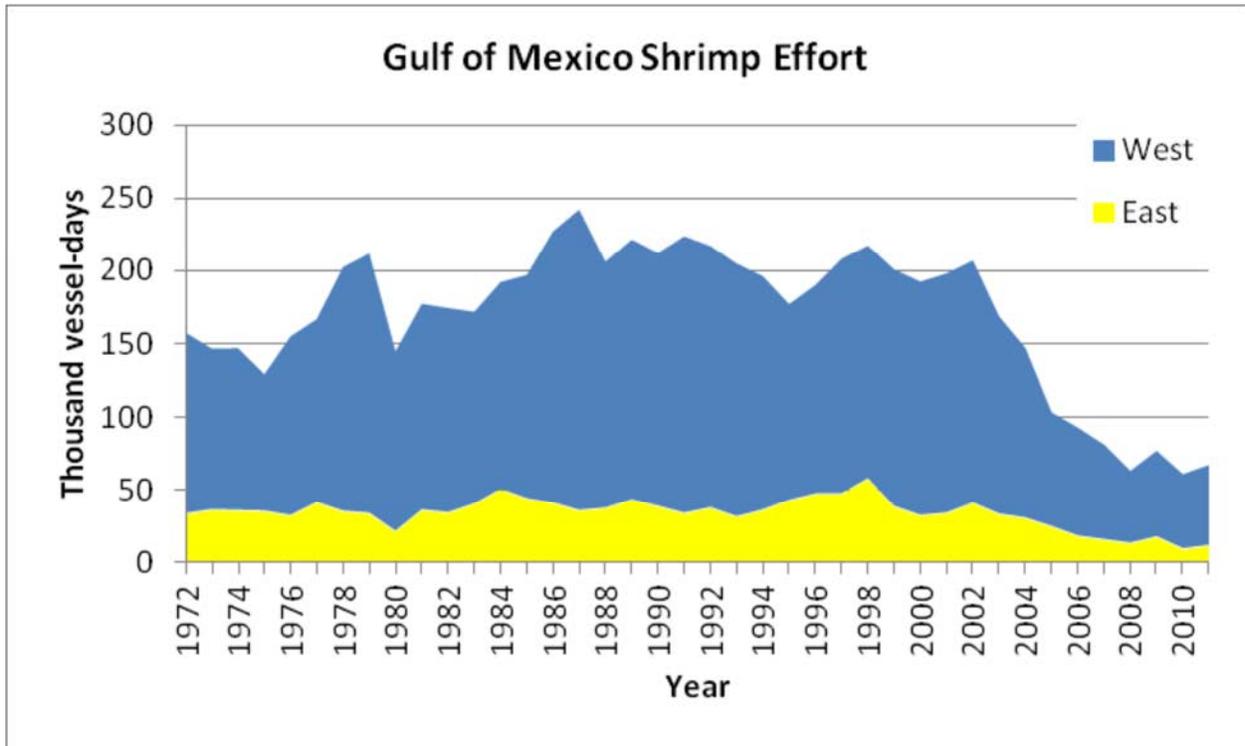


Figure 1. Gulf shrimp fishery effort (thousand vessel-days) provided by the National Marine Fisheries Service Galveston Lab. The reported effort does not include the average effort values used to fill empty cells. Source: Linton 2012.

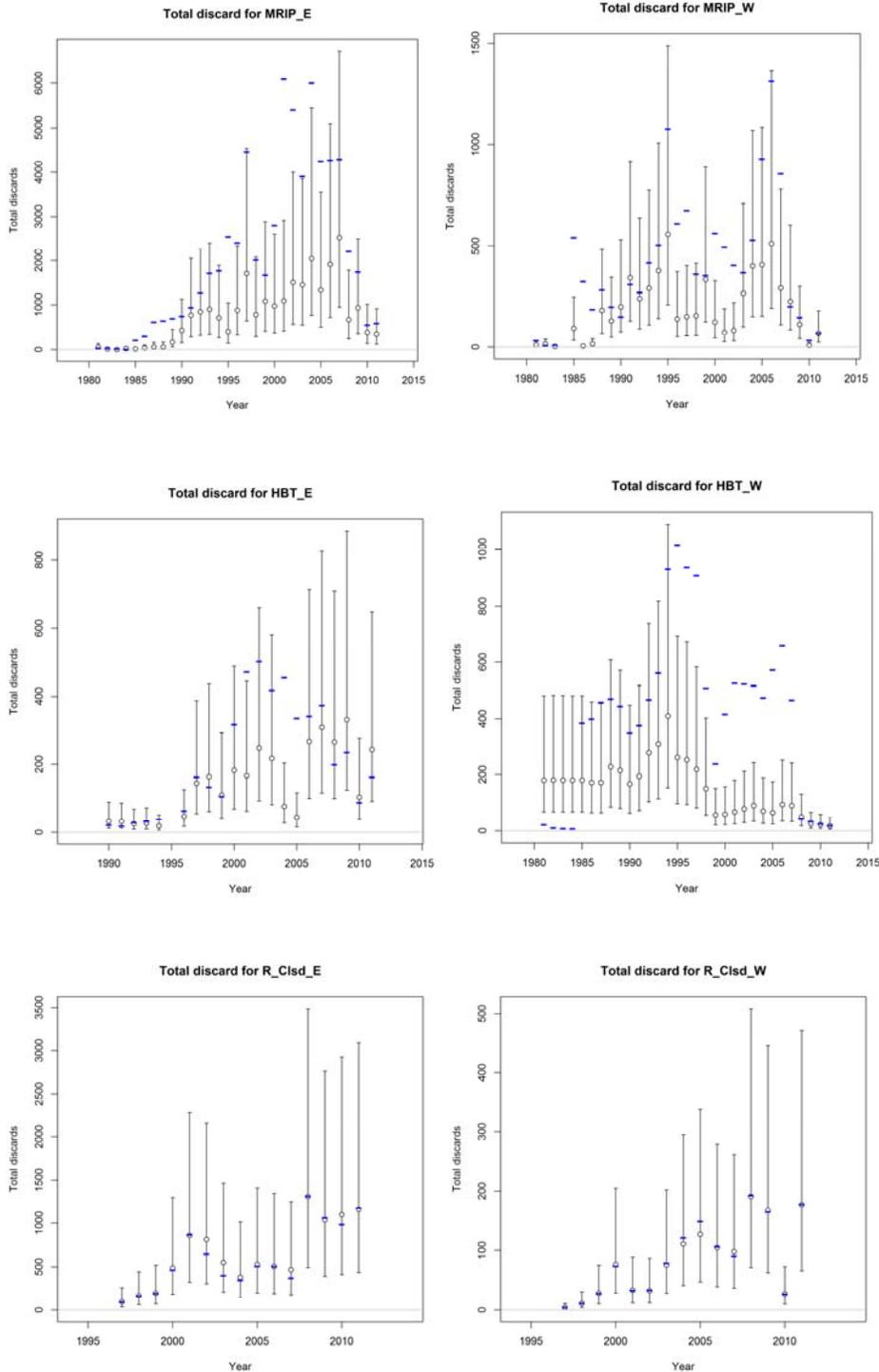


Figure 2. Observed (open circles) and predicted total discards (blue dashes) of red snapper from the private angler open season (top), headboat open season (middle), and recreational closed season in the eastern (left) and western (right) Gulf, 1997-2011. Source: SEDAR 31 2013.

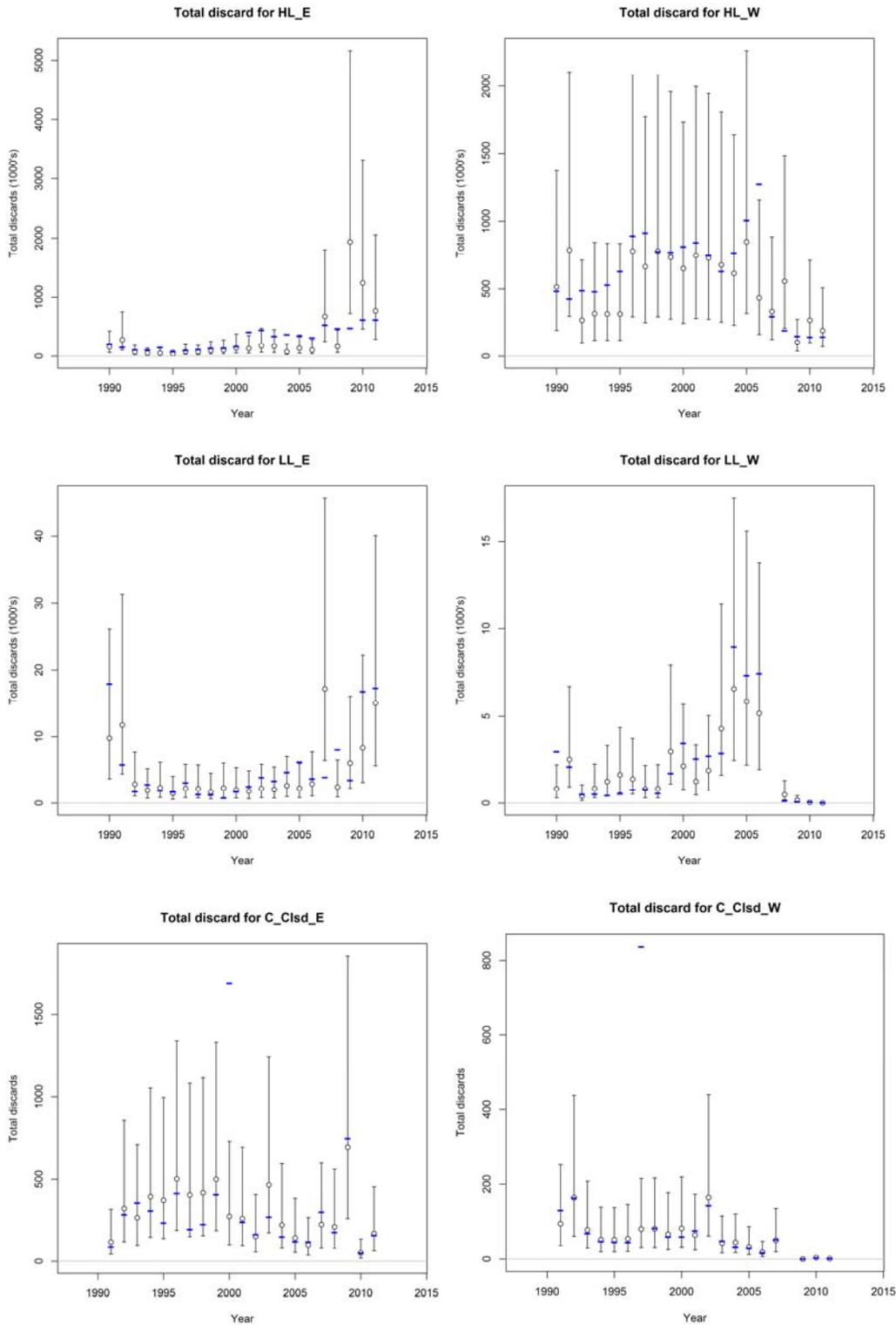


Figure 3. Observed (open circles) and predicted total discards (blue dashes) of red snapper from the commercial handline open season (top), longline open season (middle), and commercial closed season in the eastern (left) and western (right) Gulf, 1997-2011. Source: SEDAR 31 2013.

Campbell et al. (2012) identified several causes of red snapper discard mortality in their review of discard mortality in the directed reef fish fishery. These included hooking injuries, thermal stress, and barotrauma. Campbell et al. (2012) reviewed 11 studies that listed discard (release) mortality rates ranging from 0 to 79%. They reported that mortality tended to increase with capture depth, increasing water temperature, or from some compounding effect of these two factors. Burns et al. (2004) and Burns and Froeschke (2012) examined the feeding behavior of red snapper and found red snapper quickly chew and swallow their prey. As a result, there is less time to set a hook while fishing, resulting in greater probability of hooking related injuries. Burns et al. (2004) concluded hook-related trauma accounted for a greater portion of discard mortality than depth, despite catching red snapper at depths ranging from 90 to 140 feet.

Although Campbell et al. (2012) did not specifically address surface interval and predation, these factors were identified in GMFMC (2007) as contributing to discard mortality. Burns et al. (2002) found survival of red snapper increased the faster red snapper were returned to the water, thus they considered any reductions in surface interval/handling time an important way to reduce discard mortality. Several studies have documented predation on released red snapper. Dolphins and pelicans are the two most commonly observed predators and are known to pursue released fish, as well as fish before they are landed (SEDAR 7 2005). Several studies, which assessed discard mortality through surface observations, accounted for predation when estimating discard mortality (Patterson et al. 2001; Burns et al. 2004; Wilson et al. 2004).

A variety of discard mortality rates have been used in different stock assessment. The 1999 red snapper stock assessment (Schirripa and Legault 1999) assumed discard mortality rates of 33 percent for the commercial fishery and 20 percent for the recreational fishery. These discard mortality rates were derived from the literature and were determined by the Council's Reef Fish Stock Assessment Panel to be the best available estimates at the time (RFSAP 1999). During development of the 2005 red snapper stock assessment, the SEDAR 7 data workshop panel (SEDAR 7 2005) reviewed available information on depth of fishing and discard mortality by depth to produce fishery specific discard mortality rates by region (eastern and western Gulf), season (open and closed), and by sector (commercial and recreational). Applied estimates of discard mortality rates ranged 15% for recreationally caught and released red snapper in the eastern Gulf to 88% for commercially caught and released red snapper in the western Gulf caught during a season closure (Table 1).

Table 1. Mean/median depth of fishing and corresponding discard mortality rates for red snapper by fishery, region, and season.

Fishery	Region	Season	Depth of Capture	Release Mortality
Commercial	East	Open	180 ft (55 m)	71%
	East	Closed	180 ft (55 m)	71%
	West	Open	190 ft (58 m)	82%
	West	Closed	272 ft (83 m)	88%
Recreational	East	Open	65-131 ft (20-40 m)	15%
	East	Closed	65-131 ft (20-40 m)	15%
	West	Open	131 ft (40 m)	40%
	West	Closed	131 ft (40 m)	40%

Source: SEDAR 7 2005.

In the most recent benchmark stock assessment (SEDAR 31, 2013), a meta-analysis was used to estimate red snapper discard mortality using the 11 studies reviewed by Campbell et al. (2012). A venting/no venting component was added to account for the requirement to vent reef fish put in place through Amendment 27 (GMFMC 2007) as well as a gear component. For the commercial sector, average depths at which discards occurred for each gear (handline or long line), region (eastern or western Gulf), and season (open or closed) were calculated using commercial observer program data. Consistent with how commercial discards have been treated in other parts of the assessment, discards from trips with IFQ allocation were considered open season discards, while discards from trips with no IFQ allocation were considered closed season discards. For the recreational sector, average depths at which discards occurred for each region (eastern or western Gulf) and season (open or closed) were calculated using self-reported data from the iSnapper program. Estimated discard mortality rates ranged from 10 to 95% with commercial discard mortality rates greater than recreational discard mortality rates (Tables 2 and 3).

SEDAR 31 (2013) estimated the total number of fish killed (landed and discarded dead) by the commercial and recreational sectors from 1983 to 2011 (Table 4). For the recreational sector, the percentage of dead discards to total fish killed has declined since a peak in 2001. However, it was not until 2007 that the number of dead discards was consistently less than the number of landed fish. For the commercial sector, the percentage of dead discards peaked in 2000, but it was not until 2010 that the number of dead discards declined to less than 40% of the total fish killed.

Since 1996, more red snapper have been landed in the eastern Gulf than the western Gulf by the recreational sector (Table 5). A drop in the percentage of dead discards relative to the total number of fish killed occurred in both regions in 2008. The percentage of dead discards fell from 49.4% to 36.7% between 2007 and 2008 for the eastern Gulf and from 50.0% to 20.3% between 2007 and 2008 in the western Gulf. For the commercial sector, in the eastern Gulf the number of dead discards has generally been above 50% indicating that there are more discards were killed than landed (Table 5). In contrast, in the western Gulf there has been a falling off in the percentage of dead discards relative to the total number of killed fish since 2006 to well below 50%.

Table 2. Average depths and associated discard mortality rates for commercial discards of red snapper in the Gulf.

Gear	Handline				Longline			
Region	East		West		East		West	
Season	Closed	Open	Closed	Open	Closed	Open	Closed	Open
Average Depth (m)	24	45	84	53	66	62	132	104
Disc Mort - no venting	0.74	0.75	0.87	0.78	0.82	0.81	0.95	0.91
Disc Mort - venting	0.55	0.56	0.74	0.60	0.66	0.64	0.88	0.81

Source: SEDAR 31 2013.

Table 3. Average depths and associated discard mortality rates for recreational discards of red snapper in the Gulf.

Gear	Recreational			
Region	East		West	
Season	Open	Closed	Open	Closed
Average Depth (m)	33	34	36	35
Disc Mort - no venting	0.21	0.21	0.22	0.22
Disc Mort - venting	0.10	0.10	0.11	0.10

Source: SEDAR 31 2013.

Table 4. Estimates of the total number of red snapper landed, the number of dead discards, and percent dead discards for all killed fish for the recreational and commercial sectors by year in the Gulf.

Year	Recreational			Commercial		
	Landed	Dead Discards	Percent dead discards	Landed	Dead Discard	Percent dead discards
1983	3,314,185	8,599	0.3%	4,559,794	80,758	1.7%
1984	1,232,024	2,699	0.2%	2,775,042	33,579	1.2%
1985	1,427,026	255,716	15.2%	1,234,986	351,105	22.1%
1986	1,265,955	223,079	15.0%	875,494	304,026	25.8%
1987	1,022,844	271,426	21.0%	661,469	277,787	29.6%
1988	1,241,859	302,800	19.6%	950,904	366,876	27.8%
1989	1,060,456	289,201	21.4%	742,388	296,024	28.5%
1990	625,933	270,824	30.2%	703,020	549,250	43.9%
1991	1,060,610	353,327	25.0%	691,943	635,961	47.9%
1992	1,609,040	434,448	21.3%	995,013	817,581	45.1%
1993	2,202,931	581,455	20.9%	1,011,914	781,941	43.6%
1994	1,615,241	695,102	30.1%	869,075	796,390	47.8%
1995	1,384,049	1,008,873	42.2%	698,404	767,187	52.3%
1996	1,180,361	859,431	42.1%	1,011,328	1,120,205	52.6%
1997	1,547,317	1,342,121	46.4%	1,122,447	1,674,115	59.9%
1998	1,235,683	679,689	35.5%	1,167,877	949,481	44.8%
1999	1,031,284	549,708	34.8%	1,190,580	1,063,684	47.2%
2000	1,002,899	985,281	49.6%	1,088,667	2,065,579	65.5%
2001	1,075,115	1,792,155	62.5%	1,030,580	1,214,566	54.1%
2002	1,372,415	1,586,095	53.6%	1,145,169	1,171,069	50.6%
2003	1,224,547	1,204,754	49.6%	1,080,662	996,171	48.0%
2004	1,365,946	1,677,071	55.1%	1,036,860	1,027,510	49.8%
2005	1,024,641	1,433,508	58.3%	973,109	1,170,293	54.6%
2006	1,196,183	1,533,800	56.2%	1,193,134	1,343,644	53.0%
2007	1,397,237	1,370,519	49.5%	851,537	903,242	51.5%
2008	821,804	417,509	33.7%	671,979	481,599	41.7%
2009	979,945	339,988	25.8%	656,148	772,463	54.1%
2010	447,991	170,959	27.6%	833,253	472,930	36.2%
2011	670,910	220,515	24.7%	808,582	533,198	39.7%

Source: Recreational data is from MRIP; headboat and commercial data is from the logbook and SEDAR 31 2013; Jacob Tetzlaff, pers. comm. Southeast Fisheries Science Center, Miami, Florida.

Table 5. Estimates of the total number of red snapper landed the number of dead discards, and percent dead discards for all killed fish for the recreational and commercial sectors by year and region of the Gulf.

Year	Recreational						Commercial					
	East			West			East			West		
	Landed	Dead Discard	Percent dead discards	Landed	Dead Discard	Percent dead discards	Landed	Dead Discard	Percent dead discards	Landed	Dead Discard	Percent dead discards
1983	1,055,691	4,455	0.4%	2,258,494	4,144	0.2%	1,851,965	23,983	1.3%	2,707,829	56,775	2.1%
1984	192,098	332	0.2%	1,039,926	2,367	0.2%	1,077,487	5,872	0.5%	1,697,555	27,707	1.6%
1985	482,587	51,497	9.6%	944,439	204,219	17.8%	575,540	109,179	15.9%	659,446	241,926	26.8%
1986	574,495	63,839	10.0%	691,460	159,240	18.7%	237,499	31,193	11.6%	637,996	272,833	30.0%
1987	548,813	129,871	19.1%	474,031	141,555	23.0%	179,088	35,679	16.6%	482,381	242,108	33.4%
1988	524,591	137,182	20.7%	717,268	165,618	18.8%	197,784	72,004	26.7%	753,120	294,872	28.1%
1989	474,670	147,657	23.7%	585,786	141,544	19.5%	166,355	59,518	26.4%	576,033	236,506	29.1%
1990	314,036	161,286	33.9%	311,897	109,538	26.0%	208,799	169,101	44.7%	494,221	380,150	43.5%
1991	548,912	202,238	26.9%	511,698	151,089	22.8%	156,339	187,293	54.5%	535,604	448,669	45.6%
1992	886,594	272,181	23.5%	722,446	162,267	18.3%	155,044	294,315	65.5%	839,969	523,266	38.4%
1993	1,336,961	366,226	21.5%	865,970	215,229	19.9%	160,428	346,349	68.3%	851,486	435,592	33.8%
1994	819,900	379,092	31.6%	795,341	316,010	28.4%	161,842	341,927	67.9%	707,233	454,464	39.1%
1995	664,786	547,997	45.2%	719,263	460,876	39.1%	47,994	234,693	83.0%	650,411	532,493	45.0%
1996	608,817	519,005	46.0%	571,544	340,426	37.3%	66,458	384,466	85.3%	944,870	735,739	43.8%
1997	966,914	992,702	50.7%	580,403	349,419	37.6%	52,616	231,911	81.5%	1,069,832	1,442,204	57.4%
1998	814,811	485,790	37.4%	420,872	193,899	31.5%	112,125	271,377	70.8%	1,055,751	678,104	39.1%
1999	788,097	413,395	34.4%	243,187	136,313	35.9%	148,788	407,417	73.2%	1,041,792	656,267	38.6%
2000	741,378	753,560	50.4%	261,521	231,721	47.0%	169,886	1,375,667	89.0%	918,781	689,912	42.9%
2001	858,210	1,559,948	64.5%	216,905	232,208	51.7%	209,036	487,449	70.0%	821,544	727,118	47.0%
2002	1,137,262	1,374,869	54.7%	235,153	211,226	47.3%	300,706	459,631	60.5%	844,463	711,438	45.7%
2003	956,693	992,640	50.9%	267,854	212,113	44.2%	281,921	459,040	62.0%	798,741	537,130	40.2%
2004	1,128,710	1,429,531	55.9%	237,236	247,540	51.1%	251,425	392,841	61.0%	785,435	634,669	44.7%
2005	759,036	1,071,240	58.5%	265,605	362,268	57.7%	220,412	352,853	61.6%	752,697	817,440	52.1%

2006	839,855	1,076,677	56.2%	356,328	457,123	56.2%	212,766	329,879	60.8%	980,368	1,013,764	50.8%
2007	1,087,060	1,059,975	49.4%	310,177	310,544	50.0%	311,729	626,004	66.8%	539,808	277,238	33.9%
2008	642,570	371,930	36.7%	179,233	45,579	20.3%	284,937	366,341	56.2%	387,042	115,258	22.9%
2009	773,394	303,722	28.2%	206,551	36,266	14.9%	302,568	682,585	69.3%	353,579	89,878	20.3%
2010	360,404	162,119	31.0%	87,587	8,840	9.2%	413,808	384,519	48.2%	419,445	88,411	17.4%
2011	552,878	192,184	25.8%	118,032	28,331	19.4%	423,809	445,771	51.3%	384,773	87,427	18.5%

Source: Recreational data is from MRIP; headboat and commercial data is from the logbook and SEDAR 31 2013; Jacob Tetzlaff, pers. comm. Southeast Fisheries Science Center, Miami, Florida.

Other Bycatch

Species incidentally encountered by the directed red snapper fishery include sea turtles, sea birds, and reef fishes. The primary gears of the Gulf reef fish fishery (longline and handline) are classified in the List of Fisheries for 2014 (79 FR 14418, April 14, 2014) as Category III gear. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to one percent of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock, while allowing that stock to reach or maintain its optimum sustainable population.

The most recent biological opinion for the Reef Fish FMP was completed on September 30, 2011 (NMFS 2011). The opinion determined the continued authorization of the Gulf reef fish fishery managed under this FMP is not likely to adversely affect Endangered Species Act-listed marine mammals or coral, and would not likely jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback), or smalltooth sawfish. However, in the past, actions have been taken by the Council and NMFS to increase the survival of incidentally caught sea turtle and smalltooth sawfish by the commercial and recreational sectors of the fishery. These include the requirements for permitted vessels to carry specific gear and protocols for the safe release in incidentally caught endangered sea turtle species and smalltooth sawfish (GMFMC 2005) as well as restrictions on the longline portion of the commercial sector. Restrictions for longlines in the reef fish fishery include a season-area closure, an endorsement to use longline gear, and a restriction on the total number of hooks that can be carried on a vessel (GMFMC 2009).

Three primary orders of seabirds are represented in the Gulf, Procellariiformes (petrels, albatrosses, and shearwaters), Pelecaniformes (pelicans, gannets and boobies, cormorants, tropic birds, and frigate birds), and Charadriiformes (phalaropes, gulls, terns, noddies, and skimmers) (Clapp et al., 1982; Harrison, 1983) and several species, including: piping plover, least tern, roseate tern, bald eagle, and brown pelican (the brown pelican is endangered in Mississippi and Louisiana and delisted in Florida and Alabama) are listed by the U.S. Fish and Wildlife Service as either endangered or threatened. Human disturbance of nesting colonies and mortalities from birds being caught on fishhooks and subsequently entangled in monofilament line are primary factors affecting sea birds. Oil or chemical spills, erosion, plant succession, hurricanes, storms, heavy tick infestations, and unpredictable food availability are other threats. There is no evidence that the directed red snapper fishery is adversely affecting seabirds. However, interactions, especially with brown pelicans consuming red snapper discards and fish before they are landed, are known to occur (SEDAR 7 2005).

Other species of reef fish are also incidentally caught when targeting red snapper. In the western Gulf, vermilion snapper and some deep-water groupers are incidentally caught as bycatch when harvesting red snapper. In the eastern Gulf, various species of shallow-water grouper and vermilion snapper are the primary species caught as bycatch when targeting red snapper. Vermilion snapper are not overfished or undergoing overfishing (SEDAR 9 Update 2011) and bycatch is not expected to jeopardize the status of this stock. Deep-water groupers are caught both in the eastern and western Gulf primarily with longline gear (> 80 percent). The deep-water grouper fishery was managed with a 1.02 million pound quota. From 2004 until the

implementation of the grouper/tilefish IFQ program in 2010 (SERO 2012a), the fishery met their quota and closed no later than July 15 each year. Deep-water grouper closures during this time period may have resulted in some additional discards of grouper by longliners targeting red snapper. Since the IFQ program was implemented, deep-water grouper species are landed year-round by holders of IFQ allocation and the quota has not been exceeded. Longliners account for approximately 5% of the annual commercial red snapper landings since 2000 (SEDAR 31 2013). It is unknown how increases in closed season discards might have affected the status of deep-water grouper stocks or the change to an IFQ managed sector. An updated assessment for yellowedge grouper found the stock was not overfished or undergoing overfishing (SEDAR 22 2011).

Red grouper and gag are the two most abundant shallow-water grouper species in the Gulf and primarily occur on the west Florida shelf. Gag was recently assessed (SEDAR 10 Update 2009) and determined to be overfished and undergoing overfishing. A rebuilding plan that takes into account gag dead discards was implemented through Amendment 32 (GMFMC 2011a). Red grouper were found not to be in an overfished condition and not undergoing overfishing (SEDAR 12 Update 2009). Within the reef fish fishery, discards represent a large and significant portion of mortality for gag and red grouper. In the past, these species were managed under a shallow-water grouper quota which was met prior to the end of the 2004 and 2005 fishing years. For the recreational sector, shallow-water grouper including gag and red grouper are managed with size limits, bag limits, and season and area closures. The recreational gag season begins July 1 and extends until the catch target is projected to be caught. Since 2010, the commercial harvest of gag, red grouper, and other shallow-water grouper are managed under an IFQ program and the commercial sector has not exceeded its quota under the program. Prior to the IFQ program, quota closures at the end of the year have likely resulted in some additional commercial discards when the red snapper fishery is open. However, most commercial landings of red snapper occur in the western Gulf where gag and red grouper are less abundant or infrequently caught.

Practicability of current management measures in the directed red snapper fishery relative to their impact on bycatch and bycatch mortality.

The bycatch practicability analysis in Amendment 27 (GMFMC 2007) indicated directed fishery bycatch was believed to have a greater effect on red snapper stock recovery than the shrimp fishery. Although shrimp bycatch still accounts for a majority of bycatch, bycatch from the directed fishery is now known to have a greater effect on stock recovery. A quota, 16-inch total length (TL) minimum size limit, 2-fish bag limit, closed season, and gear restrictions are presently used to manage the recreational fishery. The commercial fishery is managed with an IFQ program, a quota, a 13-inch TL minimum size limit, and gear restrictions. Prior to 2007 when the red snapper IFQ program was implemented, the commercial fishery was also managed with closed seasons and trip limits. The following discusses current and historic management measures with respect to their relative impacts on bycatch.

Closed Seasons

Prior to 1997, the recreational sector was able to fish for red snapper year round. To prevent the recreational quota from being exceeded, recreational fishing for red snapper was closed on November 27, 1997, September 30, 1998, and August 29, 1999. In 2000, an April 21 through October 31 red snapper season was established. This was modified to a June 1 through October 31 season in 2008 by Amendment 27 (GMFMC 2007). Currently, the recreational directed red snapper fishery is closed in the exclusive economic zone from January 1 through May 31 each year through a 2012 framework action. However, since 2008, the sector has been closed early when the quota is projected to be caught. In addition, since 2008, the length of time red snapper fishing has been open has become increasingly shorter such that for 2011, 2012, and 2013, the season length has shrunk to 48, 46, and 42 days, respectively. With these shorter seasons, the number of released fish has decreased during the open season, but the number of releases during the closed season has increased (Figure 2; SEDAR 31 2013). Reflected in this trend is that although the estimated number of dead discards has decreased during the fishing season, the number of dead discards has increased during the longer closed periods (Figure 4). For 2014, the season length was decreased to 9 days. This was in response to a decision by the U.S. District Court for the District of Columbia (Court) in *Guindon v. Pritzker*, 2014 WL 1274076 (D.D.C. Mar. 26, 2014). NMFS, at the request of the Council, took emergency action to implement an in-season accountability measure for the recreational harvest of red snapper in the Gulf. The action set an annual catch target (ACT) equal to 80% of the 5,390 mp quota (ACT = 4,312 mp). The resultant 9-day season was based on the ACT and has only a 15% probability of exceeding the quota.

With the implementation of the IFQ program, there is no closed season for the commercial sector. However, commercial vessels with little or no red snapper allocation cannot land red snapper on most or all their trips. Thus, they effectively operate under closed season conditions. GMFMC (2013) indicated most discards were likely due to insufficient allocation, rather than the minimum size limit, especially in the longline fleet. Most of these discards were recorded as released alive.

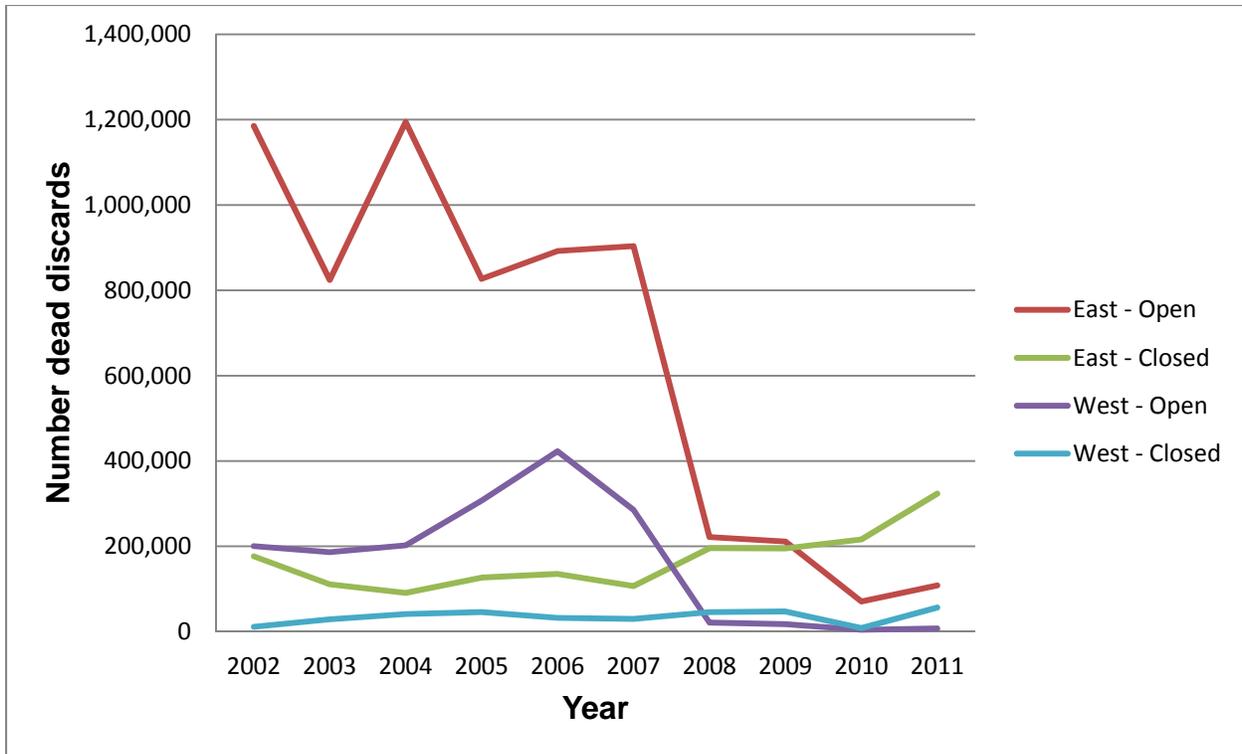


Figure 4. The number of Gulf red snapper dead discards from the recreational sector by year and by area. Source: Jakob Tetzlaff., pers. comm. Southeast Fisheries Science Center, Miami, Florida.

Bag Limits

The recreational fishery is regulated by a 2-red snapper daily bag limit per person. Red snapper discards while harvesting the daily bag limit are a result of incidental capture of undersized fish prior to reaching the bag limit and targeting of other reef fish residing in similar habitat as red snapper after bag limits have been reached. SERO (2012b) reported for-hire anglers, on average, landed 1.23 red snapper per trip and private anglers landed 1.58 red snapper per trip when the season is open. Based on average catch rates, the current two red snapper bag limit is not a limiting factor for some trips, but likely occurs on others. Therefore, the release of undersized fish while harvesting the bag limit is still an important factor contributing to discards in addition to the release of legal-sized red snapper after the bag limit is reached.

Size limits

The 16-inch recreational and 13-inch commercial TL minimum size limits are important factors when considering bycatch in the directed fishery. Size limits are intended to protect immature fish and reduce fishing mortality. The recreational minimum size limit is above the size at 50% maturity and the commercial size limit is near the size at 50% maturity. Size-at-maturity varies by region, with 75% of eastern Gulf female red snapper mature by 12-inches TL and 50% of western Gulf red snapper mature by 13-14-inches TL (Fitzhugh et al. 2004).

Several yield-per-recruit (YPR) analyses have previously been conducted to identify the size that balances the benefits of harvesting fish at larger sizes against losses due to natural mortality. Goodyear (1995) concluded YPR was maximized in the red snapper fishery between 18 and 21-inches TL, assuming 20 and 33% discard mortality in the recreational and commercial red snapper fisheries, respectively. A subsequent YPR analysis by Schirripa and Legault (1997) indicated increasing the minimum size limit above 15-inches TL would result in no gains in yield. Analyses of minimum size limits conducted for Amendment 27 (GMFMC 2007) indicated red snapper projected recovery rates are slightly faster if the commercial minimum size limit is reduced or eliminated, but increasingly slowed by smaller recreational minimum size limits (Porch 2005). Decreasing the recreational and commercial minimum size limits was projected to increase stock recovery slightly over the short term, but stock recovery would be increasingly slowed if the recreational size limit were lowered over the long term (Porch 2005). However, as discussed in Amendment 27, changes in spawning potential and the rate of stock recovery were found to be negligible for recreational size limits ranging from 13 to 15-inches TL. An YPR analysis conducted by SERO (2006), using current fishery selectivities and discard mortality rates from SEDAR 7 (2005) supported Porch's (2005) findings. SERO (2006) examined four commercial minimum size limits (12-, 13-, 14-, and 15-inches TL) and five recreational minimum size limits (6-, 13-, 14-, 15-, and 16-inches TL). Based on the range of size limits analyzed, YPR was maximized at 16-inches TL in both the eastern and western Gulf recreational fisheries, 12-inches TL in the western Gulf commercial fishery, and 15-inches TL in the eastern Gulf commercial fishery. However, there was virtually no difference in maximum YPR (< 0.3 percent) for any of the eastern Gulf commercial size limits analyzed. In a study by Wilson et al. (2004) aboard commercial vessels using bandit rigs, 61% of red snapper released were greater than 13 inches and 86% were greater than 12 inches.

For Amendment 39 (still under development; GMFMC 2014a), an YPR analysis was applied to the recreational sector (SERO 2013). This analysis indicates the Gulf-wide YPR is maximized at a recreational size limit of 15-inches TL. However, there was not much of a change in YPR between lengths of 13- and 18-inches TL. Thus, if the minimum size limit were changed from 16- to 15-inches TL, any gain in YPR would be minimal. SERO (2013) also showed that any increase in the minimum size limit would reduce the number of fish landed. This would probably result in more regulatory discards and an increase in the number of dead discards.

Given the above discussion, a larger recreational minimum size limit is considered to be more effective than a similar sized commercial minimum size limit because of lower discard mortality rates in the recreational fishery (Tables 2 and 3). High discard mortality rates in the commercial fishery provide little, if any, protection to the stock because the released fish mostly die rather than contribute to filling the quota. In contrast, the current 16-inch TL minimum recreational size limit was found to afford some protection to the stock, because a greater percentage of discarded fish will survive to spawn and later contribute to the quota as larger animals.

Area closures

Although the Council has not developed area closures specifically for red snapper, the Council has created areas to protect other species. For example, two restricted fishing areas were developed to specifically protect spawning aggregations of gag in 2000 (GMFMC 1999). The

Madison-Swanson and Steamboat Lumps marine restricted fishing areas are located in the northeastern Gulf at a depth of 40 to 60 fathoms. Both areas prohibit bottom fishing. Bottom fishing is also prohibited in the Tortugas North and South marine reserves in the southern Gulf near the Dry Tortugas. Marine reserves and time/area closures benefit fish residing within reserve boundaries by prohibiting their capture during part or all of the year. Within marine reserves, fish that are undersized potentially have an opportunity to grow to legal size and are no longer caught as bycatch. If these fish emigrate from the marine reserve (i.e., spillover effect), then they may be caught as legal fish outside the reserve, thereby reducing bycatch. However, anglers and commercial fishermen may redistribute their effort to areas surrounding the area closure. If fishing pressure in these areas is increased, then any benefits of reduced bycatch of fish in the marine reserve will likely be offset by increases in bycatch of fish residing outside the marine reserve. Within restricted fishing areas or time/area closures, fishing is allowed under restrictions that are intended to protect certain components of the populations within the area (e.g., prohibitions on bottom fishing gear), or to protect populations during a critical phase of their life history, such as during spawning.

The Council did develop a season area closure to reduce bycatch of sea turtles for the longline component of the commercial sector. The use of longlines had been prohibited from waters less than 20 fathoms east of Cape San Blas, Florida, and 50 fathoms west of Cape San Blas; however, due to higher estimates of sea turtles caught in longline gear, measures were put in place through Amendment 31 (GMFMC 2009) to reduce this bycatch. One of these measures was the prohibition of the use of bottom longline gear in the Gulf reef fish fishery, shoreward of a line approximating the 35-fathom contour east of Cape San Blas, Florida from June through August. Most sea turtle takes by longline occur during the summer months.

Allowable gear

Vertical hook-and-line gear (bandit rigs, manual handlines) is the primary gear used in the commercial fishery (> 96% of annual landings). Longlines, spears, and fish traps account for a small portion of the commercial harvest (< 5%). Longlines account for only a small fraction of red snapper dead discards as most of the landings come from handline-caught fish (Table 6). In addition, longlines are fished in deeper water, particularly in the west, and select for larger, legal-sized red snapper. Longline vessels east of Cape San Blas, Florida are also restricted to carrying 1,000 hooks onboard (only 750 rigged for fishing at any given time) as part of a suite of measures put in place through Amendment 31 (GMFMC 2009) to reduce sea turtle bycatch.

Rod-and-reel is the primary gear used in the recreational fishery. Recreational anglers also use spears to capture red snapper. Spearfishing does not affect discard mortality since all fish caught are killed. Only undersized red snapper mistakenly killed while spearfishing would contribute to discard mortality. During the red snapper recreational fishing season, discards are primarily due to the recreational size limit; however, allowable gears can affect discard mortality rates.

Fishermen in both the commercial and recreational sectors are required to use non-stainless steel circle hooks, if using natural baits, to reduce discard mortality. The size of circle hooks used in the fishery varies by manufacturer, gear type, and species targeted (i.e., if targeting vermilion snapper, smaller circle hooks may be used). Although circle hooks may not work as well to

reduce red snapper discard mortality, they are effective in reducing mortality in other species such as red grouper (Burns and Froeschke 2012).

In addition to the circle hook requirement, Amendment 27 (GMFMC 2007) also put in place requirements for both commercial and recreational fishermen in the reef fish fishery to carry onboard dehooking devices. These gears are all intended to reduce bycatch and discard mortality. A dehooking device is a tool intended to remove a hook embedded in a fish. It reduces the handling time releasing a fish from a hook and allows a fish to be released with minimum damage.

IFQ program

The commercial sector was previously regulated by 2,000-lb and 200-lb trip limits. With the establishment of the red snapper IFQ program, red snapper discards after a trip limit was reached are no longer a factor. However, reef fish observer data since the IFQ program was implemented indicate a large proportion of legal-sized red snapper continue to be discarded by both the handline and longline fleets (2013). Discard rates do vary by gear. In 2011, 3.5 red snapper were landed for every fish released in the vertical line fleet compared to a 0.5 red snapper landed for each fish released in the longline fleet (SERO 2012b). Discard rates greatly varied by region. In 2011, 87% of observed red snapper caught in the Florida Panhandle were landed, compared to 79% off Louisiana and Texas, and 47% off the Florida Peninsula. There was also a noticeable difference in the size of red snapper caught, with red snapper along the Florida Peninsula (mostly 19-24-inches TL) generally larger than fish caught in other areas of the Gulf (mostly 15-21-inches TL). Most discards were estimated to be released alive, regardless of gear type used. Discards were likely due to insufficient allocation, rather than the minimum size limit, especially in the longline fleet. In a study by Wilson et al. (2004) aboard commercial vessels using bandit rigs, 61% of red snapper released were greater than 13-inches TL, the minimum size limit.

Table 6. Commercial red snapper landings and dead discards in the Gulf by year and area.

Year	Eastern Gulf				Western Gulf			
	Landings		Dead discards		Landings		Dead discards	
	Handline	Longline	Handline	Longline	Handline	Longline	Handline	Longline
1983	1,646,550	205,415	1,587	1,237	2,698,740	9,089	56,690	85
1984	949,341	128,146	309	388	1,625,800	71,755	27,160	547
1985	550,063	25,477	79,906	2,239	608,624	50,822	233,753	8,173
1986	222,738	14,761	21,314	646	564,277	73,719	261,093	11,740
1987	168,788	10,300	20,091	743	412,668	69,713	229,400	12,708
1988	186,924	10,860	51,433	738	686,680	66,440	285,429	9,443
1989	156,071	10,284	32,961	1,714	531,066	44,967	230,318	6,188
1990	198,778	10,021	94,242	4,552	482,224	11,997	377,444	2,706
1991	152,971	3,368	79,800	1,647	527,667	7,937	332,927	1,905
1992	153,940	1,104	54,930	484	837,699	2,270	380,571	460
1993	157,367	3,061	57,447	843	849,065	2,421	375,085	471
1994	160,369	1,473	87,448	568	705,354	1,879	412,546	407
1995	46,528	1,466	54,453	658	648,399	2,012	491,941	501
1996	65,129	1,329	62,736	925	941,768	3,102	695,812	699
1997	51,767	849	79,005	515	1,066,360	3,472	713,290	729
1998	111,068	1,057	99,004	494	1,052,750	3,001	605,570	522
1999	147,499	1,289	102,825	340	1,032,070	9,722	602,380	1,564
2000	168,301	1,585	107,368	556	899,899	18,882	634,841	3,146
2001	207,257	1,779	278,236	894	809,218	12,326	658,252	2,334
2002	297,471	3,235	319,910	1,555	830,146	14,317	584,024	2,481
2003	279,295	2,626	235,502	1,190	782,006	16,735	492,094	2,618
2004	247,833	3,592	251,909	1,633	741,737	43,698	598,933	8,157
2005	216,596	3,816	230,654	2,081	725,819	26,878	785,721	6,686
2006	209,704	3,062	221,631	1,394	955,637	24,731	992,193	6,781
2007	308,237	3,492	949,770	14,520	521,931	17,877	231,164	443
2008	277,716	7,221	660,738	24,096	381,349	5,693	115,150	108
2009	299,480	3,088	748,261	10,548	347,913	5,666	89,641	68
2010	398,806	15,002	1,111,727	53,620	415,081	4,364	85,851	56
2011	408,346	15,463	1,274,735	60,252	382,630	2,143	86,460	18

Source: SEDAR 31 2013; Jacob Tetzlaff, pers. comm. Southeast Fisheries Science Center, Miami, Florida)

Alternatives being considered and bycatch minimization

The proposed allocations and accountability measures discussed in Amendment 28 (GMFMC 2014b) can indirectly affect bycatch in the Gulf reef fish fishery. These actions are primarily administrative. They would change the apportionment of fish between the commercial and recreational sector as well as affect how the recreational season is calculated. Depending on which alternatives are selected for each action, they could either reduce or increase bycatch in the reef fish fishery.

Practicability Analysis

Criterion 1: Population effects for the bycatch species

This action would revise the current red snapper allocation between the recreational and commercial sectors and so would not directly affect bycatch minimization. As discussed in Section 4.1.2 of Amendment 28 (GMFMC 2014b), the number of dead discards is estimated to be lower as a result of more recreational allocation because some fish caught could be retained rather than discarded under an increased quota. For the commercial sector, a decrease in the allocation would likely lead to more discards as a result of a reduced quota. Thus, any benefit to the red snapper stock from increasing the recreational allocation in Alternatives 2-7 would likely be offset by increases in dead discards as a result of a reduced commercial quota. As a result, it is difficult to assess whether this action, in terms of dead discards, would be beneficial, adverse, or have no effect on the red snapper stock.

This action also would add accountability measures for the management of red snapper. The proposed accountability measures, as discussed in Sections 4.2.2 and 4.3.2 of Amendment 28 (GMFMC 2014b) could also indirectly affect bycatch, but it is difficult to assess whether they would provide any benefits or not. For red snapper, the consequences of selecting accountability measures that would lead to a shorter fishing season would reduce discards during the season. However, because the reef fish fishery is a multispecies fishery, fishing effort would likely shift to some other species after the red snapper season closes. During the closure, any red snapper caught would be discarded. Given that some of these discarded fish would die, a shorter season could result in more red snapper being discarded dead.

As described earlier in this bycatch practicability analysis, the Council and NMFS have developed a variety of management measures to reduce red snapper bycatch and these measures are thought to benefit the status of the stock. These include bycatch reduction devices and effort targets in the shrimp fishery, size limit reductions and the IFQ program for the commercial sector, and gear requirements, such as dehooking devices and the use of circle hooks by the reef fish fishery. In addition, any increases in bycatch resulting from proposed management actions are accounted for when reducing directed fishing mortality. Any reductions in bycatch not achieved must be accounted for when setting the annual catch limits; the less bycatch is reduced, the more the annual catch limits must be reduced.

Criterion 2: Ecological effects due to changes in the bycatch of red snapper (effects on other species in the ecosystem)

The relationships among species in marine ecosystems are complex and poorly understood, making the nature and magnitude of ecological effects difficult to predict with any accuracy. The most recent red snapper stock assessment (SEDAR 31 2013) indicated the stock is rebuilding. Consequently, it is possible that forage species and competitor species could decrease in abundance in response to an increase in red snapper abundance. Changes in the bycatch of red snapper are not expected to directly affect other species in the ecosystem. Although birds, dolphins, and other predators may feed on red snapper discards, there is no evidence that any of these species rely on red snapper discards for food.

Criterion 3: Changes in the bycatch of other species of fish and invertebrates and the resulting population and ecosystem effects

Population and ecosystem effects resulting from changes in the bycatch of other species of fish and invertebrates are difficult to predict. As discussed in Amendment 27 (GMFMC 2007), groupers, snappers, greater amberjack, gray triggerfish and other reef fishes are commonly caught in association with red snapper. Many of these species are in rebuilding plans (gag, gray triggerfish, and greater amberjack) with the stocks improving. Regulatory discards significantly contribute to fishing mortality for all of these reef fish species, with the exceptions of gray triggerfish and vermilion snapper.

No measures are proposed in this amendment to directly reduce the bycatch of other reef fish species. Bycatch minimization measures implemented through Amendment 18A (GMFMC 2005), Amendment 27 (GMFMC 2007), and Amendment 31 (GMFMC 2009) are expected to benefit reef fish stocks, sea turtles, and smalltooth sawfish. As mentioned, this action would revise the red snapper allocation between the commercial and recreational sectors. For species with quotas (greater amberjack, gray triggerfish, and recreational red snapper), this could lead to a shift in fishing effort during red snapper season closures and negatively impact reef fish stocks not currently constrained by annual quotas or IFQ programs. The magnitude of this impact would depend on the size of the resultant quotas, the length of the red snapper closure, and the amount of effort shifting that occurs. Annual catch limits and accountability measures are now in effect for species not considered undergoing overfishing or overfished, thus potential for effort shifting and changes in bycatch may be lessened for these species.

Criterion 4: Effects on marine mammals and birds

The effects of current management measures on marine mammals and birds are described above. Bycatch minimization measures evaluated in this amendment are not expected to significantly affect marine mammals and birds. There is no information to indicate marine mammals and birds rely on red snapper for food, and the measure in this amendment is not anticipated to alter the existing prosecution of the fishery, and thus interactions with marine mammals or birds.

Criterion 5: Changes in fishing, processing, disposal, and marketing costs

Reducing the commercial allocation in Action 1, Alternatives 2-7 would result in fewer fish being landed and certainly affect fishing, processing, disposal, and marketing costs. However, because red snapper is a part of a multispecies fishery, other species could be targeted to fill any losses from reduced red snapper quotas. This action would not be expected to result in any changes in fishing, processing, disposal, or marketing costs of recreationally harvested red snapper because these fish may not be sold.

Criterion 6: Changes in fishing practices and behavior of fishermen

It is not possible to determine whether bycatch, including the amount of regulatory discards, will be affected following implementation of these actions. For the recreational sector, Action 1, Alternatives 2-7 are expected to increase the season length, albeit only a few days, and thus reduce discards. However, Action 2, Alternatives 2-5, could cancel out any increase in season length through the establishment of ACTs. In addition, reef fish fishing will occur when recreational fishing for red snapper is closed, so regulatory discards red snapper will occur. Thus, it is possible that the amount of recreational regulatory discards remains more or less the same with the proposed shift in allocation and additional accountability measures. For the commercial sector, individual fishing quota shareholders will need to determine if their red snapper allocation is sufficient to target red snapper, or to use the allocation to keep incidentally caught red snapper while targeting other species.

Criterion 7: Changes in research, administration, and enforcement costs and management effectiveness

The proposed management measures are not expected to significantly impact administrative costs. Quotas and ACTs based on stock allocation measures are currently used to regulate the commercial and recreational sectors harvesting red snapper. None of the resultant quotas from this action are expected to diminish regulatory effectiveness. All of these measures will require additional research to determine the magnitude and extent of impacts to bycatch and bycatch mortality. Administrative activities such as quota monitoring and enforcement should not be affected by the proposed management measures.

Criterion 8: Changes in the economic, social, or cultural value of fishing activities and non-consumptive uses of fishery resources

Red snapper is a highly desirable target species and the proposed shift in allocation (Action 1) is intended to increase the percentage of the red snapper quota allocated to the recreational sector (and decrease the commercial sector's share by an equivalent percentage). This would be expected to improve fishing opportunities for the recreational sector, thereby increasing the economic and social benefits for recreational anglers and associated coastal businesses and communities as modified by the Action 2 and 3 accountability measures. However, this amendment would also decrease fishing opportunities for commercial fishermen, thereby adversely impacting associated businesses and communities. No effects would be expected on the non-consumptive uses of the fishery resources.

Criterion 9: Changes in the distribution of benefits and costs

The net effects of the proposed management measures in this amendment on bycatch are unknown because the resultant management measures could increase dead discards for the commercial sector and decrease dead discards for the recreational sector. The proposed management measures would not be expected to affect the total amount of red snapper normally harvested by anglers and commercial fishermen. However, increases in the recreational red snapper quota and decreases in the commercial quota (Action 1) are expected to result in economic benefits for the recreational sector as modified by Actions 2 and 3, and losses to the commercial sector.

Criterion 10: Social effects

Bycatch is considered wasteful by fishermen and it reduces overall yield obtained from the fishery. Minimizing bycatch to the extent practicable will increase efficiency, reduce waste, and benefit stock recovery, thereby resulting in net social benefits. It is expected that these actions would result in benefits for the recreational sector and adverse effects for the commercial sector.

Conclusion

Analysis of the ten bycatch practicability factors indicates there would be positive biological impacts associated with further reducing bycatch in the recreational sector. However, these benefits have to be balanced against the expected increases in bycatch in the commercial sector. The main benefits of reducing red snapper bycatch are less waste and increased yield in the directed fishery. Reducing discards and discard mortality rates would result in less forgone yield.

When determining reductions associated with various management measures, discard mortality is factored into the analyses to adjust the estimated reductions for losses due to dead discards. Changes in discards associated with each of these management measures are contingent on assumptions about how fishermen's behavior and fishing practices will adjust. In these actions, establishing a new red snapper allocation and adding recreational accountability measures would indirectly affect discards and bycatch. Discards and bycatch would be affected depending on the magnitude of allocation change allowed under **Action 1** and how recreational harvest is constrained under **Actions 2 and 3**.

The Council needed to consider the practicability of implementing the bycatch minimization measures discussed above with respect to the overall objectives of the Reef Fish FMP and Magnuson-Stevens Fishery Conservation and Management Act. Therefore, given actions in this amendment combined with previous actions, management measures, to the extent practicable, minimize bycatch and to the extent bycatch cannot be avoided, minimize the mortality of that bycatch.

References

- Burns, K. M., C. C. Koenig, and F. C. Coleman. 2002. Evaluation of multiple factors involved in release mortality of undersized red grouper, gag, red snapper, and vermilion snapper. Mote Marine Laboratory Technical Report No. 814. (MARFIN grant #NA87FF0421). 53 pp.
- Burns, K. M., N. F. Parnell, R. R. Wilson. 2004. Partitioning release mortality in the undersized red snapper bycatch: Comparison of depth vs. hooking effects. Final Report MARFIN Grant No. NA97FF0349 36 pp.
- Burns, K. M., and J. T. Froeschke. 2012. Survival of red grouper (*Epinephalus morio*) and red snapper (*Lutjanus campechanus*) caught on J-hooks and circle hooks in the Florida recreational and recreational-for-hire fisheries. Bull. Mar. Sci. 88(3):633-646.
- Campbell, M.D., W.B. Driggers, and B. Sauls. 2012. Release mortality in the red snapper fishery: a synopsis of three decades of research. SEDAR31-DW22. SEDAR, North Charleston, SC. 25 pp.
- Clapp, R. B., R. C. Banks, D. Morgan-Jacobs, and W. A. Hoffman. 1982. Marine birds of the southeastern United States and Gulf of Mexico. U.S. Dept. of Interior, Fish and Wildlife Service, Office of Biological Services, Washington D.C. FWS/OBS-82/01. 3 vols.
- Fitzhugh, G. R., M. S. Duncan, L. A. Collins, W. T. Walling, and D. W. Oliver. 2004. Characterization of red snapper (*Lutjanus campechanus*) reproduction: for the 2004 Gulf of Mexico SEDAR. NOAA, NMFS, SEFSC, 3500 Delwood Beach Road, Panama City, Florida 32409. Contribution 04-01. 29 pp + addendum.
- GMFMC. 1999. Regulatory amendment to the reef fish fishery management plan to set 1999 gag/black grouper management measures (revised), includes environmental assessment, regulatory impact review, and initial regulatory flexibility analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20RegAmend%20-%201999-08.pdf>
- GMFMC. 2002. Amendment number 10 to the fishery management plan for the shrimp fishery of the Gulf of Mexico, U.S. Waters with environmental assessment, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/SHRIMP%20Amend-10%20Final%202002-07.pdf>
- GMFMC. 2004a. Amendment 22 to the fishery management plan for the reef fish fishery of the Gulf of Mexico, U.S. waters, with supplemental environmental impact statement, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend%2022%20Final%2070204.pdf>

GMFMC. 2004b. Final amendment 23 to the reef fish fishery management plan to set vermilion snapper sustainable fisheries act targets and thresholds and to establish a plan to end overfishing and rebuild the stock, including a final supplemental environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/VS%2023%20Oct%20Final%2010-21-04%20with%20Appendix%20E.pdf>

GMFMC. 2005. Final amendment 18A to the fishery management plan for the reef fish resources of the Gulf of Mexico, including environmental assessment, regulatory impact review, and initial regulatory flexibility analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida. http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amendment_18A_Final.pdf

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008a. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. <http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%202008.pdf>

GMFMC. 2008b. Final reef fish amendment 30B: gag – end overfishing and set management thresholds and targets. Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance. Gulf of Mexico Fishery Management Council, 2203 North Lois Avenue, Suite 1100, Tampa, FL. http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 261 pp with appendices. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2011a. Final reef fish amendment 32 – gag grouper – rebuilding plan, annual catch limits, management measures, red grouper – annual catch limits, management measures, and grouper accountability measures. Gulf of Mexico Fishery Management Council. Tampa, Florida. [http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

GMFMC. 2011b. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2012a. Final amendment 35 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – modifications to the greater amberjack rebuilding plan and adjustments to the recreational and commercial management measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final_Amendment_35_Greater_Amberjack_Rebuilding_8_May_2012.pdf

GMFMC. 2012b. Final amendment 37 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – Modifications to the gray triggerfish rebuilding plan including adjustments to the annual catch limits and annual catch targets for the commercial and recreational sectors. Gulf of Mexico Fishery Management Council. Tampa, Florida.

[http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12\[1\].pdf](http://www.gulfcouncil.org/docs/amendments/Final_Reef_Fish_Amend_37_Gray_Triggerfish_12_06_12[1].pdf)

GMFMC. 2012c. Final amendment 38 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – modifications to the shallow-water grouper accountability measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis.

<http://www.gulfcouncil.org/docs/amendments/Final%20Amendment%2038%2009-12-2012.pdf>

GMFMC. 2013. Red snapper individual fishing quota program 5-year review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 94 p.

GMFMC. 2014a. Regional Management of Recreational Red Snapper Amendment 39 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including a Draft Environmental Impact Statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

GMFMC. 2014b. Red Snapper Allocation Amendment 28 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, including a Draft Environmental Impact Statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

Goodyear, C. P. 1995. Red snapper in U.S. waters of the Gulf of Mexico. NOAA, NMFS, SEFSC, 75 Virginia Beach Drive, Miami, Florida 33149. Contribution: MIA 95/96-05. 171 pp.

Harrison, P. 1983. Seabirds: an identification guide. Houghton Mifflin Company, Boston, MA. Field Notes 48: 976-978.

Linton, B. 2012. Shrimp fishery bycatch estimates for Gulf of Mexico red snapper, 1972-2011. SEDAR31-DW30. SEDAR, North Charleston, SC. 11 pp.

NMFS. 2011. Biological opinion on the continued authorization of Reef Fish fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at: <http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

Patterson, W. F. III, J. C. Watterson, R. L. Shipp, and J. H. Cowan, Jr. 2001. Movement of tagged red snapper in the northern Gulf of Mexico. Transactions of the American Fisheries Society 130: 533-545.

Porch, C. E. 2005. Projected effects of changes in minimum size regulations on the future status of the red snapper (*Lutjanus campechanus*) fishery in the U. S. Gulf of Mexico. NOAA, NMFS, SEFSC, 75 Virginia Beach Drive, Miami, Florida 33149. Contribution: SFD-2005-009. 7 pp.

RFSAP. 1999. September 1999 Report of the Reef Fish Stock Assessment Panel. Gulf of Mexico Fishery Management Council. Tampa, FL.

Schirripa, M. J. and C. M. Legault. 1997. Status of the red snapper in U.S. waters of the Gulf of Mexico: Executive summary updated through 1996. MIA-97/98-05. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida. 37 pp.

Schirripa, M. J., and C. M. Legault. 1999. Status of the red snapper fishery in the Gulf of Mexico: Updated through 1998. SFD-99/00-75. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida. 44pp. with appendices

SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011. SEDAR update stock assessment of vermilion snapper in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10 Update. 2009. Stock assessment of gag in the Gulf of Mexico. – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

SEDAR 12 Update. 2009. Stock assessment of red grouper in the Gulf of Mexico – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SERO. 2006. Red snapper yield-per-recruit analyses. NOAA, NMFS, SERO, 263 13th Ave. South, St. Petersburg, Florida 33701. 13 pp.

SERO. 2012a. 2011 Gulf of Mexico grouper-tilefish individual fishing quota annual report. SERO-LAPP-2012-09. Southeast Regional Office. St. Petersburg, Florida. 49 p.

SERO. 2012b. Southeast Regional Office National Marine Fisheries Service. Estimated reduction in Gulf of Mexico recreational red snapper harvest associated with various bag limits. Southeast Regional Office, St. Petersburg, Florida.

SERO. 2013. Establishing Recreational Closure Authority Specific to Federal Waters off Individual States for the Red Snapper Component of the Gulf of Mexico Reef Fish Fishery. Emergency Action to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico. Southeast Regional Office, St. Petersburg, FL.

Wilson, C. A., D. L. Nieland, A. J. Fischer, and M. S. Baker, Jr. 2004. Red snapper *Lutjanus campechanus* in the northern Gulf of Mexico: Age and size composition of the commercial harvest and mortality of regulatory discards. NOAA, NMFS, SERO, 263 13th Ave. South, St. Petersburg, Florida 33701. MARFIN grant #NA17FF2007. 55 pp.

APPENDIX C. SUMMARY OF HABITAT UTILIZATION BY LIFE HISTORY STAGE FOR SPECIES IN THE REEF FISH FMP.

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Red Snapper	Pelagic	Pelagic	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Sand/ shell bottoms, Soft bottoms	Hard bottoms, Reefs	Sand/ shell bottoms
Queen Snapper	Pelagic	Pelagic	Unknown	Unknown	Hard bottoms	
Mutton Snapper	Reefs	Reefs	Mangroves, Reefs, SAV, Emergent marshes	Mangroves, Reefs, SAV, Emergent marshes	Reefs, SAV	Shoals/ Banks, Shelf edge/slope
Blackfin Snapper	Pelagic		Hard bottoms	Hard bottoms	Hard bottoms, Shelf edge/slope	Hard bottoms, Shelf edge/slope
Cubera Snapper	Pelagic		Mangroves, Emergent marshes, SAV	Mangroves, Emergent marshes, SAV	Mangroves, Reefs	Reefs
Gray Snapper	Pelagic, Reefs	Pelagic, Reefs	Mangroves, Emergent marshes, Seagrasses	Mangroves, Emergent marshes, SAV	Emergent marshes, Hard bottoms, Reefs, Sand/ shell bottoms, Soft bottoms	
Lane Snapper	Pelagic		Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Mangroves, Reefs, Sand/ shell bottoms, SAV, Soft bottoms	Reefs, Sand/ shell bottoms, Shoals/ Banks	Shelf edge/slope
Silk Snapper	Unknown	Unknown	Unknown	Unknown	Shelf edge	
Yellowtail Snapper	Pelagic		Mangroves, SAV, Soft bottoms	Reefs	Hard bottoms, Reefs, Shoals/ Banks	

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Wenchman	Pelagic	Pelagic			Hard bottoms, Shelf edge/slope	Shelf edge/slope
Vermilion Snapper	Pelagic		Hard bottoms, Reefs	Hard bottoms, Reefs	Hard bottoms, Reefs	
Gray Triggerfish	Reefs	Drift algae, <i>Sargassum</i>	Drift algae, <i>Sargassum</i>	Drift algae, Reefs, <i>Sargassum</i>	Reefs, Sand/ shell bottoms	Reefs, Sand/ shell bottoms
Greater Amberjack	Pelagic	Pelagic	Drift algae	Drift algae	Pelagic, Reefs	Pelagic
Lesser Amberjack			Drift algae	Drift algae	Hard bottoms	Hard bottoms
Almaco Jack	Pelagic		Drift algae	Drift algae	Pelagic	Pelagic
Banded Rudderfish		Pelagic	Drift algae	Drift algae	Pelagic	Pelagic
Hogfish			SAV	SAV	Hard bottoms, Reefs	Reefs
Blueline Tilefish	Pelagic	Pelagic			Hard bottoms, Sand/ shell bottoms, Shelf edge/slope, Soft bottoms	
Tilefish (golden)	Pelagic, Shelf edge/ Slope	Pelagic	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	Hard bottoms, Shelf edge/slope, Soft bottoms	
Goldface Tilefish	Unknown					
Speckled Hind	Pelagic	Pelagic			Hard bottoms, Reefs	Shelf edge/slope
Yellowedge Grouper	Pelagic	Pelagic		Hard bottoms	Hard bottoms	

Common name	Eggs	Larvae	Early Juveniles	Late juveniles	Adults	Spawning adults
Atlantic Goliath Grouper	Pelagic	Pelagic	Mangroves, Reefs, SAV	Hard bottoms, Mangroves, Reefs, SAV	Hard bottoms, Shoals/ Banks, Reefs	Reefs, Hard bottoms
Red Grouper	Pelagic	Pelagic	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	Hard bottoms, Reefs	
Warsaw Grouper	Pelagic	Pelagic		Reefs	Hard bottoms, Shelf edge/slope	
Snowy Grouper	Pelagic	Pelagic	Reefs	Reefs	Hard bottoms, Reefs, Shelf edge/slope	
Black Grouper	Pelagic	Pelagic	SAV	Hard bottoms, Reefs	Hard bottoms, Mangroves, Reefs	
Yellowmouth Grouper	Pelagic	Pelagic	Mangroves	Mangroves, Reefs	Hard bottoms, Reefs	
Gag	Pelagic	Pelagic	SAV	Hard bottoms, Reefs, SAV	Hard bottoms, Reefs	
Scamp	Pelagic	Pelagic	Hard bottoms, Mangroves, Reefs	Hard bottoms, Mangroves, Reefs	Hard bottoms, Reefs	Reefs, Shelf edge/slope
Yellowfin Grouper			SAV	Hard bottoms, SAV	Hard bottoms, Reefs	Hard bottoms

Source: Adapted from Table 3.2.7 in the final draft of the EIS from the Generic EFH Amendment (GMFMC 2004a) and consolidated in this document.

APPENDIX D. SUMMARIES OF PUBLIC COMMENTS RECEIVED

This section includes four sets of public comment summaries on Reef Fish Amendment 28, Red Snapper Allocation:

- Summary of written comments received between the October 2013 and February 2014 Council meetings.
- Summary of written comments received between the February and April 2014 Council meetings.

Both sets of comments can be viewed at:

http://www.gulfcouncil.org/fishery_management_plans/scoping-thru-implementation.php

- Summary of scoping comments received by NOAA Fisheries on the Notice of Intent to prepare an Environmental Impact Statement (EIS)
- Summaries of comments received at public hearings (March 10-20, 2014).

I. Summary of written comments received between the October 2013 and February 2014 Council meetings

- Take no action/Status quo – commercial sector supplies red snapper to the majority of the population
- Shift 5% of the existing quota to the recreational sector
- Shift 10% (or more) of the existing quota to the recreational sector
- Increase recreational quota by 8%
- Allocate 100% of future quota increases to the recreational sector if the allowable red snapper quota is in excess of 9.12 million pounds.
- Allocate 75% of quota increases if the allowable red snapper quota is in excess of 9.12 million pounds.
- Allocate 60% of the quota to the recreational sector
- Allocate 65% recreational and 35% commercial
- Allocate 75% recreational and 25% commercial
- Allocate 50/50 plus 100% of any quota increases to the recreational sector
- Allocate 55% recreational and 45% commercial
- Allocate 90% recreational and 10% commercial
- Allocate 67% recreational and 33% commercial – with the charter for-hire classified as commercial
- Allocate 50/50 quota
- Please oppose Amendment 28 and focus on real solutions for recreational anglers that will extend the season over the long-term.

- A 10% increase in allocation for the recreational sector would not increase the season length by much – but it would reduce the commercial sector’s ability to supply America with red snapper.
- Any change in allocation would have a negative effect on the commercial sector’s ability to make a living.
- Amendment 28 would hurt the region’s seafood industry by giving more allocation to a poorly managed recreational sector at the expense of commercial fishermen, restaurants, seafood markets, and the millions of Americans who don’t have the means to catch their own fish.

Other suggestions

- Eliminate commercial fishing until the fishery is no longer overfished, then allow commercial fishing under the same bag/size/season/gear restrictions as recreational, and auction off any commercial fishing permits.
- 4-6 month season with 4-fish bag limit
- 3-5 fish with one fish under 16” and a May 1 – October 1 weekend and holiday season.
- Charter for-hire should get 50% of the quota and each permit should receive the same amount of allocation.
- Giving more quota to the recreational sector will not solve their overfishing problem.
- 3-day weekend only fishing season.
- Close the season every ten years for one full season.
- Would support a 5-fish bag limit and 12” minimum size limit – keep the first 5 fish.
- Keep the first 4 fish – no size limit.
- Increase recreational bag limit to 10 fish.
- Allocation of any wild fish species should be relative to the numbers of recreational and commercial fishermen.
- 12” size limit/4 per person bag limit with an open season of 30 fishing days throughout the year – anglers would have to login to a computer system to declare a fishing day.

II. Summary of written comments received between the February and April 2014 Council meetings

Comments include:

- Support for all of the Alternatives, including new Alternative 7
- Alternatives 1, 5, and 6 appear to be most popular
- Many offered support for some sort of reallocation in favor of the recreational sector, but did not specify an Alternative.

Others offered Alternatives not included in the document:

- A 50/50 split in allocation.

- 60% recreational allocation/30% commercial allocation, and a longer recreational season.
- 65% recreational allocation/35% commercial allocation.
- 65% recreational allocation/35% commercial allocation with a 4-fish bag limit and a longer recreational season.
- 75% recreational allocation/25% commercial allocation.
- 80% recreational allocation/20% commercial allocation.
- 95% recreational allocation/5% commercial allocation.

General Comments regarding the Amendment include:

- A shift in allocation in favor of the recreational sector, but not unless some sort of recreational accountability is put in place.
- Allocation of red snapper to the recreational fishery should be accompanied with accountability measures (AMs) to more effectively constrain the recreational sector to the prescribed annual catch limit (ACL).
- This amendment does not meet or address the stated purpose and need because increasing allocation on its own does not stabilize the fishery or prevent overfishing, nor is the amendment consistent with MSA (does not address AMs).
- Current allocation causes an increase in recreational fishing pressure.
- Reconsider the effects of removing the “30B permit provision”, sector separation and other management strategies, as well as changes to the management goal for red snapper in conjunction with this amendment.

Other Red Snapper Comments Received:

- There is a need for better quality data, which can only come from improved funding, partnerships, and proper auditing.
- Current recreational regulations promote mortality by requiring fish to be thrown back only to die.
- Support Sector Separation.
- Make red snapper a sport fish.
- If the recreational season cannot be at least three months implement some type of days at sea program.
- Open amberjack and gray triggerfish during the same time as red snapper so there are other species to fish for, making the offshore trip more worthwhile.
- Captains should not be able to have a commercial license and a Charter-for-Hire license at the same time.
- Consider allowing the commercial sale of spear fishing catches.
- Recreational sector puts more money into the economy.
- Recreational sector loses a lot of days to bad weather.
- Louisiana is ready and able to manage snapper in federal and state waters off of Louisiana.
- More artificial reefs will provide more habitat and help the stock grow.
- A viable solution is to set a minimum distance (50-75 miles) from any shoreline for commercial fishing operations.
- Eliminate the size limit.

- Better way to manage – keep every snapper caught regardless of size and set a limit per angler.
- Allow anglers to keep a 5 gallon bucket of “first caught” reef fish.
- Close the fishery during spawning season.
- Develop a program that would allow private recreational anglers to pick and choose the days they can fish for red snapper.
- Implementing a tag program or a recreational red snapper license would help the recreational sector stay within its quota as well as contribute to data collection.
- Give recreational anglers six months to fish for red snapper.
- Decrease size limit to 13 or 14”.
- Increase the red snapper bag limit.
- Increase the bag limit to 3-5 fish.
- Implement a 4-fish bag limit.
- Open red snapper season and leave it open.
- Adjust the season to accommodate the Friday before Memorial Day through Labor Day.
- Season should begin the first Friday in July and last through the last Saturday in July, but the five states should adopt the same seasons, with state waters abiding by a 2-fish bag limit while the federal bag limit increases to 4 fish.
- Implement a July – September season.
- Need separate seasons for different areas in the gulf by population.
- Implement a split, multi-season to accommodate more people.
- There should be no private “ownership” of red snapper (IFQ).
- Extend the season by 4 weeks.
- Delay the start of the season to July 1.
- Implement a 6 month season.
- If there cannot be a reasonable recreational season, there should be no commercial fishery.
- Unfair to reward the recreational sector that has consistently exceeded its quota.
- Allocating more fish to the recreational sector cannot increase the stability of the red snapper fishery, as stated in the purpose and need, because you are giving more fish to the sector that continues to exceed its quota.
- Allocation should be reviewed frequently.
- Amendment 28 is not a real solution. This amendment will only hurt more coastal businesses and commercial fishermen who depend on this fishery for a living.
- Recreational anglers should be able to keep a 2-day bag limit when on a trip in excess of 24 hours.
- Mid water trawlers should be using TEDs.

III. Summary of scoping comments received by NOAA Fisheries on the Notice of Intent to prepare an Environmental Impact Statement (EIS) for Reef Fish Amendment 28

The comment period was open from November 7 through December 9, 2013, and 159 comments were received. These comments may be viewed at <http://www.regulations.gov/#!documentDetail;D=NOAA-NMFS-2013-0146-0001>.

Comments in support of increasing the recreational sector’s share of the annual catch limit often cited socioeconomic gains, reducing restrictions, and providing a better sense of fairness in setting the allocation. Comments in support of the status quo or increasing the commercial share of the annual catch limit often cited fairness because the commercial sector does not exceed their quota due to better accountability of catches, the importance of providing seafood to the non-fishing public, and protecting commercial sector investments in the fishery.

The following is a breakdown of the comments. Table 1 shows the number of comments supporting each of the alternatives in Amendment 28.

Table 1. The number of scoping comments recommending each Amendment 28 alternative.

Alternative	Number of comments recommending the alternative
1	29
2	1
3	0
4	3
5	2*
6	19

*Two commenters in support of Alternative 6 indicated they could also support Alternative 5

Other allocation alternatives were recommended by commenters and are shown Table 2.

Table 2. Other allocations recommended in scoping comments on Amendment 28.

Recreational:commercial allocation	Number of comments in support of the allocation
10:90	1
50:50	3
60:40	3
75:25	1
100:0	6

Twenty-one comments recommended an alternative similar to Alternative 5 except that if the red snapper quota is greater than 9.12 million pounds (mp), allocate 90% rather than 75% of the amount in excess of 9.12 mp to the recreational sector and 10% rather than 25% to the commercial sector.

IV. Summaries of comments received at public hearings (March 10-20, 2014).

Orange Beach, Alabama March 10, 2014

Council/Staff

Johnny Green
Assane Diagne
Charlotte Schiaffo

68 members of the public attended.

Gary Royal- Charter

Mr. Royal noted that he had been running a charterboat since 1997, and stated that the only sector being punished was the commercial sector. He did not support taking any commercial allocation away and suggested that the commercial sector be allocated on historical numbers. He supported Alternative 5. He added that the fishery needed to work under a system that allowed the recreational sector to fish year-round, maybe with tags, and that flexibility in regulations was needed so that everyone could catch more fish.

Randy Boggs- Charter

Mr. Boggs supported Alternative 1 and stated that the Council was pitting the sectors against each other and he could not support reallocation, or anything else, until the recreational sector was brought into compliance. He added that Alabama could not control compliance by other states and should not be punished because recreational fishers in other states were going over their quotas. He advocated making the recreational sector more accountable.

Troy Frady- Charter

Mr. Frady noted that he had been attending Council meetings for five years. He stated that all sectors needed to move towards a system that allowed flexibility. He said that the recreational harvest was running 54-56% each year even though their quota was 49%, and that about 140,000lbs of snapper were being fished across the Gulf daily. He believed that Amendment 28 was premature and suggested a fish tag system. He recommended tabling Amendment 28 until a better data collection plan was in place for about two years in order to get accurate data.

David Walker- Commercial

Mr. Walker supports Alternative 1 and stated that the amendment would cause instability in the commercial sector and rewarded the recreational sector for going over their allocation. He said that the IFQ program had been a success and that it should not be changed by the Council. He added that any allocation taken away from the commercial sector took fish away from the American consumer and that reallocation unfairly penalized the commercial sector, which followed the rules. He noted that the commercial sector had already taken a huge quota reduction while the recreational sector kept going over theirs. He believed that the commercial sector deserved to keep their historical quota and that the recreational sector needed to be held accountable. He indicated that SESSC votes are in question because one of the members may be

ineligible. He suggested that the SESSC needed to review all data on the Amendment, and that the Council should take no action until this was done.

Shawn Miller- Recreational

Mr. Miller felt that the amendment was good. He suggested that the fishery be shut down in June for a few years to allow the fish to spawn, and maybe even shut down for three months to all sectors, even though people would lose money in the short term. He believed such an action would allow longer seasons eventually due to more fish being spawned, thus benefitting all sectors.

Blakeley Ellis- Recreational

Mr. Blakely supported Preferred Alternative 5. He felt it was long overdue and was happy with any increase.

Ben Fairy- Charter

Mr. Fairy supported Alternative 1 (No Action). He noted that there was a commercial lawsuit against NMFS because of the recreational sector continuously going over their quota, and that the length of the season depended on the upcoming ruling. He did not support reallocation and stated that there needed to be three sectors: recreational, charter, and commercial.

Tom Ard- Charter

Mr. Ard supported Alternative 1. He stated that the amendment was a band aid, and that he supported dividing the charterboat industry from the recreational.

Bobby Kelly- Charter

Mr. Kelly supported Alternative 1 and the separation of the charterboat industry from recreational. He wanted better data collection methods and supports sector separation.

Joe Nash- Charter

Mr. Nash supported sector separation and believed the commercial and charterboat industries were penalized for the recreational fishers going over the allocation. He advocated more accountability in the recreational sector and noted that derby fishing was too hard on the charterboat industry.

Dale Woodruff- Charter

Mr. Woodruff advocated tabling Amendment 28 and expressed concern over there being no accountability in the recreational fishery. He stated that if the commercial sector had to give up some of its allocation, that it should be put in a program for everybody. He urged everyone to contact their representatives in Congress to have a plan applying only to Alabama, since other states were being non-compliant and punishing Alabama. He stated there needed to be a better reporting system.

Gary Malin- Recreational

Mr. Malin did not believe the recreational sector was going over its limit. He noted that bad weather had limited fishing days and advocated a tag system for all sectors.

Mike Rowell- Charter

Mr. Rowell expressed concern that the sectors were being pitted against one another. He supported Alternative 1. He felt that Alabama was being punished because of non-compliance by other states.

Scott Drummond- Founder of an outdoor trade organization

Mr. Drummond stated that the data the Council uses are not accurate, and that economic studies needed to be done for each amendment. He said that commercial fish landings had to be documented while recreational did not, and that estimates were used instead of hard data. He supported Alternative 1.

Jim Tinker- Recreational

Mr. Tinker agreed with other speakers that the sectors were being pitted against each other. He believed the Council was not dealing with issues or solving problems and that there were plenty of snapper in the Gulf. He stated that the season was too short, which was economically devastating and that the size limits caused too many fish to be thrown back, increasing mortality. He said the recreational industry supported the Gulf economy, and that the percentage of quota was not the problem, the counting of the fish was the problem. He did not support the amendment and believed the recreational fishery in Alabama was being destroyed. He also stated that red snapper were overwhelming other fisheries and the Council was practicing poor conservation.

Angelo Depaula- Recreational

Mr. Depaula stated that the problem was not the amount of fish being caught, but the counting method being used. He advocated a smaller limit, noting the mortality rate was over 50%. He supported an increased quota and a longer season (6 months).

**Mobile, Alabama
March 11, 2014**

Council/Staff

Kevin Anson
Assane Diagne
Charlotte Schiaffo

46 members of the public attended.

Ben Fairy- Charter

Mr. Fairy supported Alternative 1. He noted that there was a federal lawsuit by the commercial industry over the recreational overages, and that the outcome of that lawsuit could determine allocations. He urged the recreational sector to be accountable and advised against the sectors pitting themselves against each other.

George Null- Boat dealership

Mr. Null stated that his business' sales of offshore boats had decreased in the last 3-4 years causing an economic impact to his business.

Larry Huntley- Commercial

Mr. Huntley supported Alternative 1, noting that giving more fish to the recreational sector took fish away from consumers, and that increasing their allocation would reward them for going over their allocation.

David Walker- Commercial

Mr. Walker supported Alternative 1, stating that allocation was not the problem; it was the fishery management process that was the problem. He stated that the SESSC needed to review the amendment before the Council made a decision and said that the Council should reconvene the SESSC because one vote was cast by someone who may not be eligible to serve on the SESSC.

Donald Waters- Commercial

Mr. Waters said that numerous fish species were given to recreational fishers and that to give them more of the red snapper quota was unfair. He stated that the recreational fishery needed to be held accountable and supported Alternative 1.

Edwin Lamberth- Recreational

Mr. Lamberth supported Alternative 6, but would be satisfied with Alternative 5. He stated that the recreational fishery provided \$10 billion in economic impacts. He emphasized that the Council needed to reallocate fairly based on the recreational industry's economic impact and that the data the Council was currently using to reach its allocation decisions was over thirty years old.

Charles Rodriguez- Boat dealer

Mr. Rodriguez did not have a preferred alternative, but suggested that there be a 3-month season with a 3-fish limit. He did not feel any of the sectors should have fish taken away from them and that the red snapper population had rebounded enough for everyone's allotment to be increased.

Scott Drummond- Outdoor trade organization

Mr. Drummond stated that the data the Council used are bad and that no one should have any fish taken from their sector. He advocated cancelling the amendment, saying it was not needed.

Charles Beach- Charter

Mr. Beach supported Alternative 1. He stated that the stock had recovered and that the Council was not taking into account that the commercial fishery was dealing in pounds and not numbers. He pointed out that the shrimping industry had collapsed so there was very little bycatch of juveniles which increased the stock. He added that a 40-day season was too short and that the Council needed to reassess its stock assessment methods and lower the commercial size limit since it was hurting the commercial industry.

Tom Steber- Alabama Charter Association

Mr. Steber supported Alternative 1 and stated that the Council was pitting the sectors against each other.

Avery Bates- Commercial

Mr. Bates advocated more reef building to increase stocks, noting that Alabama had a successful program. He stated that the commercial fishery was being pushed out by too much regulation, and that the fish count was incorrect. He wanted fair and equitable allocation and emphasized that the best scientific data needed to be used in Council decisions. He did not support the amendment.

**Panama City, Florida
March 12, 2014**

Council/Staff

Pam Dana
Assane Diagne
Charlotte Schiaffo

93 members of the public attended.

John Anderson- Commercial

Mr. Anderson supported Alternative 1 and stated that taking fish away from the commercial sector would punish the consumer and the industry that followed the rules.

BJ Burkett- Charter

Mr. Burkett supported Alternative 1 and stated that there were too many loopholes for the recreational industry. He advocated a 150-day recreational season.

Jack Melancon- Commercial

Mr. Melancon supported Alternative 1.

Pam Anderson- Charter

Ms. Anderson supported Alternative 5, stating it was the most fair to all sectors and would create more stability in the fishery. She noted that an economic study had been done showing that taking away fish from the commercial sector was equitable and would be best for the nation. She stated that the overages reported in the recreational sector were due to bad data from NOAA. She suggested a Gulf reef permit to give researchers more accurate data.

Ron Schoenfeld- Recreational

Mr. Schoenfeld supported Alternative 4. He suggested an odd-even day season in order to double fishing days, and to have fish counted when boats come in to dock.

Bart Niquet- Commercial

Mr. Niquet supported Alternative 1 and stated that recreational anglers needed to be held accountable.

Bob Zales- Charter

Mr. Zales supported Alternative 5 and stated that sector separation would not work, and that separation would increase the commercial quota at the expense of the recreational. He added that data being used were not accurate.

Jackie Rinker- Media

Ms. Rinker supported Alternative 4 or 5, stating that money spent in the communities by recreational anglers was important to keep local communities viable.

Chuck Guilford- Charter

Mr. Guilford supported Alternative 6. He stated that allocation had put a lot of people out of business.

Kenyon Gandy- Charter

Mr. Gandy supported Alternative 1 and noted that there was too much discards in the industry because of size restrictions.

David Krebs- Dealer

Mr. Krebs supported Alternative 1. He advocated getting rid of the size limit. He stated that the current recreational management system was designed for failure.

Mike Whitfield- Charter

Mr. Whitfield supported Alternative 1. He stated that there were too many participants in the recreational fishery and that a count of them needed to be done.

Dewey Destin- Charter

Mr. Destin supported Alternative 1. He stated that the Council needed to change its management plan and get rid of kill and release. He stated that taking away fish from the commercial sector was not fair, and that while he did not object to an increase in the recreational quota, it should not be done at the expense of the commercial sector.

Curtis Culwell- Recreational

Mr. Culwell supported Alternative 5.

Russell Underwood- Commercial

Mr. Underwood supported Alternative 1. He stated that the commercial IFQ system was working well, and that the Council recreational management system was flawed. He suggested a tag system.

Candy Ansard- Recreational

Ms. Ansard did not support the amendment, saying none of the options solved the problem. She suggested building more artificial reefs and pursuing an aggressive program against lionfish.

Charlie Saleby- Charter

Mr. Saleby supported Alternatives 4, 5, and 6. He stated that the size limit needed to be smaller and that the season was too short, noting that smaller boats were put in danger by having to go far out in bad weather to fish.

Donald Whitecotton- Charter

Mr. Whitecotton supported Alternative 6, and agreed that bad weather limited fishing days.

Stewart Miller- Charter and commercial

Mr. Miller supported Alternative 1.

Billy Archer- Recreational, charter, and commercial

Mr. Archer supported Alternative 1 and suggested tabling the amendment. He also recommended a tag system for the recreational sector and sector separation.

Kerry Hurst- Commercial

Mr. Hurst supported Alternative 1. He recommended a national plan for both sectors and more accountability for the recreational sector.

Dean Preston- Recreational

Mr. Preston supported Alternative 6. He agreed that lionfish were a problem and stated that the amendment pitted the sectors against each other. He believed that the commercial sector had too large an allotment of a public resource.

Frank Gomez- Commercial

Mr. Gomez supported Alternative 1.

Ken Vandirzeyne- Recreational

Mr. Vandirzeyne supported Alternative 6.

Gary Jarvis- Charter and commercial

Mr. Jarvis supported Alternative 1 and advocated a management plan for the recreational sector. He encouraged Amendment 40 to be taken to public hearings and stated that Amendment 28 was the result of recreational lobbying.

Mike Guidry- Recreational

Mr. Guidry supported Alternative 4. He encouraged more accountability in his sector and also asked for more fishing days.

David Underwood- Commercial

Mr. Underwood supported Alternative 1.

Bruce Craul- Restaurant owner

Mr. Craul supported Alternative 1 and stated that better data were needed.

Chris Niquet- Commercial

Mr. Niquet supported Alternative 1 and urged the Council to get more accurate data. He stated that reallocation would cause instability in the fishery.

Ben Seltzer- Commercial

Mr. Seltzer supported Alternative 1.

Frank Bowling- Recreational

Mr. Bowling supported Alternative 5.

Jason Smith- Charter

Mr. Smith did not support the amendment, stating there was not enough data to make a choice.

**Gulfport, Mississippi
March 12, 2014**

Council/Staff

Corky Perret

Emily Muehlstein

Phyllis Miranda

45 members of the public attended.

Robert Cullimber-

Mr. Cullimber supports Alternative 4.

Tony Dees- Owner of retail fishing store

Mr. Dees supports Alternative 4 because in the last ten years he has seen an approximately 80% decrease in tackle sales and 90% decrease in SCUBA sales for spearfishing.

Donny Waters- Commercial

Mr. Waters said the ITQ program initiated 8 years ago is probably the most successful program initiated by Council; 40% less fish are killed to bring quota to the dock. He doesn't feel it's right to reallocate fish from a sector that has been accountable, and commercial fishermen should not be penalized for the Council's inability to create a good fishing plan for the recreational fishery. He feels that the recreational sector wants to be accountable. The commercial sector cannot take a fish home, and they are feeding 97% of the population that cannot go recreational fishing. He does not want to take anything away from anybody but feels that this allocation will wreak havoc in the commercial fishery. His money goes back into his business. The answer is not to take from one sector to give it to another. This amendment does not promote any conservation because of the bycatch in the recreational fishery and it will create bycatch in the commercial fishery.

FJ Eicke- Recreational

Mr. Eicke supports Alternative 5 because the commercial sector won't lose anything. The recreational sector has increased in numbers significantly since the initial allocation was set.

Recreational angling has a tremendous economic and social value. The initial allocation was set using the time period of 1979-1987 and there was no recreational data at that time so the initial allocation was flawed from the start. The recreational fishery has put up with limited seasons and limited bag limits, and he feels that now there is a chance to do something right. The Council should reallocate on a fair and equitable basis.

Jordan White- Recreational

Mr. White prefers Alternative 1 because he doesn't support taking any red snapper quota away from commercial fishermen.

David Walker- Commercial

Mr. Walker does not want to attack the recreational fishermen themselves; it's their management plan that is the problem. The seafood industry is not the problem. Less than 2% of anglers in the U.S. are recreational and most of the nation depends on the seafood supply chain to get seafood. The commercial management plan is working. A new management plan needs to be developed for the recreational fishery, and reallocation is not the answer. Recreational fishermen need to get proactive not just in developing a new management system for themselves. Robbing from Peter to pay Paul is not the answer. Commercial fishermen had to make sacrifices. Alternative 5 does not enhance the net benefits of fishing, it only increases fishing days in a minor way. You could reallocate 100% to the recreational sector and they would still continue to lose days. Economic value cannot be the sole purpose for allocation. He supports Alternative 1: no action, because the commercial sector should not be penalized for following the rules. Reallocation is not justified when it comes to conservation. Also, there should be an outreach program (like the RAP sessions) for the seafood supply chain.

JR Titnus- Recreational

Mr. Titnus said the recreational season lengths projections are dependent on estimated weights and catches. Commercial fishing harvest is not an estimation. He has only been asked about his harvest once. There needs to be reliable data to make any decisions.

Tom Becker- President of Mississippi Charter Boat Captains Association

Mr. Becker said the fishing season is too short and he has different feelings about when to fish throughout the year. He supports Alternative 5. He has seen that commercial fishermen will drive by while he's fishing, take his number, and then fish his spot and empty them out.

John Bullok- Recreational

Mr. Bullok supports Alternative 1. Before the Council decides where the fish go, there needs to be a better way to check the recreational fishermen to determine if they deserve more pounds. When he goes out to the rig under this 2-snapper per person limit, he sees dead discards all over. Recreational fishermen are hi-grading and not venting. Stability of the recreational fishing sector should not be measured in length of season or allocation, but in the quality of fish. Commercial fishermen are checked 100% of the time for both harvest and other regulatory compliance, but he as a recreational angler hasn't been checked in 5 years.

Johnny Marquez- Executive Director of CCA Mississippi

Mr. Marquez supports Alternative 5 because for many years the season has gotten shorter and shorter and something different needs to be done. The initial allocation is outdated, it didn't take into account the economic and social concerns for the fishery. There have been tremendous changes in the fishery since that initial split. Economics should play an important role in the allocation decision. As the species rebounds, Alternative 5 wouldn't take away from the commercial fishery; it only takes the excess. We're back at the high-water mark for the commercial fishery and it's fair and equitable to give more to the recreational sector.

Nathan Witonovich

Mr. Witonovich supports Alternative 5.

Phillip Horn- 3rd generation seafood dealer and former Council member

Mr. Horn has been involved in the red snapper war since it began. He was involved in the development of the IFQ program and supports Alternative 1. The commercial industry has a tough row to hoe. Texas has never closed their state waters; Florida left their fishery open one year for a rodeo; Louisiana is open on weekends and claiming 10 miles; yet, the states all receive money for enforcement. The commercial industry suffered when quotas began and snapper needed help. The industry was closed over and over, and the agencies and the charter captains used to say 'catch something else.' Alternative 5 would only increase the recreational season by 4 days. The year the 9.12 million pound quota was put in place, the recreational sector overfished their quota. Members of the commercial industry were forced out when the IFQ program was put in place and the same may need to happen in the recreational fishery to reduce effort. The biggest problem is stock assessments. We continue to increase quotas. The red snapper average size started at 2 pounds now we're catching bigger fish. We can't predict the weather with 8 different models, and the red snapper stock is managed under a single model; we need to argue about assessments not allocations.

Gary Smith- Recreational and AP member

Mr. Smith would like to correct some errors. Last year in a red snapper Advisory Panel meeting these issues came up: there needs to be a plan to let new people in. It needs to be addressed. He does not support any alternatives because none of them do anything to solve the recreational issues. The problem is the data and the people in charge. It's the NMFS's Council and the Council members just go along without doing anything. Dr. Crabtree is responsible because NMFS has openly said they want a catch and release fishery in the recreational sector. Mr. Smith wants accountability. He has asked for a boat permit and he only gets excuses as to why he can't do it. He does not believe it is possible that the recreational sector catches the number of fish that NMFS says they do. It is about shutting the Gulf down. He said we need to ban together and demand accountability.

Keith King- Owner of the largest boat dealer in Mississippi

Mr. King supports Alternative 5 because it's a compromise that doesn't impact the commercial sector in any way. Council needs to find a way to increase the accuracy of the data. The initial allocation split was determined long ago and was based on failed info. The data collection methodology is inaccurate. The economic benefits of the recreational sector are not being considered. The shortened season has impacted the sale of offshore boats and that needs to be

taken into consideration. He wants accurate data and feels decisions should not be made today based on the data we do have. The stocks are improving, and although there is a problem with the harvest count, it's obvious that effort is overstated.

David Floyd-

Mr. Floyd supports Alternative 1, do not reallocate red snapper.

Nicky Cvitanovich- Currently recreational; has done commercial and charter

Mr. Cvitanovich said this shouldn't be a commercial vs. recreational fight. The Council needs to fix the recreational management plan so that the season isn't so short. It's also a problem that you can't catch snapper and amberjack at the same time. The fishery service doesn't want you to catch fish. Most everyone has shifted to inshore speckled trout fishing now. He supports Alternative 5, but would rather the recreational management plan be fixed.

Dustin Trochesset- 3rd generation charter captain

Mr. Trochesset supports Alternative 5. He is displeased with the handling of the red snapper fishery in the MSA. The Act was created to be fair and equitable to all fishermen. How is it fair for the commercial guys to have more fish and the luxury under the IFQ program to fish when they want? The recreational guys are given condensed time and commercial fishermen can target the spots before recreational anglers are allowed to fish. There is nothing fair and equitable about that. The charter industry is negatively impacted by the short season. They were cut short last year and had to cancel trips. He doesn't believe that 200 boats are fishing every day and wonders if the weather is taken into account. He would like the Council to be fair and equitable and there is not much that is fair about the commercial fishermen getting more allocation. The other states open their seasons and that hurts Mississippi, because the stuff they're catching counts against the Gulf-wide quota.

Scott Drummond- President of an outdoor trade organization

Mr. Drummond supports Alternative 1, because we don't understand the economic impact of what we do.

**Kenner, Louisiana
March 13, 2014**

Council/Staff

Harlon Pearce
Emily Muehlstein
Phyllis Miranda

48 members of the public attended.

Pierre Villere-

Mr. Villere said the current recreational allocation was set in the 1970's based purely on catch history. Using only catch history is a bad way to determine allocation. There are fewer boats in the commercial fishery than ever, and they continue to have the most harvest. What is the

impact of shorter seasons on bait shops, marinas, and hotels? At such a high price per pound, red snapper is not protein for America. Pollock is a more accurate example; it's cheap and there's lots of it. Counting every fish is the wrong path and it's a waste of time and resources. Trying to manage 1 million recreational fishermen is unusual and can't be done. The Council should set a bag limit and a decent season of 2-fish for the summer months, especially if the stock keeps expanding like it is.

James Schere- Charter and commercial

Mr. Schere supports Alternative 1. Transferring quota to the recreational sector won't help anyone, especially if the season remains open during the hottest time of the year. No one goes fishing only for red snapper; they catch 100 trout then go out for snapper. It takes one stop and 30 minutes of fishing and makes up a fraction of what's being caught in a fishing day. Customers don't book charter trips based on red snapper. It doesn't affect his [charter] business at the busiest fishing time of the year. Adding a few days won't help him and won't hardly affect any charter folks. Also, he doesn't think it will help private recreational anglers that much, because they're not targeting just red snapper on their trips.

George Heuey- Recreational

Mr. Heuey supports Alternative 5. From his fish camp, he catches trout near shore and then he runs his bay boat out to catch his two fish. His big problem is the verification of the recreational catch. If there was a way to count the recreational catch like the commercial catch is counted, then it would solve problems. But, that will never happen because of the number of ports and boats that recreational fishermen are using. The recreational sector gets the short end of the stick, and he thinks the allocation should expand in their favor. He loves to eat red snapper and wants it to remain in restaurants, and he wants charter fishermen to continue to have their business.

Dax Nelson – Commercial

Amendment 28 is wrong and Mr. Nelson supports Alternative 1. We've built this fishery. He remembers when we didn't have any snapper at all. Adding allocation to the recreational fishery won't help the recreational sector. The recreational sector has gone over its allocation in 6 of the last 7 years. If we do this amendment, it will only add two days to fish.

Steve Loop- Recreational

Mr. Loop is in favor of reallocation since it hasn't happened for the last 20 years, and the recreational sector is in need of a greater share of the snapper in the Gulf. The recreational sector gives more income to the government with all the taxes and money they spend to fish. The recreational sector has never caught over their limit, the federal government overestimates. Commercial fishermen are sitting at home making money renting out their licenses; that's not right and it's not fair. The Council should do the right thing and reallocate to the recreational sector.

Louis Valet- Recreational

Mr. Valet supports reallocation. He has seen so many changes in the Gulf since he started fishing. He doesn't think the changes in stock abundance happen because of fishermen fishing. God intended to feed the world with fish; that's why a fish lays a million eggs. What needs to be

done to promote those million eggs to grow into a million fish? We need to focus on clean water, habitat, and food. Farmers understand how to plant and grow plants but the stupid people regulating fish in the Gulf don't. Fish need to eat, but we wipe out porgy so that the red snapper won't be able to eat and grow. These fish have to eat something and they'll eat little red snapper and trout. The bonita and triggerfish are gone because they have nothing to eat.

Thally Stone- Commercial

Mr. Stone supports Alternative 1. He is just now making a decent living as a commercial fisherman. He earned every pound of allocation he got and nothing was given to him.

Doug Hawkins-

Mr. Hawkins supports Alternative 1. The fish are coming back and the Council shouldn't change things. Giving the allocation to recreational fishermen won't solve the problems in the recreational fishery.

Russell Underwood – Commercial

Mr. Underwood supports Alternative 1. We have rebuilt the fishery both commercially and recreationally. It took seven years to get a true stock assessment before the quota was increased. The problem is not the average guy who wants to catch a red snapper in the afternoon; the problem is with the Council system itself and whether the use of all the tools in the toolbox has been considered. He is worried about the resource. Seven years ago, there were hardly any people at these meetings. There was hardly any fish either; now, we have brought the fishery back. It was overcapitalized commercially, and there used to be a lot more boats. But, the IFQ program reduced the fleet and brought the fishery back. Recently, the commercial sector got a quota increase, and now they want to take it back. 500,000 pounds of snapper will only give an extra 2-3 days for recreational fishing. Is it fair for Texas to fish year round and the rest [of the Gulf] has a 30 to 40-day season? The problem is not allocation, the problem is the Council system.

Charlie Capplinger - Recreational

Mr. Capplinger said the system doesn't work. Recreational fishermen spend a lot of money on fishing. He supports Alternative 5, because it does not take any fish from the commercial sector. If there is additional allocation, than everyone will get more fish. The allocation is based on old data from 20 years ago. The demographics in the Gulf have changed. The economic value of the recreational fishery is enormous, and the number of fishermen targeting red snapper commercially is small. The allocation should have been different a long time ago. No one targets only red snapper, and no fisherman can fish during the week. The season is not set up for a recreational fisherman at all. The Council should increase the recreational sector's allocation to achieve the greatest economic impact and social impact for the largest user group.

Daryl Prince- Commercial

Mr. Prince supports Alternative 1. When he first started, there was hardly any fish in the Gulf. All the regulations have allowed the stock to improve because commercial fishermen have stopped hammering them. There are plenty of fish. Taking them from the commercial guys will not solve a thing. Sports fishermen won't have a better fishery by taking away allocation from the commercial sector.

Christopher Gray - Commercial

He used to wonder where the fish were, and now they're starting to see lots of fish. If you take 500,000 pounds from him by selecting Alternative 5, you're throwing him in the back of the bus. He should be standing in the front, because he made the fishery better as a commercial fisherman, by making sacrifices to rebuild the stock. He supports Alternative 1.

Michelle Malony- Louisiana Wildlife Federation

Ms. Malony said that outdoor recreational public access is just as important as habitat, and she expects improvement in data collection to show a robust recovering stock. She supports Alternative 5.

Gunner Waldmann- Recreational

Mr. Waldmann supports Alternative 5 with some caveats. The data collection is antiquated and needs to be improved. Alternative 5 does not take anything away from commercial fishermen. If the quota is over 9.12 mp, then the commercial sector will still gain 25% more of the allocation. As a safety consultant, he won't work for a company that removes oil platforms. It shouldn't be okay for them to blow up platforms and kill thousands of pounds of fish without anything being allocated for that damage.

Chuck Laday- Recreational

Mr. Laday is a member of CCA and an avid inshore angler. He occasionally fishes for red snapper. He would like to fish more but due to the short season, weather, and fatherhood, he doesn't have as much opportunity as he wants. His sons would really like to fish if there is a longer season. He supports Alternative 5 and applauds the Council. It's a fair and modest change to the current allocation that is based on old data. Under Alternative 5, the commercial sector loses nothing.

Robert- Recreational

Robert believes Alternative 5 seems like the right thing to do, adding that we all agree that something needs to be done for the management of the resource for our kids and grandkids. We need to work with the Council to come up with a different way to manage. We all need to come together to solve the problem because the fish are here. We don't see the croakers and triggerfish like we used to and we need to use data that isn't 25 years old. The Council is managing for the whole Gulf, and Louisiana is different than the other states. We need to come up with a subcommittee to recommend to the Council how to manage Louisiana. CCA is a good group that cares about conservation, and everyone should ban together to come up with meaningful management and [supporting] studies.

Chris Marcusio-

Mr. Marcusio is in favor of Alternative 5. In the last year, he has worked with some recognizable and seasoned fishery managers, economists, and advocates across the country to develop a report to reflect the culture and needs of the saltwater fishing public. One recommendation that came from the report was to examine allocation. It is set based on old data. If we're not managing fish for the best socioeconomic value and for conservation, then why are we managing? All allocations need to be examined, not just red snapper.

Woody Cruse- Recreational

Mr. Cruse said commercial and recreational fishermen are being pitted against each other, and it's unfortunate that we can't manage the resource together. He is a private angler and time on the water with his family is being limited. He has an expensive boat and he targets red snapper. It is terrible that amberjack is closed when red snapper is open. He is not anti-commercial, he just wants more time to fish. He has little confidence in the recreational harvest numbers.

Steve Tomeny- Commercial

Mr. Tomeny supports the Alternative 1 -no action. At this time, taking fish away from the commercial sector to add an extra two days to the recreational season is a no win situation. The system the recreational anglers are fishing under is broken. Adding pounds won't fix it, and the allocation is always overrun. The recreational fishery is an unlimited user group and as the fishery has recovered, more and more people want to go. The numbers should be lower than they are and he advocates a tag system. Sector separation would create more accountability, and we're still pushing for alternative management ideas. The SESSC should review Amendment 28 before final action is taken.

Ed Petrey- Charter and commercial

Mr. Petrey is against reallocation and supports Alternative 1. Reallocation won't solve anything and the only way we will solve something for the recreational sector is using some type of tag system to figure out what they're catching. The population has increased a lot and we're doing a lot better charter-wise. We need to leave allocation the way it is.

James Bruce- Commercial

Mr. Bruce said that when the industry signed up and voted for the IFQ program, they got cut off. Now for the first time, people are here in the room saying they're not taking fish from the commercial guys that made sacrifices. The recreational fishermen need sector separation and a tag system. The pie is only so big, and not everyone can catch fish. That's what the commercial guys had to do; limit entry. It's time for the recreational sector to do something. Keep allocation at status quo and choose Alternative 1.

Bobby Jackson-

Mr. Jackson is in favor of Alternative 1. He feels that everything should be left as it is now. All the people should be glad they live in Louisiana where you can go out and catch trout and mangrove snapper, and the state is giving us extra days in state waters. He doesn't think that 2 or 3 more days of fishing is worth taking away from the commercial fishermen.

Brent Fay- Recreational

Mr. Fay thinks the population is healthy and that management is flawed. He supports Alternative 5. As a citizen of Louisiana, he thinks it's wrong if he can't fish but he can go to the grocery store and buy fish. He thinks he should be able to catch red snapper at any time.

Andy Leblanc- Recreational

Mr. Leblanc is more of an inshore fisherman and only has a 22 foot boat. The weather limits his red snapper fishing. He supports Alternative 5, because it's not doing any harm to the commercial guys. The restaurants and stores won't run out of fish.

Joe Macaluso-

Mr. Macaluso said the Council has driven a wedge between the commercial and recreational sectors. We have fish in Louisiana; Florida and Alabama don't. We have fish and we're fighting about who gets to catch more than the other guys. He has seen more than his share of mismanagement, but in this instance, there is a problem that won't be solved by Alternative 1 or 5. We have fish and we need to make sure that Louisiana has the right amount of red snapper they deserve (70% of the fish with 20% of the effort). This is a band-aid and we need the wound to heal.

Bill LaJune- Recreational

Mr. LaJune supports Alternative 5 with some changes. A recreational season should be on weekends, and the state does a good job of knowing how to best govern.

John Abair-

Mr. Abair supports Alternative 5 because it's a fair distribution of the resource. We all need to ban together and attack the administration that is removing rigs. We don't need to argue over the amendments as much as we need to stop rig removal.

John Cappell- Recreational

Mr. Cappell supports Alternative 5. He advocates for future generations. The fishery has improved and it's easy to wipe the snapper out. We need a bigger pot and we need habitat. We need to stop [removing] idle iron. The vertical reef structures hold fish and make fish. We also need better data collection. We don't need to fight each other; we need a bigger, better managed pot of fish.

Walter Heathcock- Commercial

Mr. Heathcock is against Amendment 28 and prefers Alternative 1. Changing the allocation won't solve anything. Red snapper is already a pricey fish, and he doesn't want to increase the price any more. All the fish commercial fishermen catch are going to the American public. This quota was set a long time ago and it has been fair for 24 years, but somehow it's a problem this year.

Andre Thomas-

Mr. Thomas supports Alternative 5. He feels it is a public resource and should not belong to the private sector. He said we need to address how fish are counted. He would like to divide the Gulf and manage fish separately.

Archie-

He is against any type of reallocation and supports Alternative 1 because it's a public resource. Not everyone that wants to eat fish has the opportunity to fish. The American public needs access to seafood. There are lots of fish that commercial fishermen can't catch, and it seems like the recreational fishermen always want more.

Dante Nelson-

Supports Alternative 1 because the commercial fishermen should still have fish. Fish are going to continue to be here until we're dead and gone.

Corpus Christi, Texas
March 17, 2014

Council/Staff

Robin Riechers
Emily Muehlstein
Karen Hoak

38 members of the public attended.

Charlie Alegria- Morgan Street Seafood owner

Mr. Alegria supports Alternative 1 because the commercial guys seem to give things up and never get them back. He thinks we should do nothing and leave businessmen alone.

Blaine Wise-

Mr. Wise supports Alternative 5 because it's a win-win situation for both sides.

Shane Cantrell- Charter

Mr. Cantrell supports Alternative 1. He opposes action because it gives a false promise to the recreational sector and won't increase their season at all. We will actually still be losing days because Florida is non-compliant. This isn't a sustainable fishery management plan. It violates National Standards 1 and 4, and is missing accountability measures to keep recreational anglers within their allocation.

Alan West- Recreational

Mr. West supports Alternative 5, as it would benefit recreational fishermen without cutting into commercial fishermen's allocation. He believes it makes good sense, because there are a substantial number of recreational fishermen in the state.

Ron Dollins- Recreational

Mr. Dollins supports Alternative 5. He supports the 400 commercial fishermen, but it's time to give fairness to thousands of recreational fishermen. Recreational fishing supports many varied industries, and they don't fish for profit; they fish for the love of it. The value of fishing is not measured by numbers at the dock. It's the time they [recreational anglers] spend on the water and building relationships, and the large number of people using the resource need the support of fisheries managers.

Don Wilkinson-

Mr. Wilkinson supports Alternative 5 because it offers the best economic benefit. The commercial harvest wouldn't be diminished, it would actually increase. He suggests the following: adopt an adaptive management plan that has demonstrated its effectiveness in other fisheries such as Atlantic striped bass. Stop all fishing during spawning and allow commercial fishing to be done after peak spawning in June-August. This would allow an increase in productivity because you're not removing the larger spawning fish from the resource, and this wouldn't cause any net loss for the commercial fisherman. Consider segmenting the Gulf

according to recruitment; he has heard and supports the idea of dividing the stock, perhaps at the Mississippi River.

CJ Garcia- Business owner, commercial red snapper fisherman

Mr. Garcia supports Alternative 1 and opposes reallocation because it won't solve the problems in the recreational fishery. Anglers consistently overharvest in the recreational fishery and if given more fish, will over harvest more. It will also cause instability in the commercial fishery. Increasing the amount of pounds won't decrease the recreational overage. He suggests working with the recreational fishermen to give them a real solution to the problems in the recreational fishery. The SESSC should review the analysis of Amendment 28 before the Council takes final action; their vote was null and void because a member of the SESSC shouldn't have been there. They should re-vote before the Council takes final action. This is honestly offensive to those who make a living on the water.

Tylor Scott- Commercial

Mr. Scott is new to the fishery and opposes reallocation because it doesn't solve the problems of the recreational fishery and will cause instability in the commercial sector. He supports Alternative 1.

Nena Hale- Owns a business catering to recreational fishermen

Ms. Hale said it's hard for her to have to take a stance on this issue, because without commercial and recreational fishermen, Port Aransas wouldn't be the town that it is. There is an abundance of fish now, and there are so many that you have to release that die while targeting other species. She is not sure where she stands on this issue but feels that there has to be a middle ground that will help both sectors. It is recreational fishers who come to her boutique; they support her business and she depends on them for her livelihood, so she wants them to have more fishing opportunities.

Ken Sims- Boat captain; has worked in both sectors

Mr. Sims opposes reallocation and supports Alternative 1 because it won't solve any problems. This needs to be solved with a different way of managing the recreational sector. We should try tags or licenses like the red fish program in Texas. Giving more fish to the recreational sector will ensure higher discard mortality, because they continue to fish and discarded fish float off dead and are then eaten by other predators, which is ridiculous. Fifteen years ago, fishermen used to struggle to catch fish. What we are doing is working. Today, the snapper are huge. Commercial fishermen are not harming the rebuilding plan because they are accountable. What we're doing in the recreational sector is wrong; charter guys need their own regulations, and everyone needs to play by the rules.

Scott Hickman- Charter and commercial

Mr. Hickman said the CFA has been begging for a new management system for the recreational fishery for 5 years, and he is disappointed that this is what we get. We're going to take fish from an accountable fishery and dump it into the unaccountable side for two more fishing days? That is silly and won't help his charter business. Until we work to get a new management system, we're never going to fix our problems. Why are we working on this instead of Amendment 39 [regional management], where Texas can manage their own fish through tags, or however they

want? The Council needs to do something different. He supports Alternative 1, no action on this amendment.

Pete Petropoulos- Recreational

Mr. Petropoulos is a capitalist and believes there is no reason to take anything from the commercial fisherman. He supports Alternative 1.

Kevin Haller- Charter and commercial

Mr. Haller sees both sides and opposes reallocation because it doesn't solve the problems in the recreational fishery. It will cause instability to the commercial fishery, and the recreational sector will continue to overharvest their allocation without accountability. He supports Alternative 1, status quo. The recreational sector needs a real solution to protect the resource. The SESSC should review the analysis, and it should be re-done before the Council takes final action.

Mike Hurst- Representing S.E.A.

Mr. Hurst does not think it's right that anglers have 20 days to fish during the worst wind of the year. He prefers Alternative 6, but since that option was not on the table to solve that problem, they would like to ask for Alternative 5.

Norman Oats- Recreational

Mr. Oats was fishing in the 1980's when the stock was ok. He then came back in 2001 when it was very hard to catch a snapper. Now, for 10 years they have only had a month of fishing. If we don't increase the quota, we're all in trouble. He supports Alternative 5 because he wants to fish more than 30 days a year. Under that alternative, if the ACL is increased we all benefit. The Council is losing credibility because the ACL is wrong. Nice size snapper are everywhere. He says to do more offshore research and see; don't just look at the closest rigs, but study some hilltops and use data that is not 20 years old. Start with a 3 month season and a 4-fish per person bag limit and if the stock decreases, then cut it. Do real research. He catches snapper in 35' of water.

Corey Garcia- Commercial

Mr. Garcia opposes reallocation and supports Alternative 1 because it will not solve problems in the recreational fishery, overharvests will continue, and [reallocation] will cause instability in the commercial sector. He suggests working with recreational fishermen to give them a real solution like tags so they can fish year round. There are plenty of fish out there and the Council needs to find a way to let them fish. The SESSC should review the amendment before the Council takes final action.

Mike Miglini-

Mr. Miglini said Amendment 28 is an insult to those trying to actually get a fishery management plan in place that will bring results. It will not solve the problems of the recreational fishery and will result in further overharvest. It's not the private recreational angler or the charter industry's fault that the Council has consistently failed to address a management system that provides both accountability and flexibility. The recreational sector needs to end derby fishing and start using tags for private anglers, just like the red drum system in Texas, so they can fish on their schedule

not when the government tells them to fish. The charter guys need their own sector allocation. Fishermen need to give up good harvest data from recreational anglers on private boats, from charter/headboats, and continue to get data from the commercial industry. This amendment and this reallocation is a false promise and the Council must develop a management plan that works. It's like putting more fuel in a boat that has autopilot moving in the wrong direction. We'll continue to see shorter and shorter seasons even with the reallocation of fish. We need to manage in a way that is efficient. Dumping fish back instead of using a tag system is an insult to conservation and the MSA. He supports status quo (Alternative 1). The SESSC should review Amendment 28 before the Council takes final action, because the initial vote to accept the methodology was null as a member was in conflict [of interest]. We have more than a ton of red snapper here, and we need a world class management system that allows us to harvest recreationally, in a sustainable manner, without wasting fish. Amendment 28 will not do that.

Gus Lopez- Commercial

Mr. Lopez supports Alternative 1, no action. They do this for a living; it's not for fun. If you're here you like to fish, but for commercial guys, it's their livelihood. It seems unfair to take from them and give it away for recreational purposes. It doesn't solve problems. Instead, he suggests letting the recreational sector fish whenever they want using a tag system. World class red snapper fishing is in our back yard, so why strip it back to making it hard to fish? Why take fish from an accountable sector and dump them into a system that isn't accountable? There are a lot of changes that will have to take place to make the recreational sector accountable like the commercial sector, which is law abiding, non-wasteful, and protective for the future generations. The SESSC needs to review Amendment 28 before the Council takes final action. What are the real reasons for changing allocation? He wondered what net benefits we were striving for.

Michael Matthews- Commercial and former headboat fisherman

Mr. Matthews is against the amendment; he supports Alternative 1, no action. He opposes reallocation because it won't solve the issues in the fishery and will cause problems on the commercial side. We need to work with recreational fishermen and find something that will work for them. Reallocation will only make things worse for the recreational fishery and for him.

Brenda Ballard- Recreational

Ms. Ballard supports Alternative 5. She doesn't want to take anything away from commercial fishermen. She doesn't have a yacht; she has a 25-foot boat and it's hard for them to get out. The inshore rigs are fished out and they have to go further. She only gets to fish five days out of the year, because she works for a living and she wants more opportunities to fish. She does not believe that Alternative 5 will hurt commercial fishermen in any way. Fishing is fun and she wants to be able to use the additional 75% to increase their opportunity for more fishing days.

Russell Sanguinet- Headboat operator

Mr. Sanguinet does not support any part of the amendment because there is an overabundance of fishing regulations. He is an active participant in the headboat cooperative (EFP) and he is 100% accountable. The problem is not the fish, it's the lack of enforcement and the bad management. The enforcement needs to account for everyone, not just the for-hire sector. This is a temporary patch on the problem, and it's not going to fix anything.

Paul Kennedy, III- Recreational

Mr. Kennedy gets out 8-10 times a year and he likes to take friends and family fishing. Red snapper is his most consistent fish. He doesn't understand the way it's managed and the limits put on them. The fish are so plentiful, he needs to avoid them and he doesn't understand management. He wants to bring a few home to eat and he can catch them in state waters. These are the strictest limits we have on any fish and they are the most abundant species. These regulations are ridiculous. Recreational fishermen are not being tracked like the headboats. It's his goal that recreational fishermen can fish year round. With a 2-fish per person bag limit, we will never overfish the red snapper. He is allowed to catch 10 speckled trout in the bays, but can rarely catch the limit. Red snapper is a mismanaged resource and the Council should give a longer season because it's not overfished. He wants to see some better data on catch. He wonders about how the management system is set up so when everyone goes out, they can catch their limit, but they are only allowed 2 fish.

Gary Hough- Recreational

Mr. Hough has seen a major comeback in the number of fish that are available in both the well-known and the more secretive spots. He supports an increased allocation for the recreational fishermen. Alternative 5 is the most palatable. He does think it should be tilted even more towards the recreational fishermen. On this side of the coast, it is dangerous to fish the first two weekends of snapper season because of the wind. The first of June is a horrible time to fish. There is no way the amount of recreational fish being caught could be harming the population.

Jerry Bravenec-

Mr. Bravenec said one of the biggest issues is accountability. The thing that concerns him most is that Texas continues to be penalized for other areas overharvesting red snapper. Red snapper don't move around too much. There has been a major rebound in the past five years, and he does not want to be penalized by the other areas overfishing. Alternative 5 is good for recreational fishermen without harming the commercial sector. TPWD needs to manage the resource and we need to be managing based on the fish we have locally.

**San Antonio, Texas
March 18, 2014**

Council/Staff

Patrick Riley
Emily Muehlstein
Karen Hoak

36 members of the public attended.

Jason Belz- Recreational

Mr. Belz wants a longer snapper season. It's rough in Texas and they like to catch billfish, but it's nice to have something to eat, something that they can catch on the way back in especially since they burn a lot of fuel. Red snapper are everywhere; they come to the surface in 300 feet of water. He does not want commercial fishermen to have 51% while the public has only 49%.

David Triplett- Recreational

Mr. Triplett questions the red snapper data and where the statistics are coming from that says recreational fishermen are catching the amount of pounds that they are. He does it as a hobby for his family, and there are very few days they can get out, especially with the high winds in June. The statistics seem very inaccurate, and he can't catch anything else. They run into them everywhere and, if you catch red snapper while trolling there is something wrong; the system is broken. He wants to see a longer season and he thinks there is a better way to count the catch in the recreational sector.

Michael Jacob-

Mr. Jacob said the rules don't reflect what anglers are seeing. He is conservation minded and follows the rules all the time. He used to have trouble catching snapper, but now you can free-line dead shrimp or troll wahoo lures in 200 feet of water and catch red snapper during amberjack season. He kills 10 snapper for every amberjack he catches. There is a nuisance with dolphin; you feed red snapper directly to them or the sharks. They are not releasing any of the fish. He catches between 25 and 75 fish during the entire season and feeds around 500 fish to predators. The commercial guys are likely more important and he doesn't want to take away from them. The amount of fish that go to the dolphins and sharks is insane. We are doing nothing about it but sitting on our hands. The numbers are inaccurate and it's getting hard to follow the rules.

Liz Hewitt-

Ms. Hewitt supports Alternative 5, or possibly Alternative 6. She wonders why we don't have a federal fishing license to track catch.

Ray Weldon-Recreational

Mr. Weldon supports Alternative 6, although it's not really reallocation. According to the American Sportfishing Association, recreational fishermen catch 2% of fish but provide 3 times more value to the gross domestic product than commercial landings. For every 1 pound of fish caught, they add \$152 to the GDP. There are about 400 shareholders holding 51% of the red snapper fishery and they don't even put enough money back to cover the cost of monitoring the program itself. The EDF, restaurant chefs, and fishermen are using the slogan "protein for America," but they are getting wealthy providing fish for the wealthy at \$18 a pound. No one will be put out of business with any of these reallocation options. There are less commercial fishermen now than ever catching more fish than ever. They are looking towards sector separation and inter-sector trading so they can sell quota to charter captains who will then sell them back to the recreational fishermen. I guess the commercial fishermen don't really care about feeding America. Mr. Weldon sat on the Ad Hoc Private Recreational Data Collection Advisory Panel and has not seen the improvements he's looking for. The MRIP data is messed up and NMFS is still not getting the data they need from the MRIP states. Louisiana dropped out [of MRIP] and is now getting their own data, just like Texas. It's not the best, but when in 1996 you could catch 7 fish per person for 360 days and catch 4 million pounds and now, in 2012, you can catch 2 fish per person and fish for 30 days and you are catching 5 million pounds? Impossible!

Jean Streetman- Recreational

Mr. Streetman supports Alternative 5 and agreed with the comments of others.

Norman Long- Recreational

Mr. Long has been fishing for over 50 years. Alternative 5 is his choice if he has to pick one. They are using a 30-year old allocation and data, and everything is out of whack and in need of a total overhaul. Last summer, he fished 20 days and left state waters once or twice because he didn't need to. There are more red snapper out there than he can chase. You can catch all you want at 8-9 pounds. Why can't we seem to get a longer season in federal waters? We need new science, new data, and new rules. It's ludicrous to give 51% of the fishery to 400 people. They have a place in the overall picture but not a guaranteed deal like they have now. There are plenty of fish out there. He remembers days when that was not the case so we need to be careful to not overharvest. By setting good limits, we now have plenty again.

Jerry Walker-

Mr. Walker said we need to have a new look at what's going on in the Gulf. You try to catch a different species and you're inevitably catching snapper because they're everywhere, top to bottom, every wreck, every rig, solid fish. The ecosystem is out of sync; we need to increase the limit and the number of days to fish.

Gary Johnson- Texas Restaurant Association

Mr. Johnson said that at current levels, the commercial industry stands to lose ½ million pounds with the current allocation, which will affect the portion sizes on plates for people supplied with fish. There are places not near the water, customers that don't fish, all who want to eat snapper. We need to somehow look into regional management. He supports Alternative 1, no action.

Leonard Philipp-

Mr. Phillip supports Alternative 5 and agrees with the others.

Michael Miglini-

Mr. Miglini supports Alternative 1, no reallocation. He thinks it's a false promise for the recreational fishery. For years the charter boats have tried to bring real solutions to the Council. Reallocating only feeds more fish to a broken management plan. There are a ton of red snapper out there and reallocation is barely going to give more days. There needs to be a fish tag program like the red drum that allows 365 days of fishing a year, along with accountability and reliable data on the total count of fish harvested. The charter industry needs their own allocation and the private sector needs a system that doesn't force them to throw back dead fish. He suggests focusing on meaningful solutions to the problems in the recreational fishery.

Bobby Hinds- Recreational

Mr. Hinds supports Alternative 5. There are so many fish out there, it's ridiculous. They can limit out a full boat without going into federal waters. The quota should be raised and the season should be longer in federal waters.

Pam Baker – Environmental Defense Fund

Ms. Baker supports Alternative 1. Allocation has been on the table for a really long time and is choking progress on other issues such as federal fishing licenses and predators eating discards. The amendment doesn't have the opportunity to achieve its objectives, and it pits fishermen against each other. The demand for fresh fish is strong, but fishing recreationally is also a valuable use of the resource. The stated purpose of increasing net benefits cannot be achieved by increasing the number of fish in a common pool, managed by bag/size limits. No group or individual is benefiting from that. The other stated purpose is to increase stability of the fishery. Maybe reallocation will increase the recreational fishery by 2 or 3 days, but it doesn't increase the stability or predictability of the season. Stability is about increasing opportunity and predictability. Reallocation does not do that. The Council is avoiding tackling the improvements that are needed to solve the issues with the fishery.

Wes Galloway- Recreational

Mr. Galloway doesn't want to change things for the commercial fishery; it's got the IFQ and that is fine. He felt that 51% of the public resource going for commercial use is backwards. Half of the alternatives are not reallocation at all. No movement can be made towards reallocation because IFQs are already out there. For alternatives beyond the quota, he supports Alternative 5.

Scott Hickman- Charter, commercial, boat dealer

Mr. Hickman supports Alternative 1. He is offended that the Gulf Council has come to the recreational fishermen with a plan offering two extra days. With Florida non-compliance, we likely won't even see that possible increase but rather, a reduction in days. It's ludicrous. He demands that the Council do something real. He asks why CCA is pushing Amendment 28; what about Amendment 39 so Texas can get its own piece of the pie? Reallocation is a poor plan for the recreational fisherman. If that's the best we can do, we're in trouble. He demands accountability and flexibility through tags or something else that allows fishermen to select when to fish. Amendment 28 is a joke and will not help. The Council has pitted fishermen against one another. He wants status quo (Alternative 1), and to go back to the table. Fix the problem so people can fish when they want to fish. He supports fish tags, regional management, and he likes iSnapper.

David Ruthmann- Recreational

Mr. Ruthmann is not opposed to any of the allocation options but that's not the end solution to the problem. We're talking about adding a few days to a 1 or 2 fish per person limit when it's too rough for Texans to get out on the water. There must be more to it. We are oversimplifying a process that is broken. Regional management is a good idea, especially because our water is shallower here than in other parts of the Gulf.

Buddy Guindon- Commercial

Mr. Guindon grew his family business around fixing the fishery. He believes that they [recreational anglers] should have the right to fish, but also to use a program to report data and get an accurate count. The Harte Research Institute already has a program that can be used for them to report their fish. As a commercial fisherman, he doesn't represent himself; he represents anyone who goes to a restaurant or grocery store or fish market and buys a fish to eat. You're not going to hurt him by taking 50% of his fish, but you'll harm the new entrants, the people who

are struggling to get IFQ and start in the industry. When you say 400 people, think of 400 businesses. If we don't allow them to grow, they're going to fail. They need the opportunity to be successful and to grow. Let these people do their job. Commercial fishermen are not at fault for the current situation. Force the fishery managers to do their job and let them know you want to be accountable. Also, understand that Florida has 250 fishermen for every one we have. The east is taking away your fish by allowing the other areas to harvest the fish. Of the fish consumed in this country, 97% of it comes from a grocery store. Commercial fishermen catch inexpensive fish as well as red snapper (blue fish). Don't listen to what CCA pounds into your head; get real solutions. Alternative 5 won't give you anything more. A good management system will give you what you want: year round fishing.

Shane Cantrell- Charter

Mr. Cantrell said it's a mess that we're here and discussing moving 500,000 pounds from the commercial industry to give the recreational sector 2-4 extra fishing days. He questions moving fish from the commercial fishery, which is accountable, and giving them to an unaccountable system for 4 extra days. That is a management issue. We need tags or regional management. He travels the coast and there is an incredible number of fishermen on the east side that take trips 2 and 3 times a day fishing red snapper. It's not fair to Texas. He has a hard time believing that Texas can't get past the 1% of the allocation from Florida to implement a regional management plan. Disturbing.

Brian Wyatt- Recreational

Mr. Wyatt got to this meeting and it seemed chaotic because everyone is passionate. He's been fishing for a long time and his dad was a commercial fisherman. The Gulf is broken due to federal management. Texas could manage the waters much better than the federal government. He doesn't like Alternative 5 fully; he supports it most because the economic value of the recreational fishery is much greater. This is a publicly owned resource and the 51/49% split is out of line. We all pay our fair share, but recreational fishers are stuck on the dock, some with a \$200,000 boat, and they can't fish unless they pay a charter boat? That is not right. Fish tags aren't right either. For private recreational anglers, these measures are nowhere near enough. For every 1 million pounds over the TAC that the federal government says can be caught, 25% goes to commercial and 75% to the recreational fishery. Every million pounds equates to \$35 million. Everyone should be able to fish every day they want to for red snapper because there are plenty of them.

**Galveston, Texas
March 19, 2014**

Council/Staff

Patrick Riley
Carrie Simmons
Emily Muehlstein

35 members of the public attended.

Scott Hickman- Charter and commercial

Mr. Hickman said the plan to save the recreational fishery only gives two days to the recreational sector. The plan is to take fish away from a system where people fish accountably and provide fresh fish year round and transfer it to a rotten system. You're not even going to see the fish you take from the commercial fishermen. Florida has just gone non-compliant and those extra fish are going to disappear. Mr. Hickman wants a completely different system; something that works like the commercial system. He says no to Amendment 28. He supports Alternative 1. The Council needs to find a better management system and leave us a legacy of fishing.

Steven Myer- Recreational

Mr. Myer has spoken to TPWD and knows they don't have landings on the recreational side, and he doesn't understand where we're getting our data. Nine times out of 10, the weather is too bad for fishing during the recreational season. There needs to be a better way to determine what we're landing, and the quota needs to be fixed.

Kristen McConnell- Environmental Defense Fund

Ms. McConnell encourages the Council to choose Alternative 1, no action, and move reallocation off the table to make room for better work. This issue has been choking progress on other management plans that will actually fix things. There is high demand for both fresh seafood and recreational fishing opportunities and we should not have to decide between the two. This document does nothing to meet the objectives stated in the document. The economic value won't be realized by the recreational fishery if you continue to use a common pool of fish regulated by days and bag limits. Stability is frustrating, because allocation won't change the stability of the recreational red snapper fishery. We've had increases in the TAC over the years and it hasn't solved the season problem or the issue of stability. Reallocation won't fix that problem. There are a variety of ideas; regional management, tags, charter IFQ, and days at sea, that could be actual solutions. The Council needs to stop this and do something real.

Billy Wright- Recreational and charter

Mr. Wright supports Alternative 1, No action. Moving fish to the unaccountable sector doesn't seem like the right thing to do.

Tom Hilton-

We've had this allocation for years and we should have looked at it according to the NOAA policy but, now there is staunch opposition. The commercial IFQ program has privatized our fish and turned them into stock basically. The commercial guys have a stock portfolio and he is in favor of Alternative 5. Recreational fishermen don't want to cut commercial fishing out or act like they don't have a place at the table. If we choose alternative 5 about 17 million dollars of fish will be transferred to the recreational fishery. A high-liner that owns 6% of the red snapper shares (share cap) is worth about 11 million dollars and he can retire sell them to make money for his retirement. I don't agree with any plan that privatized the resources. This is not the solution and wont fix our red snapper problems but Alternative 5 is a step in the right direction. We need data. We should implement Alternative 5 and let the states take the bull by the horns with data collection.

Bruce Daneki- Recreational

He doesn't begrudge anyone earning a living by catching red snapper. It is an endangered public resource and he's against anyone having ownership. There are clearly more fish but despite this the recreational fisherman continues to be penalized. While the TAC increases and the commercial fishery gets more pounds and money and the recreational fisherman gets a shorter season as the fish get bigger. Success of stock improvement isn't shared with the recreational fishery. He supports Alternative 5. We're not greedy and everyone should benefit but the recreational sector has been struggling in the recent past. Jim Donofrio said ownership of our nations public resourced are replenished and the commercial sector was gifted their allocation and they paid nothing for their private rights. Against catch shares and a special program for headboats.

Fred Howard- Recreational

He is in favor of Alternative 5, not because it's a solution but because it's a first step that needs to be taken. Why can't the Gulf Council separate the fishery from the fishery in Texas.

Bill Hull-

Mr. Hull is in favor of Alternative 5.

David Conrad- Charter

Mr. Conrad favors Alternative 1. We need to work on a system that makes the recreational sector accountable. We don't want to move fish from the accountable sector to the non accountable one.

David Cochraine- Charter

Mr. Cochraine supports Alternative 1 because reallocation is not a solution. We should not take fish from commercial fishermen to add 2 extra days to the recreational fishery. Recreational management needs to be improved. We have a management problem and a data collection/accountability problem not an allocation problem. Accountably is the key to a better management system.

David Cuiton-

It appears that the harvest data for the recreational fishermen is off. Whatever the solution is to the problem he hops that we can mutually work it out.

Jaron Cressi- Commercial and recreational

Mr. Cressi is against reallocation and supports Alternative 1.

Buddy Guindon- Commercial

Reallocation won't hurt him, he is a big share holder and he was catching fish before the catch share program was implemented. He knows how to fish. The problem he sees with reallocation is that it will hurt small businessmen the new entrants into the fishery. Taking 8% of the commercial quota and giving it to the recreational fishery will get 700 recreational fishermen to go out and catch a fish but it will put the little guy out of business. Recreational fishermen can catch what they want and when we consider what's best for the red snapper fishery we need to get an accountably system. We don't have to wonder if the federal management is doing a good

job because you'll be part of that system. Self reported data like the iSnapper system will ensure that the government knows exactly what was harvested. Reallocation is a game so the Council can say "look what we gave you", but it does nothing to solve the problem. I promise the recreational season will continue to collapse. We've rebuild the fishery but the federal government hasn't given recreational fishermen the tools to stay within the catch limits. The state representatives don't want accountability to happen. CCA doesn't bring solution to the table the only tell you what's wrong. They did this with redfish, trout, and flounder; they promised to give back commercial harvest once the stocks were healthy, but never did. I'll never have the opportunity to catch them again. We need a management plan to fix these problems.

Bill Cochraine-

Mr. Cochraine supports Alternative 1: no action. He thinks everyone agrees that there is a problem with recreational accountability. We all know that once there is an accountably system in place then we can get some real data. Were going in the wrong direction by trying to fix a problem with reallocation; there are more fish than ever but we need to count. Choosing any of the alternatives besides Alternative 1 will set a bad precedent; and if this is done he is worried that this will continue to happen. When 2 days are added then the recreational anglers are going to keep asking for more each year.

KP Burnette- Commercial

Supports Alternative 1; no action.

Sean Warren- Charter

Supports Alternative 1; no action, and suggests Council move forward with sector separation.

Dan Green-

Against reallocation and supports Alternative 1. Why take fish out of an accountable sector and give it to a non-accountable one. We work on a new management plan for the recreational anglers.

LG Boyd-

Supports Alternative 1 and suggests the Council fix management first.

Shane Cantrell- Charter

We're not trying to take anything from anyone. Commercial fishermen are not hoarding these fish in their house, they're harvesting them for the American public. The guy from Kansas who fishes with me doesn't want to own a boat and it makes no sense, but if he wants fish he should be able to buy fish from a restaurant or fish on my boat. You're proposing to take fish from the commercial fishermen to give recreational anglers 2 more days. It's a band-aid on a sinking ship and we need to find a real solution for the recreational fishery instead.

Garrett King- Charter and commercial

Supports Alternative 1; no action.

Mark Friedberg- Seafood dealer

Mr. Friedberg supports Alternative 1. NMFS is trying to pit the commercial fishermen against recreational fishermen. We commercial folks all started fishing as recreational fishermen. As a recreational fishermen I wouldn't settle on two extra days from the Council. Recreational anglers need to demand a different plan.

Jamie Cantu- Charter

Mr. Cantu supports Alternative 1 and supports sector separation

John Spike- Recreational

Mr. Spike wants to clarify that he is checked all the time for his data.

Jason Delgado- Recreational

He is a boat owner and went of 10 times last season with lots of friends. On average they took 18-20 pound fish. He would support Alternative 5 reasoning that if the rising tide lifts all boats then increases in ACL should benefit the recreational anglers as well. He has not heard anyone say that they don't want to be accountable and there have been conversations about tags and other methods of accomplishing that. He would like the recreational fishermen to have a better system. The people we fish with all follow the rules and we support better accountability.

Larry Millican- Recreational

Supports Alternative 5 because the numbers are skewed in the recreaitonal catch data. In the 1960's you could catch all kinds of fish whenever you tried. In the 70's and 80's it got tough, but recently that's drastically improved because of the rules. He doesn't like 2 fish bag and short season and he wants more, but he also cautions that when you take your boat offshore now he doesn't see may people even with all the technology we have. In the 80's and 90's there were people and boats everywhere, and has a hard time believing that effort is increasing because there's no one out there. I've never been stopped in all my days of fishing and he would like catch be recorded better. In his opinion the recreational fishermen are not taking near what Council thinks is being harvested.

Bill Evans –

Mr. Evans supports Alterative 5.

**St. Petersburg, Florida
March 24, 2014**

Council/Staff

Martha Bademan
Assane Diagne
Carrie Simmons

30 Members of public attended.

Steve Maisel- Commercial

Mr. Maisel was in favor of no reallocation of red snapper, No Action; Alternative 1.

Bill Tucker- Commercial

Mr. Tucker was in favor of No Action; Alternative 1. He said the recreational sector has already landed 56% of the quota, not the 49% they are currently allocated. He has no personal ill feelings about the recreational sector, but feels it is no surprise that the recreational sector is meeting their quota earlier and the season length is getting shorter. He believes that there are more people in the recreational fishery, with more access to the fishery due to the recovering red snapper stock and a more affluent society. Mr. Tucker stated he wanted the anglers from the recreational sector to discuss other avenues to increase the season length, such as agreeing to go down to a 1-fish bag limit, instead of taking fish away from the commercial sector. He also stated there was a lot of misinformation going around about charter vessels being tied to the dock when red snapper season is closed, but in reality they were out fishing. He asked why you would reallocate to 1-3% of the U.S. population, when it is clearly not good practice to reward a sector that is unaccountable.

Ed Maccini- Commercial, President of S.O.F.A.

Mr. Maccini is in favor of No Action; Alternative 1. He knows the red snapper stock is recovering in the Gulf of Mexico, and knows that the recreational sector is catching the bag limit and the red snapper are larger, due to the management efforts the Council has completed to date. Because of the rebuilding efforts both sectors participated in, both sectors need to fish as many days to achieve their limit. For example, since the commercial sector was moved to an IFQ system, he fishes fewer days, fishes when he wants, and his vessels yield greater catch in a shorter number of days. He said the consumer is involved in the recreational sector and he would like see the recreational sector develop a management plan to increase the season length on their own, with a program such as days-at-sea.

Jim Zurbrick- Commercial, Steinhatchee

Mr. Zurbrick stated he was in favor of No Action, Alternative 1. He said many of the recreational fishing clubs (CCA and FRA) claimed to be conservationists, but when he attended a meeting hosted by Florida FWC to improve data collection for offshore recreational fishermen, the idea was met with much resistance. He wants the recreational sector to come to the podium with a solution. If they don't want the FWC developed offshore vessel permit, then the recreational fishery should consider a days-at-sea program, tagging program, or any other fishery management plan that would address the problems in the recreational sector's accountability. He agrees the fishery in Florida is not the same as it was years ago and he believes it will never be the same, due to the number of people participating in the private recreational fishery. Mr. Zurbrick stated if the private recreational anglers do not become accountable for their own fishery and think outside the box, they could end up with a 20-day or less red snapper fishing season.

Mike Colby- Charter, Clearwater Marine Association and Charter Association

Mr. Colby said in preparation of this meeting he reviewed the comments online and a majority of them were rambling comments that had nothing to do with Reef Fish Amendment 28. He hopes the Council considers the quantity and quality of comments submitted online. He said he would like to see a sound recreational management plan. Mr. Colby stated the data being used for Reef

Fish Amendment 28, has been considered in the past to be fatally flawed. Yet now that same data is being used to reallocate in favor of the recreational sector. So, for reallocation some recreational anglers think it is okay to use the data, in fact embrace it, since it gives them the personal solution they are seeking. Further, if this same data is fatally flawed then there are no reasons or excuses why it can't be used in the development of Reef Fish Amendment 40-Sector Separation. Until a better data collection system is developed he can't endorse any of the alternatives, except No Action; Alternative 1.

Wayne Werner- Commercial, F/V Sea Quest

Mr. Werner stated he was in favor of No Action; Alternative 1. He stated he did not understand how anyone could be in favor of taking away 500,000 meals from consumers, for 2 extra days to fish in the recreational sector. He said he had great concerns about overharvest by the recreational sector and didn't see any justification for giving them any additional fishing days. Mr. Werner stated the recreational data used in the economic efficiency analysis was fatally flawed, in fact most of the recreational data used in that analysis came from recreational anglers in the South Atlantic. He suggested that Amendment 28 was a "feel-good" amendment for the CCA. He pointed out that there had been studies done by NMFS that showed recreational anglers would rather have 1 larger fish and more days than to catch 2 fish and have a shorter season. He stated he did not agree with the Council putting Mr. Gentner on the Socio-economic SSC. Mr. Gentner was the deciding vote and he was in violation of the Council's policies to serve on an advisory committee.

Thomas Shook- Seafood company owner, Clearwater

Mr. Shook stated he was in favor of No Action; Alternative 1. He said the commercial sector has to become accountable for every pound of red snapper landed and that he didn't see why there couldn't be more accountability for the recreational sector.

John Schmidt- Commercial

Mr. Schmidt is in favor of No Action; Alternative 1. He stated that Amendment 28 was supposed to increase net benefits to the nation, not net benefits to the recreational sector. Most of the American public doesn't have access to federal waters and must access the resource through the commercial fishery. Since the Council implemented a strict rebuilding plan, there has been an incredible recovery and advances in the fishery. During these rebuilding efforts, the commercial sector had never gone over its allocation and had never asked for any of the recreational sector's allocation. Mr. Schmidt stated he felt Amendment 28 had been rushed, more so than many of the other Council actions. He stated he was not happy with the membership on the Socio-economic SSC, especially when the deciding vote was cast by a CCA representative. He is unsure why the Council ever considered putting such an individual on the panel. He felt moving forward with Reef Fish Amendment 28 – reallocation was not a solution; instead it is unfair, and not based on sound science.

Tom Wheatley- PEW Charitable Trusts

Mr. Wheatley stated although this seems like a simple amendment (and he agrees that there should be a fair and systematic review of sector allocations), he does not think the current document supports the red snapper rebuilding plan. He would like to see in-season and post-season accountability measures added to the current draft of the amendment; without these, he

does not understand how these shifts in allocation could be biologically safe. Therefore, if a new action was added to this amendment that would ensure the rebuilding plan for red snapper was not compromised, he could see this document moving forward. But until then, PEW was not in support of this action.

Frank Chivas- Restaurateur and recreational

Mr. Chivas is in favor of No Action; Alternative 1. He noted that he had been fishing since 1968 and seen the results of overfishing happen in 3 years, (by 1971) red snapper were almost gone. He credited conservation measures with bringing the stock back. He knows red snapper is the fish of choice in many restaurants. In his restaurants, over 20% of fish sold is red snapper, and now more grocery stores are selling red snapper as the stock recovers. He personally has seen more red snapper in the last 3 years than ever before. He believes the rebuilding plan is working fine and should be left as is.

Eric Mercadante- Dual-permitted federal charter and commercial

Mr. Mercadante said he lands 90% of his red snapper commercially. He said he is closely checked and monitored when he lands his catch commercially, but none of his charter trips have ever been checked. He said, recreationally everyone wants a trophy fish, especially a large red snapper. He would like to see the recreational sector get away from a short derby fishing season. He is in agreement that the recreational sector should get together and discuss licenses, tagging, and accountability for what they are catching and landing. Until the recreational sector does this he is in favor of No Action; Alternative 1.

Shawn Watson- Commercial

Mr. Watson is in favor of No Action; Alternative 1.

Jason DeLaCruz- Commercial and seafood dealer

Mr. DeLaCruz is in favor of No Action; Alternative 1. He has a fuel dock at John's Pass and he is unsure how the two additional fishing days in the current preferred alternative are going to help the recreational sector or his business. He doesn't think fish should be taken away from the commercial sector and that such rules will make it hard for them to make a living. He thinks that is the real economic impact of the preferred alternative, versus the economic analysis cited in the amendment. He said the Socio-economic SSC said it was okay to move forward with reallocation, but voted it was based on poor economic data and the Socio-economic SSC were only in consensus on minimal changes to the current allocation.

Gregg Pruitt- Commercial and dealer Fish Busters, Madeira Beach

Mr. Pruitt is in favor of No Action; Alternative 1 until the recreational sector can be constrained to their current allocation and become more accountable. He stated that it is possible that the recreational sector may need to pay for a data collection system or program like the commercial sector does which contributes 3% of their ex-vessel value of landings to the agency for program operations.

Dennis O'Hern- Recreational, FRA

Mr. O'Hern stated the recreational sector has requested better data collection for years and it is the Office of Science and Technology's fault for not improving the survey system, not the

recreational anglers. In fact, recreational anglers have requested an improved survey system since 2000 and it still hasn't been completed. He emphasized that the recreational sector was being accountable every year. He complimented the State of Florida's efforts for taking the lead on strategies to improve data collection and applauded the efforts of the Louisiana Department of Fisheries and Wildlife. He stated if there was better data collection for the recreational sector, there would be a 6 month, 3-fish bag limit as once suggested by Dr. Shipp. He suggested more and better surveys of anglers would help this happen. Mr. O'Hern said until NMFS and the Office of Science and Technology improve the data collection program for recreational anglers, and were held accountable for their actions. The FRA was not in support of moving forward with this amendment, so he supports No action; Alternative 1.

Jim Bonnell- Commercial

Mr. Bonnell supports No Action; Alternative 1. He stated he has been fishing for 30 years and doesn't understand how commercial logbooks can be questioned, when recreational anglers can just tell the samplers how many fish they caught without any validation. He doesn't see how the recreational survey could be adequate to determine landings or support any modifications to the allocation.

Ricky Baker- Commercial

Mr. Baker is in favor of No Action; Alternative 1. He has spent 30 years commercial fishing and feels the recreational data collection system is flawed. He noted that there were worries when logbooks were first required, some people felt the government would know what they were doing and where they were fishing and of course people didn't like that, but the system worked. He explained that in 1980, red snapper were almost gone and now they are everywhere.

Sean Wert- Commercial

Mr. Wert is in favor of No Action; Alternative 1. He stated he does not understand how the agency can make commercial fishermen jump through so many hoops compared to the recreational sector, yet they are going to get more fish. Mr. Wert stated he didn't understand how the agency had any idea what the recreational landings are based on the current collection system.

Cody Chivas- Commercial and restaurateur

Mr. Chivas is in favor of No Action; Alternative 1. He stated that he did not understand how the commercial sector has to be accountable for every single pound, compared to the recreational sector, yet the agency is looking at giving them more fish.

Jackson Beatty- Recreational and diver

Mr. Beatty said he wanted to be an accountable angler and was willing to go to a 1-fish bag limit if it meant a longer fishing season. He wanted to work with other recreational anglers to improve accountability and increase fishing opportunities. He supported No Action; Alternative 1.

James Coble- Recreational and tackle shop owner

Mr. Coble stated he was in favor of Alternative 5: If the red snapper quota is less than or equal to 9.12 mp, maintain the commercial and recreational red snapper allocations at 51% and 49% of the red snapper quota, respectively. If the red snapper quota is greater than 9.12 mp, allocate

75% of the amount in excess of 9.12 mp to the recreational sector and 25% to the commercial sector.). He felt it was the most viable option in the amendment. He didn't understand why it was such a bad alternative for the commercial sector. He stated that the recreational fishery has to get more bang out of every fish they catch, and needs to be more accountable. He noted that no recreational fishers had VMS on their boats and that they didn't report their catches. He urged recreational anglers to step up to the plate and help get the fishery in shape.

**Webinar
March 20, 2014**

Staff

Emily Muehlstein
Charlene Ponce

10 members of the public attended.

David Krebs- Commercial

Supports Alternative 1; no action. Flexibility and accountability need to be built into the recreational sector before any other action is taken.

Eric Brazer-

Supports Alternative 1. There are no effective accountability measures for the recreational fishing sector. Until we solve that problem the recreational sector will continue to over harvest their portion of the allocation. Do not take final action on Amendment 28 until or unless the SESSC does a final analysis of the methodology used.

Brian Jilek-

Meetings should be held on weekends so that more people have an opportunity to attend.

Ken Haddad-

All the information that has come to the Council has said that the snapper allocation needs to be revisited. The recreational sector is in agreement that Alternative 5 is a stabilizing action that will allow the Council to focus on a new management regime for red snapper.

APPENDIX E. FISHERY ALLOCATION POLICY

Gulf of Mexico Fishery Management Council Fishery Allocation Policy

This allocation policy was developed by the Gulf of Mexico Fishery Management Council to provide principles, guidelines, and suggested methods for allocation that would facilitate future allocation and reallocation of fisheries resources between or within fishery sectors.

Issues considered in this allocation policy include principles based on existing regulatory provisions, procedures to request and initiate (re)allocation, (re)allocation review frequency, tools and methods suggested for evaluating alternative (re)allocations.

1. Principles for Allocation

- a. Conservation and management measures shall not discriminate between residents of different states.
- b. Allocation shall:
 - (1) be fair and equitable to fishermen and fishing sectors;
 - (i) fairness should be considered for indirect changes in allocation
 - (ii) any harvest restrictions or recovery benefits be allocated fairly and equitably among sectors
 - (2) promote conservation
 - (i) connected to the achievement of OY
 - (ii) furtherance of a legitimate FMP objective,
 - (iii) promotes a rational, more easily managed use
 - (3) ensure that no particular individual, corporation, or other entity may acquire an excessive share.
- c. Shall consider efficient utilization of fishery resources but:
 - (1) should not just redistribute gains and burdens without an increase in efficiency
 - (2) prohibit measures that have economic allocation as its sole purpose.
- d. Shall take into account: the importance of fishery resources to fishing communities by utilizing economic and social data in order to:
 - (1) provide for the sustained participation of fishing communities
 - (2) minimize adverse economic impacts on fishing communities.

- e. Any fishery management plan, plan amendment, or regulation submitted by the Gulf Council for the red snapper fishery shall contain conservation and management measures that:
 - (1) establish separate quotas for recreational fishing (including charter fishing) and commercial fishing.
 - (2) prohibit a sector (i.e., recreational or commercial) from retaining red snapper for the remainder of the season, when it reaches its quota.
 - (3) ensure that the recreational and commercial quotas reflect allocation among sectors and do not reflect harvests in excess of allocations.

2. Guidelines for Allocation

- a. All allocations and reallocations must be consistent with the Gulf of Mexico Fishery Management Council's principles for allocation.
- b. An approved Council motion constitutes the only appropriate means for requesting the initiation of allocation or reallocation of a fishery resource. The motion should clearly specify the basis for, purpose and objectives of the request for (re)allocation.
- c. The Council should conduct a comprehensive review of allocations within the individual FMPs at intervals of no less than five years.
- d. Following an approved Council motion to initiate an allocation or reallocation, the Council will suggest methods to be used for determining the new allocation. Methods suggested must be consistent with the purpose and objectives included in the motion requesting the initiation of allocation or reallocation.
- e. Changes in allocation of a fishery resource may, to the extent practicable, account for projected future socio-economic and demographic trends that are expected to impact the fishery.
- f. Indirect changes in allocation, i.e., shifts in allocation resulting from management measures, should be avoided or minimized to the extent possible.

3. Suggested Methods for Determining (Re)Allocation

a. Market-based Allocation

- (1) Auction of quota
- (2) Quota purchases between commercial and recreational sectors
 - (i) determine prerequisites and conditions:
 - (a) quota or tags or some other mechanism required in one or both sectors
 - (b) mechanism to broker or bank the purchases and exchanges

- (c) annual, multi-year, or permanent
- (d) accountability for purchased or exchanged quota in the receiving sector

b. Catch-Based (and mortality) Allocation

- (1) historical landings data
 - (i) averages based on longest period of credible records
 - (ii) averages based on a period of recent years
 - (iii) averages based on total fisheries mortality (landings plus discard mortality) by sector
 - (iv) allocations set in a previous FMP
 - (v) accountability (a sector's ability to keep within allocation)

c. Socioeconomic-based Allocation

- (1) socio-economic analyses
 - (i) net benefits to the nation
 - (ii) economic analysis limited to direct participants
 - (iii) economic impact analysis (direct expenditures and multiplier impacts)
 - (iv) social impact analysis
 - (v) fishing communities
 - (vi) participation trends
 - (vii) "efficiency" analysis
 - (a) lowest possible cost for a particular level of catch;
 - (b) harvest OY with the minimum use of economic inputs

d. Negotiation-Based Allocation

- (1) Mechanism for sectors to agree to negotiation and select representatives
- (2) Mechanism to choose a facilitator
- (3) Negotiated agreement brought to Council for normal FMP process of adoption and implementation.

APPENDIX F. CURRENT FEDERAL REGULATIONS FOR GULF OF MEXICO RECREATIONAL RED SNAPPER MANAGEMENT

1. § 622.9 Prohibited gear and methods--general.

(e) Use of Gulf reef fish as bait prohibited. Gulf reef fish may not be used as bait in any fishery, except that, when purchased from a fish processor, the filleted carcasses and offal of Gulf reef fish may be used as bait in trap fisheries for blue crab, stone crab, deep-water crab, and spiny lobster.

2. § 622.20 Permits and endorsements

(b) Charter vessel/headboat permits. For a person aboard a vessel that is operating as a charter vessel or headboat to fish for or possess Gulf reef fish, in or from the EEZ, a valid charter vessel/headboat permit for Gulf reef fish must have been issued to the vessel and must be on board.

(1) Limited access system for charter vessel/headboat permits for Gulf reef fish. No applications for additional charter vessel/headboat permits for Gulf reef fish will be accepted. Existing permits may be renewed, are subject to the restrictions on transfer in paragraph (b)(1)(i) of this section, and are subject to the renewal requirements in paragraph (b)(1)(ii) of this section.

(i) Transfer of permits--(A) Permits without a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that does not have a historical captain endorsement is fully transferable, with or without sale of the permitted vessel, except that no transfer is allowed to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred. An application to transfer a permit to an inspected vessel must include a copy of that vessel's current USCG Certificate of Inspection (COI). A vessel without a valid COI will be considered an uninspected vessel with an authorized passenger capacity restricted to six or fewer passengers.

(B) Permits with a historical captain endorsement. A charter vessel/headboat permit for Gulf coastal migratory pelagic fish or Gulf reef fish that has a historical captain endorsement may only be transferred to a vessel operated by the historical captain, cannot be transferred to a vessel with a greater authorized passenger capacity than that of the vessel to which the moratorium permit was originally issued, as specified on the face of the permit being transferred, and is not otherwise transferable.

(C) Procedure for permit transfer. To request that the RA transfer a charter vessel/headboat permit for Gulf reef fish, the owner of the vessel who is transferring the permit and the owner of the vessel that is to receive the transferred permit must complete the transfer information on the reverse side of the permit and return the permit and a completed application for transfer to the RA. See § 622.4(f) for additional transfer-related requirements applicable to all permits issued under this part.

(ii) Renewal. (A) Renewal of a charter vessel/headboat permit for Gulf reef fish is contingent upon the permitted vessel and/or captain, as appropriate, being included in an active

survey frame for, and, if selected to report, providing the information required in one of the approved fishing data surveys. Surveys include, but are not limited to—

(1) NMFS' Marine Recreational Fishing Vessel Directory Telephone Survey (conducted by the Gulf States Marine Fisheries Commission);

(2) NMFS' Southeast Headboat Survey (as required by § 622.26(b)(1));

(3) Texas Parks and Wildlife Marine Recreational Fishing Survey; or

(4) A data collection system that replaces one or more of the surveys in paragraph (b)(1)(ii)(A),(1),(2), or (3) of this section.

(B) A charter vessel/headboat permit for Gulf reef fish that is not renewed or that is revoked will not be reissued. A permit is considered to be not renewed when an application for renewal, as required, is not received by the RA within 1 year of the expiration date of the permit.

(iii) Requirement to display a vessel decal. Upon renewal or transfer of a charter vessel/headboat permit for Gulf reef fish, the RA will issue the owner of the permitted vessel a vessel decal for Gulf reef fish. The vessel decal must be displayed on the port side of the deckhouse or hull and must be maintained so that it is clearly visible.

(2) A charter vessel or headboat may have both a charter vessel/headboat permit and a commercial vessel permit. However, when a vessel is operating as a charter vessel or headboat, a person aboard must adhere to the bag limits. See the definitions of "Charter vessel" and "Headboat" in § 622.2 for an explanation of when vessels are considered to be operating as a charter vessel or headboat, respectively.

(3) If Federal regulations for Gulf reef fish in subparts A or B of this part are more restrictive than state regulations, a person aboard a charter vessel or headboat for which a charter vessel/headboat permit for Gulf reef fish has been issued must comply with such Federal regulations regardless of where the fish are harvested.

3. § 622.26 Recordkeeping and reporting.

(b) Charter vessel/headboat owners and operators—(1) Reporting requirement. The owner or operator of a vessel for which a charter vessel/headboat permit for Gulf reef fish has been issued, as required under § 622.20(b), or whose vessel fishes for or lands such reef fish in or from state waters adjoining the Gulf EEZ, who is selected to report by the SRD must maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, on forms provided by the SRD and must submit such record as specified in paragraph (b)(2) of this section.

(2) Reporting deadlines--(i) Charter vessels. Completed fishing records required by paragraph (b)(1) of this section for charter vessels must be submitted to the SRD weekly, postmarked not later than 7 days after the end of each week (Sunday). Information to be reported is indicated on the form and its accompanying instructions.

(ii) Headboats. Completed fishing records required by paragraph (b)(1) of this section for headboats must be submitted to the SRD monthly and must either be made available to an authorized statistical reporting agent or be postmarked not later than 7 days after the end of each month. Information to be reported is indicated on the form and its accompanying instructions.

4. § 622.27 At-sea observer coverage.

(a) Required coverage. A vessel for which a Federal commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued must carry a NMFS-approved observer, if the vessel's trip is selected by the SRD for observer coverage. Vessel permit renewal is contingent upon compliance with this paragraph (a).

(b) Notification to the SRD. When observer coverage is required, an owner or operator must advise the SRD in writing not less than 5 days in advance of each trip of the following:

(1) Departure information (port, dock, date, and time).

(2) Expected landing information (port, dock, and date).

(c) Observer accommodations and access. An owner or operator of a vessel on which a NMFS-approved observer is embarked must:

(1) Provide accommodations and food that are equivalent to those provided to the crew.

(2) Allow the observer access to and use of the vessel's communications equipment and personnel upon request for the transmission and receipt of messages related to the observer's duties.

(3) Allow the observer access to and use of the vessel's navigation equipment and personnel upon request to determine the vessel's position.

(4) Allow the observer free and unobstructed access to the vessel's bridge, working decks, holding bins, weight scales, holds, and any other space used to hold, process, weigh, or store fish.

(5) Allow the observer to inspect and copy the vessel's log, communications logs, and any records associated with the catch and distribution of fish for that trip.

5. § 622.29 Conservation measures for protected resources.

(a) Gulf reef fish commercial vessels and charter vessels/headboats--(1) Sea turtle conservation measures. (i) The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under

§§ 622.20(a)(1) and 622.20(b), respectively, must post inside the wheelhouse, or within a waterproof case if no wheelhouse, a copy of the document provided by NMFS titled, "Careful Release Protocols for Sea Turtle Release With Minimal Injury," and must post inside the wheelhouse, or in an easily viewable area if no wheelhouse, the sea turtle handling and release guidelines provided by NMFS.

(ii) Such owner or operator must also comply with the sea turtle bycatch mitigation measures, including gear requirements and sea turtle handling requirements, specified in §§ 635.21(c)(5)(i) and (ii) of this chapter, respectively.

(iii) Those permitted vessels with a freeboard height of 4 ft (1.2 m) or less must have on board a dipnet, tire, short-handled dehooker, long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in §§ 635.21(c)(5)(i)(E) through (L) of this chapter with the following modifications: the dipnet handle can be of variable length, only one NMFS-approved short-handled dehooker is required (i.e., § 635.21(c)(5)(i)(G) or (H) of this chapter); and life rings, seat cushions, life jackets, and life vests or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives to

tires for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter. Those permitted vessels with a freeboard height of greater than 4 ft (1.2 m) must have on board a dipnet, tire, long-handled line clipper, a short-handled and a long-handled dehooker, a long-handled device to pull an inverted "V", long-nose or needle-nose pliers, bolt cutters, monofilament line cutters, and at least two types of mouth openers/mouth gags. This equipment must meet the specifications described in § 635.21(c)(5)(i)(A) through (L) of this chapter with the following modifications: only one NMFS-approved long-handled dehooker (§ 635.21(c)(5)(i)(B) or (C)) of this chapter and one NMFS-approved short-handled dehooker (§ 635.21(c)(5)(i)(G) or (H) of this chapter) are required; and life rings, seat cushions, life jackets, and life vests, or any other comparable, cushioned, elevated surface that allows boated sea turtles to be immobilized, may be used as alternatives for cushioned surfaces as specified in § 635.21(c)(5)(i)(F) of this chapter.

(2) Smalltooth sawfish conservation measures. The owner or operator of a vessel for which a commercial vessel permit for Gulf reef fish or a charter vessel/headboat permit for Gulf reef fish has been issued, as required under §§ 622.20(a)(1) and 622.20(b), respectively, that incidentally catches a smalltooth sawfish must--

- (i) Keep the sawfish in the water at all times;
 - (ii) If it can be done safely, untangle the line if it is wrapped around the saw;
 - (iii) Cut the line as close to the hook as possible; and
 - (iv) Not handle the animal or attempt to remove any hooks on the saw, except for with a long-handled dehooker.
- (b) [Reserved]

6. § 622.30 Required fishing gear.

For a person on board a vessel to fish for Gulf reef fish in the Gulf EEZ, the vessel must possess on board and such person must use the gear as specified in paragraphs (a) through (c) of this section.

(a) Non-stainless steel circle hooks. Non-stainless steel circle hooks are required when fishing with natural baits.

(b) Dehooking device. At least one dehooking device is required and must be used to remove hooks embedded in Gulf reef fish with minimum damage. The hook removal device must be constructed to allow the hook to be secured and the barb shielded without re-engaging during the removal process. The dehooking end must be blunt, and all edges rounded. The device must be of a size appropriate to secure the range of hook sizes and styles used in the Gulf reef fish fishery.

(c) Venting tool. At least one venting tool is required and must be used to deflate the abdominal cavities of Gulf reef fish to release the fish with minimum damage. This tool must be a sharpened, hollow instrument, such as a hypodermic syringe with the plunger removed, or a 16-gauge needle fixed to a hollow wooden dowel. A tool such as a knife or an ice-pick may not be used. The venting tool must be inserted into the fish at a 45-degree angle approximately 1 to 2 inches (2.54 to 5.08 cm) from the base of the pectoral fin. The tool must be inserted just deep enough to release the gases, so that the fish may be released with minimum damage.

7. § 622.32 Prohibited gear and methods.

Also see § 622.9 for additional prohibited gear and methods that apply more broadly to multiple fisheries or in some cases all fisheries.

(a) Poisons. A poison may not be used to take Gulf reef fish in the Gulf EEZ.

(b) [Reserved]

8. § 622.33 Prohibited species.

(d) Gulf reef fish exhibiting trap rash. Possession of Gulf reef fish in or from the Gulf EEZ that exhibit trap rash is prima facie evidence of illegal trap use and is prohibited. For the purpose of this paragraph, trap rash is defined as physical damage to fish that characteristically results from contact with wire fish traps. Such damage includes, but is not limited to, broken fin spines, fin rays, or teeth; visually obvious loss of scales; and cuts or abrasions on the body of the fish, particularly on the head, snout, or mouth.

9. § 622.34 Seasonal and area closures designed to protect Gulf reef fish.

(a) Closure provisions applicable to the Madison and Swanson sites and Steamboat Lumps, and the Edges-- (1) Descriptions of Areas. (i) The Madison and Swanson sites are bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	29°17'	85°50'
B	29°17'	85°38'
C	29°06'	85°38'
D	29°06'	85°50'
A	29°17'	85°50'

(ii) Steamboat Lumps is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°14'	84°48'
B	28°14'	84°37'
C	28°03'	84°37'
D	28°03'	84°48'
A	28°14'	84°48'

(iii) The Edges is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°51'	85°16'
B	28°51'	85°04'
C	28°14'	84°42'
D	28°14'	84°54'
A	28°51'	85°16'

(2) Within the Madison and Swanson sites and Steamboat Lumps, possession of Gulf reef fish is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section.

(3) Within the Madison and Swanson sites and Steamboat Lumps during November through April, and within the Edges during January through April, all fishing is prohibited, and possession of any fish species is prohibited, except for such possession aboard a vessel in transit with fishing gear stowed as specified in paragraph (a)(4) of this section. The provisions of this paragraph, (a)(3), do not apply to highly migratory species.

(4) For the purpose of paragraph (a) of this section, transit means non-stop progression through the area; fishing gear appropriately stowed means--

(i) A longline may be left on the drum if all gangions and hooks are disconnected and stowed below deck. Hooks cannot be baited. All buoys must be disconnected from the gear; however, buoys may remain on deck.

(ii) A trawl net may remain on deck, but trawl doors must be disconnected from the trawl gear and must be secured.

(iii) A gillnet must be left on the drum. Any additional gillnets not attached to the drum must be stowed below deck.

(iv) A rod and reel must be removed from the rod holder and stowed securely on or below deck. Terminal gear (i.e., hook, leader, sinker, flasher, or bait) must be disconnected and stowed separately from the rod and reel. Sinkers must be disconnected from the down rigger and stowed separately.

(5) Within the Madison and Swanson sites and Steamboat Lumps, during May through October, surface trolling is the only allowable fishing activity. For the purpose of this paragraph (a)(5), surface trolling is defined as fishing with lines trailing behind a vessel which is in constant motion at speeds in excess of four knots with a visible wake. Such trolling may not involve the use of down riggers, wire lines, planers, or similar devices.

(6) For the purpose of this paragraph (a), fish means finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. Highly migratory species means tuna species, marlin (*Tetrapturus spp.* and *Makaira spp.*), oceanic sharks, sailfishes (*Istiophorus spp.*), and swordfish (*Xiphias gladius*).

10. § 622.35 Gear restricted areas.

(a) Reef fish stressed area. The stressed area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 2 in Appendix B of this part.

(1) A powerhead may not be used in the stressed area to take Gulf reef fish. Possession of a powerhead and a mutilated Gulf reef fish in the stressed area or after having fished in the stressed area constitutes prima facie evidence that such reef fish was taken with a powerhead in the stressed area. The provisions of this paragraph do not apply to hogfish.

(2) A roller trawl may not be used in the stressed area. Roller trawl means a trawl net equipped with a series of large, solid rollers separated by several smaller spacer rollers on a separate cable or line (sweep) connected to the footrope, which makes it possible to fish the gear over rough bottom, that is, in areas unsuitable for fishing conventional shrimp trawls. Rigid framed trawls adapted for shrimping over uneven bottom, in wide use along the west coast of Florida, and shrimp trawls with hollow plastic rollers for fishing on soft bottoms, are not considered roller trawls.

(b) Seasonal prohibitions applicable to bottom longline fishing for Gulf reef fish. (1) From June through August each year, bottom longlining for Gulf reef fish is prohibited in the portion of the Gulf EEZ east of 85°30' W. long. that is shoreward of rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	28°58.70'	85°30.00'
B	28°59.25'	85°26.70'
C	28°57.00'	85°13.80'
D	28°47.40'	85°3.90'
E	28°19.50'	84°43.00'
F	28°0.80'	84°20.00'
G	26°48.80'	83°40.00'
H	25°17.00'	83°19.00'
I	24°54.00'	83°21.00'
J	24°29.50'	83°12.30'
K	24°26.50'	83°00.00'

(2) Within the prohibited area and time period specified in paragraph (b)(1) of this section, a vessel with bottom longline gear on board may not possess Gulf reef fish unless the bottom longline gear is appropriately stowed, and a vessel that is using bottom longline gear to fish for species other than Gulf reef fish may not possess Gulf reef fish. For the purposes of paragraph (b) of this section, appropriately stowed means that a longline may be left on the drum

if all gangions and hooks are disconnected and stowed below deck; hooks cannot be baited; and all buoys must be disconnected from the gear but may remain on deck.

(3) Within the Gulf EEZ east of 85°30' W. long., a vessel for which a valid eastern Gulf reef fish bottom longline endorsement has been issued that is fishing bottom longline gear or has bottom longline gear on board cannot possess more than a total of 1000 hooks including hooks on board the vessel and hooks being fished and cannot possess more than 750 hooks rigged for fishing at any given time. For the purpose of this paragraph, “hooks rigged for fishing” means hooks attached to a line or other device capable of attaching to the mainline of the longline.

(c) Reef fish longline and buoy gear restricted area. A person aboard a vessel that uses, on any trip, longline or buoy gear in the longline and buoy gear restricted area is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5 percent, by weight, of all fish on board or landed. The longline and buoy gear restricted area is that part of the Gulf EEZ shoreward of rhumb lines connecting, in order, the points listed in Table 1 in Appendix B of this part.

(d) Alabama SMZ. The Alabama SMZ consists of artificial reefs and surrounding areas. In the Alabama SMZ, fishing by a vessel that is operating as a charter vessel or headboat, a vessel that does not have a commercial permit for Gulf reef fish, as required under § 622.20(a)(1), or a vessel with such a permit fishing for Gulf reef fish is limited to hook-and-line gear with three or fewer hooks per line and spearfishing gear. A person aboard a vessel that uses on any trip gear other than hook-and-line gear with three or fewer hooks per line and spearfishing gear in the Alabama SMZ is limited on that trip to the bag limits for Gulf reef fish specified in § 622.38(b) and, for Gulf reef fish for which no bag limit is specified in § 622.38(b), the vessel is limited to 5 percent, by weight, of all fish on board or landed. The Alabama SMZ is bounded by rhumb lines connecting, in order, the following points:

Point	North lat.	West long.
A	30°02.5'	88°07.7'
B	30°02.6'	87°59.3'
C	29°55.0'	87°55.5'
D	29°54.5'	88°07.5'
A	30°02.5'	88°07.7'

11. § 622.37 Size limits.

All size limits in this section are minimum size limits unless specified otherwise. A fish not in compliance with its size limit, as specified in this section, in or from the Gulf EEZ, may not be possessed, sold, or purchased. A fish not in compliance with its size limit must be released immediately with a minimum of harm. The operator of a vessel that fishes in the EEZ is responsible for ensuring that fish on board are in compliance with the size limits specified in this section. See § 622.10 regarding requirements for landing fish intact.

(a) Snapper—(1) Red snapper—16 inches (40.6 cm), TL, for a fish taken by a person subject to the bag limit specified in § 622.38 (b)(3) and 13 inches (33.0 cm), TL, for a fish taken by a person not subject to the bag limit.

12. § 622.38 Bag and possession limits.

(a) Additional applicability provisions for Gulf reef fish. (1) Section 622.11(a) provides the general applicability for bag and possession limits. However, § 622.11(a) notwithstanding, bag and possession limits also apply for Gulf reef fish in or from the EEZ to a person aboard a vessel that has on board a commercial permit for Gulf reef fish--

(i) When trawl gear or entangling net gear is on board. A vessel is considered to have trawl gear on board when trawl doors and a net are on board. Removal from the vessel of all trawl doors or all nets constitutes removal of trawl gear.

(ii) When a longline or buoy gear is on board and the vessel is fishing or has fished on a trip in the reef fish longline and buoy gear restricted area specified in § 622.35(c). A vessel is considered to have a longline on board when a power-operated longline hauler, a cable of diameter and length suitable for use in the longline fishery, and gangions are on board. Removal of any one of these three elements, in its entirety, constitutes removal of a longline.

(iii) For a species/species group when its quota has been reached and closure has been effected, provided that no commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, are on board as specified in paragraph (a)(2) of this section.

(iv) When the vessel has on board or is tending any trap other than a stone crab trap or a spiny lobster trap.

(2) A person aboard a vessel that has a Federal commercial vessel permit for Gulf reef fish and commercial quantities of Gulf reef fish, i.e., Gulf reef fish in excess of applicable bag/possession limits, may not possess Gulf reef fish caught under a bag limit.

(b) Bag limits--

(3) Red snapper--2. However, no red snapper may be retained by the captain or crew of a vessel operating as a charter vessel or headboat. The bag limit for such captain and crew is zero.

13. § 622.39 Quotas.

See § 622.8 for general provisions regarding quota applicability and closure and reopening procedures. This section, provides quotas and specific quota closure restrictions for Gulf reef fish.

(a) Gulf reef fish--

(2) Recreational quotas. The following quotas apply to persons who fish for Gulf reef fish other than under commercial vessel permits for Gulf reef fish and the applicable commercial quotas specified in paragraph (a)(1) of this section.

(i) Recreational quota for red snapper--4.145 million lb (1.880 million kg), round weight.

(c) Restrictions applicable after a recreational quota closure--

(1) After closure of the recreational quota for red snapper. The bag and possession limit for red snapper in or from the Gulf EEZ is zero.

APPENDIX G. ECONOMIC ANALYSIS OF RED SNAPPER ALLOCATION ALTERNATIVES FOR AMENDMENT 28 TO THE GULF OF MEXICO REEF FISH FMP

Juan J. Agar, David W. Carter

Southeast Fisheries Science Center

National Oceanic and Atmospheric Administration

75 Virginia Beach Drive

Miami, FL 33149

Contents

1.	Introduction	212
2.	Commercial Sector Analysis	213
	Specification and Data for the Allocation Price Regression.....	214
	Commercial Sector Results.....	215
3.	Recreational Sector Analysis	216
	Background and Assumptions	216
	Calculation of the Net Benefit of Two Red Snapper Harvested per Trip.....	219
	Recreational Sector Results	221
4.	Results and Conclusions	222
5.	References	231
	Appendix A: Discussion of the Derived Demand Approach to Benefits Estimation in the Commercial Sector.....	232
	Appendix B: Materials for the Monte Carlo Simulation in the Recreational Sector Analysis ...	234

Introduction

This report investigates the economic effects of the alternatives proposed in Amendment 28 to the Reef Fish Fishery Management Plan (FMP) of the Gulf of Mexico. Amendment 28 considers revising the 51% commercial/49% recreational allocation formula set in Amendment 1 to the Reef Fish FMP. Specifically, alternatives 2 through 4 consider increasing the recreational sector allocation by 3%, 5% and 10%, respectively; whereas alternatives 5 and 6 would only reallocate quota increases when the red snapper quota is greater than 9.12 million pounds (mp) whole weight (ww) (Table 2). Alternative 5 would allocate 75% of quota increases (above 9.12 mp) to the recreational sector and 25% to the commercial sector, whereas alternative 6 would allocate 100% of the quota increases (above 9.12 mp) to the recreational sector.

Conceptually, the economic value of a two-sector fishery, given a set quota level, reaches a maximum when quota is efficiently allocated among the two sectors. This occurs when the net benefit of the last unit of quota allocated to one sector equals the net benefit of the last unit of quota allocated to the other sector. If these marginal net benefits are not equal, then the economic benefits to the nation can be improved by shifting quota from the sector with the lower marginal net benefit to the sector with the higher marginal net benefit for a unit of quota.

In the 2012 red snapper allocation analysis (Agar and Carter 2012a), we found that the current allocation was not economically efficient because the marginal net benefit for an additional unit of quota differed between the commercial and recreational sectors. However, we cautioned that the extent to which economic benefits could be increased via reallocation could not be adequately determined at the time. We noted that additional research, improvements in the quality of existing data collections, and new data collections were necessary in order to estimate the economic effects of non-marginal changes to allocation. The caveats mentioned in Agar and Carter (2012a) also

apply to this analysis. The methods used in this analysis follow our earlier work with red snapper and grouper species (Agar and Carter 2012a, b; Carter et al. 2008).

The remainder of the report is structured as follows. Section 2 describes the estimation of the commercial net benefits for the proposed reallocation alternatives. Section 3 describes the calculation of the recreational net benefit for the proposed allocation changes. The last section summarizes the economic effects of the proposed reallocation alternatives and discusses the key results of the analysis.

Commercial Sector Analysis

We explored the economic effects of alternative red snapper quota reallocations using two alternative approaches. The first approach attempted to estimate a derived demand model for red snapper allocation (leased quota) from indirect, trip-level revenue (profit) functions analogous to the framework used by Squires and Kirkley (1995), Carter et al. (2008), and Gentner et al. (2010). Unfortunately, this approach proved unfruitful because the absence of data on rental prices limited our ability to estimate how quasi-fixed input usage would be change in response to quota changes (see, Appendix A for discussion); hence, we pursued a second approach to estimate the economic effects of changes in the allocation formula. The second approach used a reduced form, linear equation to examine the relationship between red snapper allocation prices and quota levels (Newell et al. 2005). In the red snapper commercial fishery, IFQ allocation is the actual poundage of red snapper that shareholder or allocation holder can possess, land, or sell during a given calendar year.

We use allocation prices because they serve as sound proxies for net economic benefits because fishermen will only purchase additional units of allocation as long the as the expected net revenue of the last unit of allocation purchased equals or exceeds the allocation price. At the margin, the

net revenue of last unit of allocation purchased should equal the allocation price. In other words, the market based allocation prices are expected to reflect the expected net revenue from holding additional units of allocation (Clark, 1982; Newell et al. 2005).

In well-behaved quota markets, we expect allocation prices to be a function of, among other things, output and factor prices, harvesting technology, fish abundance, and quota. In particular, we expect the allocation price for red snapper to be positively related to the dockside price of red snapper and negatively related to input prices such as fuel. Also, all other things being equal, as quota levels increase, allocation prices are expected to fall.

Specification and Data for the Allocation Price Regression

We used a specification for the allocation price equation that is similar to the one put forth by Newell et al. (2005). However, our specification is considerably more parsimonious given data limitations and the number of observations available. Specifically, we modelled the average monthly red snapper allocation prices as a function of red snapper dockside prices, diesel fuel price index, annual red snapper quota levels, and dummy variables for quarter and year.¹⁹

Data on quota levels, and allocation and dockside prices were obtained from the Southeast Regional Office (SERO) IFQ Database.²⁰ The diesel (#2, WPU057303) price index was obtained from the U.S. Bureau of Labor Statistics along with the consumer price index (CUSR0000SA0) that was used to adjust all prices to 2012 dollars. The analysis focused on the 2007-2012 period when the IFQ program was in place. About 80 percent of the allocation transactions reported zero or very low allocation prices because many participants were concerned about privacy and also because many of the transactions are believed that to have involved non-arm length transfers

¹⁹ We tried other specification that regressed allocation prices against the number of monthly allocation transfers, monthly landings and cumulative landings but these were not statistically significant.

²⁰ In the commercial red snapper fishery, landings are usually expressed in pounds gutted weight (gw) and dockside, share and allocation prices in dollars per pound of gw. The whole weight to gutted weight conversion factor is 1.11.

between related accounts. Therefore, we created monthly allocation price averages using only observations with values greater or equal \$1.2 but less or equal than \$5. In addition, because many dockside prices for red snapper were reported as net of allocation price (i.e., dockside price minus allocation price) we generated monthly dockside prices using observations with prices equal or greater than \$2.6 and but less than \$10. The values generated for monthly allocation and dockside prices follow the guidelines used in the 5 year review of the red snapper IFQ program. The descriptive statistics of the variables used in the analysis are found in Table 3.

Commercial Sector Results

Table 4 shows the OLS results of 4 different models that considered the relationship between red snapper allocation prices and dockside prices, diesel price index, quarterly and yearly variables, and quota levels. In general, the results show that much of the variation in average allocation prices is explained by yearly dummies. Most of the explanatory variables such as dockside prices, diesel 2 index, are not statistically significant when yearly dummy variables are included (Models 2 and 3). Only Model 4 yields a quota parameter that is negative and statistically significant at the 5% level.

To predict the effect of changing quotas on allocation prices while controlling for dockside price, diesel fuel prices and quarterly and yearly fixed effects we use Model 4. The predicted mean allocation price over a range of quotas levels is shown in Table 5 along with the lower (95Lower) and upper (95Upper) confidence estimates of the mean. Table 6 shows the estimated forgone annual net economic benefits from reallocating quota from the commercial to the recreational sector. Alternative 2 (3% change in allocation) was the least onerous alternative to the commercial sector resulting in a net annual loss of \$0.8 million, whereas alternative 4 (10% change in allocation) and 6 (100% allocation of quota increases above 9.12 mp) were the most onerous

alternatives to the commercial sector resulting in an annual loss in net benefits of \$2.9 million and \$2.5 million, respectively.

Recreational Sector Analysis

This section describes the methods used to determine the change in economic net benefits to the recreational sector associated with the allocation alternatives proposed for red snapper in the Gulf of Mexico. The general method is simple: the net benefits of a change in allocation equal the implied change in harvest times the net benefit per pound of fish. Most of this section is spent discussing the approach used to calculate the net benefit for a pound of fish in the recreational sector. We provide further discussion of the concept of net benefit, or willingness-to-pay (WTP), in our previous report on red snapper (Agar and Carter 2012b).

Background and Assumptions

There is no quota market (e.g., ITQ) for recreationally harvested red snapper in the Gulf of Mexico. Nor are harvest estimates timely enough to allow “real-time” quota monitoring in the recreational sector. Therefore, any additional quota allocated to the recreational sector must be distributed via changes in fishing regulations (e.g., bag limits and season length). The regulations used to distribute additional quota can influence the amount of economic benefit generated, if any. In fact, preliminary research at the University of Maryland suggests that the way the recreational sector is managed has important implications for the way we should *measure* the economic benefits of reallocation. Discussion of this issue is beyond the scope of this report, but should be kept in mind as many of the margins we discuss below (trips per season, harvest per trip, etc.) are irrelevant to the analysis if there is no mechanism in place to sort anglers along the margin according to their preferences.

Consider the ways in which aggregate recreational harvest might increase given a reallocation. That is, how can an increase in harvest allocated to the recreational sector be absorbed? In general, aggregate harvest can increase if more pounds are harvested per trip or if more trips are taken. Pounds per trip can increase when more or bigger fish are harvested per trip either because of improvements in the stock, a change in the bag or size limit, changes in technology, or an increase in the time spent fishing per trip. An increase in trips occurs when new anglers start fishing, existing anglers take more trips, or existing trips are redirected from other species to harvest red snapper.

Based on discussions with Council and SERO staff, we assume that there will be no change in the number of pounds harvested per trip, primarily because the Council is unlikely to change the bag or minimum size limits. The Council is likely to extend the red snapper fishing season to allocate additional harvest to the recreational sector. Given data and model limitations we are forced to take a narrow view regarding the effect of the longer season on fishing activity. Specifically, we assume that no new anglers will start fishing and that existing anglers will not change the number of trips they take when the season is extended. If there are no new anglers or trips and the harvest per trip is unchanged, then aggregate harvest can only increase if anglers previously fishing for other species *redirect* to harvest red snapper when the season is open. These assumptions were implicit in our previous analyses, but were somewhat less controversial because we were measuring economic value at the margin or evaluating very small allocation changes. Presently, the Council is considering relatively larger changes in allocation (e.g., 10 percent) and the assumptions of no new anglers or trips are more tenuous. In any case, if new anglers or trips result from the increase in allocation to the recreational sector and the extension of the season, then the increase in economic benefits would probably be higher than measured in this report.

We make five other methodological assumptions:²¹ 1) anglers harvest the bag limit, i.e., harvest two red snapper per trip; 2) the average weight per red snapper is 6.34 based on the average from 2011; 3) the net benefit of two red snapper harvested per trip is the same for all trips taken over the season; 4) the net benefit curve for the number of red snapper harvested per trip is estimated using data from 2003; and 5) changes in net benefits to for-hire operators are not measured. Currently, the daily bag limit of red snapper is two fish. Figure 1 demonstrates the potential sensitivity of our results to the different assumptions about the average fish weight and the number of red snapper harvested per trip. In general, the heavier the fish on average, the lower the measures of net benefit. This somewhat counterintuitive outcome is because lower weight fish means more fish can be caught for a given quota increase. Similarly, if we were to assume that only one fish is harvested per trip, instead of two fish, then the measures of net benefit would be higher, as the preference for a second fish is less than for the first.

As we describe below, our estimate of angler benefit for fish on a trip is based on data from 2003 (inflation adjusted). Currently an economic survey of anglers in the Gulf of Mexico is being fielded and is scheduled to end in spring of 2014. We will have some preliminary results by the end of the year. Until then, however, we do not know whether estimates using more recent data would be higher or lower than the estimates from the 2003 data. Consequently, we cannot speculate as to how our measures of the economic value associated with increased quota in the recreational sector would change with more recent data.

We do not attempt to measure changes in economic value (producer surplus) accruing to operators/owners in the charter and head boat industry. In fact, by assuming that trips do not

²¹ As in the previous analyses, we also ignore dynamic feedbacks (e.g., congestion or stock effects) because this type of response is unlikely to be significant in the short-term, i.e. one year.

change, we are also assuming that the only way to have changes in producer surplus would be for for-hire profits to be relatively higher on trips that offer red snapper. The angler benefit estimates described below suggest that some anglers are indeed willing to pay a premium for trips that offer red snapper. However, for the analysis we assume that trip costs are same regardless of species offerings such that the all economic value increase (surplus) from longer seasons accrues to anglers. Our estimates of the economic value associated with increased quota in the recreational sector would be higher if we were to include the value accruing to the for-hire sector operators/producers. The potential consequences for our results of relaxing the key assumptions we have described are summarized in Table 7 .

Calculation of the Net Benefit of Two Red Snapper Harvested per Trip

Following Agar and Carter (2012a,b) we use the results from an analysis of a stated preference choice experiment conducted in 2003 (Carter and Liese 2012). In this analysis, the total benefit²² for harvest of species j per trip by angler i is given by

$$(1) \quad TB_{ij}(h) = \beta_{ij} \sinh^{-1} h_j$$

where β_{ij} is a preference parameter for the harvest of h_j number of fish of species j . The preference parameters are randomly distributed and correlated across species as a multivariate normal: $\beta_{ij} \sim N(\bar{\beta}_j, \Omega)$ where a $\bar{\beta}_j$ is the mean vector and Ω is the covariance matrix for the joint distribution. Expression 1 measures the amount of money you would have to take from angler i to make him indifferent to harvesting h fish per trip versus no fish per trip. Figure 2 shows the total benefit function plotted over the number of fish harvested per trip for each species evaluated at the

²² Total benefit is measured by the compensating variation that equates the indirect utility of a trip harvesting h fish of species j with the indirect utility of a trip that harvests zero fish of species j .

mean value of the preference parameter.²³ This figure suggests that the average angler would be willing to pay around \$200 to keep two red snapper on a trip versus a trip where no red snapper could be kept. Note, however, that we are assuming that red snapper harvest increases with an extended season because anglers redirect from harvesting another species. Therefore, we need to subtract the total anglers get from the harvest of their next preferred species to get a net benefit for the opportunity to harvest two red snapper on a trip. We used the following Monte Carlo simulation to estimate this net benefit and associated confidence bounds:

1. Draw 10,000 vectors of 14 parameters from the multivariate normal, including 4 species preference parameters, $(\bar{\beta}_1, \bar{\beta}_2, \bar{\beta}_3, \bar{\beta}_4)$, and the 10 components, $(\rho_{11}, \rho_{21}, \rho_{22}, \rho_{31}, \rho_{32}, \rho_{33}, \rho_{41}, \rho_{42}, \rho_{43}, \rho_{44})$, of the lower triangular Cholesky factorization matrix corresponding to the estimate of Ω . The mean preference parameters and Cholesky terms along with the corresponding covariance matrix are shown in the Appendix.
2. For each of the 10,000 vectors of preference parameters and lower triangular Cholesky factorization matrix elements drawn in step 1:
 - a. Draw 10,000 “anglers” or coefficient vectors, $(\bar{\beta}_{i1}, \bar{\beta}_{i2}, \bar{\beta}_{i3}, \bar{\beta}_{i4})$, from the multivariate normal using the mean preference parameters and the Cholesky factorization matrix terms as follows:

$$\begin{pmatrix} \beta_{i1} \\ \beta_{i2} \\ \beta_{i3} \\ \beta_{i4} \end{pmatrix} = \begin{pmatrix} \bar{\beta}_1 \\ \bar{\beta}_2 \\ \bar{\beta}_3 \\ \bar{\beta}_4 \end{pmatrix} + \begin{bmatrix} \rho_{11} & & & \\ \rho_{21} & \rho_{22} & & \\ \rho_{31} & \rho_{32} & \rho_{33} & \\ \rho_{41} & \rho_{42} & \rho_{43} & \rho_{44} \end{bmatrix} \begin{bmatrix} \zeta_{i1} \\ \zeta_{i2} \\ \zeta_{i3} \\ \zeta_{i4} \end{bmatrix}$$

²³ The graph is plotted from zero to five fish, but the original experiment did not include alternative trips in which no fish were harvested. Hence the value of one fish is an out-of-sample extrapolation. Zero marginal value for zero fish is a quite plausible assumption.

where the ζ terms are drawn from the standard normal distribution.

- b. Calculate total benefit for two fish per trip for each species for each of the 10,000 “anglers” drawn in 2a using equation 1.
 - c. Based on the results in 2b, keep the “red snapper anglers” where the total benefit for red snapper is greater than the total benefit for other species.
 - d. For each “red snapper angler”, calculate the net benefit as the total benefit for red snapper minus the total benefit for the species with the next highest total benefit.
 - e. Return the mean (and median) net benefit over the vector calculated in 2d.
3. Calculate the mean and confidence bounds based on the 10,000 estimates of the mean and median net benefit generated by evaluating step 2 on each of the vectors drawn in step 1.

This measure of net benefit is converted to net benefit per pound by dividing by the pounds per fish and the number of fish harvested on the trip, assumed to be two fish based on the current bag limit.

The results of the simulation are shown in Table 8. On average around 20% of the 10,000 anglers “preferred” red snapper over the other three species, i.e., these anglers had a total benefit for red snapper that was higher than the total benefit for any other species. The mean and confidence bounds are shown for the simulated mean and median net benefit estimates in 2003 and 2012 dollars. We also show the results converted to the net benefit per pound. The estimates range from \$8 to \$12 per pound in 2012 dollars. Note that these confidence bounds only account for parameter uncertainty and the heterogeneity angler preferences. There are other potential sources (e.g., structural or model) of uncertainty that are not captured.

Recreational Sector Results

Table 9 shows the economic value of changes in the red snapper allocation to the recreational sector. The allocation is shown in the first column and the change in the allocation from the Alternative 1 (status quo) is shown in the second column. The numbers in the second column are multiplied by the *mean* net benefit per pound in 2012 dollars (\$11.21) from Table 8 to get the change in economic value relative to the status quo that is presented in the last column. This simple method ensures that the change in economic value moves in the same direction and is proportional to the change in allocation to the recreational sector.

Results and Conclusions

Amendment 28 to the GOM Reef Fish FMP is revisiting the existing allocation formula between the commercial and recreational sectors. Specifically, the Amendment is considering alternatives that would increase the recreational sector allocation between 3% and 10% or assigning 25% or 100% of the quota increases to the recreational sector when snapper quota is greater than 9.12 mp ww.

This analysis shows that on economic efficiency grounds, benefits to the nation could be increased by redistributing some of the quota from the commercial to the recreational sector. In general, the larger the share of quota redistributed to the recreational sector, the greater the economic benefits to the nation. The analysis suggests that the 10% redistribution alternative generates the most benefits to the nation, at about \$6.16 million annually whereas the 3% redistribution alternative generates the least benefits to the nation of about \$1.92 million annually. Table 9 summarizes the key results of the analysis. We caution, however, that the results of this analysis are conditional on a number of simplifying assumptions and, strictly speaking, apply at the margin and to the quota level at the time the data were collected. The methods and assumptions become tenuous at “large” reallocations. As emphasized in our previous allocation work (Agar

and Carter 2012a, b), more and better data and analysis are necessary to accurately measure the potential economic implications of relatively large reallocations of fishery stocks as well as adequately capture other economic surpluses in the wholesale and retail markets. However, some of these surpluses are not expected to be large due to the presence of substitutes.

Finally, it should be pointed out, that National Standard 5 of the Magnuson Stevens Reauthorization Act of 2006 states “Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.” In other words, economic efficiency considerations alone should not be the only guiding criteria for making re-allocation decisions.

Table 2. Gulf of Mexico Red Snapper Allocation Alternatives

Alternative	Commercial Sector		Recreational Sector	
	Quota (Million Pounds Whole Weight)	%	Quota (Million Pounds Whole Weight)	%
1 (Status Quo)	5.610	51.0	5.390	49.0
2	5.280	48.0	5.720	52.0
3	5.060	46.0	5.940	54.0
4	4.510	41.0	6.490	59.0
5	5.121	46.6	5.879	53.4
6	4.651	42.3	6.349	57.7

Table 3. Descriptive Statistics of the Variables Used in the Analysis (n=72)

Variable	Mean	Median	Std. dev.	Min	Max
Red snapper monthly allocation price (\$/lb)	2.84	2.98	0.34	1.99	3.31
Red snapper monthly dockside price (\$/lb)	4.37	4.42	0.13	4.05	4.54
Diesel #2 price index	0.85	0.83	0.21	0.44	1.36
Red Snapper commercial quota (Million Pounds Gutted Weight)	2.81	2.99	0.52	2.30	3.71

Sources: NOAA IFQ Database and BLS. All prices are adjusted to 2012 dollars using the CPI.

Table 4. Allocation Price Regression Results (n=72)

Independent Variables	Model 1	Model 2	Model 3	Model 4
Intercept	-6.70523*** (0.61902)	-6.81492*** (0.60554)	0.77921 (1.31535)	1.51673 (1.43179)
Monthly dockside price	2.13208*** (0.14335)	2.15326*** (0.14021)	0.45214 (0.29226)	0.34118 (0.30846)
Diesel #2 price index	-0.12826 (0.09848)	-0.16243** (0.09714)	-0.15544 (0.13327)	-0.23727* (0.13504)
Commercial Quota	0.11914*** (0.04145)	0.13078*** (0.04237)	-0.09668 (0.06520)	-0.20046** (0.08734)
Quarter 2		0.05893 (0.05162)		0.05401 (0.04198)
Quarter 3		0.05534 (0.05287)		0.13020** (0.04961)
Quarter 4		-0.06062 (0.05252)		0.06270 (0.05119)
Year 2008			0.20261** (0.08427)	0.20201*** (0.08185)
Year 2009			0.52325*** (0.09461)	0.50200*** (0.09345)
Year 2010			0.68000*** (0.10973)	0.72767*** (0.11596)
Year 2011			0.74341*** (0.12851)	0.85477*** (0.14463)
Year 2012			0.76603*** (0.14856)	0.91003*** (0.17169)
R Squared	0.7976	0.8176	0.8851	0.8978
Adjusted R Squared	0.7886	0.8008	0.8705	0.8791
F Value	89.31	48.56	60.66	47.92
Prob.> F	<.0001	<.0001	<.0001	<.0001

Table 5. Predicted Mean Allocation Price at Different Quota Levels

Quota (Million Pounds Gutted Weight)	Predicted Price (\$/lb)		
	Mean	95Lower	95Upper
4.06	2.95	2.69	3.21
4.19	2.93	2.66	3.19
4.56	2.85	2.56	3.15
4.61	2.84	2.55	3.14
4.76	2.81	2.50	3.12
5.06	2.75	2.41	3.10

Table 6. Annual Economic Cost (Losses) to the Commercial Sector of the Various Reallocation Alternatives.

Alternative	Quota (Million Pounds Gutted Weight)	Quota share (%)	Poundage lost relative to Alt. 1	Economic cost (losses) (\$ million/year)
1 (Status quo)	5.06	51	-	-
2	4.76	48	0.30	0.8 (0.7-0.9)
3	4.56	46	0.50	1.4 (1.2-1.6)
4	4.06	41	1.00	2.9 (2.6-3.2)
5	4.61	46.6	0.45	1.3 (1.1-1.4)
6	4.19	42.3	0.87	2.5 (2.2-2.7)

Table 7. Effect of Relaxing Key Assumptions in Recreational Sector Analysis

Assumption	Relaxing Assumption Makes Results
No new anglers or trips	Higher
All trips harvest two red snapper	Higher
Data from 2003	?
Only measured value to angler (i.e., for-hire operators not included)	Higher

Table 8. Net Benefit for Two Red Snapper Keep Calculated from the Simulation

	Simulated Mean	Simulated Median
--Net Benefit (2003 dollars)--		
Mean	\$114.06	\$92.75
95Lower	\$104.71	\$84.09
95Upper	\$123.73	\$101.74
--Net Benefit (2012 dollars)--		
Mean	\$142.11	\$115.56
95Lower	\$130.46	\$104.76
95Upper	\$154.16	\$126.76
--Net Benefit per pound (2012 dollars)--		
Mean	\$11.21	\$9.11
95Lower	\$10.29	\$8.26
95Upper	\$12.16	\$10.00

Notes: The 2003 dollars are inflated to 2012 dollars using the January CPI from series CUSR0000SA0. The net benefit per pound is based on two fish at 6.34 pounds each.

Table 9. Economic Value of Changes in the Red Snapper to the Recreational Sector

Alternative	Recreational Allocation (Million Pounds Whole Weight)	Change in Recreational Allocation from Alt1	Change in Economic Value to Anglers Relative to Alt1 (Millions\$)
1 (Status Quo)	5.39		
2	5.72	0.33	\$2.72
3	5.94	0.55	\$4.53
4	6.49	1.1	\$9.06
5	5.88	0.49	\$4.03
6	6.35	0.96	\$7.90

Table 10. Change in Benefits (Millions of Dollars) to the Commercial and Recreational Sectors and the Net Benefits of the Alternative Allocations Relative to the Status Quo (Alternative 1)

Alternative	Commercial	Recreational	Net
2	-\$0.80	\$2.72	\$1.92
3	-\$1.40	\$4.53	\$3.13
4	-\$2.90	\$9.06	\$6.16
5	-\$1.30	\$4.03	\$2.73
6	-\$2.50	\$7.90	\$5.40

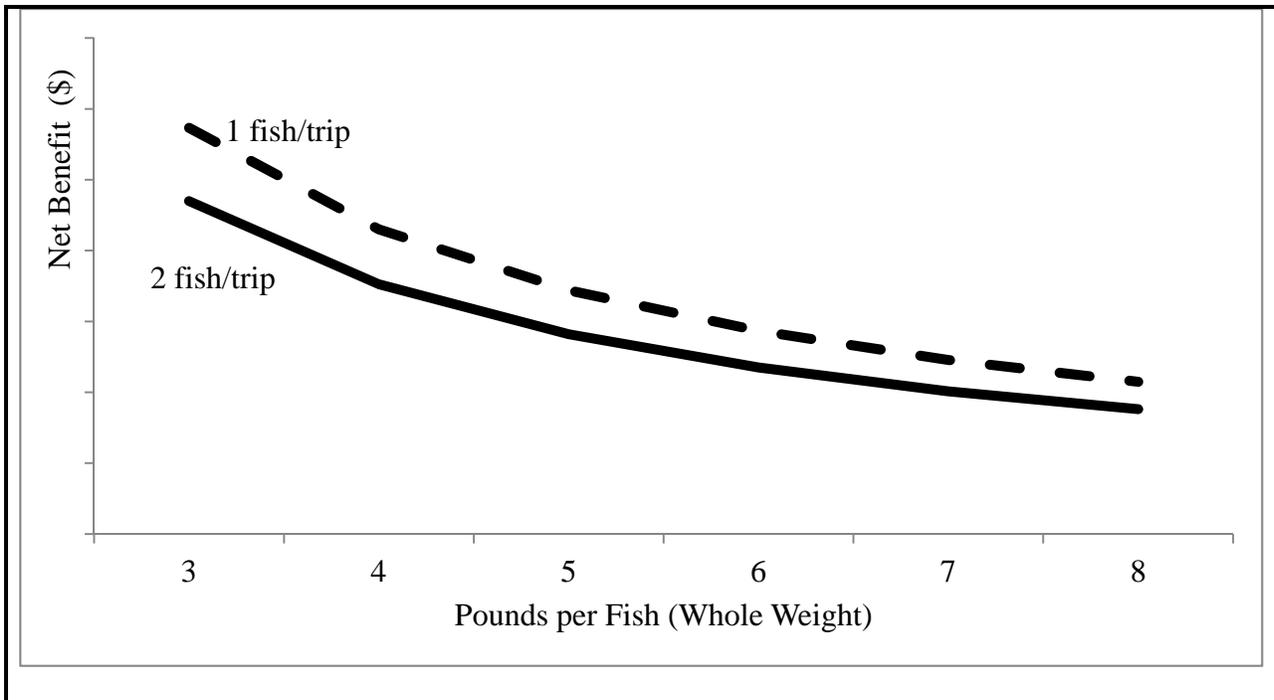


Figure 1. Sensitivity of Recreational Net Benefit Calculations to Pounds per Fish and the Number of Fish Harvested per Trip.

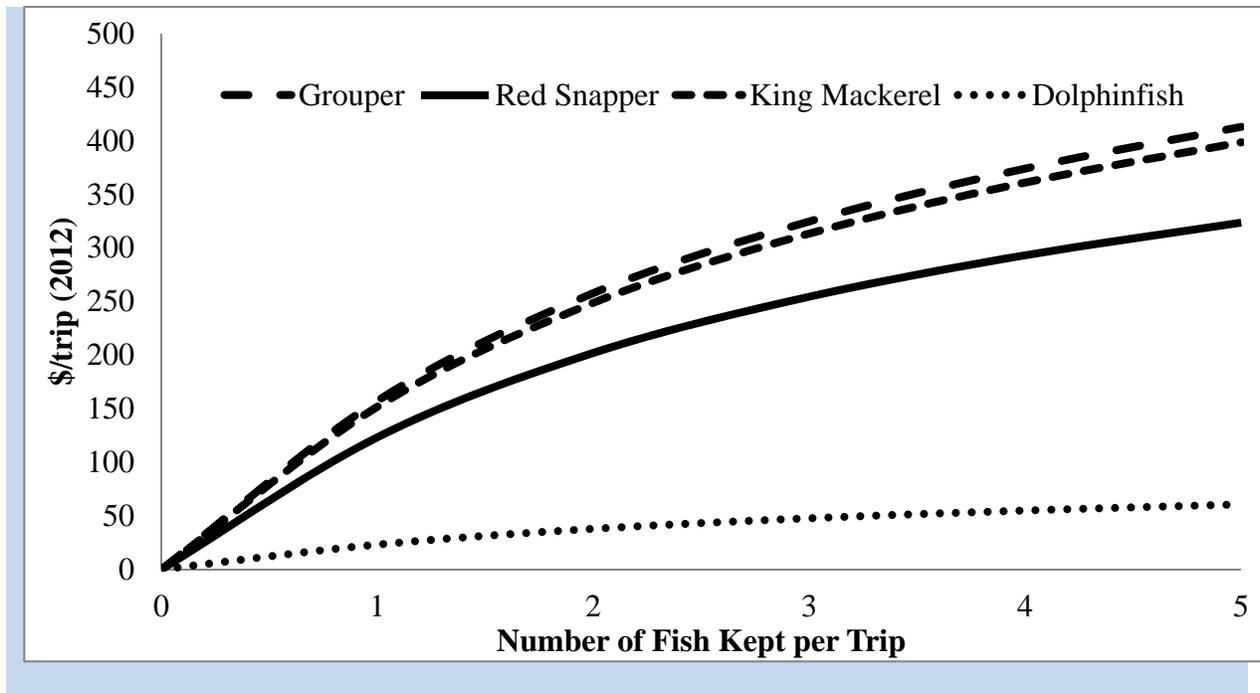


Figure 2. Average Angler Total Benefit by Number of Fish Kept per Trip for each Species

References

Agar, J.J. and D.W. Carter. 2012a. "Is the Allocation of Red Snapper in the Gulf of Mexico Economically Efficient?" NOAA Fisheries, Southeast Fisheries Science Center, Miami, Florida.

Agar, J.J. and D.W. Carter. 2012b. "Are the Allocations of Gag, Red, and Black Grouper in the Gulf of Mexico Economically Efficient?" NOAA Fisheries, Southeast Fisheries Science Center, Miami, Florida.

Carter, D.W., J.J. Agar, and J.R. Waters. 2008. Economic Framework for Fishery Allocation Decisions with an Application to Gulf of Mexico Red Grouper. *NOAA Technical Memorandum NMFS-SEFSC-576*, 96 p.

Carter, D.W. and C. Liese. 2012. "The Economic Value of Catching and Keeping or Releasing Saltwater Sportfish in the Southeast USA." *North American Journal of Fishery Management* 23: 613-625.

Clark, C.W. 1982. "Towards a predictive model for the economic regulation of commercial fisheries." *Canadian Journal of Fisheries and Aquatic Sciences*, 37:1111-1129.

Gentner, B., J. Kirkley, P. R. Hindsley, and S. Steinback. 2010. Summer Flounder Allocation Analysis. *NOAA Technical Memorandum NMFSF/SPO-111*, 93 p.

Newell, R.G., Sanchirico, J.N. and Kerr, S. 2005. "Fishing Quota Markets." *Journal of Environmental Economics and Management* 49: 437-462.

Squires, D. and J. Kirkley. 1991. "Production Quota in Multiproduct Pacific Fisheries." *Journal of Environmental Economics and Management* 21: 109-126.

Squires, D. and J. Kirkley. 1995. "Resource Rents from Single and Multispecies Individual Transferable Quota Programs." *ICES Journal of Marine Science*, 52 (2):153-164.

Appendix A: Discussion of the Derived Demand Approach to Benefits Estimation in the Commercial Sector

This approach models how fishermen choose their profit maximizing species mix at the trip level given quasi-fixed inputs (e.g., capital and labor available), weather, resource constraints, relative product prices, etc. These models can examine how fishermen would change their harvest mix and revenue stream if either quota(s) were imposed or quota levels were changed. This can be done by imputing a *virtual or net dockside price* (i.e., *dockside price minus allocation price*) for each of the quota-constrained species.²⁴ After determining the impact of virtual prices on the harvest level and mix of the fleet, the economic impact of quota changes can be calculated by integrating under the allocation price curve.

For the red snapper allocation analysis, we estimated the output (harvest) supply functions derived from two different Leontief revenue specifications. The first specification included two species (i.e., red snapper and other species) and the second one included three species (i.e., red snapper, other mid-water snappers-mainly vermilion snapper, and other species). These models regressed each species (or species' group) harvest per trip against relative dockside prices (virtual price for red snapper since it was quota constrained), quasi-fixed input (i.e., crewdays*vessel length), and dummy variables for quarter, year, and region (i.e., Panhandle Florida plus Alabama and Mississippi, Non-Panhandle Florida, Texas, Louisiana).

In general, we found that own-price elasticity of supply of red snapper was positive but fairly inelastic suggesting that fishermen have limited ability to re-adjust their production of red snapper in response to changes in its own-virtual price. To examine the economic effect of changing quota levels, we assumed that fishermen would take same number of trips as in 2012 and would readjust

²⁴ Virtual prices are equivalent to those 'net' dockside prices (i.e., dockside price minus allocation price) that would induce a fishing vessel operating without quota constraints to operate in the same manner as when faced with quotas (Squires and Kirkley, 1991).

their catch mix in response to changes in red snapper's virtual price. Unfortunately, these models predicted that the fleet could not exhaust the 36.4% increase in red snapper quota, from 3.71 mp gutted weight (gw) in 2012 to 5.06 mp gw in 2013, by re-organizing their product mix at the 2012 effort levels indicating that the relatively large quota increase could only be absorbed with additional trips. Because we do not have the information on rental prices for quasi-fixed inputs (i.e., of crew days times vessel length) currently we cannot determine how effort would change in response to changes in the quota/virtual price (Squires and Kirkley, 1991).

Appendix B: Materials for the Monte Carlo Simulation in the Recreational Sector Analysis

Table B.1. Mean Parameters

Species	Type	Symbol	Mean Estimate	Covariance Matrix Label
dolphin	Beta	β_3	2.1	d
dolphin, grouper	Cholesky	ρ_{13}	0.549	dg
dolphin, red snapper	Cholesky	ρ_{23}	0.423	dr
grouper	Beta	β_1	1.43	g
king mackerel	Beta	β_4	1.38	k
king mackerel, dolphin	Cholesky	ρ_{34}	0.985	kd
king mackerel, grouper	Cholesky	ρ_{14}	0.813	kg
king mackerel, red snapper	Cholesky	ρ_{24}	0.0242	kr
red snapper	Beta	β_2	1.12	r
red snapper, grouper	Cholesky	ρ_{12}	0.859	rg
dolphin, dolphin	Cholesky	ρ_{33}	10.7	dd
grouper, grouper	Cholesky	ρ_{11}	1.51	gg
king mackerel, king mackerel	Cholesky	ρ_{44}	1.69	kk
red snapper, red snapper	Cholesky	ρ_{22}	1.03	rr

Table B.2. Covariance Matrix

	d	dg	dr	g	k	kd	kg	kr	r	rg	dd	gg	kk	rr
d	0.0873	0.00136	0.00101	0.00349	0.00422	0.00201	0.00111	2.96E-05	0.0028	0.00115	-0.00072	0.00217	0.00243	0.00158
dg	0.00136	0.00159	0.000848	0.000605	0.00048	0.00111	0.000153	3.24E-05	0.000396	0.000316	0.00495	0.000587	0.000635	0.000371
dr	0.00101	0.000848	0.00127	0.000445	0.000372	0.000806	0.000184	-5.6E-05	0.000309	0.000256	0.00438	0.000434	0.0005	0.000343
g	0.00349	0.000605	0.000445	0.00365	0.00171	0.000997	0.00079	6.19E-05	0.00131	0.000792	0.00982	0.00159	0.00168	0.00102
k	0.00422	0.00048	0.000372	0.00171	0.00416	0.000905	0.000852	3.23E-05	0.0012	0.000784	0.00925	0.00134	0.00166	0.000872
kd	0.00201	0.00111	0.000806	0.000997	0.000905	0.00269	0.000479	5.12E-05	0.000694	0.000566	0.00843	0.000982	0.00114	0.000656
kg	0.00111	0.000153	0.000184	0.00079	0.000852	0.000479	0.0022	-0.00019	0.000613	0.000656	0.00636	0.000971	0.000918	0.000552
kr	2.96E-05	3.24E-05	-5.6E-05	6.19E-05	3.23E-05	5.12E-05	-0.00019	0.000841	1.44E-05	-5.6E-05	-0.00015	6.38E-05	0.000101	6.16E-05
r	0.0028	0.000396	0.000309	0.00131	0.0012	0.000694	0.000613	1.44E-05	0.00291	0.000575	0.00713	0.00106	0.00118	0.00071
rg	0.00115	0.000316	0.000256	0.000792	0.000784	0.000566	0.000656	-5.6E-05	0.000575	0.00146	0.00632	0.00103	0.000991	0.000559
dd	-0.00072	0.00495	0.00438	0.00982	0.00925	0.00843	0.00636	-0.00015	0.00713	0.00632	0.132	0.0103	0.012	0.00657
gg	0.00217	0.000587	0.000434	0.00159	0.00134	0.000982	0.000971	6.38E-05	0.00106	0.00103	0.0103	0.00239	0.00172	0.00101
kk	0.00243	0.000635	0.0005	0.00168	0.00166	0.00114	0.000918	0.000101	0.00118	0.000991	0.012	0.00172	0.00312	0.00111
rr	0.00158	0.000371	0.000343	0.00102	0.000872	0.000656	0.000552	6.16E-05	0.00071	0.000559	0.00657	0.00101	0.00111	0.00144

Mathematica Notebook for the Net Benefit of 2 Red Snapper Harvested on a Trip (referred to as “Net WTP” in the Notebook)

Total willingness-to-pay (WTP) function

```
twtp=b ArcSinh[h];
```

Parameters from the 2003 SPCE model (grouper, red snapper, dolphinfish, and king mackerel)

Mean (scaled) random parameter vector and corresponding covariance matrix

```
betas={1.430,1.120,2.100,1.380} ;  
cov={{3.450,1.510,5.901,0.205},  
      {1.510,1.970,4.543,0.557},  
      {5.901,4.543,115.000,10.579},  
      {0.205,0.557,10.579,4.840} };
```

Select the number corresponding to the species for the rest of the analysis (red snapper is species 2)

```
sn=2.;
```

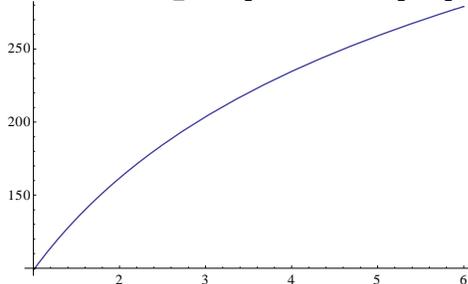
Plot of total willingness-to-pay parameterized with the mean species parameter from the 2003 SPCE model

Select the mean parameter of the species of interest and rescale

```
beta=betas[[sn]] 100.;
```

Plot of the total from one to six fish

```
Plot[twtp/.{b→beta},{h,1,6}]
```



Total WTP per trip at one and two fish

```
twtp/.{b→beta, h→1}  
twtp/.{b→beta, h→2}
```

```
98.7138
161.687
```

Set seed for random draws

```
SeedRandom[1234];
```

Function to select rows from a matrix based on criteria applied to one column.

```
select[table:{colNames_List,rows_List},where[condition_] :=
With[{self=Apply[Function,Hold[condition]/.Dispatch[Thread
[colNames→Thread[Slot[Range[Length[colNames]]]]]]},Select[
{rows},self@#&]];
```

Parameter estimates and related covariance matrix from the RPL model, including the heterogeneity (covariance) terms.

```
betas0={2.1,0.549,0.423,1.43,1.38,0.985,0.813,0.0242,1.12,0
.859,10.7,1.51,1.69,1.03};
cov0=Import["C:\\Users\\dcarter\\Desktop\\working\\projects
\\seConjoint2003\\output\\BIOGEME\\runToGetVCov\\vcov.csv"]
;
```

Create a multivariate normal distribution with the mean parameter estimates and related covariance matrix from the RPL model.

```
betasn0=MultinormalDistribution[betas0,cov0];
```

Draw 10,000 vectors of the parameter estimates from the RPL model, including the heterogeneity (covariance) terms.

```
betasn0100=RandomVariate[betasn0,10000.] ;
```

Functions to correctly order the parameter vector and Cholesky matrix and to reconstruct the covariance matrix of the random parameters.

```
cbetas[b_] := {b[[4]], b[[9]], b[[1]], b[[5]]}
ccol[c_] :=
(
cc={
{c[[12]],0,0,0},
{c[[10]],c[[14]],0,0},
{c[[2]],c[[3]],c[[11]],0},
{c[[7]],c[[8]],c[[6]],c[[13]]}
}
)
ccov[c_] :=
(
ccol[c].ConjugateTranspose[ccol[c]]
)
```

```

)
MatrixForm[ccol[betas0]]
MatrixForm[ccov[betas0]]
MatrixForm[cov]
(
  {
    {1.51, 0, 0, 0},
    {0.859, 1.03, 0, 0},
    {0.549, 0.423, 10.7, 0},
    {0.813, 0.0242, 0.985, 1.69}
  }
)
(
  {
    {2.2801, 1.29709, 0.82899, 1.22763},
    {1.29709, 1.79878, 0.907281, 0.723293},
    {0.82899, 0.907281, 114.97, 10.9961},
    {1.22763, 0.723293, 10.9961, 4.48788}
  }
)
(
  {
    {3.45, 1.51, 5.901, 0.205},
    {1.51, 1.97, 4.543, 0.557},
    {5.901, 4.543, 115., 10.579},
    {0.205, 0.557, 10.579, 4.84}
  }
)

```

Function to calculate the net WTP for *fish* red snapper on a trip when red snapper is available given d draws from a multivariate normal distribution of random parameters given a vector *betasa* including the four preference parameters and the 10 elements of the lower triangular Cholesky matrix corresponding with the preference parameter covariance matrix.

```

netWTP[fish_,d_,betasa_]:=
(
betasns100=Table[cbetas[betasa]+Transpose[ccol[betasa]].RandomVariate[NormalDistribution[],4],{i,1,d}] 100;
wtp2=Table[twtp/.{b->betasns100[[All,i]],
h->fish},{i,1,4}];
wtp2[[3,All]]=wtp2[[3,All]]/10;
wtp2t=Transpose[wtp2];
tt=Table[Max[wtp2t[[i,All]]]==wtp2t[[i,2]],{i,d}];
wtp2tf=MapThread[Prepend,{wtp2t,tt}];
wtp2tff=Prepend[wtp2tf,{"rsmax","wtp2g","wtp2r","wtp2d","wtp2k"}];
wtp2tff0=select[wtp2tff,where["rsmax"==True]];
tt2=Table[wtp2tff0[[i,3]]-
Max[wtp2tff0[[i,{2,4,5}]]],{i,Length[wtp2tff0]};
drs=Length[tt2];

```

```
{N[drs/d], If[drs<=0, 0, Mean[tt2]], If[drs<=0, 0, Median[tt2]]}
)
```

Test evaluation for 2 fish using 10,000 draw and the means of the four preference parameters and the 10 elements of the lower triangular Cholesky matrix

```
netWTP[2, 10000., Mean[betasn0]]
{0.2328, 114.867, 93.2638}
```

Launch the kernels used for parallel evaluation and distribute the netWTP function to each kernel.

```
LaunchKernels[]
DistributeDefinitions[netWTP]

{KernelObject[1, local], KernelObject[2, local], KernelObject[3,
local], KernelObject[4, local], KernelObject[5, local], KernelO
bject[6, local]}
```

Use the 10,000 vectors of the parameter estimates from the RPL model to run the net red snapper WTP function 10,000 times.

```
netWTPmc=ParallelTable[netWTP[2, 10000., RandomVariate[Multin
ormalDistribution[betas0, cov0]]], {i, 1., 10000.}];
```

Summary statistics from the run of the net red snapper WTP function 10,000 times

```
Mean[netWTPmc]
Median[netWTPmc]
Quantile[netWTPmc, 1-.975]
Quantile[netWTPmc, .975]
(Quantile[netWTPmc, .975] - Mean[netWTPmc]) / Mean[netWTPmc]
(Quantile[netWTPmc, .025] - Mean[netWTPmc]) / Mean[netWTPmc]
{0.22749, 114.063, 92.7491}
{0.2274, 114.066, 92.6894}
{0.2032, 104.709, 84.086}
{0.2525, 123.732, 101.737}
{0.109939, 0.084772, 0.0969103}
{-0.106774, -0.0822161, -0.0934628}
```

APPENDIX H RECREATIONAL RED SNAPPER AVERAGE WEIGHTS

Table H-1. Gulf of Mexico recreational red snapper landings and average weights, 1996-2013.

Year	Numbers	Pounds	AvgWeight
1996	1,190,120	4,690,917	3.94
1997	1,606,560	5,873,155	3.66
1998	1,256,725	4,233,104	3.37
1999	1,033,978	4,246,230	4.11
2000	1,024,616	4,069,528	3.97
2001	1,108,288	4,447,073	4.01
2002	1,425,435	5,553,810	3.90
2003	1,309,059	5,181,545	3.96
2004	1,493,608	5,540,101	3.71
2005	1,037,629	3,953,838	3.81
2006	1,198,923	4,024,849	3.36
2007	1,444,532	4,768,107	3.30
2008	834,217	3,628,435	4.35
2009	987,560	4,774,895	4.84
2010	451,343	2,277,410	5.05
2011	676,243	4,305,989	6.37
2012	733,492	5,146,485	7.02
2013	1,359,183	9,541,328	7.02

<-- preliminary data

Source: Southeast Fisheries Science Center Recreational (MRIP-based) ACL Dataset (Feb 2014) with preliminary (expanded) 2013 headboat landings.

**Summary for the Ad Hoc
Red Snapper For-Hire Advisory Panel
Tampa, FL
December 2-3, 2014**

Panel Members

Gary Bryant
Shane Cantrell
Daryl Carpenter
Troy Frady
James Green
Charles Guilford
Mark Hubbard
Mark Kelley
Robbie Langlinais
Seth Macinko
Greg Mercurio

Panel Members cont'd

Mike Nugent
Richard (Rene) Rice
Scott Robson
Bill Staff
Mike Sullivan
Skipper Thierry
Edward Walker
Johnny Williams
Troy Williamson
Bob Zales

Council and Staff

Steven Atran
Martha Bademan
Doug Boyd
Assane Diagne
John Froeschke
Johnny Greene
Karen Hoak
Morgan Kilgour
Ava Lasseter
Emily Muehlstein
Carrie Simmons

Attendance-Others

Jeff Barger
Randy Boggs
Steve Branstetter
Sue Gerhart
Peter Hood
Mara Levy
Rich Malinowski
Christina McConnell
Dennis O'Hern
Jessica Stephen
Andy Strelcheck
Tom Wheatley

The meeting was convened at 9:00 a.m. The AP elected Jim Green as Chair and Johnny Williams as Vice-Chair. Staff provided an overview of the reef fish for-hire component, a review of for-hire data collection, and information on the Headboat Collaborative. Staff also reviewed the Council's charge to the Ad Hoc Red Snapper For-hire AP:

The charge to the Red Snapper For-Hire AP is to make recommendations to the Council relative to the design and implementation of flexible measures for the management of red snapper for the for hire sector.

During the first day, much of the discussion highlighted the differences in perceived objectives and expectations relative to the outcome of the meeting. Through review of the information included in the scope of work and subsequent discussions, AP members improved their understanding of the meeting charge and made several recommendations to the Council.

A major theme of the discussion concerns the urgent need for more accurate data collection. In considering any change in management, concerns about red snapper discards were also expressed. Discussing data collection and validation methods, some AP members were supportive of requiring VMS usage while other members were expressly opposed. Participants in the Headboat Collaborative shared their experiences with dockside enforcement. The AP passed the following motion:

To recommend that NMFS accelerate the development of an Electronic Logbook including some type of validation tools.

Another theme of the discussion concerned Section 407(d) of the Magnuson-Stevens Act. Members were concerned about the management options available to for-hire operators under their own quota, since fishing by both private angling and for-hire vessels must end once the red snapper quota is met. Given the increasing amount of red snapper caught in state waters outside of the federal season and the inability of for-hire operators to participate in those fishing opportunities, some members expressed frustration about the for-hire component's uncertain access to its assigned portion of the quota before the recreational quota is met. Without knowing how the states will set their seasons, members were unsure of the possible actions which could improve access for the for-hire fleet before the total recreational quota is met.

The AP members took turns sharing their vision and goals for management, or expressed their concerns for future management. With these suggestions, AP members began to compile a list of objectives for management of the for-hire component. However, some members felt that the objectives were too broad and did not provide the Council with specific direction. The discussion shifted to the differences between charter boats and headboats, and the AP passed the following motion:

To recommend to the Council the option of separating the for-hire component into a headboat and a charter component.

One member raised the issue of regional management for the for-hire fleet. Some members supported the states managing the for-hire fleet while other members preferred to remain under federal management.

AP members discussed the option of reducing the bag limit from two to one red snapper, as a way to extend the length of the fishing season. There was concern that decreasing the red snapper bag limit would not extend the season as much as expected. AP members from the eastern Gulf were more supportive of a lower bag limit, while AP members

from the western Gulf generally opposed a lower bag limit because they take longer fishing trips offshore. By a vote of 15 to 5, the AP passed the following motion:

That the Council adopt a 1 fish bag limit for 2015 for the charter-for-hire sector.

AP members were also concerned about not exceeding their portion of the quota and recommended splitting the fishing season to allow landings from the first season to be reviewed before reopening the second season for harvest. They were supportive of a split-season until such time that real-time in-season electronic monitoring and reporting could be implemented. Following discussion, the AP passed the following motion by a vote of 12 to 5:

To recommend that the Council establish a split season, with 66% of the quota allocated for the first season, and following determination of landings, open a second season in the fall for the remainder of the quota for 2015, or until an electronic reporting method is implemented.

Following further discussion regarding short-term and long-term management options for the for-hire fleet, some members expressed concern that there was not enough time to get any type of a program in place for the for-hire fleet, due to the three year sunset adopted for sector separation. Some members did not support the sunset clause while other members did support the provision requiring the components of the recreational sector to be managed together, again. In support of the sunset clause, three members wanted to transfer management of the for-hire fleet to the Gulf States, although other members emphasized that they held federal permits and did not see how they could be managed by the states. After discussion, the AP passed the following motion:

To recommend that the Council begin development of a charter-for-hire management plan.

AP members asked questions about angler management organizations (AMOs) as a tool for management. They also discussed the pros and cons of AMOs as a vehicle for other types of programs including catch shares or tags. The AP then passed the following motion:

That the Council consider management options, such as an Angling Management Organization made up of for-hire vessels, one part of which could feature dividing the for hires into regional groups, a catch share program, a tag system, and a days at sea program.

The AP then discussed the administrative costs of new management approaches. One member wanted to exact resource rent from any management plan, and others discussed what types of management would trigger the collection of fees. By a vote of 11 to 9, the AP passed the following motion:

That the Council consider how the cost of any new program will be shared between the charter-for-hire industry and the agencies charged with management of the program.

The AP continued to discuss the Headboat Collaborative and whether the charter boats and headboats should be managed separately. There was interest by some AP members in expanding the Headboat Collaborative program and making it mandatory for all headboat vessels. If the Council were to support continuing to manage the for-hire component separate from private anglers, and potentially the charter fleet separate from headboats, the headboat operators would want to meet as a separate headboat AP. Contingent upon the Council separating the for-hire groups, the AP passed the following motion by a vote of 16 to 3:

That the Council convene an Ad Hoc Headboat Red Snapper and Grouper AP.

The AP expressed interest in continuing their discussion at another meeting. Given the short time before sector separation sunsets and the length of time needed to develop management actions, the AP expressed interest in meeting again as soon as possible and passed the following motion:

To request that the Council reconvene this panel as soon as possible after January Council, preferably by the end of February, to continue discussions on charter-for-hire program development.

There was discussion about for-hire permits that may not be actively used and suggestions for identifying latent permits. A permit buy-out program was suggested but was not supported by AP members. Following discussion, the AP passed the following motion:

That the Council explore ways to identify latent effort in the charter for-hire fishing industry.

The meeting adjourned at 11:55 a.m.

All motions, including failed and substitute motions. Motions that passed are in bold.

Motion: **To elect Jim Green as Chair.**

Motion carried.

Motion: **To elect Johnny Williams as vice chair.**

Motion carried.

Motion: To request that NMFS accelerate the development of a VMS and Electronic Logbook Data Collection system for the for-hire sector.

Substitute motion: To recommend that NMFS accelerate the development of an Electronic Logbook Data Collection system for the for-hire sector.

Second substitute motion: **To recommend that NMFS accelerate the development of an Electronic Logbook including some type of validation tools.**

Second substitute motion carried.

Motion: To adopt the following list as the overall objectives (vision) of the panel

Flexibility

Accountability (for management also)

Sustainability

Predictable season

Stewardship

Good monitoring system

Increased Fishing days

Maintain industry

More access for the industry

Make sure the for-hire component does not exceed its quota

Do not make any allocation to be bought and sold or traded

Better data

Fair and equitable system for fishery participants

Move away from fixed season

Collect resource rent

Size and slot limits

Bag limits

Fishing season

Catch shares

Fish tags

Access for the public to the fishery

Motion failed.

Substitute Motion: To request that the Council develop a charter for hire management plan to meet the following management objectives: Red snapper management plan for the for hire industry. In that plan, include a permanent charter for hire charter plan, new entrants can access the fishery, no set seasons, flexibility to choose when to fish, flexibility in business decisions, accountable, equitable, robust data collection. Substitute motion withdrawn.

Motion: **To recommend to the Council the option of separating the for-hire component into a headboat and a charter component.**

Motion carried.

Motion: That the NMFS develop computer code for accepting the data generated by the charter-for-hire fleet.

Motion withdrawn.

Motion: To remove the charter-for-hire subsectors from Amendment 39

Motion failed.

Day 2

Motion: To recommend to the Council to begin development of a charter-for-hire catch share permit-based program. Allocation would be awarded to the permit rather than the individual.

Motion withdrawn.

Motion: **That the Council adopt a 1 fish bag limit for 2015 for the charter-for-hire sector.**

Motion carried 15 to 5.

Motion: **To recommend that the Council establish a split season, with 66% of the quota allocated for the first season, and following determination of landings, open a second season in the fall for the remainder of the quota for 2015, or until an electronic reporting method is implemented.**

Motion carried 12 to 5.

Motion: **To recommend that the Council begin development of a charter-for-hire management plan.**

Motion carried 20 to 0 with 1 abstention.

Substitute motion: That the care, custody, and control of the charter-for-hire allocation be managed by the 5 Gulf states, FL, AL, MS, TX, and LA for the benefit of the recreational angler and the charter-for-hire sector.

Motion failed 3 to 16.

Motion: That the Council consider, as one of the management options, an AMO made up of for-hire vessels, one part of which could feature dividing the for hires into 5 groups, being administered by state agencies, and overseen by the NMFS.

Substitute motion: **That the Council consider management options, such as an Angling Management Organization made up of for-hire vessels, one part of which could feature dividing the for hires into regional groups, a catch share program, a tag system, and a days at sea program.**

Substitute motion carried with 1 opposed.

Motion: To recommend to the Council add the Headboat Collaborative to the list of management alternatives.

Motion withdrawn.

Motion: The Council consider implementing and collecting a resource rent from the charter-for-hire sector to pay for administrative expenses incurred as a result of any charter-for-hire management plan.

Substitute motion: The Council consider implementing and collecting a fee from the charter-for-hire sector to pay for any additional administrative costs incurred as a result of any charter-for-hire management plan.

Second substitute: **That the Council consider how the cost of any new program will be shared between the charter-for-hire industry and the agencies charged with management of the program.**

Motion carried 11 to 9.

Motion: Ask the Council to expand the Headboat Collaborative program to a program that includes all headboats.

Substitute motion: **That the Council convene an Ad Hoc Headboat Red Snapper and Grouper AP.**

Substitute motion carried.

Motion: To request that the Council reconvene this panel as soon as possible after January Council to continue discussions on charter-for-hire program development.

Substitute motion: To request that the Council reconvene this panel between the January and March Council meetings, to continue discussions on charter-for-hire program development.

Second substitute motion: **To request that the Council reconvene this panel as soon as possible after January Council, preferably by the end of February, to continue discussions on charter-for-hire program development.**

Second substitute motion carried with 2 abstentions.

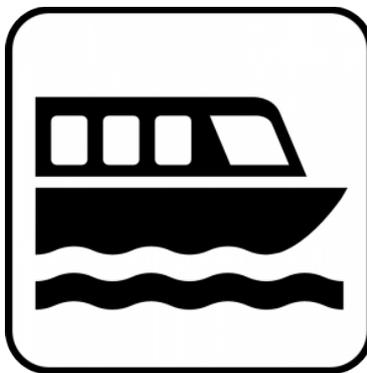
Motion: **That the Council explore ways to identify latent effort in the charter for-hire fishing industry.**

Motion carried 18 to 1 with 1 opposed.

Motion: That the Council consider proposing to the NMFS a charter-for-hire permit buy-out program.

Motion failed 5 to 13.

Framework Action to Adjust Recreational Charter-for-Hire Red Snapper Management Measures



Draft Framework Action to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

Including Environmental Assessment,
Regulatory Impact Review,
and Regulatory Flexibility Act Analysis

January 2015



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.

This page intentionally blank

ENVIRONMENTAL ASSESSMENT COVER SHEET

Framework Action to Adjust the Red Snapper Recreational Bag Limit on For-Hire Vessels in the Gulf of Mexico including Environmental Assessment, Fishery Impact Statement, Regulatory Impact Review, and Regulatory Flexibility Act Analysis

Proposed actions: The Gulf of Mexico Fishery Management Council developed this framework action to address the recreational bag limit for red snapper landed in the Gulf of Mexico aboard charter vessels and headboats. The Council considered lowering the bag limit for this component of the recreational sector from two fish per person to one fish per person or to one fish per two people.

Responsible Agencies and Contact Persons

Gulf of Mexico Fishery Management Council 2203 North Lois Avenue, Suite 1100 Tampa, Florida 33607 Steven Atran (Steven.Atran@gulfcouncil.org)	813-348-1630 813-348-1711 (fax) gulfcouncil@gulfcouncil.org http://www.gulfcouncil.org
National Marine Fisheries Service Southeast Regional Office 263 13 th Avenue South St. Petersburg, Florida 33701 Susan Gerhart (Susan.Gerhart@noaa.gov)	727-824-5305 727-824-5308 (fax) http://sero.nmfs.noaa.gov

ABBREVIATIONS USED IN THIS DOCUMENT

ABC	Acceptable biological catch
ACL	Annual catch limit
ACT	Annual catch target
AMs	Accountability measures
AP	Advisory Panel
APA	Administrative Procedures Act
Council	Gulf of Mexico Fishery Management Council
CPUE	Catch per unit effort
CS	consumer surplus
CZMA	Coastal Zone Management Act
DQA	Data Quality Act
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential fish habitat
EIS	Environmental impact statement
EJ	Environmental justice
ESA	Endangered Species Act
FMP	Fishery Management Plan
GMFMC	Gulf of Mexico Fishery Management Council
Gulf	Gulf of Mexico
HAPC	Habitat area of particular concern
IFQ	individual fishing quota
IRFA	Initial regulatory flexibility analysis
LOF	List of fisheries
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	Maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
mp	million pounds
MRFSS	Marine Recreational Fisheries Survey and Statistics
MRIP	Marine Recreational Information Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
nm	nautical mile
NOR	net operating revenues
OFL	Overfishing level
OMB	Office of Management and Budget
PRA	Paperwork Reduction Act
PS	Producer surplus
RA	Regional Administrator
RFA	Regulatory Flexibility Act of 1980
RIR	Regulatory impact review
Secretary	Secretary of Commerce
SEDAR	Southeast Data, Assessment and Review

SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SRHS	Southeast Region Headboat Survey
SSC	Scientific and Statistical Committee
WTP	willingness to pay
ww	whole weight

Table of Contents

ENVIRONMENTAL ASSESSMENT COVER SHEET	1
ABBREVIATIONS USED IN THIS DOCUMENT	2
LIST OF TABLES	6
LIST OF FIGURES	7
Chapter 1. Introduction	8
1.1 Background	8
1.2 Purpose and Need	11
1.3 History of Management	12
Chapter 2. Management Alternatives	16
2.1 Action 1 – Red Snapper Bag Limit for Charter Vessels and Headboats	16
Chapter 3. Affected Environment	19
3.1 Description of the Physical Environment	19
3.2 Description of the Biological/Ecological Environment	21
3.2.1 Red Snapper and Reef Fish	21
3.3 Description of the Economic Environment	27
3.3.1 Commercial Sector	27
3.3.2 Recreational Sector	27
3.4 Description of the Social Environment	34
3.4.1 Recreational Fishing Communities	34
3.4.2 Environmental Justice	38
3.5 Description of the Administrative Environment	39
Chapter 4. Environmental Consequences	42
4.1 Action 1: Red Snapper Bag Limit for Charter Vessels and Headboats	42
4.1.1 Direct and Indirect Effects on the Physical Environment	42
4.1.2 Direct and Indirect Effects on the Biological/Ecological Environment	43
4.1.3 Direct and Indirect Effects on the Economic Environment	44
4.1.4 Direct and Indirect Effects on the Social Environment	51
4.1.5 Direct and Indirect Effects on the Administrative Environment	52
4.2 Cumulative Effects Analysis	53
Chapter 5. Regulatory Impact Review	58
5.1 Introduction	58
5.2 Problems and Objectives	58

5.3 Methodology and Framework for Analysis	58
5.4 Description of the Fishery.....	58
5.5 Effects on Management Measures	58
5.6 Public and Private Costs of Regulations.....	58
5.7 Determination of Significant Regulatory Action.....	58
Chapter 6. Regulatory Flexibility ACT Analysis	59
6.1 Introduction.....	59
6.2 Statement of the need for, objective of, and legal basis for the rule.....	59
6.3 Description and estimate of the number of small entities to which the proposed action would apply	59
6.4 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records	59
6.5 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule	59
6.6 Significance of economic impacts on a substantial number of small entities.....	59
6.7 Description of the significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities	59
Chapter 7. List of Preparers and Agencies and Persons Consulted	60
Chapter 8. References	61
Appendix A. Other Applicable Law	71
Appendix B. Summaries of Public Comments Received	74

LIST OF TABLES

Table 1.1.1. Red snapper recreational landings vs. allocation	10
Table 2.1a. Percent change in non-HB Collaborative red snapper landings and the corresponding percent change in season length. Assumes no high-grading occurs.	18
Table 2.1b. Percent change in non-HB Collaborative red snapper landings and the corresponding percent change in season length. Assumes average weight of red snapper would be 1 lb greater than the 2014 average weight of 6.90 lbs due to high-grading.	18
Table 3.2.1. Species of the reef fish FMP grouped by family.....	24
Table 3.3.1. Number of red snapper recreational target trips, by mode, 2011-2014*	29
Table 3.3.2. Number of red snapper recreational catch trips, by mode, 2011-2014*	29
Table 3.3.3. Headboat angler days and percent distribution, by state, 2011 – 2013 (2014 unavailable). FLW = Florida from the Dry Tortugas through the Florida Middle Grounds, FL-AL = northwest Florida and Alabama, MS = Mississippi, LA = Louisiana, TX = Texas from Sabine Pass-Freeport south to Port Isabel.....	30
Table 3.3.4. Headboat angler days and percent distribution, by month, 2011 – 2013 (2014 unavailable).....	31
Table 3.3.5. Summary of red snapper target trips (2011-2014 average) and associated business activity (2013 dollars). Output and value added impacts are not additive.....	33

LIST OF FIGURES

Figure 3.1.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (http://accession.nodc.noaa.gov/0072888)	20
Figure 3.3.1. Fishery closure at the height of the Deepwater Horizon MC252 oil spill. Error! Bookmark not defined.	31
Figure 3.4.1.1. Recreational fishing engagement and reliance for selected Florida communities	36
Figure 3.4.1.2. Recreational fishing engagement and reliance for selected communities outside of Florida	37
Figure 3.4.2.1. Social vulnerability indices for selected Florida communities. Source: SERO Social Indicators Database	38
Figure 3.4.2.2. Social vulnerability indices for selected communities outside of Florida	39
Figure 4.1.2.1. Average number of red snapper per angler per trip	Error! Bookmark not defined.

CHAPTER 1. INTRODUCTION

1.1 Background

Recreational red snapper harvest in the Gulf of Mexico (Gulf) has been managed using bag limits since 1990. The initial bag limit was seven fish. It was reduced to five fish in 1995, four fish in 1998, and two fish in 2007 (Table 1.1.1)

Gulf of Mexico Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 17 voting members, 11 of whom are appointed by the Secretary of Commerce, the National Marine Fisheries Service Regional Administrator, and 1 representative from each of the 5 Gulf states marine resource agencies
- Responsible for developing fishery management plans and amendments, and for recommending actions to National Marine Fisheries Service for implementation

National Marine Fisheries Service

- Responsible for conservation and management of fish stocks
- Responsible for compliance with federal, state, and local laws
- Approves, disapproves, or partially approves Council recommendations
- Implements regulations

The Sustainable Fisheries Act of 1996 added a provision to the Magnuson-Stevens Fishery Conservation and Management Act that specifically addressed catch limits for Gulf of Mexico red snapper. This provision requires separate quotas for recreational fishing (which includes charter fishing) and commercial fishing that, when reached, result in a prohibition on the retention of fish caught during recreational fishing and commercial fishing, respectively, for the remainder of the fishing year. The recreational quota was first implemented in 1997. Initially, the recreational season opened on January 1, and NMFS determined a closing date during the season based on reported landings from the first two or three waves of landings reported in the Marine Recreational Fishery Statistics Survey plus projected landings for the remainder of the fishing year. This resulted in the first red snapper recreational closed season. The recreational season closed on November 27, 1997 resulting in a 330 day season. In subsequent years, the recreational season closed on October 1, 1998 and August 29, 1999.

The practice of announcing season closure dates during the season created disruptions in the recreational fishing industry as charter vessels would have to cancel trips reserved months in advance. Consequently, beginning in 2000, a fixed recreational season was adopted from April 21 through October 31 of each year. This 194 day season was projected to be the number of

days needed to fill the 4.47 million pound (mp) whole weight (WW) recreational quota that was in effect at the time. This season remained in effect from 2000 through 2007, during which there were seven years with harvests over the quota and two years with harvest less than the quota (Table 1.1.1). In 2007, quota reductions were implemented as part of a new red snapper rebuilding plan. With subsequent annual adjustments to the quota, in 2008 NMFS began to project the season length each year prior to the start of the season, with an opening date of June 1 and a closing date determined by the projections. This resulted in progressively shorter seasons, which prompted some state agencies to adopt extended and inconsistent recreational seasons in state waters. Consequently, catches continued to exceed the quota in most years (Table 1.1.1). Since the quota is based on total catch regardless of where the fish are caught, the state actions resulted in even shorter seasons in federal waters, culminating to date in a nine day federal season in 2014.

A management measure adopted in 2009 as part of Amendment 30B required that federally permitted reef fish vessels abide by federal regulations when in state waters if the federal regulations were more restrictive than state regulations. Because of this measure, federally permitted charter vessels and headboats are unable to participate in the extended state seasons. In October 2014, the Council approved a sector separation plan through Amendment 40, which has been submitted to NMFS and is currently under review. Amendment 40 would establish separate quotas for the federally permitted charter vessels and headboats, and the private anglers. Amendment 40 is intended to stabilize the federal for-hire component's participation in the sector, and provide a basis for flexible management that can be tailored to the needs of each component, thereby reducing the likelihood for recreational quota overruns which could negatively impact the rebuilding of the red snapper stock.

Representatives of the charter vessel and headboat industry asked the Council at the October 2014 meeting to consider a reduction in the for-hire bag limit from two red snapper to one red snapper. This change would allow the for-hire industry to have an extended red snapper season while allowing their customers to experience catching a red snapper along with other species. During the meeting of the Council's Ad Hoc Red Snapper Charter-for-Hire Advisory Panel (AP) held December 2-3, 2014, the AP endorsed a one fish bag limit for the for-hire sector. The AP also requested a split season with a only a portion of the for-hire sector allocation (e.g., two thirds of the allocation) released for the June 1 opening, and any remaining allocation to be allowed in a fall opening once the June catches were reported. This would help to assure that the charter-for-hire sector does not exceed their allocation in June, and would possibly allow a supplemental for-hire season in the fall. Both the bag limit reduction and the split season would apply only to the for-hire component. However, under section 407(d) of the Magnuson-Stevens Act, the red snapper recreational quota includes both private and for-hire fishing. When the total recreational landing from private and for-hire fishing combine reach, or are projected to reach, the quota, both components of the recreational sector will be closed to red snapper fishing for the remainder of the fishing year, even if one of the components still has unused allocation remaining.

Table 1.1.1. Gulf red snapper recreational landings vs. allocation/quota and days open, bag limit, and minimum size limits 1986-2014. Landings are in mp ww. Minimum size limits are in inches total length. Recreational allocations began in 1991, and became quotas in 1997. Values highlighted in red are those where landings exceeded the quotas.

Year	Allocation/ Quota	Actual landings	Difference	% over or under	Days open	Bag limit	Minimum size limit
1986	na	3.491	na		365	none	13
1987	na	2.090	na		365	none	13
1988	na	3.139	na		365	none	13
1989	na	2.940	na		365	none	13
1990	na	1.625	na		365	7	13
1991	1.96	2.917	+0.957	+49%	365	7	13
1992	1.96	4.618	+2.658	+136%	365	7	13
1993	2.94	7.161	+4.221	+144%	365	7	13
1994	2.94	6.076	+3.136	+107%	365	7	14
1995	2.94	5.464	+2.524	+86%	365	5	15
1996	4.47	5.339	+0.869	+19%	365	5	15
1997	4.47	6.804	+2.334	+52%	330	5	15
1998	4.47	4.854	+0.384	+9%	272	4	15
1999	4.47	4.972	+0.502	+11%	240	4	15
2000	4.47	4.750	+0.280	+6%	194	4	16
2001	4.47	5.252	+0.782	+17%	194	4	16
2002	4.47	6.535	+2.065	+46%	194	4	16
2003	4.47	6.105	+1.635	+37%	194	4	16
2004	4.47	6.460	+1.990	+45%	194	4	16
2005	4.47	4.676	+0.206	+5%	194	4	16
2006	4.47	4.131	-0.339	-8%	194	4	16
2007	3.185	5.809	+2.624	+82%	194	2	16
2008	2.45	4.056	+1.606	+66%	65	2	16
2009	2.45	5.597	+3.147	+128%	75	2	16
2010	3.403	2.651	-0.752	-22%	53 + 24 = 77	2	16
2011	3.866	6.734	+2.868	+74%	48	2	16
2012	3.959	7.524	+3.565	+90%	46	2	16
2013	5.390	9.639	+4.249	+79%	42	2	16
2014	5.390 4.312 ACT	tba			9	2	16

Sources: Southeast Fisheries Science Center including calibrated landings from the Marine Recreational Information Program, Texas Parks and Wildlife Department, and the Southeast Headboat Survey (May 2013).

1.2 Purpose and Need

The purpose of this action is to extend the Gulf of Mexico red snapper recreational fishing season for federally permitted charter vessels and headboats by adjusting the red snapper for-hire recreational bag limit. The need for this action is to provide more recreational fishing opportunities to anglers as well as flexibility to for-hire fishing businesses in their operations, while continuing to prevent overfishing and achieve optimum yield in the reef fish fishery.

1.3 History of Management

This history of management only covers events pertinent to red snapper fishing in the Gulf. A summary of red snapper management through 2006 can be found in Amendment 27/14 (GMFMC 2007) and in Hood et al. (2007), and is incorporated herein by reference. This section focuses on management actions since 2007 with a review of changes in red snapper bag limits. Information on management of the reef fish fishery as a whole can be obtained by contacting the Council.

Amendment 26 (with SEIS, RIR, and IRFA), effective on January 1, 2007, established an individual fishing quota program for the commercial red snapper fishery. Quota shares are freely transferable to other reef fish permit holders during the first five years following implementation and to anyone thereafter.

An interim rule, published on April 2, 2007, reduced the red snapper total allowable catch to 6.5 mp, resulting in a commercial quota of 3.315 mp and a recreational quota of 3.185 mp; reduced the red snapper recreational bag limit from four fish to two fish per person per day; prohibited the captain and crew of for-hire vessels from retaining the recreational bag limit; reduced the commercial minimum size limit from 15-inches to 13-inches total length; and established a target red snapper bycatch mortality reduction goal for the shrimp fishery that equates to 50% of the bycatch mortality that occurred during 2001-2003 and a level of shrimp effort equal to that observed in the fishery in 2005.

Joint Reef Fish FMP Amendment 27/Shrimp FMP Amendment 14, (with EIS, RIR, and IRFA) was implemented February 28, 2008, except for reef fish bycatch reduction measures that became effective on June 1, 2008. This amendment addressed overfishing and stock rebuilding for red snapper. The amendment reduced total allowable catch to 5.0 mp (2.55 mp and 2.45 mp commercial recreational quotas respectively). For the recreational sector, the rule implemented a June 1 through September 30 fishing season in conjunction with a 2.45 mp recreational quota, 16-inch minimum size limit, two fish bag limit, and zero bag limit for captain and crew of for-hire vessels. The implementing regulations for this amendment created the June 1 through September 30 season by establishing fixed closed seasons of January 1 through May 31 and October 1 through December 31. The amendment also required the use of non-stainless steel circle hooks when using natural baits to fish for Gulf reef fish effective June 1, 2008, and required the use of venting tools and dehooking devices when participating in the commercial or recreational reef fish fisheries effective June 1, 2008. In addition, the amendment established a 74% reduction in shrimp effort compared to average effort levels of 2001-2003, and possible closed areas should this target not be met. This action replaced the dependence on bycatch reduction devices by the shrimp fishery to reduce red snapper bycatch.

The Sustainable Fisheries Act required that the Regional Administrator close the recreational red snapper season when the quota is projected to be met. When Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007) was submitted to NMFS, the Council requested that the five Gulf states adopt compatible regulations in state waters. Florida adopted a compatible two fish bag limit, but maintained its state red snapper fishing season of April 15 through October 31, 78 days longer than the federal fishing season. Texas also maintained its four fish bag limit and

year-round fishing season in its state waters. Prior to the start of the 2008 season, NMFS recalculated its projections for recreational red snapper catches in light of the state regulations, and projected that there would be a 75% probability that the recreational quota would not be exceeded if the season closed on August 5. As a result, NMFS took action to set the 2008 season to be June 1 to August 5.

Amendment 30B (with EIS, RIR, and IRFA) was implemented May 2009. While this amendment was primarily directed toward management of gag and red grouper, it included a management action which required that all vessels with federal commercial or charter reef fish permits must comply with the more restrictive of state or federal reef fish regulations when fishing in state waters

A February 2010 regulatory amendment (GMFMC 2010a) increased the red snapper total allowable catch from 5.0 mp to 6.945 mp, which increased the recreational quota from 2.45 mp to 3.403 mp. However, NMFS estimated that in 2009, the recreational sector overharvested its quota by approximately 75%. In recalculating the number of days needed to fill the recreational quota, even with the quota increase, NMFS projected that the 2010 season would need to be shortened to June 1 through July 24, and published notice of those dates prior to the start of the recreational fishing season.

In April 2010, the Deepwater Horizon MC252 deep-sea drilling rig exploded and sank off the coast of Louisiana. Because of the resulting oil spill, approximately one-third of the Gulf was closed to fishing for much of the summer months. The direct loss of fishing opportunities due to the closure, plus the reduction in tourism throughout the coastal Gulf, resulted in a much lower catch than had been projected. After the recreational season closed on July 24, NMFS estimated that 2.3 mp of the 3.4 mp recreational quota remained unharvested (NMFS 2010a). However, due to the fixed October 1 to December 31 closed season, NMFS could not reopen the recreational season without an emergency rule to suspend the closure. Consequently, the Council requested an emergency rule to provide the Regional Administrator with the authority to reopen the recreational red snapper season. After considering various reopening scenarios, the Council requested that the season be reopened for eight consecutive weekends (Friday, Saturday and Sunday) from October 1 through November 21 (24 fishing days).

In January 2011, the Council submitted a regulatory amendment (GMFMC 2011a) to NMFS to increase the red snapper total allowable catch to 7.185 mp, with a 3.521 mp recreational quota and a 3.664 mp commercial quota. The final rule implemented the increase and established a 48-day recreational red snapper season that was June 1 through July 18.

On August 12, 2011, NMFS published an emergency rule that, in part, increased the recreational red snapper quota by 345,000 pounds for the 2011 fishing year and provided the agency with the authority to reopen the recreational red snapper season later in the year, if the recreational quota had not been filled by the July 19 closing date. However, in August of that year, based on headboat data plus charterboat and private recreational landings through June, NMFS calculated that 80% of the recreational quota had been caught. With the addition of July landings data plus Texas survey data, NMFS estimated that 4.4 to 4.8 mp were caught, well above the 3.865 mp quota. Thus, no unused quota was available to reopen the recreational fishing season.

A March 2012 regulatory amendment (GMFMC 2012) set the 2012 quotas for commercial and recreational red snapper harvest at 4.121 mp and 3.959 mp respectively based on a recent population assessment which showed that overfishing has ended. The regulatory amendment also eliminated the fixed recreational red snapper closed season of October 1 - December 31. By eliminating the closure date, NMFS can re-open the recreational harvest for red snapper if any remaining quota is available, without the delay of additional rulemaking. On May 30, 2012, NMFS published a final rule to increase the commercial and recreational quotas and establish the 2012 recreational red snapper fishing as June 1 through July 11. However, the north-central Gulf experienced extended severe weather during the first 26 days of the 2012 recreational red snapper fishing season, including Tropical Storm Debby. Due to the severe tropical weather, the season was extended by six days and closed on July 17.

On March 25, 2013, an emergency rule [78 FR 17882] was published in the Federal Register giving NMFS the authority to set separate closure dates for the recreational red snapper season in federal waters off individual Gulf of Mexico states. The closure dates would depend on whether state regulations were consistent with federal regulations for the recreational red snapper season length or bag limit.

A March 2013 framework action¹ (GMFMC 2013a) modified the 2013 commercial and recreational red snapper quotas to 4.315 mp and 4.145 mp respectively. Based on the emergency rule to allow separate closure dates, NMFS announced that the recreational red snapper season in federal water would open on June 1. Off Mississippi and Alabama, which had consistent state regulations, the season would be 34 days and close on July 5. The other Gulf states had inconsistent state regulations, and the seasons were announced as follows. Off Texas, the season would be 17 days and close on June 18. Off Louisiana, the season would be 24 days and close on June 25. Off Florida, the season would be 26 days and close on June 27.

Texas and Louisiana filed a legal challenge to the separate closure dates, and on May 31, 2013, the U.S. District Court in Brownsville, Texas, set aside the emergency rule. As a result of this Court decision, the federal recreational red snapper season was changed to make it the same in federal waters off all five Gulf states. Considering the catches expected later in the year during the extended state-water seasons off Texas, Louisiana, and Florida, NMFS established a Gulf-wide federal recreational red snapper season at 28 days long, opening on June 1 and closing to recreational red snapper harvest at 12:01 a.m., June 29, 2013.

A July 2013 framework action (GMFMC 2013b) increased the 2013 recreational quota from 4.145 mp to 5.39 mp and the commercial quota from 4.315 mp to 5.61 mp. The increase in commercial quota was distributed to individual fishing quota shareholders on or shortly after October 1. The increase in the recreational quota was implemented by re-opening federal waters to red snapper recreational fishing for 14 days beginning on October 1, 2013, at 12:01 a.m. and closing on October 15, 2013, at 12:01 a.m.

¹ Prior to 2013, regulatory actions made under the Reef Fish framework procedure for setting total allowable catch, or the generic framework procedure in the Generic Annual Catch Limits/Accountability Measures Amendment, were referred to as either framework actions or regulatory amendments. Beginning in 2013, such actions were referred to only as framework actions.

On March 26, 2014, in response to a legal challenge from commercial fishermen, the U.S. District Court for the District of Columbia ruled that NMFS failed to require adequate accountability measures for the recreational sector, failed to prohibit the retention of fish after the recreational quota had been harvested, and failed to use the best scientific information available when determining whether there should be a 2013 fall fishing season. In response to the Court's decision and to reduce the probability of the recreational sector exceeding its quota, the Council requested, through an emergency rule, that NMFS implement an annual catch target (ACT) that would be used to set the season length that was 20% less than the 2014 recreational quota. The emergency rule, published on May 15, 2014 [79 FR 27768], resulted in a recreational ACT of 4.312 million pounds whole weight and, after taking into consideration inconsistent state regulations, a 9-day federal recreational red snapper season, opening at 12:01 a.m., June 1, and closing at 12:01 a.m., on June 10.

An October 2014 framework action (GMFMC 2014a) proposes to establish a permanent recreational red snapper ACT that is 20% less than the recreational quota. The framework action also proposes to establish a recreational quota overage adjustment where, while red snapper is under a rebuilding program, if the recreational red snapper quota is exceeded, the overage would be deducted from the recreational red snapper quota in the following season unless the best scientific information available determines that a greater, lesser, or no overage adjustment is necessary. The ACT would also be adjusted to maintain the established percent buffer. A proposed rule to implement this framework action was published on November 21, 2014 [79 FR 69418].

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 – Red Snapper Bag Limit for Charter Vessels and Headboats

Alternative 1: No Action. The red snapper bag limit for charter vessels and headboats remains at two fish per person per day.

Alternative 2: Set the red snapper bag limit for charter vessels and headboats at one fish per person per day.

Alternative 3: Set the red snapper bag limit for charter vessels and headboats at one fish for every two anglers.

Note: Implementation of this action is contingent upon implementation of the sector separation provision in Amendment 40. If sector separation terminates, then the bag limit adopted in this action will also end. The red snapper bag limit for charter-for-hire vessels will be the same as for private vessels, unless modified in a subsequent regulatory action.

Discussion:

The alternatives in this action consider reducing the red snapper bag limit for anglers fishing from federally permitted for-hire vessels (charter vessels and headboats) as a way to extend the fishing season for that component of the recreational red snapper sector. The red snapper bag limit for the private angler component of the recreational sector is not affected by the action in this amendment and would remain at two fish per person per day. The pending establishment of for-hire vessels (charter vessels and headboats) and private recreational boats as separate components of the recreational red snapper sector allows the flexibility to establish regulations specific to each component that may result in seasons of different lengths.

Alternative 1 leaves the for-hire red snapper bag limit at two fish, the same bag limit as the private recreational component. Fifty-seven percent of headboat anglers, 65% of west Florida through Mississippi charter anglers, and 95% of Louisiana charter anglers landed the two fish bag limit in 2014. Seventy-four percent of Texas charter anglers landed the two fish bag limit in 2013. The lengths of the recreational red snapper seasons are projected by NMFS in advance of the season based on past fishing patterns and projected changes in the abundance and average size of red snapper caught by recreational anglers. This alternative provides the shortest for-hire

season, but allows anglers on for-hire vessels to catch the same bag limit as fishermen on private recreational vessels.

Alternative 2 reduces the red snapper bag limit on for-hire vessels to one fish. Eighty percent of headboat anglers, 83% of west Florida through Mississippi charter anglers, and 100% of Louisiana charter anglers landed the two fish bag limit in 2014. One hundred percent of Texas charter anglers landed the two fish bag limit in 2013. For qualified for-hire vessels on trips lasting more than 24 hours, a double bag limit, or two fish, would be allowed. With a reduced bag limit, the catch rate would be reduced, and the number of days needed to catch the for-hire quota would be greater than under **Alternative 1**. This alternative is projected to increase the season length for the for-hire component of the recreational sector by as much as 63% assuming no high-grading occurs (Table 2.1a) or by 42% if the average weight of a retained red snapper increases by an average of one pound due to high-grading (Table 2.1b). Anglers on for-hire vessels typically catch a variety of species in addition to red snapper, including other snapper species, groupers, and triggerfish. Thus vessel operators can still provide a multi-species fishing trip that includes red snapper. However, with only a one fish red snapper limit, there could be an increased incentive to high-grade (discard a smaller fish in order to retain a larger fish).

Alternative 3 would limit red snapper harvest on a for-hire vessel to 1 fish for every two passengers. This alternative is projected to increase the season length for the for-hire component of the recreational sector by 160% assuming no high-grading occurs (Table 2.1a) or by 127% if the average weight of a retained red snapper increases by an average of one pound due to high-grading (Table 2.1b). This fractional bag limit approach was considered but rejected for greater amberjack in Amendment 30A (GMFMC 2008). At that time, public hearing and Reef Fish AP comments indicated fractional bag limits were not an acceptable way to manage the recreational fishery, and impossible to enforce. It is included in this action because it is a reasonable alternative to achieve a longer fishing season. This alternative would allow the longest for-hire red snapper season, but would require that some passengers be allowed to retain a red snapper while prohibiting others from retaining any bag limit, which would be particularly problematic for anglers fishing on headboats.

Table 2.1a. Percent change in for-hire red snapper landings (excluding HB Collaborative vessels) and the corresponding percent change in season length. Assumes no high-grading occurs.

Bag Limit	Percent Change in non-HB Collab landings	% Change in Charter + Non-HBC Collab Season Length
2	0%	0%
1.5	-18%	22%
1	-39%	63%
0.5	-61%	160%

Source: NMFS Southeast Regional Office, December 15, 2014. Analytical methods are described in SERO-LAPP-2012-11. Data inputs included preliminary 2014 Headboat, MRIP, and LA Creel data, and 2013 TPWD catch-effort data.

Table 2.1b. Percent change in for-hire red snapper landings (excluding HB Collaborative vessels) and the corresponding percent change in season length. Assumes average weight of red snapper would be 1 lb greater than the 2014 average weight of 6.90 lbs due to high-grading.

Bag Limit	Percent Change in non-HB Collab landings	% Change in Charter + Non-HBC Collab Season Length
2	0%	0%
1.5	-6%	6%
1	-30%	42%
0.5	-56%	127%

Source: NMFS Southeast Regional Office, December 15, 2014. Analytical methods are described in SERO-LAPP-2012-11. Data inputs included preliminary 2014 Headboat, MRIP, and LA Creel data, and 2013 TPWD catch-effort data

Because an individual cannot land half of a fish, at least 2 anglers would be required on a vessel to land 1 red snapper (Table 2.2).

Table 2.2. Number of landed red snapper allowed if **Alternative 3** is selected, based on the number of anglers aboard a vessel.

Number of anglers	Number of red snapper allowed
1	0
2-3	1
4-5	2
6-7	3

CHAPTER 3. AFFECTED ENVIRONMENT

The affected environment as it pertains to the red snapper component of the Gulf of Mexico (Gulf) reef fish fishery has been described in detail in the following documents: Generic Essential Fish Habitat Amendment (GMFMC 2004a), February 2010 Regulatory Amendment (GMFMC 2010a), January 2011 Regulatory Amendment (GMFMC 2011a), Generic Annual Catch Limit/Accountability Measures Amendment (GMFMC 2011b), and March 2013 Framework Action (GMFMC 2013a). This information is incorporated by reference and is summarized below.

3.1 Description of the Physical Environment

The Gulf of Mexico (Gulf) has a total area of approximately 600,000 square miles (1.5 million km²), including state waters (Gore 1992). It is a semi-enclosed, oceanic basin connected to the Atlantic Ocean by the Straits of Florida and to the Caribbean Sea by the Yucatan Channel (Figure 3.1.1). Oceanographic conditions are affected by the Loop Current, discharge of freshwater into the northern Gulf, and a semi-permanent, anti-cyclonic gyre in the western Gulf. The Gulf includes both temperate and tropical waters (McEachran and Fechhelm 2005). Gulf water temperatures range from 54° F to 84° F (12° C to 29° C) depending on time of year and depth of water. Mean annual sea surface temperatures ranged from 73 ° F through 83° F (23-28° C) including bays and bayous (Figure 3.1.1) between 1982 and 2009, according to satellite-derived measurements (NODC 2012: <http://accession.nodc.noaa.gov/0072888>). In general, mean sea surface temperature increases from north to south with large seasonal variations in shallow waters.

There are several marine reserves, habitat areas of particular concern, and restricted fishing gear areas in the Gulf. These are detailed in GMFMC (2005). The Bureau of Ocean Energy Management lists historic shipwrecks that occur in the Gulf. Most of these sites are in state or deep (>1,000 feet or 328 meters) waters. There is one site located in federal waters in less than 100 feet (30 meters) that could be affected by reef fish fishing. This is the *U.S.S. Hatteras* located approximately 20 miles (12 kilometers) off Galveston, Texas.

In the Gulf, fish habitat for adult red snapper consists of submarine gullies and depressions, coral reefs, rock outcroppings, gravel bottoms, oilrigs, and other artificial structures (GMFMC 2004a); eggs and larvae are pelagic; and juveniles are found associated with bottom inter-shelf habitat (Szedlmayer and Conti 1998) and prefer shell habitat over sand (Szedlmayer and Howe 1997). Adult red snapper are closely associated with artificial structures in the northern Gulf (Szedlmayer and Shipp 1994; Shipp and Bortone 2009) and larger individuals have been found to use artificial habitats, but move further from the structure as they increase in size and based on the time of day (Topping and Szedlmayer 2011). Detailed information pertaining to the closures and preserves is provided in the February 2010 Regulatory Amendment (GMFMC 2010a) and is incorporated here by reference.

There are environmental sites of special interest that are discussed in the Generic EFH Amendment (GMFMC 2004a) that are relevant to red snapper management. These include the longline/buoy area closure, the Edges Marine Reserve, Tortugas North and South Marine

Reserves, individual reef areas and bank habitat areas of particular concern (HAPCs) of the northwestern Gulf the Florida Middle Grounds HAPC, the Pulley Ridge HAPC, and Alabama Special Management Zone. These areas are managed with gear restrictions to protect habitat and specific reef fish species. These restrictions are detailed in the Generic EFH Amendment (GMFMC 2004a).

The Deepwater Horizon MC252 oil spill in 2010 affected at least one-third of the Gulf area from western Louisiana east to the Florida Panhandle and south to the Campeche Bank in Mexico. The impacts of the Deepwater Horizon MC252 oil spill on the physical environment are expected to be significant and may be long-term. Oil was dispersed on the surface, and because of the heavy use of dispersants (both at the surface and at the wellhead), oil was also documented as being suspended within the water column, some even deeper than the location of the broken well head. Floating and suspended oil washed onto shore in several areas of the Gulf as did non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are persistent in the environment and can be transported hundreds of miles. A discussion of the additional impacts to the physical, biological, economic, social, and administrative environments affected by the oil spill is contained in the January 2011 Regulatory Amendment (GMFMC 2011a) and is incorporated here by reference. For more information on physical impacts of the Deepwater Horizon MC252 oil spill, see http://sero.nmfs.noaa.gov/deepwater_horizon_oil_spill.htm.

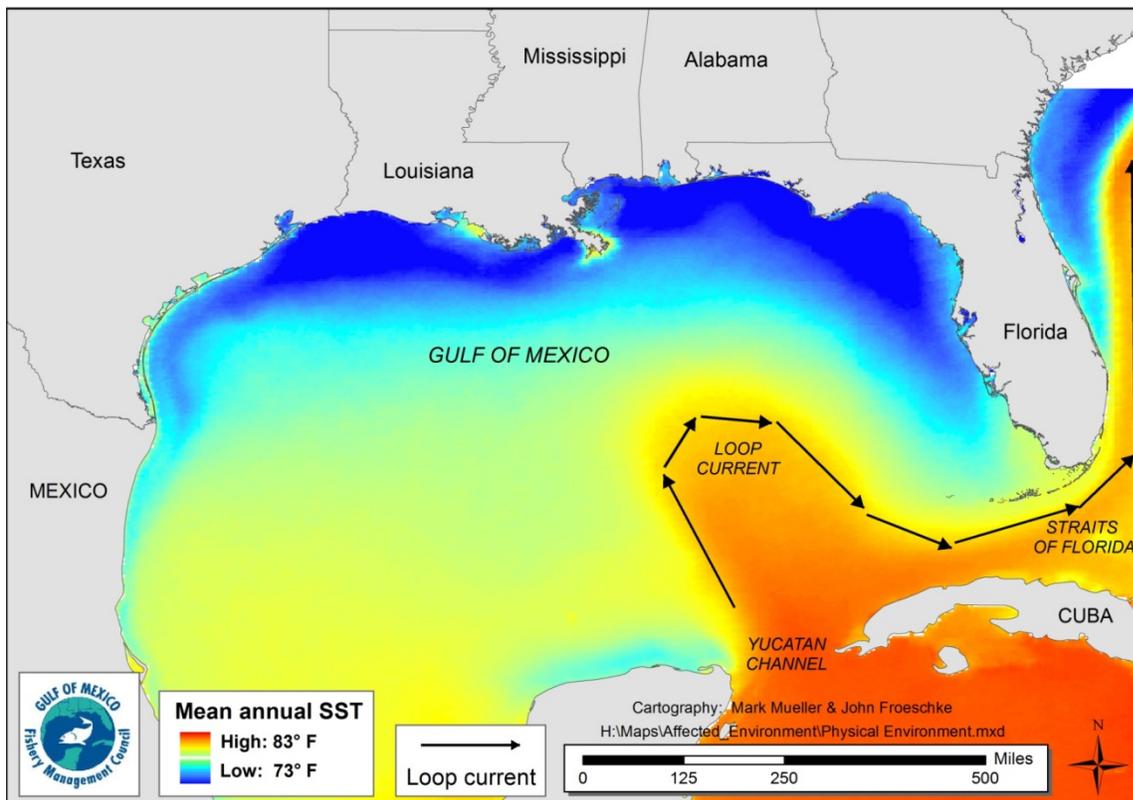


Figure 3.1.1. Physical environment of the Gulf including major feature names and mean annual sea surface temperature as derived from the Advanced Very High Resolution Radiometer Pathfinder Version 5 sea surface temperature data set (<http://accession.nodc.noaa.gov/0072888>)

3.2 Description of the Biological/Ecological Environment

The biological environment of the Gulf, including red snapper addressed in this amendment, is described in detail in the final environmental impact statement (EIS) for the Generic EFH Amendment (GMFMC 2004a), the Generic Annual Catch Limit/Accountability Measure (ACL/AM) Amendment (GMFMC 2011b), and Amendment 40 (GMFMC 2014b), and are incorporated herein by reference.

Definition of Overfishing

In January 2012, the Generic ACL/AM Amendment (GMFMC 2011b) became effective. One of the provisions in this amendment was to redefine overfishing. In years when there is a stock assessment, overfishing is defined as the fishing mortality rate exceeding the maximum fishing mortality threshold. In years when there is no stock assessment, overfishing is defined as the catch exceeding the overfishing limit (OFL). Note that, because the overfishing threshold is now re-evaluated each year instead of only in years when there is a stock assessment, this status for red snapper and other reef fish could change on a year-to-year basis.

3.2.1 Red Snapper and Reef Fish

Red Snapper Life History and Biology

Red snapper demonstrate the typical reef fish life history pattern (GMFMC 2004a). Eggs and larvae are pelagic while juveniles are demersal. Juvenile red snapper are common on mud bottoms in the northern Gulf, particularly off Texas through Alabama. Spawning occurs over firm sand bottom with little relief during the summer and fall. Adult females mature as early as 2 years and most are mature by 4 years (Schirripa and Legault 1999). Red snapper have been aged up to 57 years, but most caught by directed harvest are 2 to 4 years old (Wilson and Nieland 2001). A more complete description of red snapper life history can be found in the Generic EFH Amendment (GMFMC 2004a), Amendment 40 (GMFMC 2014b), and in the supporting documentation for SEDAR 31.

Status of the Red Snapper Stock

Southeast Data Assessment and Review (SEDAR) 31 Benchmark Stock Assessment Commercial harvest of red snapper from the Gulf began in the mid-1800s (Shipp 2001). In the 1930s, party boats built exclusively for recreational fishing began to appear (Chester 2001). The first stock assessment conducted by National Marine Fisheries Service (NMFS) in 1986 suggested that the stock was in decline (Parrack and McLellan 1986) and as early as 1988 (Goodyear 1988) the stock biomass has been found to be below threshold levels.

The most recent red snapper stock assessment was completed in 2013 (SEDAR 31 2013). The primary assessment model selected for the Gulf red snapper stock evaluation assessment was Stock Synthesis (Methot 2010). Stock Synthesis is an integrated statistical catch-at-age model which is widely used for stock assessments in the United States and throughout the world. The results of the SEDAR 31 assessment, including an assessment addendum that was prepared after a review of the SEDAR Assessment Panel Report by the SEDAR Review Panel, was presented

to the Scientific and Statistical Committee (SSC) in May 2013 (GMFMC 2013c). Under the base model, it was estimated that the red snapper stock has been overfished since the 1960s.

The red snapper stock continues to recover, but spawning stock biomass was estimated to remain below both the minimum stock size threshold and the spawning stock size associated with maximum sustainable yield proxy of a biomass level corresponding to a spawning stock biomass of 26% spawning potential ratio. Therefore, the SSC concluded that the stock remains overfished. With respect to overfishing, the definition in the Generic ACL/AM Amendment (GMFMC 2011b) specifies that overfishing is determined as exceeding the overfishing limit (OFL) in years when there is no stock assessment, and by the current fishing mortality rate estimated by the assessment exceeding the maximum fishing mortality threshold (MFMT) in years when there is an assessment. In 2012, 9.182 million pounds of red snapper were landed (GMFMC 2014a). This amount was below the OFL, indicating overfishing was not occurring. In 2013, landings increased to 14.326 mp (GMFMC 2014a), above the OFL of 13.7 mp. However, since an assessment was conducted in 2013 (SEDAR 31 2013), the overfishing determination was based on the current fishing mortality rate estimated in the assessment. The 2013 stock assessment concluded that the current fishing mortality rate was below the MFMT. Therefore, the stock remains classified as not undergoing overfishing, although it remains overfished (GMFMC 2013c). The 2014 Status of Stocks Report to Congress currently lists the red snapper stock as overfished, but not undergoing overfishing. A red snapper update assessment scheduled for 2014 is expected to re-evaluate the acceptable biological catch (ABC) for 2015 and beyond.

General Information on Reef Fish Species

The following is summarized from the January 2011 Regulatory Amendment (GMFMC 2011a). The National Ocean Service of NOAA (NOS) collaborated with the NMFS and the Gulf of Mexico Fishery Management Council (Council) to develop distributions of reef fish (and other species) in the Gulf of Mexico (SEA 1998). The NOS obtained fishery-independent data sets for the Gulf of Mexico, including the Southeast Area Monitoring and Assessment Program (SEAMAP), and state trawl surveys. Data from the Estuarine Living Marine Resources (ELMR) Program contain information on the relative abundance of specific species for a series of estuaries, by five life stages and month for five seasonal salinity zones. The NOS staff analyzed the data to determine relative abundance of the mapped species by estuary, salinity zone, and month. For some species not in the ELMR database, distribution was classified as only observed or not observed for adult, juvenile, and spawning stages.

Habitat types and life history stages can be found in more detail in GMFMC (2004). In general, reef fish are widely distributed in the Gulf of Mexico, occupying both pelagic and benthic habitats during their life cycle. In general, both eggs and larval stages are planktonic. Larvae feed on zooplankton and phytoplankton. Exceptions to these generalizations include the gray triggerfish that lay their eggs in depressions in the sandy bottom, and gray snapper whose larvae are found around submerged aquatic vegetation. Juvenile and adult reef fish are typically demersal, and are usually associated with bottom topographies on the continental shelf (<100 m) which have high relief, i.e., coral reefs, artificial reefs, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings. However, several species are

found over sand and soft-bottom substrates. Some juvenile snappers (e.g. mutton, gray, red, dog, lane, and yellowtail snappers) and groupers (e.g. goliath, red, gag, and yellowfin groupers) have been documented in inshore seagrass beds, mangrove estuaries, lagoons, and larger bay systems (GMFMC 1981). More detail on hard bottom substrate and coral can be found in the Fishery Management Plan (FMP) for Corals and Coral Reefs (GMFMC and SAFMC 1982).

Status of Reef Fish Stocks

The FMP for the Reef Fish Resources for the Gulf of Mexico currently encompasses 31 species (Table 3.2.1). Eleven other species were removed from the FMP in 2012 by the Council in their Generic ACL/AM Amendment (GMFMC 2011b). Stock assessments and stock assessment reviews can be found on the Council (www.gulfcouncil.org) and SEDAR (www.sefsc.noaa.gov/sedar) websites and have been conducted for 13 species:

- red snapper (SEDAR 7 2005; SEDAR 7 Update 2009; SEDAR 31 2013)
- vermilion snapper (Porch and Cass-Calay 2001; SEDAR 9 2006a; SEDAR 9 Update 2011a)
- yellowtail snapper (Muller et al. 2003; SEDAR 3 2003; O’Hop et al. 2012)
- mutton snapper (SEDAR 15A 2008)
- gray triggerfish (Valle et al. 2001; SEDAR 9 2006b; SEDAR 9 Update 2011b)
- greater amberjack (Turner et al. 2000; SEDAR 9 2006c; SEDAR 9 Update 2010; SEDAR 33 2014a)
- hogfish (Ault et al. 2003; SEDAR 6 2004b)
- red grouper (NMFS 2002; SEDAR 12 2007; SEDAR 12 Update 2009)
- gag grouper (Turner et al. 2001; SEDAR 10 2006; SEDAR 10 Update 2009; SEDAR 33 2014b)
- black grouper (SEDAR 19 2010)
- yellowedge grouper (Cass-Calay and Bahnick 2002; SEDAR 22 2011b)
- tilefish (golden) (SEDAR 22 2011a)
- goliath grouper (Porch et al. 2003; SEDAR 6 2004a; SEDAR 23 2011)

The NMFS Office of Sustainable Fisheries updates its Status of U.S. Fisheries Report to Congress on a quarterly basis utilizing the most current stock assessment information. The most recent update can be found at: (<http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>). The status of both assessed and unassessed stocks is shown in Table 3.2.1.

Table 3.2.1. Species of the reef fish FMP grouped by family.

Common Name	Scientific Name	Stock Status
Family Balistidae – Triggerfishes		
gray triggerfish	<i>Balistes capriscus</i>	Overfished, overfishing
Family Carangidae – Jacks		
greater amberjack	<i>Seriola dumerili</i>	Overfished, overfishing
lesser amberjack	<i>Seriola fasciata</i>	Unknown
almaco jack	<i>Seriola rivoliana</i>	Unknown
banded rudderfish	<i>Seriola zonata</i>	Unknown
Family Labridae - Wrasses		
hogfish	<i>Lachnolaimus maximus</i>	Overfished status unknown, overfishing
Family Malacanthidae - Tilefishes		
tilefish (golden)	<i>Lopholatilus chamaeleonticeps</i>	Not overfished, no overfishing
blueline tilefish	<i>Caulolatilus microps</i>	Unknown
goldface tilefish	<i>Caulolatilus chrysops</i>	Unknown
Family Serranidae - Groupers		
gag	<i>Mycteroperca microlepis</i>	Rebuilt, no overfishing
red grouper	<i>Epinephelus morio</i>	Not overfished, no overfishing
scamp	<i>Mycteroperca phenax</i>	Unknown
black grouper	<i>Mycteroperca bonaci</i>	Not overfished, no overfishing
yellowedge grouper	<i>Hyporthodus flavolimbatus*</i>	Not overfished, no overfishing
snowy grouper	<i>Hyporthodus niveatus*</i>	Unknown
speckled hind	<i>Epinephelus drummondhayi</i>	Unknown
yellowmouth grouper	<i>Mycteroperca interstitialis</i>	Unknown
yellowfin grouper	<i>Mycteroperca venenosa</i>	Unknown
warsaw grouper	<i>Hyporthodus nigritus*</i>	Unknown
**Atlantic goliath grouper	<i>Epinephelus itajara</i>	Unknown
Family Lutjanidae - Snappers		
queen snapper	<i>Etelis oculatus</i>	Unknown
mutton snapper	<i>Lutjanus analis</i>	Not overfished, no overfishing
blackfin snapper	<i>Lutjanus buccanella</i>	Unknown
red snapper	<i>Lutjanus campechanus</i>	Overfished, no overfishing
cubera snapper	<i>Lutjanus cyanopterus</i>	Unknown
gray snapper	<i>Lutjanus griseus</i>	Unknown
lane snapper	<i>Lutjanus synagris</i>	Unknown
silk snapper	<i>Lutjanus vivanus</i>	Unknown
yellowtail snapper	<i>Ocyurus chrysurus</i>	Not overfished, no overfishing
vermillion snapper	<i>Rhomboplites aurorubens</i>	Not overfished, no overfishing
wenchman	<i>Pristipomoides aquilonaris</i>	Unknown

Notes: * In 2013 the genus for yellowedge grouper, snowy grouper, and warsaw grouper was changed by the American Fisheries Society from *Epinephelus* to *Hyporthodus* (Page et al. 2013).

**Atlantic goliath grouper is a protected grouper and benchmarks do not reflect appropriate stock dynamics. In 2013 the common name was changed from goliath grouper to Atlantic

goliath grouper by the American Fisheries Society to differentiate from the Pacific goliath grouper, a newly named species (Page et al. 2013).

Description of the Fishery

The reef fish fishery of the Gulf is divided into two broad categories, recreational fishing and commercial fishing. Recreational fishing includes fishing from charter vessels and headboats (collectively referred to as for-hire vessels) as well as from private vessels and from shore. No federal permit is needed for private vessels to fish for reef fish in the exclusive economic zone (EEZ), but persons fishing onboard private vessels do need a state recreational saltwater fishing license to land their catch. For-hire vessels fishing for reef fish and other federally managed species are required to have a federal reef fish charter/headboat permit, and as a condition of the permit, must agree to abide by federal fishing regulations whether in federal or state waters. Reef fish caught under recreational bag limits are not allowed to be sold. A commercial reef fish permit is required in order to harvest commercial quantities and sell reef fish. In addition, commercial harvest of red snapper, shallow-water grouper, deep-water grouper, and tilefish is managed under an individual fishing quota (IFQ) system, which requires that vessels have individual allocations of the quotas for those stocks to harvest and sell the catch. Both charter/headboat and commercial reef fish permits are under a moratorium, but the permits are transferable. IFQ shares and allocations are also transferable.

A detailed description of the fishing gears and methods used in the reef fish fishery is provided in Amendment 1 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) (GMFMC 1989). The gears described included handline and bandit fishing, fish traps, longlines, buoy fishing, and shrimp bycatch of red snapper. Spearfishing is also used as a method of taking grouper by both the commercial and recreational sectors, but to a lesser extent than hook and line methods. In 1999, the NMFS published a list of authorized fisheries and fishing gear used in those fisheries [FR 64 67511]. For the Gulf reef fish fishery, the following gears were listed as authorized:

Commercial: Longline, handline, bandit gear, rod and reel, buoy gear, pot, trap, spear, powerhead, cast net, trawl (reef fish caught in a trawl are limited to recreational bag limits and cannot be sold). In February 2007 the use of fish traps (including pots) was phased out in the Gulf EEZ.

Recreational: Spear, powerhead, bandit gear, handline, rod and reel, cast net.

Protected Species

There are 40 species protected by federal law that may occur in the Gulf. Thirty-nine of these are under the jurisdiction of NMFS, while the West Indian manatee (*Trichechus manatus*) is managed by the U.S. Fish and Wildlife Service. Of the species under NMFS's jurisdiction, 27 are marine mammals that are protected under the Marine Mammal Protection Act (MMPA). The MMPA requires that each commercial fishery be classified by the number of marine mammals they seriously injure or kill. NMFS's List of Fisheries (LOF) classifies U.S. commercial fisheries into three categories based on the number of incidental mortality or serious injury they

cause to marine mammals. More information about the LOF and the classification process can be found at: <http://www.nmfs.noaa.gov/pr/interactions/lof/>. Five of these marine mammal species are also listed as endangered under the Endangered Species Act (ESA) (sperm, sei, fin, blue, and humpback). In addition to those five marine mammals, five sea turtle species (Kemp's ridley, loggerhead, green, leatherback, and hawksbill), two fish species (Gulf sturgeon and smalltooth sawfish), and five coral species (elkhorn, staghorn, lobed star, mountainous star, and boulder star) are also protected under the ESA. Designated critical habitat for smalltooth sawfish, Gulf sturgeon, and the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles also occur within nearshore waters of the Gulf, though only loggerhead critical habitat occurs in federal waters.

NMFS has conducted specific analyses (Section 7 consultations) to evaluate potential effects from the Gulf reef fish fishery on species and critical habitats protected under the ESA. On September 30, 2011, the Protected Resources Division released a biological opinion (Opinion), which concluded that the continued operation of the Gulf reef fish fishery is not likely to jeopardize the continued existence of sea turtles (loggerhead, Kemp's ridley, green, hawksbill, and leatherback) or smalltooth sawfish (NMFS 2011a). The Opinion also concluded that other ESA-listed species are not likely to be adversely affected by the FMP. An incidental take statement was issued specifying the amount and extent of anticipated take, along with reasonable and prudent measures and associated terms and conditions deemed necessary and appropriate to minimize the impact of these takes. The Gulf of Mexico Fishery Management Council addressed further measures to reduce take in the reef fish fishery's longline component in Amendment 31 (GMFMC 2009).

Subsequent to the completion of the biological opinion, NMFS published final rules listing 20 new coral species (September 10, 2014), and designating critical habitat for the Northwest Atlantic Ocean distinct population segment of loggerhead sea turtles (July 10, 2014). NMFS addressed these changes in a series of consultation memoranda. In a consultation memorandum dated October 7, 2014, NMFS assessed the continued operation of the Gulf reef fish fishery's potential impact on the newly-listed coral species occurring in the Gulf (3 species of *Orbicella* and *Mycetophyllia ferox*) and concluded the fishery is not likely to adversely affect any of the protected coral species. Similarly, in a consultation memorandum dated September 16, 2014, NMFS assessed the continued authorization of South Atlantic and Gulf of Mexico fisheries' potential impacts on loggerhead critical habitat and concluded the Gulf reef fish fishery is not likely to adversely affect the newly designated critical habitat.

Marine Mammals

The gear used by the Gulf reef fish fishery is classified in the Marine Mammal Protection Act's 2015 proposed List of Fisheries as a Category III fishery [79 FR 14418] and is not unchanged from the 2014 list. This classification indicates the annual mortality and serious injury of a marine mammal stock resulting from any fishery is less than or equal to 1% of the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. Dolphins are the only species documented as interacting with these fisheries. Bottlenose dolphins prey upon on the bait, catch, and/or released discards of fish from the reef fish fishery.

They are also a common predator around reef fish vessels, feeding on the discards. Marine Mammal Stock Assessment Reports and additional information are available on the NMFS Office of Protected Species website: <http://www.nmfs.noaa.gov/pr/sspecies/>.

Invasive Species

Lionfish (*Pterois miles* and *P. volitans*), an invasive species from the Indo-Pacific, have been found in the Gulf (Schofield 2010). These species, first reported off North Carolina in 2002, have been expanding their range from the South Atlantic into the Gulf and Caribbean. Scientists have expressed concern about these species and their effects on hard bottom fish and crustacean communities, either through predation or competition for resources. Albins and Hixon (2008) have found that lionfish can adversely affect recruitment by native fishes to patch reefs in the Bahamas.

The Asian tiger shrimp, *Penaeus monodon*, is an invasive penaeid shrimp species native to the Indo-West Pacific, and is widely aquacultured. The following synopsis is based on Fuller et al. (2014). Tiger shrimp were first reported in 1988 off South Carolina, Georgia, and northeastern Florida following an accidental release from an aquaculture farm in South Carolina. They were not seen again in U.S. waters until September 2006, when a single adult male was captured in Mississippi Sound near Dauphin Island, Alabama. Additional specimens were subsequently caught off Texas, Louisiana, Mississippi and Florida, and along the Atlantic coast from North Carolina to Florida. Initially, only a few isolated catches were reported, but in 2011, catches increased 20-fold. This increase could be due to greater efforts to document their occurrence, but the presence of both adults and juveniles suggests that a spawning population may have established itself in either the South Atlantic, Gulf, or both. Tiger shrimp can grow up to 12 inches in length, and may compete with or prey upon native shrimps, crabs, and bivalves. Tiger shrimp may also be a carrier for diseases such as white spot syndrome virus.

3.3 Description of the Economic Environment

3.3.1 Commercial Sector

A description of the commercial sector of the Gulf red snapper fishery is contained in GMFMC (2013d) and is incorporated herein by reference. Additional information on the commercial sector is not provided because this framework action would only change management measures for the recreational sector.

3.3.2 Recreational Sector

3.3.2.1 Landings

Recent landings information by state and mode is contained in GMFMC (2014b) and is incorporated herein by reference.

3.3.2.2 Angler Effort

Recreational effort derived from the Marine Recreational Information Program (MRIP) database can be characterized in terms of the number of trips as follows:

- Target effort – The number of individual angler trips, regardless of duration, where the intercepted angler indicated that the species or a species in the species group was targeted as either the first or second primary target for the trip. The species did not have to be caught.
- Catch effort – The number of individual angler trips, regardless of duration and target intent, where the individual species or a species in the species group was caught. The fish did not have to be kept.
- Total recreational trips – The total estimated number of recreational trips in the Gulf, regardless of target intent or catch success.

Other measures of effort are possible, such as directed trips (the number of individual angler trips that either targeted or caught a particular species), among other measures. Estimates of the number of red snapper target trips and catch trips for the shore, charter, and private/rental boat modes in the Gulf for 2011-2014 are provided in Table 3.3.1 and Table 3.3.2. Estimates of red snapper target effort for additional years, and other measures of directed effort, are available at <http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/queries/index>.

Table 3.3.1. Number of red snapper recreational target trips, by mode, 2011-2014*.

	Alabama	West Florida	Louisiana	Mississippi	Total
Charter Mode					
2011	19,010	29,642	1,424	0	50,076
2012	16,609	24,653	7,204	74	48,539
2013	23,638	32,689	7,191	38	63,556
2014	8,827	7,364	0	0	16,191
Average	17,021	23,587	3,955	28	44,591
Private/Rental Mode					
2011	116,886	113,021	19,900	16,790	266,597
2012	72,030	136,594	43,547	13,515	265,687
2013	222,245	461,349	24,691	21,586	729,871
2014	56,274	162,956	0	7,519	226,749
Average	116,859	218,480	22,035	14,853	372,226
All Modes					
2011	135,896	142,663	21,324	16,790	316,673
2012	88,640	161,247	50,751	13,589	314,227
2013	245,883	494,038	31,882	21,624	793,427
2014	65,101	170,321	0	7,519	242,940
Average	133,880	242,067	25,989	14,881	416,817

* Texas information unavailable. 2014 estimates are preliminary as of October 15, 2015.

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

Note: These effort estimates have not been re-calibrated. Re-calibrated effort data are currently unavailable.

Note: There were no target trips recorded from the shore mode.

Table 3.3.2. Number of red snapper recreational catch trips, by mode, 2011-2014*.

	Alabama	West Florida	Louisiana	Mississippi	Total
Charter Mode					
2011	43,550	101,500	3,066	221	148,336
2012	25,252	105,385	10,501	74	141,211
2013	52,331	107,466	12,321	38	172,157
2014	32,173	60,270	0	0	92,443
Average	38,327	93,655	6,472	83	138,537
Private/Rental Mode					
2011	130,500	203,567	31,957	6,169	372,193
2012	83,783	282,332	51,377	13,515	431,007

2013	227,889	537,469	55,679	29,250	850,287
2014	104,862	190,994	0	10,163	306,018
Average	136,759	303,591	34,753	14,774	489,876
All Modes					
2011	174,050	305,067	35,023	6,390	520,530
2012	109,035	387,717	61,878	13,589	572,219
2013	280,221	644,935	68,000	29,288	1,022,444
2014	137,035	251,263	0	10,163	398,461
Average	175,085	397,246	41,225	14,858	628,414

* Texas information unavailable. 2014 estimates are preliminary as of October 15, 2015.

Source: MRIP database, NOAA Fisheries, NMFS, SERO.

Note: These effort estimates have not been re-calibrated. Re-calibrated effort data are currently unavailable.

Note: There were no catch trips recorded from the shore mode.

Similar analysis of recreational effort is not possible for the headboat mode because headboat data are not collected at the angler level. Estimates of effort by the headboat mode are provided in terms of angler days, or the number of standardized 12-hour fishing days that account for the different half-, three-quarter-, and full-day fishing trips by headboats. The stationary “fishing for demersal (bottom-dwelling) species” nature of headboat fishing, as opposed to trolling, suggests that most, if not all, headboat trips and, hence, angler days, are demersal or reef fish trips by intent.

The distribution of headboat effort (angler days) by geographic area is presented in Table 3.3.3. For purposes of data collection, the headboat data collection program divides the Gulf into several areas. On average (2011 through 2013), the area from the Dry Tortugas through the Florida Middle Grounds accounted for 39.2% of total headboat angler days in the Gulf, followed by northwest Florida through Alabama (35.7%), Texas (23.5%), Mississippi (<1%) and Louisiana (<1%). Western Florida, Northwest Florida through Alabama, and Texas all experienced steady increases to three-year highs in 2013. In Louisiana, the number of headboat angler days decreased slightly in 2012 and then dropped further in 2013 to a three-year low. In Mississippi, the number of angler days increased in 2012 and then decreased slightly in 2013.

Table 3.3.3. Headboat angler days and percent distribution, by state, 2011 – 2013 (2014 unavailable). FLW = Florida from the Dry Tortugas through the Florida Middle Grounds, FL-AL = northwest Florida and Alabama, MS = Mississippi, LA = Louisiana, TX = Texas from Sabine Pass-Freeport south to Port Isabel.

	Angler Days					Percent Distribution				
	FLW	FL-AL*	LA	TX	MS	FLW	FL-AL	LA	TX	MS
2011	79,722	77,303	1,886	47,284	1,771	38.3%	37.2%	0.9%	22.7%	0.9%
2012	84,205	77,770	1,839	51,776	1,841	38.7%	35.8%	0.8%	23.8%	0.8%
2013	94,752	80,048	1,579	55,749	1,827	40.5%	34.2%	0.7%	23.8%	0.8%
Average	86,226	78,374	1,768	51,603	1,813	39.2%	35.7%	0.8%	23.5%	0.8%

Source: NMFS Southeast Region Headboat Survey (SRHS).

*For 2013, SRHS data was reported separately for NW Florida and Alabama, but has been combined here for consistency with previous years.

Headboat effort in terms of angler days for the entire Gulf was concentrated most heavily during the summer months of June through August on average (2011 through 2013) (Table 3.3.4). The monthly trend in angler days was very similar across years, building gradually from January through May, rising sharply to a peak in June and July, dropping rapidly through September, increasing slightly in October, then tapering through December.

Table 3.3.4. Headboat angler days and percent distribution, by month, 2011 – 2013 (2014 unavailable).

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Headboat Angler Days												
2011	5,242	9,174	16,378	17,626	16,148	39,775	42,089	22,513	10,766	12,609	8,514	7,132
2012	7,924	9,364	18,326	16,404	17,708	39,662	46,468	21,440	12,629	13,281	7,135	7,090
2013	8,630	9,576	16,759	16,426	17,150	47,791	38,304	27,610	12,697	21,256	8,654	9,102
Avg	7,265	9,371	17,154	16,819	17,002	42,409	42,287	23,854	12,031	15,715	8,101	7,775
Percent Distribution												
2011	2.5%	4.4%	7.9%	8.5%	7.8%	19.1%	20.2%	10.8%	5.2%	6.1%	4.1%	3.4%
2012	3.6%	4.3%	8.4%	7.5%	8.1%	18.2%	21.4%	9.9%	5.8%	6.1%	3.3%	3.3%
2013	3.7%	4.1%	7.2%	7.0%	7.3%	20.4%	16.4%	11.8%	5.4%	9.1%	3.7%	3.9%
Avg	3.3%	4.3%	7.8%	7.7%	7.7%	19.3%	19.3%	10.8%	5.5%	7.1%	3.7%	3.5%

Source: NMFS Southeast Region Headboat Survey (SRHS).

3.3.2.3 Permits

The for-hire sector is comprised of charter vessels and headboats (party boats). Although charter vessels tend to be smaller, on average, than headboats, the key distinction between the two types of operations is how the fee is determined. On a charter boat trip, the fee charged is for the entire vessel, regardless of how many passengers are carried, whereas the fee charged for a headboat trip is paid per individual angler.

A federal for-hire vessel permit has been required for both types of vessels for reef fish since 1996 and is a limited access permit. On December 2, 2014, there were 1,172 valid (non-expired) or renewable Gulf Charter/Headboat Reef Fish permits. A renewable permit is an expired permit that may not be actively fished, but is renewable for up to one year after expiration. Although the for-hire permit application collects information on the primary method of operation, the permit itself does not identify the permitted vessel as either a headboat or a charter vessel and vessels may operate in both capacities. However, only federally permitted headboats are required to submit harvest and effort information to the NMFS Southeast Region Headboat Survey (SRHS). Participation in the SRHS is based on determination by the Southeast Fishery Science Center (SEFSC) that the vessel primarily operates as a headboat. As of December 2,

2014, 69 Gulf headboats were registered in the SRHS (K. Fitzpatrick, NMFS SEFSC, pers. comm.). The majority of these headboats were located in Florida (37), followed by Texas (16), Alabama (9), and Mississippi/Louisiana (7).

Information on Gulf charter boat and headboat operating characteristics is included in Savolainen et al. (2012) and is incorporated herein by reference.

There are no specific federal permitting requirements for recreational anglers to fish for or harvest reef fish. Instead, anglers are required to possess either a state recreational fishing permit that authorizes saltwater fishing in general, or be registered in the federal National Saltwater Angler Registry system, subject to appropriate exemptions. For the for-hire sector, customers are authorized to fish under the charter or headboat vessel license and are not required to hold their own fishing licenses. As a result, it is not possible to identify with available data how many individual anglers would be expected to be affected by this proposed action.

3.3.2.4 Economic Value

Economic value can be measured in the form of consumer surplus (CS) per additional red snapper kept on a trip for anglers (the amount of money that an angler would be willing to pay for a fish in excess of the cost to harvest the fish). The estimated value of the CS per fish for a second red snapper kept on a trip is approximately \$79.72 (Carter and Liese 2012; values updated to 2013 dollars²).

With regards to for-hire businesses, economic value can be measured by producer surplus (PS) per passenger trip (the amount of money that a vessel owner earns in excess of the cost of providing the trip). Estimates of the PS per for-hire passenger trip are not available. Instead, net operating revenue (NOR), which is the return used to pay all labor wages, returns to capital, and owner profits, is used as a proxy for PS. The estimated NOR value is \$151 (2013 dollars) per charter angler trip (Liese and Carter 2011). The estimated NOR value per headboat angler trip is \$52.12 (2013 dollars) (C. Liese, NMFS SEFSC, pers. comm.). Estimates of NOR per red snapper target trip are not available.

3.3.2.5 Business Activity

The desire for recreational fishing generates economic activity as consumers spend their income on various goods and services needed for recreational fishing. This spurs economic activity in the region where recreational fishing occurs. It should be clearly noted that, in the absence of the opportunity to fish, the income would presumably be spent on other goods and services and these expenditures would similarly generate economic activity in the region where the expenditure occurs. As such, the analysis below represents a distributional analysis only.

Estimates of the business activity (economic impacts) associated with recreational angling for red snapper were derived using average impact coefficients for recreational angling for all species, as derived from an add-on survey to the Marine Recreational Fisheries Statistics Survey

² Converted to 2013 dollars using the 2013 annual Consumer Price Index (CPI) for all US urban consumers provided by the Bureau of Labor and Statistics (BLS).

(MRFSS) to collect economic expenditure information, as described and utilized in NMFS (2011b). Estimates of the average expenditures by recreational anglers are also provided in NMFS (2011b) and are incorporated herein by reference.

Recreational fishing generates business activity (economic impacts). Business activity for the recreational sector is characterized in the form of full-time equivalent jobs, output (sales) impacts (gross business sales), and value-added impacts (difference between the value of goods and the cost of materials or supplies). Estimates of the average red snapper target effort (2011-2014) and associated business activity (2013 dollars) are provided in Table 3.3.5. West Florida experienced the highest level of business activity associated with recreational red snapper fishing for all the Gulf states³, followed by Alabama.

The estimates provided in Table 3.3.5 only apply at the state-level. These numbers are not additive across the region. Addition of the state-level estimates to produce a regional (or national total) could either under- or over-estimate the actual amount of total business activity because of the complex relationship between different jurisdictions and the expenditure/impact multipliers. Neither regional nor national estimates are available at this time.

Estimates of the business activity associated with headboat effort are not available. Headboat vessels are not covered in the MRFSS/MRIP so, in addition to the absence of estimates of target effort, estimation of the appropriate business activity coefficients for headboat effort has not been conducted.

Table 3.3.5. Summary of red snapper target trips (2011-2014 average) and associated business activity (2013 dollars). Output and value added impacts are not additive.

	Alabama	West Florida	Louisiana	Mississippi	Texas
Private/Rental Mode					
Target Trips	116,859	218,480	22,035	14,853	*
Output Impact	\$6,315,390	\$11,814,604	\$1,665,404	\$522,744	*
Value Added Impact	\$3,417,684	\$6,690,075	\$800,292	\$265,885	*
Jobs	68	102	13	5	*
Charter Mode					
Target Trips	17,021	23,587	3,955	28	*
Output Impact	\$10,877,226	\$17,296,998	\$1,912,720	\$11,340	*
Value Added Impact	\$7,443,794	\$11,563,972	\$1,315,226	\$7,988	*
Jobs	106	152	15	0	*
All Modes					
Target Trips	133,880	242,067	25,989	14,881	*
Output Impact	\$17,192,616	\$29,111,602	\$3,578,124	\$534,084	*
Value Added Impact	\$10,861,478	\$18,254,047	\$2,115,518	\$273,873	*
Jobs	174	255	28	5	*

*Because target information is unavailable, associated business activity cannot be calculated.

³ Excludes Texas for which target effort data is unavailable.

Note: There were no target trips recorded from the shore mode.

Source: effort data from the MRIP, economic impact results calculated by NMFS SERO using the model developed for NMFS (2011b).

Note: 2014 estimates are preliminary as of October 15, 2015.

3.4 Description of the Social Environment

The historical background and current description of the recreational red snapper sector, which includes anglers fishing from private and for-hire vessels, is provided in Amendment 40 (GMFMC 2014b). The description is included here by reference with updated information on the for-hire component's fishing communities not included in previous amendments. This section focuses on the recreational sector, as the action does not affect the commercial harvest of red snapper.

Context of recreational red snapper management in the Gulf

As described in Amendment 40 (GMFMC 2014b), there is a moratorium on the issuance of new federal for-hire permits, so entry is limited. Harvest constraints have been enacted primarily through reductions to the bag limit and shortening of the fishing season. The bag limit has been reduced from seven red snapper per angler per day in 1990, to five fish in 1995, four fish in 1998, and two fish in 2007 (GMFMC 2014b). The recreational season was shortened for the first time in 1997 from year round to an ever shorter season, with the recreational season in federal waters averaging 62 days in length from 2008 through 2012 (GMFMC 2014b). In 2014, the recreational season in federal waters was just nine days long.

Anglers fishing from private vessels and for-hire vessels currently have the same bag limit and fishing season. However, additional restrictions are placed on the for-hire fleet for which private vessels are not subject. Since 2007, captain and crew of for-hire vessels have been prohibited from retaining a bag limit, and there are mandatory reporting requirements for headboats to report all landings and discards. Also, federally permitted for-hire vessels are prohibited from landing red snapper under state regulations in state waters that are less restrictive than federal regulations. Over time, the proportion of red snapper landed has shifted toward private vessel landings with for-hire vessel landings of red snapper decreasing, from 46.9% to 23.4% (GMFMC 2014b).

3.4.1 Recreational Fishing Communities

Red snapper is harvested recreationally in all Gulf States. However, as the red snapper stock has continued to rebuild, the proportion of landings made up by the eastern Gulf States (Alabama and western Florida) has increased compared to the western Gulf States (Texas and Louisiana). The majority of the recreational catch is landed in Florida and Alabama (GMFMC 2014b, Table 3.4.1.1). Fishermen in other Gulf States are also involved in recreational red snapper fishing, but these states represent a smaller percentage of the total recreational landings.

Red snapper landings for the recreational sector are not available at the community level, making it difficult to identify communities as dependent on recreational fishing for red snapper.

Although commercial landings are available at the community level, it cannot be assumed that the proportion of commercial red snapper landings among other species in a community would be similar to its proportion among recreational landings within the same community because of sector differences in fishing practices and preferences.

While there are no landings data at the community level for the recreational sector, a select group of communities were included in Amendment 40 (Table 3.4.1.2 in GMFMC 2014b) based upon the number of federal reef fish for-hire permits, those for-hire permits divided by population, and a cursory analysis to identify for-hire vessels that fish for red snapper through their for-hire business websites. This same set of communities is used here for further analysis using a suite of social indicators to examine the overall importance of recreational fishing at the community level.

To better capture how Gulf fishing communities are engaged and reliant on fishing overall (not specific to red snapper), indices were created using secondary data from permit and infrastructure information for the recreational sector (Jepson and Colburn, 2013; Jacob et al., 2012). Fishing engagement is primarily the absolute numbers of permits and recreational infrastructure within a community. Fishing reliance has many of the same variables as engagement divided by population to give an indication of the per capita impact of this activity within a given community.

Using a principal component and single solution factor analysis each community receives a factor score for each index to compare to other communities. Using the communities identified in Amendment 40 (GMFMC 2014b; Table 3.4.1.2), factor scores of both engagement and reliance were plotted onto a bar graph. Two thresholds of 1 and $\frac{1}{2}$ standard deviation above the mean are plotted onto the graphs to help determine a threshold for significance. Because the factor scores are standardized, a score above 1 is also above one standard deviation. A score above $\frac{1}{2}$ standard deviation is considered moderately engaged or reliant, while over 1 standard deviation is considered very engaged or reliant. It is likely that those communities that score above the thresholds in terms of fishing engagement and reliance have a dynamic recreational fishery and would be expected to have an active recreational red snapper fishery.

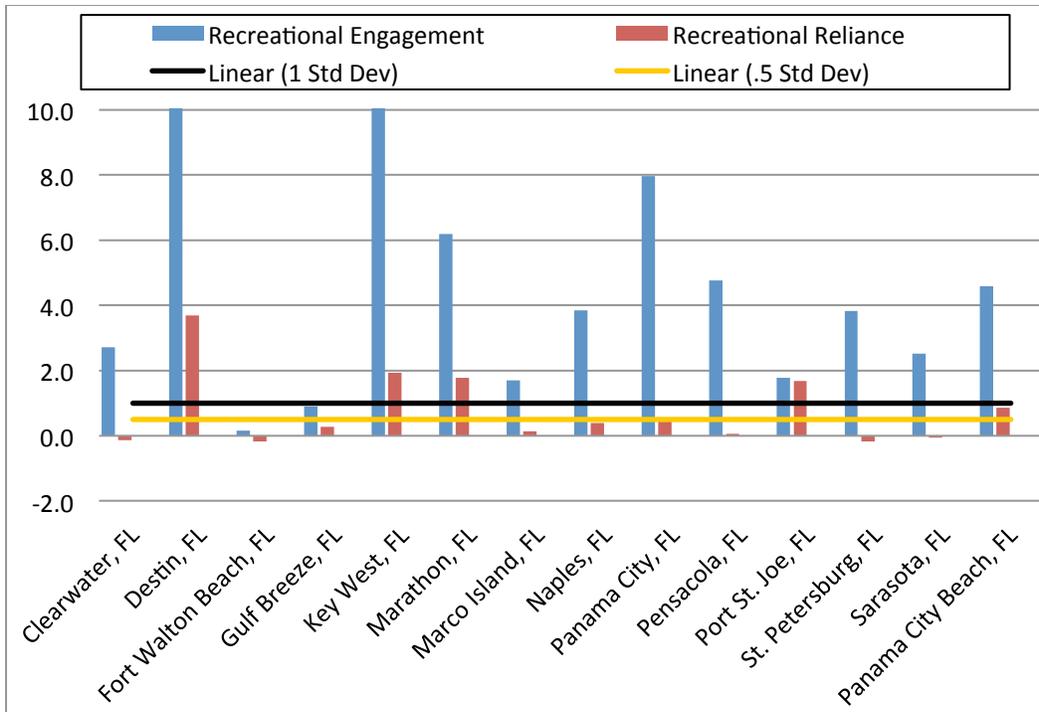


Figure 3.4.1.1. Recreational fishing engagement and reliance for selected Florida communities. Source: SERO Social Indicators Database.

Of the Florida communities included in Figure 3.4.1.1, all exceed one of the thresholds for either engagement or reliance, except Fort Walton Beach. The communities of Destin, Key West, Marathon, Panama City, Port St. Joe, and Panama City Beach all exceed at least one threshold for both engagement and reliance and would be considered somewhat dependent upon recreational fishing. All of these communities are considered to be primarily involved in fishing based upon their community profiles (Impact Assessment, Inc. 2005).

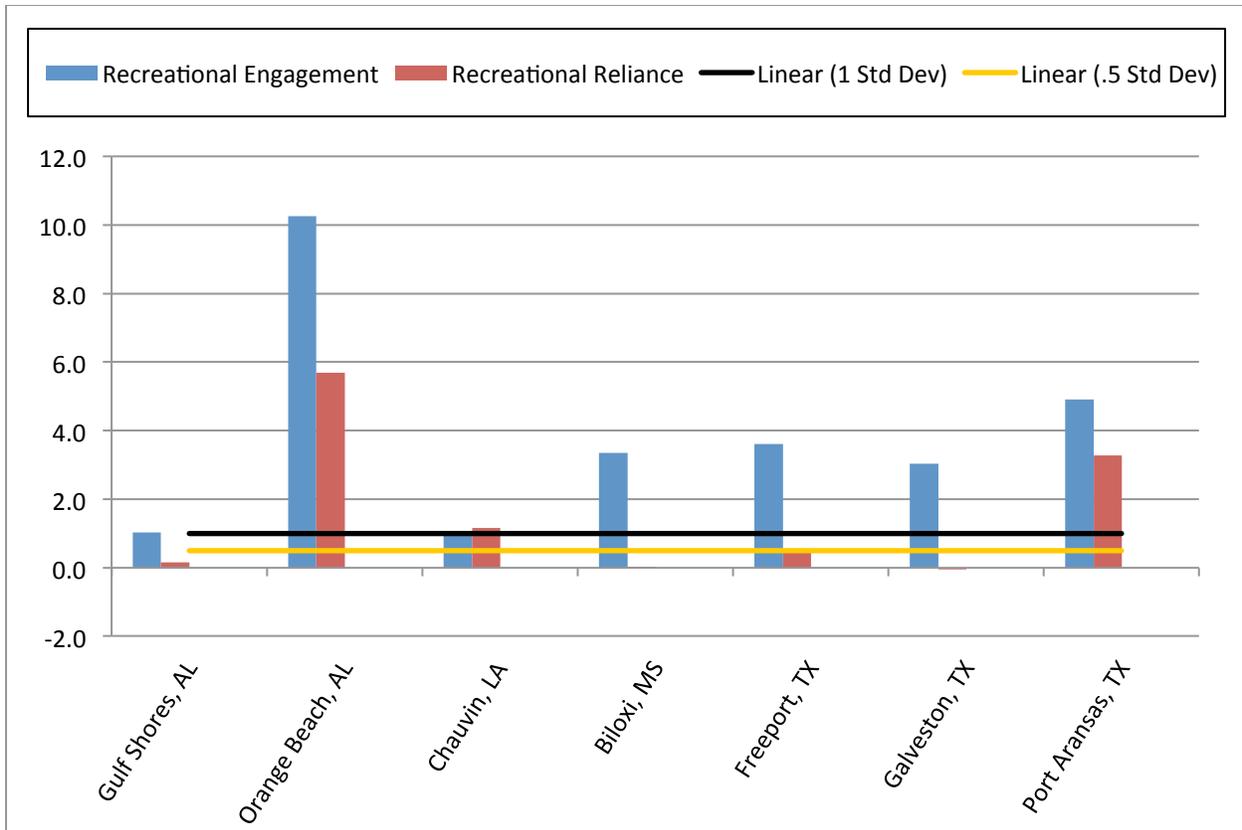


Figure 3.4.1.2. Recreational fishing engagement and reliance for selected communities outside of Florida. Source: SERO Social Indicators Database.

For other Gulf communities outside of Florida included in Amendment 40 (GMFMC 2014b; Table 3.4.1.2), all exceed at least one threshold for either engagement or reliance (Figure 3.4.1.2). Orange Beach, AL; Chauvin, LA; and Freeport and Port Aransas, TX all exceed at least one threshold for both engagement and reliance and would be considered somewhat dependent upon recreational fishing.

Charter Boats and Headboats by Community

Charter boats and headboats target red snapper throughout the Gulf. At this time it is not possible to determine which species are targeted by specific charter boats and associate those vessels with their homeport communities (other than to glean information from various for-hire websites as was done for the descriptions above for specific communities). However, landings data are available for headboats by species and can be linked to specific communities through the homeport identified for each vessel (GMFMC 2014b).

In 2013, the majority of headboats participating in the Southeast Headboat Survey landed red snapper, and most of these are registered in Florida. Headboats with red snapper landings are based in 14 homeports with the top four representing approximately 79% of the red snapper landings (GMFMC 2014b). Homeports with the greatest headboat landings of recreational red snapper include South Padre Island, Texas; Panama City Beach, Florida; and Destin, Florida.

Other homeports represent a small portion of landings and include fewer than three vessels (GMFMC 2014b). The majority of federal for-hire permits for reef fish are held by operators in Florida, followed by Texas, Alabama, Louisiana, Mississippi, and other states respectively (GMFMC 2014b).

3.4.2 Environmental Justice

To evaluate environmental justice concerns for the proposed action, a suite of indices was created to examine the social vulnerability of coastal communities and is depicted in Figures 3.4.2.1 and 3.4.2.2. The three indices are poverty, population composition, and social disruptions. The variables included in each of these indices have been identified through the literature as being important components that contribute to a community’s vulnerability. Indicators such as increased poverty rates for different groups, more single female-headed households, and households with children under the age of 5 are included, along with personal disruptions such as higher marital separation rates, higher crime rates, and unemployment, all of which may indicate populations experiencing vulnerabilities. These vulnerabilities signify that it may be difficult for someone living in these communities to recover from significant social disruption that might stem from a change in their ability to work or maintain a certain income level.

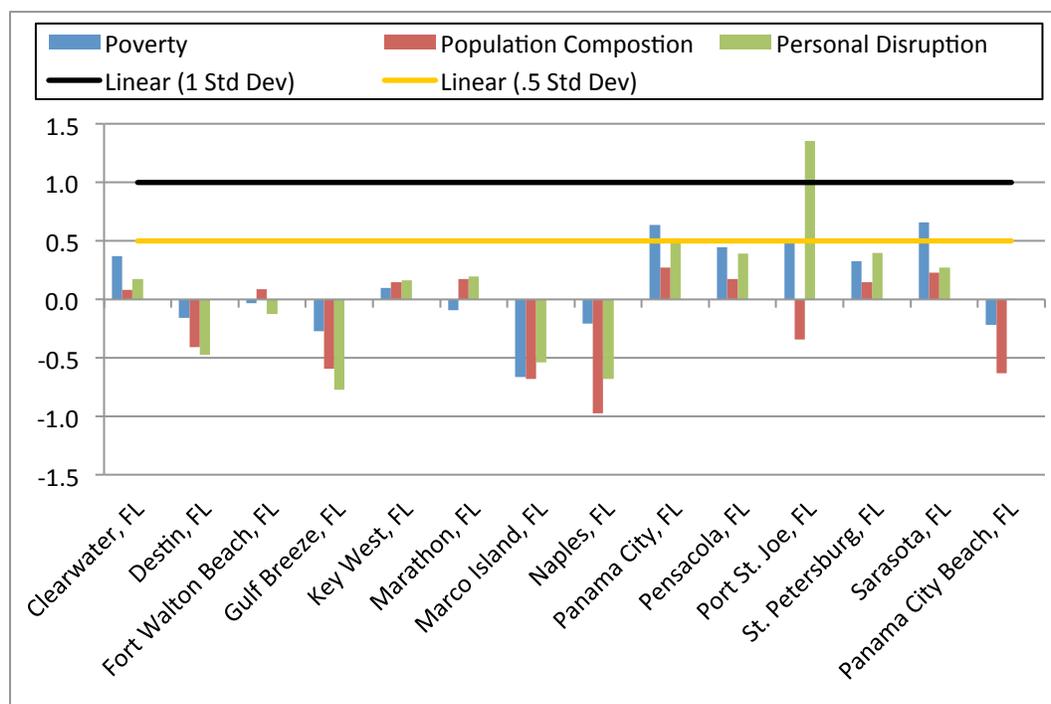


Figure 3.4.2.1. Social vulnerability indices for selected Florida communities. Source: SERO Social Indicators Database.

Of the Florida communities identified as engaged or reliant on recreational fishing in Figure 3.4.1.1 three communities exceed at least one threshold for social vulnerability. Panama City and Port St. Joe, Florida, both exceed the ½ standard deviation for poverty and personal disruption and are likely experiencing some social vulnerability. Sarasota is the only other

community that exceeds any of the thresholds (poverty), while Pensacola approaches the thresholds for both poverty and personal disruption. These communities may also be experiencing some social vulnerability. However, the other communities included in Figure 3.4.2.1 do not seem to exhibit social vulnerabilities and therefore may be better able to cope if exposed to negative social changes.

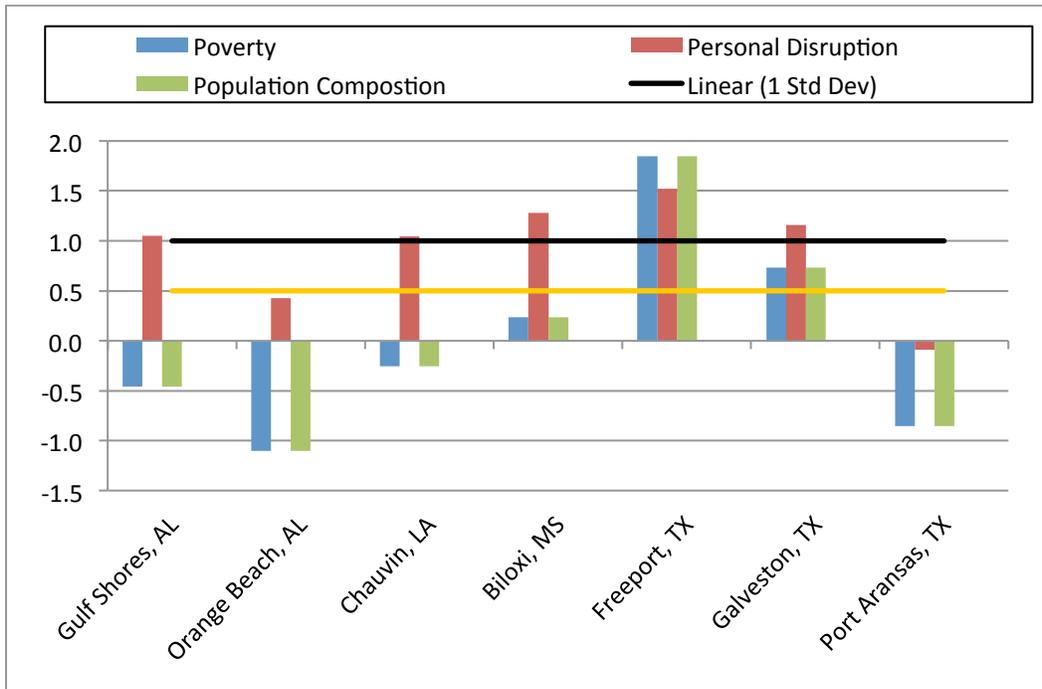


Figure 3.4.2.2. Social vulnerability indices for selected communities outside of Florida. Source: SERO Social Indicators Database.

For those communities outside of Florida (Figure 3.4.1.2), several exceed both thresholds for personal disruption. Freeport, Texas, which exceeds both thresholds for all indicators seems to be the community most exposed to social vulnerability and may have difficulty absorbing any negative social impacts that might result from regulatory change.

3.5 Description of the Administrative Environment

3.5.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 *et seq.*), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management authority over most fishery resources within the exclusive economic zone, an area extending 200 nautical miles from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the exclusive economic zone.

Responsibility for federal fishery management is shared by the Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for promulgating regulations to implement proposed plans and amendments after ensuring management measures are consistent with the Magnuson-Stevens Act and with other applicable laws summarized in Appendix A. In most cases, the Secretary has delegated this authority to NMFS.

The Council is responsible for fishery resources in federal waters of the Gulf. These waters extend to 200 nautical miles offshore from the nine-mile seaward boundary of the states of Florida and Texas, and the three-mile seaward boundary of the states of Alabama, Mississippi, and Louisiana. The length of the Gulf coastline is approximately 1,631 miles. Florida has the longest coastline of 770 miles along its Gulf coast, followed by Louisiana (397 miles), Texas (361 miles), Alabama (53 miles), and Mississippi (44 miles).

The Council consists of seventeen voting members: 11 public members appointed by the Secretary; one each from the fishery agencies of Texas, Louisiana, Mississippi, Alabama, and Florida; and one from NMFS. The public is also involved in the fishery management process through participation on advisory panels and through Council meetings that, with few exceptions for discussing personnel matters, are open to the public. The regulatory process is also in accordance with the Administrative Procedures Act, in the form of “notice and comment” rulemaking, which provides extensive opportunity for public scrutiny and comment, and requires consideration of and response to those comments.

Regulations contained within FMPs are enforced through actions of the National Oceanic and Atmospheric Administration’s Office of Law Enforcement, the United States Coast Guard, and various state authorities. To better coordinate enforcement activities, federal and state enforcement agencies have developed cooperative agreements to enforce the Magnuson-Stevens Act. These activities are being coordinated by the Council’s Law Enforcement Advisory Panel and the Gulf States Marine Fisheries Commission’s Law Enforcement Committee, which have developed joint enforcement agreements and cooperative enforcement programs (www.gsmfc.org).

The red snapper stock in the Gulf is classified as overfished, but no longer undergoing overfishing. A rebuilding plan for red snapper was first implemented under Amendment 1 (GMFMC 1989), and has undergone several revisions. The current rebuilding plan was established in Reef Fish Amendment 27/Shrimp Amendment 14 (GMFMC 2007), and calls for rebuilding the stock to a level capable of supporting maximum sustainable yield on a continuing basis by 2032. Adjustments to management measures are needed periodically to prevent ACLs from being exceeded. These management measures are needed to maintain the rebuilding plan and are implemented through regulatory amendments.

3.5.2 State Fishery Management

The purpose of state representation at the Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters. The state governments of Texas, Louisiana, Mississippi, Alabama, and Florida have the authority to manage their respective state fisheries. Each of the five Gulf States exercises legislative and regulatory authority over their respective state's natural resources through discrete administrative units. Although each agency is the primary administrative body with respect to the states' natural resources, all states cooperate with numerous state and federal regulatory agencies when managing marine resources. A more detailed description of each state's primary regulatory agency for marine resources is provided in Amendment 22 (GMFMC 2004b).

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

4.1 Action 1: Red Snapper Bag Limit for Charter Vessels and Headboats

4.1.1 Direct and Indirect Effects on the Physical Environment

Direct and indirect effects on the physical environment resulting from the harvest of red snapper in the Gulf of Mexico by the recreational sector of reef fish fishery have been discussed in detail in Reef Fish Amendment 40 (GMFMC 2014b), and are incorporated here by reference. The alternatives to change the bag limit would not directly affect the physical environment. However, if changes to the bag limit result in changes in fishing effort, the physical environment could be impacted indirectly. Possible impacts on the physical environment include entanglement of fishing line on coral or other bottom structure and anchor damage.

With a two-fish red snapper bag limit (**Alternative 1**), the recreational red snapper fishing season was nine days in 2014. Amendment 40 establishes separate recreational quotas for private anglers and for-hire vessels and is expected to be effective beginning in the 2015 fishing season. This separate quota might increase the length of the recreational season for for-hire vessels. Therefore, with **Alternative 1**, the recreational red snapper season would be expected to result in more fishing effort and have more adverse indirect effects to the physical environment than from fishing activities than in 2014. However, if Amendment 40 is not implemented, the fishing season would be expected to be the same or only slightly longer (if catch rates were lower than estimated for 2014).

With **Alternatives 2** and **3**, effort may increase relative to **Alternative 1**. Effort is a function of the number of trips and the duration of fishing time per trip. As the number of trips increases, the duration of each trip may also change. If fishermen make trips solely to target red snapper, and return to port after catching their bag limit, a decrease in the bag limit should result in a decrease in trip duration. However, most fishing trips are not only about catching the bag limit, but also the experience of a fishing trip. Fishermen may continue to fish after catching the bag limit of red snapper by targeting other species, or practicing catch and release of red snapper. Some fishermen may also continue fishing for red snapper to try to catch a larger fish (high-grading). Therefore, it is reasonable to assume that trip duration would not decrease even if the red snapper bag limit is decreased.

Assuming a separate for-hire quota, **Alternative 2** would reduce landings of the for-hire component by 39% relative to 2014 landings and **Alternative 3** would reduce landings by 61% relative to 2014 landings, if the season length remained the same (Appendix C). Relative to **Alternative 1**, with **Alternative 2** the season could be 63% longer and with **Alternative 3** the season could be 160% longer. Increasing the length of the season would be expected to increase the number of trips, and thus effort, although some of those trips would have been taken even if red snapper was not available. Consequently, **Alternative 2** could result in greater adverse indirect impacts to the physical environment than **Alternative 1**, and **Alternative 3** could result in greater adverse indirect impacts to the physical environment than **Alternative 1** and

Alternative 2. However, any increase in adverse impacts is expected to be minor relative to the current impacts of the fishery on the physical environment.

Without a separate for-hire ACT (Amendment 40 not implemented), one fishing season would be set for the whole recreational sector (for-hire and private), as in the past. That recreational season might be slightly longer if the for-hire component had a one-fish bag limit; however the for-hire component makes up a small percentage of the recreational landings so the increase in season length would be minimal and any increase in physical impacts would also be minimal.

4.1.2 Direct and Indirect Effects on the Biological/Ecological Environment

Direct and indirect effects on the biological environment from the harvest of red snapper have been discussed in detail in Reef Fish Amendment 40 (GMFMC 2014b) and are incorporated here by reference.

The impacts of changing the bag limit are expected to be minimal because modifying the bag limit should not affect the total amount of harvest because harvest is limited by the quota. Although the rate of harvest for the for-hire component would be reduced from the rate estimated for 2014 with **Alternatives 2** and **3** by 39% and 61%, respectively, these reductions are calculated based on the nine-day 2014 season (Appendix C). To set the 2015 season length, NMFS will calculate the number of days fishing can be allowed to harvest the for-hire component ACT, if implemented through Amendment 40. Therefore, any estimated decrease in landings per day would result in a corresponding increase in the number of days open with **Alternatives 2** and **3** relative to **Alternative 1**. If Amendment 40 is not implemented and a separate for-hire ACT is not established, the recreational season would only be slightly longer than with a one-fish for-hire bag limit versus a two-fish bag limit. Again, the impacts should be minimal because the total level of harvest should not change.

A decrease in the bag limit would be expected to increase discards of red snapper. The data workshop for SEDAR 31 found that release mortality was related to a combination of factors including, but not limited to, depth, thermal stress, venting, and handling time. Venting was assumed to occur for 2008 and later, resulting in an overall discard mortality rate of about 10% (SEDAR 31 2013).

Eighty-eight percent of anglers on for-hire vessels averaged landing more than one red snapper per person per trip (Figure 4.1). If one red snapper per angler (**Alternative 2**) is implemented and anglers continue to fish after catching their first red snapper, they may catch another, either intentionally or while targeting other species. In that case, anglers may release the second fish, or if it is larger, they may release the first fish caught (high-grading), which would likely be dead. Mortality would be expected to be greater if high-grading occurs, because this involves discarding a fish that has possibly been put on ice, as opposed to releasing a fish caught incidentally. With **Alternative 3**, even more discards would be expected, particularly on headboats with multiple passengers. The extent to which high-grading would occur is unknown and dependent on angler behavior; however, high-grading may occur under a two-fish bag limit as well, so any impacts from changing the bag limit are expected to be minor.

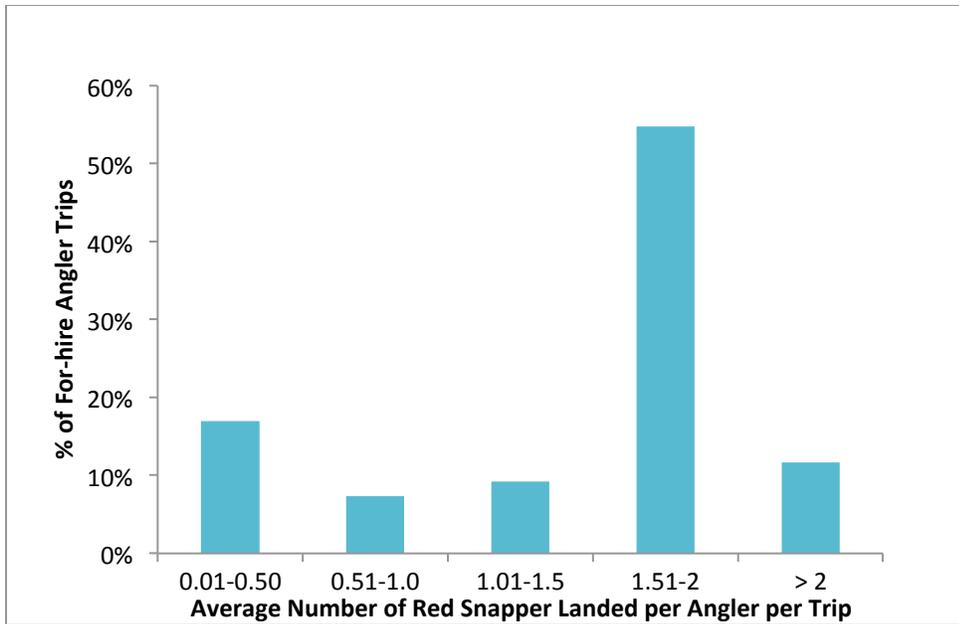


Figure 4.1. Average number of red snapper per angler per trip (expressed as a percentage) landed from the Gulf of Mexico (n = 15,984 angler trips).
Source: SERO LAPP Branch, see Appendix C.

In determining the expected catch rate and season length, NMFS must convert from numbers of fish to pounds of fish using an average weight (6.90 lbs for 2014). If high-grading occurs, the average weight of red snapper could increase in 2015, which would increase the catch rate in pounds. Assuming a one-pound increase in average weight, landings would only be reduced by 30% with **Alternative 2** and 56% with **Alternative 3** (Appendix C). NMFS does not normally assume an increase in average weight, so if high-grading occurs landings (in pounds) could be greater than projected.

If anglers on for-hire vessels can only keep one red snapper, effort may shift to other species. For-hire trips are usually for a certain length of time, and anglers expect to fish throughout that time. Therefore, they may land more of other species that are available during the trip. This could result in greater fishing mortality on those species, although the increase would be expected to be small.

4.1.3 Direct and Indirect Effects on the Economic Environment

4.1.3.1 Effects on the Commercial Sector

The proposed management alternatives considered in this action are only applicable to the for-hire component of the recreational fishing sector and are, therefore, not expected to have any direct effects on the commercial sector. If the action results in a net increase in recreational effort, it could have a slight impact on the cost of commercial fishing due to elevated congestion on the water, but this is most likely negligible. Both **Alternative 2** and **Alternative 3** also have the potential to increase discard rates of red snapper, which could result in higher fish mortality and a smaller stock than would be expected to occur under **Alternative 1**. This could lead to

lower catch per unit effort (CPUE), and as a result, lower economic benefits to commercial fishermen. Discard rates are expected to be higher under **Alternative 3** than **Alternative 2**, since the bag limit would be reached sooner. Red snapper discards and associated indirect economic effects could increase even further if high-grading occurs. The magnitude of these impacts cannot be quantified with available data; however, they are expected to be minor, as discussed in Section 4.1.2.

4.1.3.2 Effects on the Recreational Sector

Alternative 1 would maintain the for-hire (charter and headboat) red snapper daily possession limit at two fish per angler. Catch rates would be expected to remain consistent with previous years and changes in season length would be dependent on the total allowable catch for red snapper, the portion of it allocated to recreational fishermen (recreational quota), and whether or not Amendment 40 (separate for-hire and private angler quotas) is implemented. Until the new stock assessment is completed, the current recreational red snapper quota of 5.39 mp ww will remain in effect. **Alternative 2** and **Alternative 3** consider modifications to the two-fish red snapper bag limit for those vessels that have a federal for-hire permit. **Alternative 2** would establish a recreational for-hire red snapper bag limit of one fish per angler per day. **Alternative 3** would implement a for-hire fractional bag limit and set a limit of one fish per two anglers per day. In light of the fact that Amendment 40 has not been finalized and approved, and since it is feasible that a for-hire bag limit could be implemented in the absence of sector separation, two baselines will be presented here. Baseline I discusses the economic effects of the alternatives considered in this action, assuming no separate quotas for for-hire and private vessels, and Baseline II discusses the economic effects of these alternatives assuming the preferred alternatives in Amendment 40 have been implemented. Some of the language and concepts from Baseline I are repeated under Baseline II so that each baseline analysis can be read independently of the other.

Baseline I (one recreational quota)

For a given recreational red snapper quota, the bag limit reduction proposed under **Alternative 2** would be expected to affect recreational anglers through changes in the quality of the fishing experience on individual for-hire angler trips, as well as the quantity of angler trips (private and for-hire) that are allowed to harvest red snapper relative to **Alternative 1**. For-hire businesses could experience changes in profitability as well if recreational angler demand for for-hire trips increases or decreases as a result of the bag limit reduction. These economic effects will be measured by changes in consumer surplus (CS) and net operating revenue (NOR) in the following discussion (see Section 3.3.2.4).

The one-fish bag limit for the for-hire component under **Alternative 2** would be expected to result in an increase in the number of individual angler trips (private and for-hire) that harvest red snapper, because more effort would be required to compensate for the for-hire trips that would no longer be able to harvest two fish. This assumes that all of the fish expected to be harvested under the no action alternative would still be harvested, which is a reasonable assumption, given the historical demand for red snapper. The trips that would be expected to

only harvest one fish regardless of the bag limit are assumed to be unaffected. Using an average red snapper weight of 6.9 lb whole weight (ww), a recreational quota of 5.39 mp ww, and applying the historical average percent of the quota landed by the for-hire component from 2011 through 2013 (29.2%), results in an estimated catch of 228,099 fish for the for-hire anglers (SERO LAPP/DM Branch, pers. comm. 2014)⁴. Assuming that 67%⁵ of for-hire trips achieve the two-fish bag limit on average, the number of estimated two-fish for-hire trips under **Alternative 1** would be 91,513 trips⁶ (SERO LAPP/DM Branch, pers. comm. 2014). It follows that 45,073 for-hire angler trips, harvesting only one fish per trip, would be needed to harvest the remainder of the expected harvest under **Alternative 1** (91,513 trips * two fish per trip = 183,026 fish; 228,099 – 183,026 = 45,073).

Under **Alternative 2**, all of the two-fish for-hire trips would be reduced to one fish and, therefore, 91,513 red snapper would need to be caught on other trips (new or existing) to still achieve the expected harvest. In the absence of sector separation and component allocations, it is highly likely that the majority of these fish would be caught on private angler trips because of the large number of private anglers and the higher bag limit that the private anglers would be allowed to continue to retain. For this reason, a reduction in the for-hire bag limit could be considered a transfer of economic value from the for-hire component to the private angler component under Baseline I. If this occurs, private anglers would experience an increase in CS from the additional red snapper fish and/or trips, whereas for-hire anglers would experience a decrease in CS from the reduction in the bag limit on existing trips. Using the willingness to pay (WTP) per second red snapper discussed in Section 3.3.2.4 and assuming that all estimated trips still occur, an upper bound estimate of the reduction in CS to for-hire anglers would be \$7.3 million (\$79.72 per fish per trip times 91,513 trips; 2013 dollars).

Conversely, an increase in economic value is expected to result from the harvest of those fish made available by the reduction in the bag limit for for-hire anglers. At least some of these “freed up” fish would be harvested by for-hire anglers, which in turn, would partially offset the maximum potential loss in for-hire CS described above. The majority of the newly available fish, however, would be harvested by the private sector. There is not a current estimate for the value of harvesting a first red snapper (going from zero to one fish), so the increase in for-hire and private angler CS associated with red snapper trips that go from zero red snapper to one red snapper cannot be quantified. Given the law of diminishing marginal utility, it is likely that the WTP for the first red snapper on a trip is higher than the second and so on and so forth. Therefore, assuming all 91,513 fish are caught as first red snappers would result in a maximum

⁴ NMFS determines the length of the recreational red snapper season using an annual catch target (ACT), set at 20% of the quota, to account for management uncertainty. So if the harvest projections are accurate, the actual recreational harvest would be 4.31 mp ww instead of 5.39 mp ww. However, the recreational sector is allowed to harvest the full quota, so that is what will be used here. This decision is not expected to influence the conclusions of the analysis.

⁵ Although bag limit reductions would apply to the Gulf Headboat Collaborative (HC), HC vessels have been excluded from this percentage because they operate under a pilot program to examine the effects of an alternative management structure and are not constrained by a fixed season. Anecdotal evidence suggests that some HC vessels have already instituted a one-fish bag limit in efforts to maximize profits, so this could have confounding effects on the average number of for-hire angler trips currently harvesting the bag limit.

⁶ Algebraically solved for x in the following 2 equations: $2x + y = 228,099$ and $x/(x + y) = .67$, where $x = \#$ of 2-fish trips and $y = \#$ of 1-fish trips.

increase in CS. Since private anglers will still be allowed to keep up to two red snapper, however, some of the fish made available by the for-hire bag limit reduction would be harvested as second red snappers. Overall, this action could result in a net gain in CS, but may be construed as non-equitable by the for-hire industry and its customers if **Alternative 2** results in decreased harvest by for-hire anglers.

For-hire businesses may or may not be impacted by the proposed bag-limit change, depending on how easily their customers can substitute other species for red snapper. It is possible, though unlikely, that some charter or headboat businesses could experience negative price effects (a reduction in the price they can charge for-hire anglers), lower booking rates, or cancellations as a result of the reduced bag limit under **Alternative 2**⁷. If most of the newly available fish are harvested by private anglers, there would be little opportunity to recover those lost revenues through new red snapper trip bookings. Estimates of NOR for charter and headboat angler trips are included in Section 3.3.2.4; however, it is not possible to estimate the net change in the number of for-hire trips with available data, so it is not possible to estimate the net change in for-hire NOR.

The same analytic framework would apply to **Alternative 3** to estimate the number of recreational red snapper angler trips that would exceed the fractional bag limit. The number of fish made available by the reduction in the for-hire bag limit, however, could not be estimated, because impacted trips would not correspond to a one-for-one increase in available fish⁸. Therefore, it is not possible to quantify the impacts to CS or even provide a maximum potential reduction in CS. Even if the compensating red snapper harvest could be estimated, WTP estimates for a fractional fish kept do not exist. While anglers fishing in groups may derive some benefit from the fish caught by others in their group, for-hire anglers on a trip that are not part of the same party would be forced to share the bag limit with strangers and there would be winners and losers. To further complicate matters, it is not clear how anglers fishing alone would be affected, though the incidence of single anglers may be rare.

With regards to for-hire businesses, the same challenges, as faced under **Alternative 2**, in estimating the effects of the bag limit on prices, cancellations, and booking rates exist under **Alternative 3**, but with even more uncertainty. Since the expectation of catching and keeping red snapper on for-hire trips would be reduced even further than it was under **Alternative 2**⁹, there would be a higher likelihood of shifts in angler demand for trips and corresponding negative impacts to for-hire businesses.

In relation to for-hire anglers, it is logical that the maximum reduction in for-hire CS from **Alternative 3** would be greater than or equal to that which was discussed under **Alternative 2**

⁷ For-hire anglers are assumed to derive value from the whole fishing experience, not just the harvest of a single species, and since they will still be allowed to target and keep red snapper among other species, the lower red snapper bag limit is not expected to significantly alter demand for for-hire trips. In rare circumstances, customers may be so unsatisfied with the new bag limit that they decide not to fish at all.

⁸ In this case, the compensating harvest would be dependent on the number of anglers and combined total catch estimated for each vessel-level trip.

⁹ Now only half of the anglers on a for-hire trip would be able to catch and keep a red snapper, assuming an even number of anglers. On a trip with an odd number of anglers, less than half would be allowed to catch and keep a red snapper, barring the practice of physically splitting a fish in half and returning the other half to the sea.

because all angler trips that were expected to harvest two fish would experience an equal or greater reduction in kept red snapper under **Alternative 3**, as compared to **Alternative 2**. Additionally, many of the angler trips only expected to harvest one fish would now be impacted as well, depending on whether or not the average angler catch per vessel is higher than half a fish. As in the case of **Alternative 2**, additional angler trips (mostly private and some for-hire) that harvest red snapper, and/or additional harvest on trips already harvesting red snapper (private only), would offset some or all of the loss in for-hire CS following a bag limit reduction. The increase in CS from this compensating harvest, however, cannot be quantified. As a result, it is not possible to quantitatively determine whether the overall net change in CS for the recreational sector would be more, less or equally desirable under **Alternative 3**, as compared to **Alternative 2**.

Both **Alternative 2** and **Alternative 3** have the potential to increase discard rates of red snapper, which could result in higher fish mortality and a smaller stock than would be expected to occur under **Alternative 1**. This could lead to lower CPUE, and as a result, lower economic benefits for all sectors that fish for red snapper (commercial and recreational). Discard rates are expected to be higher under **Alternative 3** than **Alternative 2**, since the bag limit would be reached sooner. Red snapper discards and associated indirect economic effects could increase even further if high-grading occurs. The magnitude of these impacts cannot be quantified with available data; however, they are expected to be minor, as discussed in Section 4.1.2.

Baseline II (separate for-hire and private angler quotas)

Assuming Amendment 40 is implemented, the recreational sector will be divided into two separate management units (components) with their own quotas, annual catch targets (ACTs) and closure provisions. If, however, the total recreational quota is met at any time during the year, fishing will close for both private and for-hire vessels regardless of which component triggered the overage, even if one component has yet to harvest its allocation. The preferred alternative in Amendment 40 is to allocate 57.7% of the allowable recreational harvest to the private component and 42.3% to the for-hire component. This will give the for-hire sector an allowable harvest of 2.28 mp ww of red snapper based on the current recreational quota. Because the bag limit alternatives considered in this action would only apply to the for-hire component of the recreational sector, and the measures approved through Amendment 40 may limit the ability of private anglers to reap the benefits of a reduced for-hire bag limit, as discussed above, the following analysis only discusses the expected economic effects of the proposed changes in the bag limit on the for-hire component.

For a given recreational red snapper quota, changes in CS and NOR would determine the economic effects expected to result from **Alternative 2** relative to **Alternative 1**. While red snapper are one of the most sought after target species in the Gulf, this analysis assumes that for-hire operators would not be expected to experience measurable changes in NOR due to a reduction in the red snapper bag limit because their existing customers (customers that continue to book for-hire services when the red snapper season would be expected to close in the absence of a reduction in the bag limit) have the ability to substitute other reef fish for red snapper or

harvest red snapper in addition to their normal expected harvest of other species¹⁰. In other words, since the for-hire season would likely be extended during the summer months when charter and headboat operations are historically most active, it is assumed most of the newly available red snapper would be harvested on for-hire trips that would have been sold anyways under **Alternative 1**. Therefore, the economic effects that would be expected to result from **Alternative 2** will be measured by the reduction in CS that would result from the substitution of angler trips harvesting one red snapper for angler trips harvesting two red snapper and the increase in CS that would result from angler trips that previously would not have been expected to harvest any red snapper but, as a result of the reduction in the bag limit, would be able/expected to harvest one red snapper. It is noted, however, that if any completely new for-hire trips are sold as a result of the extended red snapper season, then increased economic benefits may accrue to for-hire businesses as well.

Assuming an estimated average weight of 6.9 lbs ww per red snapper, the recreational for-hire red snapper allowable harvest of 2.28 mp ww would correspond to 330,430 fish available to be harvested by for-hire anglers (SERO LAPP/DM Branch, pers. comm. 2014)¹¹. Using the approach discussed under Baseline I, if 67% of for-hire trips (individual angler trips) harvest the two-fish bag limit on average, the for-hire allocation would result in an estimated 132,568 two-fish trips under **Alternative 1** (SERO LAPP/DM Branch, pers. comm. 2014), which would harvest 265,136 fish. It follows that 65,294 angler trips, harvesting one fish per trip, would be needed to harvest the remainder of the allowable harvest under **Alternative 1**. This assessment assumes all of the red snapper allowable harvest by the for-hire sector afforded by Amendment 40 would be harvested and these 65,294 one-fish harvest trips occur. These one-fish trips are assumed to be unaffected by the proposed reduction in the bag limit under **Alternative 2**¹². Thus, of the normal trips expected to harvest red snapper, only the two-fish trips would be affected. The expected loss in CS per impacted angler trip (for a trip experiencing a reduction in harvest from two fish to one fish) is \$79.72 (2013 dollars) (see Section 3.3.2.4)¹³. Therefore, the implementation of **Alternative 2** would be expected to result in a maximum potential reduction in CS to trips normally expected to harvest red snapper of approximately \$10.57 million (\$79.72 per trip times 132,568 trips), assuming for-hire anglers still take all the trips they would have

¹⁰ As discussed under Baseline I, there is of course the potential for for-hire businesses to be negatively or positively impacted if the bag limit shifts angler demand for trips such that price effects or cancellations occur and/or booking rates go up or down during the extended season. A longer red snapper season for instance could increase the number of sold trips, especially if it were to extend into part of the year with few other open fisheries. NOR estimates for a charter and heaboat for-hire trip are included in Section 3.3.2.3, however, with no way of estimating the net change in the number of for-hire trips, it is not possible to estimate the net effect on for-hire NOR.

¹¹ NMFS determines the length of the recreational red snapper season using an annual catch target (ACT), set at 20% of the quota, to account for management uncertainty. So if the harvest projections are accurate, the actual harvest would be 1.824 mp ww. However, the recreational sector is allowed to harvest the full quota, so that is what will be used here. This decision is not expected to influence the conclusions of the analysis.

¹² In reality, it is likely that some anglers value the opportunity to fish for and keep two red snapper regardless of the actual outcome of the trip. Lower harvest expectations could result in a loss in CS on angler trips other than just those which actually hit the bag limit. There is an estimate of the per angler trip value for a target trip with a 2 red snapper bag limit included in GMFMC 2010. However, there is no estimate of the value of a target trip with a 1 red snapper bag limit, so the net loss in CS discussed here is currently unquantifiable.

¹³ This assumes that anglers will stop fishing for red snapper after reaching the 1-fish bag limit and will not derive any value from catching and releasing additional red snapper. Carter and Liese (2012) did, however, estimate the WTP for a second red snapper caught on an angler trip and released due to a bag limit at \$8.69 (2013 dollars), so the potential per trip reduction in CS could actually be lower.

taken under the two-fish bag limit (i.e., no effort cancellation in response to the reduced bag limit).

Alternative 2 would also be expected to result in an increase in the number of for-hire angler trips able to harvest red snapper by 132,568 trips because of the fish “saved” on trips normally expected to harvest two fish. Because red snapper is a popular species, all available fish would be expected to be harvested. Thus, 132,568 available fish would equate to 132,568 one-fish angler trips. This total does not include the estimated 65,294 trips normally expected to harvest only one fish, as discussed above. These new red snapper trips could consist of trips that would not otherwise be expected to be taken or, as is more likely, would be trips that otherwise would be taken targeting other species or which have no target preference but would now be able to keep red snapper.

Because these would be new trips that harvest red snapper, they would be expected to result in an increase in CS. However, the increase in CS that would be expected to result from these additional trips and the net change in CS when combined with the reduction in CS for trips previously harvesting two fish, cannot be quantified because an estimate of the WTP per trip for an increase in red snapper harvest from zero to one fish per angler trip is not available at this time. Additionally, the WTP estimate used earlier (\$79.72) is based on target trips, when in fact red snapper are harvested on both target and non-target trips, as shown in Section 3.3.2.2. Based on marginality conditions, i.e., the unit (not total) value declines as more of a good is obtained, the value of the first fish should be greater than the value of the second, which should be greater than the value of the third fish, etc. As a result, it is expected that, on average, the increase in CS for a trip able to increase red snapper harvest from zero to one fish would be greater than the increase in CS from increasing harvest from one fish to two fish or, as in the current situation, reducing harvest from two fish to one fish. Further, because the number of new trips allowed to keep a red snapper would be expected to be equal to the number of trips newly restricted to one fish, the expected gain in CS from new trips would be expected to exceed the loss in CS from trips reduced to the lower bag limit. However, given the uncertainty about the number of trips that would be target versus non-target under **Alternative 2**, and the absence of appropriate estimates of CS per trip, it cannot be definitively quantitatively determined whether **Alternative 2** would have positive, negative, or no economic effects compared to **Alternative 1**. Only the maximum potential loss (\$10.57 million) to anglers who would be expected to keep fewer fish can be estimated. Although the evaluation presented in this section was based on the status quo recreational red snapper quota, the conclusions would apply regardless of the size of the allowable harvest.

The same analytic framework would apply to **Alternative 3** to estimate the number of recreational red snapper angler trips that would exceed the fractional bag limit. The number of compensating trips required to still achieve the quota under a fractional bag limit, however, could not be estimated because impacted trips would not result in a one-for-one increase in new trips¹⁴. Therefore, it is not possible to quantify the change in CS or even provide a maximum potential reduction in CS. Even if the number of compensating trips could be estimated, WTP estimates for a fractional fish kept do not exist. While anglers fishing in groups may derive some benefit

¹⁴ In this case, the number of compensating trips would be dependent on the number of anglers and combined total catch estimated for each vessel-level trip.

from the fish caught by others in their group, for-hire anglers on a trip that are not part of the same party would be forced to share the bag limit with strangers and there would be winners and losers. To further complicate matters, it is not clear how the bag limit would be enforced at the individual level, especially for anglers fishing alone, though the incidence of single anglers may be rare.

With regards to for-hire businesses, the same challenges, as faced under **Alternative 2**, in estimating the effects of the bag limit on prices, cancellations, and booking rates also exist under **Alternative 3**, but with even more uncertainty. Since the expectation of catching and keeping red snapper on for-hire trips would be reduced even further than it was under **Alternative 2**, there would be a higher likelihood of shifts in angler demand for trips and corresponding negative impacts to for-hire businesses.

In relation to for-hire anglers, it is logical that the maximum reduction in for-hire CS from **Alternative 3** would be greater than or equal to that which was discussed under **Alternative 2** because all angler trips that were expected to harvest two fish would experience an equal or greater reduction in kept red snapper under **Alternative 3**, as compared to **Alternative 2**. Additionally, many of the angler trips only expected to harvest one fish would now be impacted as well, depending on whether or not the average angler catch per vessel is higher than half a fish. As in the case of **Alternative 2**, additional for-hire trips that land red snapper would offset some or all of the loss in for-hire CS following a bag limit reduction, but it is not possible to quantify the increase in CS from the trips that go from zero fish to one fish, or in the case of anglers sharing a fish, zero fish to half a fish. As a result, it is not possible to quantitatively determine whether the overall net change in CS for the recreational sector would be more, less or equally desirable under **Alternative 3**, as compared to **Alternative 2**.

Both **Alternative 2** and **Alternative 3** have the potential to increase discard rates of red snapper, which could result in higher fish mortality and a smaller stock than would be expected to occur under **Alternative 1**. This could lead to lower CPUE, and as a result, lower economic benefits for all sectors that fish for red snapper (commercial and recreational). Discard rates are expected to be higher under **Alternative 3** than **Alternative 2**, since the bag limit would be reached sooner. Red snapper discards and associated indirect economic effects could increase even further if high-grading occurs. The magnitude of these impacts cannot be quantified with available data; however, they are expected to be minor, as discussed in Section 4.1.2.

4.1.4 Direct and Indirect Effects on the Social Environment

Generally, there is a trade-off between the length of the fishing season and the size of the bag limit, such that a longer season is possible under a smaller bag limit. Although direct impacts would be expected from decreasing the bag limit, these impacts would be expected to be mitigated if the bag limit reduction enables a longer fishing season. The season under a two-fish bag limit (**Alternative 1**) is expected to be shorter than the season under a one-fish bag limit (**Alternative 2**). A season where one fish may be landed per two anglers on board (**Alternative 3**) would be expected to result in the longest season.

Recreational anglers are not homogenous in their fishing preferences; some recreational anglers

prefer a larger bag limit while others prefer a longer season. Whether red snapper is the target species of a directed trip, or one of several desirable species on a fishing trip varies among anglers as well. Also, the accessibility of red snapper varies for anglers around the Gulf, with red snapper more easily accessible to recreational anglers in the Florida Panhandle, compared to the west Florida shelf. Thus, the effects of modifying the bag limit would affect anglers differently.

This action would directly affect federal for-hire operators and crew, and anglers fishing on federally permitted for-hire vessels. Although some fishermen have expressed willingness in public testimony to consider a bag limit reduction in exchange for a longer season, reducing the red snapper bag limit is expected to be supported by some anglers and opposed by others. In public testimony, some for-hire operators have expressed support for the bag limit reduction as a way to extend the length of the fishing season in federal waters. For-hire operators would be expected to benefit most from selecting **Alternative 2**, compared with **Alternatives 1** and **3**, if these businesses are able to book more fishing trips due to an extended season. In public testimony, many anglers expressed concern that once the bag limit is reduced, it would never again be increased and that was not worth the potential short-term extension to the length of the fishing season. These comments came primarily from anglers fishing from private vessels. It remains unknown whether anglers who use for-hire services would support a bag limit reduction. Fishery managers would benefit from additional public comment by anglers using for-hire services.

Fractional bag limits such as the one proposed under **Alternative 3** have not been used by the Council and could cause the most confusion for fishing. Although **Alternative 3** would be expected to result in the longest recreational fishing season, it would be more difficult to enforce and could be especially problematic on vessels where the anglers are not fishing as a group, such as on headboats. Because this action would affect only federally permitted for-hire vessels and not private recreational vessels, considering this action for the for-hire fleet is even less desirable than **Alternatives 1** and **2**.

4.1.5 Direct and Indirect Effects on the Administrative Environment

The alternatives in this action are expected to have nominal differences in the direct and indirect impacts on the administrative environment. **Alternative 1** would have the least burden on the administrative environment, because it would maintain the daily bag limit of two red snapper per angler per day. **Alternative 2** and **Alternative 3** would reduce the daily red snapper bag limit from **Alternative 1** creating an initial burden on the administrative environment. If the recreational red snapper bag limit is modified (**Alternative 2** or **Alternative 3**) stakeholders and law enforcement officials would need to educate themselves initially about this change in the regulations. **Alternative 2** and **Alternative 3** might also cause some confusion because the bag limit for anglers on for-hire vessels would be different from the bag limit for private anglers, which would remain two fish per person. A fractional bag limit (**Alternative 3**) is also problematic because anglers and enforcement officers may not be clear about how many fish can be retained on a vessel with an odd number of anglers.

4.2 Cumulative Effects Analysis

As directed by the National Environmental Policy Act, federal agencies are mandated to assess not only the indirect and direct impacts, but cumulative impacts of actions as well. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The cumulative impacts of FMP and non-FMP actions are analyzed in detail in Amendment 40 (GMFMC 2014b) and are incorporated here by reference. The affected area of this proposed action encompasses the state and federal waters of the Gulf as well as Gulf communities dependent on reef fish fishing. The following are some specific past, present, and future actions that could impact the environment in the area where red snapper are harvested.

Past Actions

Participation in and the economic performance of the reef fish fishery addressed in this document have been affected by a combination of regulatory, biological, social, and external economic factors. Regulatory measures have obviously affected the quantity and composition of harvests of species addressed in this document, through the various size limits, seasonal restrictions, trip or bag limits, and quotas. Some recent regulatory changes specific to red snapper fishing include:

- In May 2013, NMFS implemented a rule to increase the commercial and recreational quotas. The combined quotas were raised from 8.080 million pounds (mp) whole weight (ww) to 8.460 mp. The recreational fishing season was set differently for waters off different states because of non-compatible regulations by the states. However, a federal court ruled against different seasons, so the season for federal waters was set from June 1 through July 5. Later in 2013, NMFS increased the combined quotas from 8.46 mp to 11 mp. This allowed an additional recreational fishing season from October 1 through October 15.
- NMFS granted an exempted fishing permit to the Gulf of Mexico Headboat Collaborative beginning January 1, 2014. The two-year pilot program is intended to assess the viability of an allocation-based management strategy for achieving conservation and economic goals more effectively than current management. The Headboat Collaborative was allocated a portion of the red snapper and gag recreational quotas based on historical landings, and participating headboats can use the allotted quota to harvest red snapper and gag outside the normal recreational fishing seasons.
- In response to a decision by the U.S. District Court for the District of Columbia (Court) in *Guindon v. Pritzker*, (D.D.C. 2014 WL 1274076 Mar. 26, 2014), NMFS took emergency action in May 2014 to address recent recreational red snapper quota overages. The emergency rule implemented an in-season accountability measure for the recreational harvest of red snapper in the Gulf that set an ACT equal to 80% of the 5.390-mp quota (ACT = 4.312 mp). The result was a nine-day recreational red snapper season for 2014.
- A framework action was submitted by the Council in 2014 to establish a recreational red snapper ACT and overage adjustment as permanent accountability measures for the recreational sector that should be effective in early 2015.

Additionally, changes to regulations affecting other portions of the reef fish fishery could also impact red snapper fishermen. Recent regulatory changes include:

- A framework action, effective in July 2013, adjusted the recreational gag season to July 1

through December 31. The framework action also restricted the geographical extent of the fixed February 1 through March 31 shallow-water grouper closed season to apply only to waters seaward of the 20-fathom boundary. This allows grouper fishing to occur year-round while providing some protection to species that spawn during February and March.

- A framework action, effective in September 2013, set a 10-vermilion snapper bag limit within the 20-fish aggregate reef fish bag limit as a precautionary measure to reduce the chance of overfishing for this species. The action also increased the Gulf yellowtail snapper annual catch limit from 725,000 lbs to 901,125 lbs based on a recent stock assessment. Finally, the action eliminated the requirement to use venting tools when fishing for reef fish as some scientific studies have questioned the usefulness of venting tools in preventing barotrauma in fish and the action would give more flexibility to fishermen on when to vent or to use some other device like fish descenders.
- A framework action, effective in March 2014, required headboats to report their logbooks electronically in the Gulf reef fish and coastal migratory pelagic fisheries.
- Accountability measures were implemented for several species of reef fish. The red grouper recreational bag limit was reduced from four to three fish on May 5, 2014, and the season closed on October 4, 2014. The gray triggerfish recreational season was closed on May 1, 2014. The greater amberjack recreational season was closed on August 25, 2014.

Biological forces that either motivate certain regulations or simply influence the natural variability in fish stocks have likely played a role in determining the changing composition of the fisheries addressed by this document. Additional factors, such as changing career or lifestyle preferences, stagnant to declining prices due to imports, increased operating costs (gas, ice, insurance, dockage fees, etc.), and increased waterfront/coastal value leading to development pressure for other than fishery uses have impacted both the commercial and recreational fishing sectors. In general, the regulatory environment for all fisheries has become progressively more complex and burdensome, increasing the pressure on economic losses, business failure, occupational changes, and associated adverse pressures on associated families, communities, and businesses. Some reverse of this trend is possible and expected through management. However, certain pressures would remain, such as total effort and total harvest considerations, increasing input costs, import induced price pressure, and competition for coastal access.

The cumulative effects from the Deepwater Horizon MC252 (DWH) oil spill and response may not be known for years. The impacts of the oil spill on the physical environment are expected to be significant and may be long-term. Oil was dispersed on the surface, and because of the heavy use of dispersants, oil was also documented as being suspended within the water column. Floating and suspended oil washed onto shore in several areas of the Gulf as well as non-floating tar balls. Whereas suspended and floating oil degrades over time, tar balls are more persistent in the environment and can be transported hundreds of miles.

For red snapper, there may have been a reduction in spawning success in 2010; however, the effects may not begin to manifest themselves measurably until recruits from the 2010 year class begin to enter the adult spawning population and be caught by anglers. The most recent red snapper stock assessment (SEDAR 31 2013) did detect a slight reduction of recruitment for 2010. Because recruitment occurs at approximately three years of age, any 2010 year-class failure is likely to be detected in the next stock assessment. Should the 2010 year class be

adversely affected, reduced fishing success and reduced spawning potential could result, and would need to be taken into consideration in future assessments and actions. Oil exposure could also create sub-lethal effects on the eggs, larva, and early life stages. In a 2014 study (Incardona et al), embryos of bluefin tuna, yellowfin tuna, and amberjack exposed to environmentally realistic levels of hydrocarbons showed defects in heart function. The oil itself could adversely affect adult red snapper and other reef fish species. Weisberg et al. (2014) suggested the hydrocarbons associated with the DWH oil spill may be associated with the occurrences of reef fish with lesions and other deformities. However, Murawski et al. (2014) reported that the incidence of lesions on bottom-dwelling fish had declined between 2011 and 2012 in the northern Gulf. Other studies of the effects of hydrocarbon are ongoing. The stressors could potentially be additive, and each stressor may increase susceptibility to the harmful effects of the other.

Indirect and inter-related effects on the ecological environment of the reef fish fishery in concert with the DWH oil spill are not well understood. Changes in the population size structure could result from shifting fishing effort to specific geographic segments of populations, combined with any anthropogenically induced natural mortality that may occur from the impacts of the oil spill. The impacts on the food web from phytoplankton, to zooplankton, to mollusks, to top predators may be significant in the future. Impacts to red snapper from the oil spill may similarly impact other species that may be preyed upon by red snapper, or that might benefit from a reduced red snapper stock.

Present Actions

The Council took final action on Amendment 40 (GMFMC 2014b) at their October 2014 meeting and submitted the amendment to NMFS for approval. The purpose of this action is to establish federal for-hire and private angling red snapper components within the recreational sector, allocate the red snapper recreational quota and ACT between the components, and establish separate red snapper season closure provisions for the components with each component's ACT used to determine its respective federal red snapper season length. The Council also approved a three-year sunset provision limiting the duration of these measures unless further action is taken.

The topic of creating federal for-hire and private angling components in the recreational sector for people who fish for red snapper, also known as sector separation, has been controversial since its first inception. Private anglers and some for-hire operators are concerned that this action could result in a for-hire catch share program and greatly reduce opportunities by private anglers to fish because of limited allocation. Therefore, they are against the program. Many federal for-hire operators are for the establishment of a federal for-hire component because they see this as a way to stabilize their business strategies. With the reef fish charter vessel/headboat permit limitation, for-hire operators must follow the more restrictive of state and federal regulations. As a result, many operators are seeing fewer fishing days as more of the recreational quota is being caught in state waters due to non-compatible extended state fishing seasons. Federal for-hire operators also see the establishment of the federal for-hire component as a way to improve the monitoring of landings, provide more accountability, and provide more management flexibility.

Reasonably Foreseeable Future Actions

The following are actions important to red snapper and the reef fish fishery in general¹⁵:

- Amendment 28 would revise the current 51% commercial:49% recreational red snapper allocation.
- Amendment 36 would revise the red snapper IFQ program based on recommendations from the red snapper advisory panel. These recommendations would be based on a review of the program completed in 2013.
- Amendment 39 would allow regional management of red snapper for the recreational sector. This regional management could be set at the state level or be based on broader regions (e.g., eastern and western Gulf).

The Environmental Protection Agency's climate change webpage (<http://www.epa.gov/climatechange/>) provides basic background information on measured or anticipated effects from global climate change. A compilation of scientific information on climate change can be found in the United Nations Intergovernmental Panel on Climate Change's Fifth Assessment Report (IPCC 2014). Those findings are incorporated here by reference and are summarized. Global climate change can affect marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, and through increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH from the absorption of anthropogenic carbon dioxide emissions may affect a wide range of organisms and ecosystems, particularly organisms that absorb calcium from surface waters, such as corals and crustaceans. These influences could affect biological factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. These climate changes could have significant effects on southeastern fisheries; however, the extent of these effects is not known at this time (IPCC 2013).

In the southeast, general effects of climate change have been predicted through modeling, with few studies on specific effects to species. Warming sea temperature trends in the southeast have been documented, and animals must migrate to cooler waters, if possible, if water temperatures exceed survivable ranges (Needham et al. 2012). Higher water temperatures may also allow invasive species to establish communities in areas they may not have been able to survive previously. An area of low oxygen, known as the dead zone, forms in the northern Gulf each summer. Climate change may contribute to this dead zone by increasing rainfall that in turn increases nutrient input from rivers. This increased nutrient load causes algal blooms that, when decomposing, reduce oxygen in the water (Kennedy et al. 2002; Needham et al. 2012). Other potential effects of climate change in the southeast include increases in hurricanes, decreases in salinity, altered circulation patterns, and sea level rise. The combination of warmer water and expansion of salt marshes inland with sea-level rise may increase productivity of estuarine-dependent species in the short term. However, in the long term, this increased productivity may be temporary because of loss of fishery habitats due to wetland loss (Kennedy et al. 2002). Actions from this amendment are not expected to significantly contribute to climate change through the increase or decrease in the carbon footprint from fishing.

¹⁵ Information on these developing actions can be found on the Council's website at www.gulfcouncil.org.

Monitoring

The effects of the proposed action are, and will continue to be, monitored through collection of landings data by NMFS, stock assessments and stock assessment updates, life history studies, economic and social analyses, and other scientific observations. Landings data for the recreational sector in the Gulf are collected through the Marine Recreational Information Program, NMFS' Headboat Survey, the Texas Marine Recreational Fishing Survey, and the LA Creel Survey. A Southeast Data Assessment and Review assessment of red snapper that the next red snapper assessment is scheduled to be completed in 2015 followed by a benchmark assessment that will be complete in 2016. In response to the DWH incident, increased frequency of surveys of the recreational sector's catch and effort, along with additional fishery-independent information regarding the status of the stock, were conducted. This will allow future determinations regarding the impacts of the DWH incident on various fishery stocks.

The proposed action relates to the harvest of an indigenous species in the Gulf and Atlantic, and the activity being altered does not itself introduce non-indigenous species, and is not reasonably expected to facilitate the spread of such species through depressing the populations of native species. Additionally, it does not propose any activity, such as increased ballast water discharge from foreign vessels, which is associated with the introduction or spread on non-indigenous species.

Conclusion

This action, in combination with any past, present, or reasonably foreseeable future actions is not expected to have significant beneficial or adverse cumulative effects on the physical and biological/ecological environments. The cumulative social and economic effects of past, present, and future amendments may be described as limiting fishing opportunities in the short-term, with some exceptions of actions that alleviate some negative social and economic impacts. The intent of these amendments is to improve prospects for sustained participation in the respective fisheries over time and the proposed actions in this amendment are expected to result in some important long-term benefits to the commercial and for-hire fishing fleets, fishing communities and associated businesses, and private recreational anglers. The proposed changes in management for red snapper will contribute to changes in the fishery within the context of the current economic and regulatory environment at the local and regional level.

This analysis found the effects on the biophysical environment are positive because they would maintain the red snapper stock at a level that allows the maximum benefits in yield while increasing flexibility for recreational for-hire fishing operations. However, short-term negative impacts on the socioeconomic environment associated with red snapper fishing have occurred under the rebuilding plan and are likely to continue due to the need to limit directed harvest and reduce bycatch mortality. These negative impacts can be minimized by selecting measures that would provide the least disruption to the red snapper component of the reef fish fishery while maintaining quotas consistent with the rebuilding plan. The action considered in this framework action may further minimized the impacts of future recreational management measures by directly addressing issues specific to the federal for-hire component of the recreational sector.

CHAPTER 5. REGULATORY IMPACT REVIEW

5.1 Introduction

5.2 Problems and Objectives

5.3 Methodology and Framework for Analysis

5.4 Description of the Fishery

5.5 Effects on Management Measures

5.6 Public and Private Costs of Regulations

Council costs of document preparation, meetings, public hearings, and information Dissemination	\$x0,000
NOAA Fisheries administrative costs of document preparation, meetings and review	\$x0,000
TOTAL	\$x0,000

5.7 Determination of Significant Regulatory Action

CHAPTER 6. REGULATORY FLEXIBILITY ACT ANALYSIS

6.1 Introduction

6.2 Statement of the need for, objective of, and legal basis for the rule

6.3 Description and estimate of the number of small entities to which the proposed action would apply

6.4 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records

6.5 Identification of all relevant federal rules, which may duplicate, overlap or conflict with the proposed rule

6.6 Significance of economic impacts on a substantial number of small entities

6.7 Description of the significant alternatives to the proposed action and discussion of how the alternatives attempt to minimize economic impacts on small entities

CHAPTER 7. LIST OF PREPARERS AND AGENCIES AND PERSONS CONSULTED

PREPARERS (Interdisciplinary Planning Team)

Name	Expertise	Responsibility	Agency
Steven Atran	Fishery Biologist	Co-Team Lead – Amendment development, introduction, social analyses	GMFMC
Susan Gerhart	Biologist	Co-Team Lead – Amendment development, effects analysis, and cumulative effects	SERO
Rich Malinowski	Biologist	Co-Team Lead – Amendment development, effects analysis, and cumulative effects	SERO
David Records	Economist	Economic environment and effects analysis, Regulatory Impact Review, and Regulatory Flexibility Act analysis	SERO
Michael Jepson	Anthropologist	Social environment and environmental justice	SERO
Ava Lasseter	Anthropologist	Social analyses and Reviewer	GMFMC
Mara Levy	Attorney	Legal compliance and Reviewer	NOAA GC
Scott Sandorf	Technical Writer Editor	Regulatory writer	SERO
Noah Silverman	Natural Resource Management Specialist	NEPA compliance	SERO
Nick Farmer	Biologist	Data analysis	SERO
Andrew Strelcheck	Biologist	Data analysis	SERO
Stephen Holliman	Economist	Reviewer	SERO
Assane Diagne	Economist	Reviewer	GMFMC
Carrie Simmons	Fishery biologist	Reviewer	GMFMC
Shannon Cass-Calay	Biologist	Reviewer	SEFSC

The following have or will be consulted.

- National Marine Fisheries Service
 - Southeast Fisheries Science Center
 - Southeast Regional Office
 - Protected Resources
 - Habitat Conservation
 - Sustainable Fisheries

NOAA General Counsel
U.S. Coast Guard

CHAPTER 8. REFERENCES

Albins and Hixon 2008. Invasive Indo-Pacific lionfish *Pterois volitans* reduce the recruitment of Atlantic coral-reef fishes. Marine Ecology Progress Series. Vol. 367: 233–238, 2008.

Ault, J. S., S. G. Smith, G. A. Diaz, and E. Franklin. 2003. Florida hogfish fishery stock assessment. University of Miami, Rosenstiel School of Marine Science. Contract No. 7701 617573 for Florida Marine Research Institute, St. Petersburg, Florida.
http://www.sefsc.noaa.gov/sedar/download/SEDAR6_RW4.pdf?id=DOCUMENT

Carter, D. W., and Liese, C. 2012. The Economic Value of Catching and Keeping or Releasing Saltwater Sport Fish in the Southeast USA. North American Journal of Fisheries Management, 32:4, 613-625. Available at: <http://dx.doi.org/10.1080/02755947.2012.675943>

Cass-Calay, S. L., and M. Bahnick. 2002. Status of the yellowedge grouper fishery in the Gulf of Mexico. Contribution SFD 02/03 – 172. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
http://www.sefsc.noaa.gov/sedar/download/S22_RD02_Status%20of%20the%20Yellowedge%20Grouper%20Fishery.pdf?id=DOCUMENT

Chester, W. 2001. One hundred years of fishing and boat building in Bay County. Fire in the Water Publishing Company, South port, Florida. 314 p.

Fuller, P.F., D.M. Knott, P.R. Kingsley-Smith, J.A. Morris, C.A. Buckel, M.E. Hunter, and L.D. Hartman. 2014. Invasion of Asian tiger shrimp, *Penaeus monodon* Fabricius, 1798, in the western north Atlantic and Gulf of Mexico. Aquatic Invasions 9(1): 59–70.
http://www.aquaticinvasions.net/2014/AI_2014_Fuller_etal.pdf

GMFMC. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico and environmental impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20FMP%20and%20EIS%201981-08.pdf>

GMFMC. 1989. Amendment 1 to the reef fish fishery management plan including environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.
<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RF%20Amend-01%20Final%201989-08-rescan.pdf>

GMFMC. 2004a. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory

pelagic resources of the Gulf of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20EFH%20EIS.pdf>

GMFMC. 2004b. Amendment 22 to the fishery management plan for the reef fish fishery of the Gulf of Mexico, U.S. waters, with supplemental environmental impact statement, regulatory impact review, initial regulatory flexibility analysis, and social impact assessment. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Amend%2022%20Final%2070204.pdf>

GMFMC. 2005. Generic amendment number 3 for addressing essential fish habitat requirements, habitat areas of particular concern, and adverse effects of fishing in the following fishery management plans of the Gulf of Mexico: shrimp fishery of the Gulf of Mexico, United States waters, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, coastal migratory pelagic resources (mackerels) in the Gulf of Mexico and South Atlantic, stone crab fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coral and coral reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/FINAL3_EFH_Amendment.pdf

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%202008.pdf>

GMFMC. 2009. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes draft environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 261 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Draft%20RF%20Amend%2031%206-11-09.pdf>

GMFMC. 2010a. Final regulatory amendment the reef fish fishery management plan to set total allowable catch for red snapper including revised environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Regulatory%20Amendment%203_26_10.pdf

GMFMC. 2011a. Regulatory amendment to the reef fish fishery management plan to set 2011 total allowable catch for red snapper. Gulf of Mexico Fishery Management Council, Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%202011%20Regulatory%20Amendment%20-%201-11.pdf>

GMFMC. 2011b. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico fishery management council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2012. Final regulatory amendment to the fishery management plan for the reef fish resources of the Gulf of Mexico – revise fall recreational fixed closed season and set 2012 and 2013 quotas for red snapper. Gulf of Mexico Fishery Management Council, Tampa, Florida. 62 p.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Red%20Snapper%20Fall%20Season%20and%20Quota%20RegAmend%20-%2003-20-2012.pdf>

GMFMC. 2013a. Framework action to set the 2013 red snapper commercial and recreational quotas and modify the recreational bag limit. Gulf of Mexico Fishery Management Council, Tampa, Florida. 81 p.

<http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%20Framework%20Action%20to%20Set%202013%20Quotas.pdf>

GMFMC. 2013b. Framework action for a red snapper 2013 quota increase and supplemental recreational season. Gulf of Mexico Fishery Management Council, Tampa, Florida. 87 p.

<http://www.gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Framework%20Action%20Set%202013%20Quotas%2008-01-13.pdf>

GMFMC. 2013c. Standing and Special Reef Fish SSC Meeting Summary –May 29-31, 2013. Gulf of Mexico Fishery Management Council, Tampa, Florida. 14 p. (available from the Council's FTP file server vi the Council website: <http://www.gulfcouncil.org>)

GMFMC. 2013d. Red snapper individual fishing quota program 5-year review. Jointly prepared by Gulf of Mexico Fishery Management Council and NMFS Southeast Regional Office. Tampa and St. Petersburg, FL. <http://www.gulfcouncil.org/docs/amendments/Red%20Snapper%205-year%20Review%20FINAL.pdf>

GMFMC. 2014a. Framework Action: Recreational Accountability Measures for Red Snapper. Gulf of Mexico Fishery Management Council, Tampa, Florida. 106 p

<http://www.gulfcouncil.org/docs/amendments/Final%20Recreational%20AMs%20for%20Red%20Snapper%2010-6-2014.pdf>

GMFMC. 2014b. Final amendment 40 to the reef fish fishery management plan for the reef fish resources of the Gulf of Mexico – recreational red snapper sector separation. Gulf of Mexico Fishery Management Council, Tampa, Florida. 274 p.

<http://www.gulfcouncil.org/docs/amendments/RF%2040%20-%20Final%2012-17-2014.pdf>

GMFMC and SAFMC. 1982. Fishery management plan final environmental impact statement for coral and coral reefs. Gulf of Mexico Fishery Management Council. Tampa, Florida; and South Atlantic Fishery Management Council. Charleston, South Carolina.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Coral%20FMP.pdf>

Goodyear, C. P. 1988. The Gulf of Mexico fishery for reef fish species, a descriptive profile. Unpublished report. National Marine Fisheries Service, Southeast Fisheries Center, Miami Laboratory, CRD 87/88-19.

https://grunt.sefsc.noaa.gov/P_QryLDS/DisplayDocuments.jsp?min_series_code=CR&min_record_id=935&direction=next&total_rows=2955&description=SEFSC%20Technical%20Memorandum#

Gore, R. H. 1992. The Gulf of Mexico: A treasury of resources in the American Mediterranean. Pineapple Press. Sarasota, Florida.

Impact Assessment, Inc. 2005. Identifying Communities Associated with the Fishing Industry Along the Florida Gulf Coast. Impact Assessment, Inc. La Jolla, CA. Volumes 1-3 646 pp.

Incardona, J.P., L. D. Gardnerb, T. L. Linbo, T. L. Brown, A. J. Esbaugh, E. M. Mager, J. D. Stieglitz, B. L. French, J. S. Labenia, C. A. Laetz, M. Tagal, C. A. Sloan, A. Elizur, D. D. Benetti, M. Grosell, B. A. Block, and N. L. Scholz. 2014. Deepwater Horizon crude oil impacts the developing hearts of large predatory pelagic fish. *Proceedings of the National Academy of Sciences of the United States of America* 111(15): 1510-1518.

IPCC. 2014. Climate Change 2014: impacts, adaptation, and vulnerability. Part A: global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Field, C. B., V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. O. Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, and L. L. White (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1-32.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2012 Development and Evaluation of Social Indicators of Vulnerability and Resiliency for Fishing Communities in the Gulf of Mexico. *Marine Policy* 26(10): 16-22.

Jepson, M. and L.L. Colburn. 2013. Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions. U.S. Dept. of Commerce, NOAA Technical Memorandum NMFS-F/SPO-129, 64 p.

Liese, C. and D.W. Carter. 2011. Collecting Economic Data from the For-Hire Fishing Sector: Lessons from a Cost and Earnings Survey of the Southeast U.S. Charter Boat Industry. 14 p. In Beard, T. D., Jr., A. J. Loftus, and R. Arlinghaus (editors). *The Angler and the Environment*. American Fisheries Society, Bethesda, MD.

McEachran, J.D. and J.D. Fechhelm. 2005. *Fishes of the Gulf of Mexico, Vol. 2*. University of Texas Press. Austin, Texas

Methot, R. D. 2010. User manual for stock synthesis, model version 3.10b. Seattle, Washington
The most recent version of this manual and software is available at
<http://nft.nefsc.noaa.gov/Download.html> .

Muller, R. G., M. D. Murphy, J. de Silva, and L. R. Barbieri. 2003. A stock assessment of yellowtail snapper, *Ocyurus chrysurus*, in the Southeast United States: Final report submitted to the National Marine Fisheries Service, the Gulf of Mexico Fishery Management Council, and the South Atlantic Fishery Management Council as part of the southeast data, assessment, and review (SEDAR) III. Florida Fish and Wildlife Conservation Commission, FWC-FMRI Report: IHR 2003-10. Florida Fish and Wildlife Research Institute. St. Petersburg, Florida.
http://myfwc.com/media/199926/2003_yel_snapper_sa_4010.pdf

Needham, H., D. Brown, and L. Carter. 2012. Impacts and adaptation options in the Gulf coast. Report prepared for the Center for Climate and Energy Solutions. 38 p. Available at:
<http://www.c2es.org/docUploads/gulf-coast-impacts-adaptation.pdf>.

NMFS. 2002. Status of red grouper in United States waters of the Gulf of Mexico during 1986-2001, revised. Contribution No. SFD-01/02-175rev. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
<http://www.sefsc.noaa.gov/sedar/download/S12RD02%202001%20assess.pdf?id=DOCUMENT>

NMFS. 2005. Endangered Species Act – Section 7 consultation on the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan and proposed amendment 23. February 15, 2005. National Marine Fisheries Service. St. Petersburg, Florida.
http://sero.nmfs.noaa.gov/pr/pdf/Final_RFFFMP23.pdf

NMFS. 2010a. 2010 Recreational Red Snapper Quota Closure Analysis – Fall Reopening. SERO-LAPP-2010-04. Southeast Regional Office, National Marine Fisheries Service. St. Petersburg, Florida. Available at:
http://sero.nmfs.noaa.gov/sf/pdfs/2010_Recreational_Red_Snapper_Quota_Closure_Analysis_Fall_Reopening.pdf

NMFS. 2011a. Biological Opinion on the Continued Authorization of Reef Fish Fishing under the Gulf of Mexico Reef Fish Fishery Management Plan. September 30, 2011. Available at:
<http://sero.nmfs.noaa.gov/pr/esa/Fishery%20Biops/03584%20GOM%20Reef%20Fish%20BiOp%202011%20final.pdf>

NMFS. 2011b. Fisheries Economics of the United States, 2009. U.S. Department of Commerce, NOAA Technical Memorandum. National Marine Fisheries Service-F/SPO-118. Available at: http://www.st.nmfs.noaa.gov/st5/publication/fisheries_economics_2009.html

O'Hop, J., M. Murphy, and D. Chagaris. 2012. The 2012 stock assessment report for yellowtail snapper in the south Atlantic and Gulf of Mexico. Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida. http://www.sefsc.noaa.gov/sedar/download/YTS_FWC_SAR.pdf?id=DOCUMENT

Page, L.M., H. Espinoza-Pérez, L.T. Findley, C.R. Gilbert, R.N. Lea, N.E. Mandrak, R.L. Mayden, and J.S. Nelson. 2013. Common and scientific names of fishes from the United States, Canada, and Mexico, 7th edition. American Fisheries Society, Special Publication 34, Bethesda, Maryland. 384 p.

Parrack, N.C. and D.B. McClellan. 1986. Trends in Gulf of Mexico red snapper population dynamics, 1979-85. National Marine Fisheries Service, Southeast Fisheries Center, Miami, Florida. Coastal Resources Division Contribution No. CRD-86/87-4. 116 p.

Porch, C. E., and S. L. Cass-Calay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico – assessment 5.0 (revised 2005). Sustainable Fisheries Division Contribution No. SFD-2005.034. National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida. <http://www.sefsc.noaa.gov/sedar/download/SEDAR-AW-04-REVISED.pdf?id=DOCUMENT>

Porch, C. E., A. M. Eklund, and G. P. Scott. 2003. An assessment of rebuilding times for goliath grouper. Contribution: SFD 2003-0018. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida. http://www.sefsc.noaa.gov/sedar/download/SEDAR6_RW3_GGRebuild.pdf?id=DOCUMENT

Savolainen, M. A., R. H. Caffey, and R. F. Kazmierczak, Jr. 2012. Economic and Attitudinal Perspectives of the Recreational For-hire Fishing Industry in the U.S. Gulf of Mexico. Center for Natural Resource Economics and Policy, LSU AgCenter and Louisiana Sea Grant College Program, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, LA. 171 p. Available at: <http://www.laseagrant.org/pdfs/Gulf-RFH-Survey-Final-Report-2012.pdf>

Schirripa, M. J. and C. M. Legault. 1999. Status of the red snapper in U.S. waters of the Gulf of Mexico updated through 1998. National Marine Fisheries Service, Southeast Fisheries Science Center, Miami, Florida. Sustainable Fisheries Division Contribution SFD-99/00-75. <http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/RSAssess99.pdf>

Schofield, P.J. 2010. Update of the geographic spread of lionfish (*Pterois volitans* [Linnaeus, 1758] and *P. miles* [Bennet, 1828]) in the western North Atlantic Ocean, Caribbean Sea and Gulf of Mexico. Aquatic Invasions 5 (Supplement 1):S117-122. http://www.aquaticinvasions.net/2010/Supplement/AI_2010_5_S1_Schofield.pdf

SEA (Strategic Environmental Assessment Division, NOS). 1998. Product overview: Products and services for the identification of essential fish habitat in the Gulf of Mexico. NOS, Page 7-62 DEIS for EFH for the Gulf of Mexico FMPs July 2003 Silver Spring MD; National Marine Fisheries Service, Galveston, Texas; and Gulf of Mexico Fishery Management Council. Tampa, Florida.

SEDAR 3. 2003. Complete stock assessment report of yellowtail snapper in the southeastern United States – SEDAR 3, Assessment report 1. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004a. SEDAR report 1 the goliath grouper in southern Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 6. 2004b. SEDAR report 2 the hogfish in Florida: Assessment review and advisory report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7. 2005. Stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 7 Update. 2009. Update stock assessment report of SEDAR 7 Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006a. Stock assessment report 3 of SEDAR 9: Gulf of Mexico vermilion snapper assessment report 3. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006b. Stock assessment report 1 of SEDAR 9: Gulf of Mexico gray triggerfish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006c. Stock assessment report 2 of SEDAR 9: Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2010. SEDAR 9 stock assessment update report, Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011a. SEDAR update stock assessment of vermilion snapper in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9 Update. 2011b. SEDAR update stock assessment of gray triggerfish in the Gulf of Mexico. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10. 2006. Gulf of Mexico Gag Grouper Stock Assessment Report 2. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 10 Update. 2009. Stock assessment of gag in the Gulf of Mexico. – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12 Update. 2009. Stock assessment of red grouper in the Gulf of Mexico – SEDAR update assessment. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 15A. 2008. Stock assessment report 3 (SAR 3) South Atlantic and Gulf of Mexico mutton snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 33. 2014a. Stock assessment report Gulf of Mexico greater amberjack. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 33. 2014b. Stock assessment report Gulf of Mexico gag. Southeast Data, Assessment, and Review. North Charleston, South Carolina.
<http://www.sefsc.noaa.gov/sedar/>.

SERO-LAPP-201x-xx Coming soon

Shipp, R.L. 2001. The snapper fishery in the Gulf of Mexico, an historical perspective, and management implications. Powerpoint presentation to the Gulf of Mexico Fishery Management Council, January 2001.

Shipp, R.L. and S.A. Bortone. 2009. A perspective of the importance of artificial habitat on the management of red snapper in the Gulf of Mexico. *Reviews in Fisheries Science*, 17:1,41-47.
http://www.sefsc.noaa.gov/sedar/download/SEDAR24-RD39_Shipp2009.pdf?id=DOCUMENT

Szedlmayer, S. T. and R. L. Shipp. 1994. Movement and growth of red snapper, *Lutjanus campechanus*, from an artificial reef area in the northeastern Gulf of Mexico. *Bulletin of Marine Science* 55: 887-896.

Szedlmayer, S. T. and J. C. Howe. 1997. Substrate preference in age-0 red snapper, *Lutjanus campechanus*. *Environmental biology of fishes* 50: 203-207.

Szedlmayer, S. T. and J. Conti. 1998. Nursery habitat, growth rates, and seasonality of age-0 red snapper, *Lutjanus campechanus*, in the northeast Gulf of Mexico. *Fishery Bulletin*. 97:626-635.

Topping, D.T. and S.T. Szedlmayer. 2011. Home range and movement patterns of red snapper (*Lutjanus campechanus*) on artificial reefs. *Fisheries Research*. 112: 77-84.

Turner, S. C., N. J. Cummings, and C. P. Porch. 2000. Stock assessment of Gulf of Mexico greater amberjack using data through 1998. SFD-99/00-100. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
http://www.sefsc.noaa.gov/sedar/download/S9RD06_GAJassessGulf.pdf?id=DOCUMENT

Turner, S. C., C. E. Porch, D. Heinemann, G. P. Scott, and M. Ortiz. 2001. Status of the gag stocks of the Gulf of Mexico: assessment 3.0. August 2001. Contribution: SFD-01/02-134. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
http://www.sefsc.noaa.gov/sedar/download/GulfMexicoGagAssessment86_2000.pdf?id=DOCUMENT

Valle, M., C. Legault, and M. Ortiz. 2001. A stock assessment for gray triggerfish, *Balistes capriscus*, in the Gulf of Mexico. Contribution: SFD-01/02-124. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center. Miami, Florida.
http://www.sefsc.noaa.gov/sedar/download/S9RD11_GrayTrig01.pdf?id=DOCUMENT

Weisberg, R.H., Zheng, L., Liu, Y., Murawski, S., Hu, C., and Paul, J. (2014). Did Deepwater Horizon Hydrocarbons Transit to the West Florida Continental Shelf?, *Deep Sea Research Part II: Topical Studies in Oceanography*, Available online 17 February 2014, ISSN 0967-0645, <http://dx.doi.org/10.1016/j.dsr2.2014.02.002>

Wilson, C. A., and D. L. Nieland. 2001. Age and growth of red snapper *Lutjanus campechanus* from the northern Gulf of Mexico off Louisiana. *Fishery Bulletin* 99:653–664.

APPENDIX A. OTHER APPLICABLE LAW

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801 et seq.) provides the authority for fishery management in federal waters of the Exclusive Economic Zone. However, fishery management decision-making is also affected by a number of other federal statutes designed to protect the biological and human components of U.S. fisheries, as well as the ecosystems that support those fisheries. Major laws affecting federal fishery management decision-making include the National Environmental Policy Act (sections throughout the document), Endangered Species Act (Section 3.2.2), Marine Mammal Protection Act (Section 3.2.3), E.O. 12866 (Regulatory Planning and Review, Chapter 5) and E.O. 12898 (Environmental Justice, Section 3.4.2). Other applicable laws are summarized below.

Administrative Procedures Act

All federal rulemaking is governed under the provisions of the Administrative Procedure Act (APA) (5 U.S.C. Subchapter II), which establishes a “notice and comment” procedure to enable public participation in the rulemaking process. Under the APA, the National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider, and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day waiting period from the time a final rule is published until it takes effect.

Coastal Zone Management Act

Section 307(c)(1) of the federal Coastal Zone Management Act of 1972 (CZMA), as amended, requires federal activities that affect any land or water use or natural resource of a state’s coastal zone be conducted in a manner consistent, to the maximum extent practicable, with approved state coastal management programs. The requirements for such a consistency determination are set forth in NMFS regulations at 15 C.F.R. part 930, subpart C. According to these regulations and CZMA Section 307(c)(1), when taking an action that affects any land or water use or natural resource of a state’s coastal zone, NMFS is required to provide a consistency determination to the relevant state agency at least 90 days before taking final action.

Upon submission to the Secretary, NMFS will determine if this plan amendment is consistent with the Coastal Zone Management programs of the states of Alabama, Florida, Louisiana, Mississippi, and Texas to the maximum extent possible. Their determination will then be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management programs for these states.

Data Quality Act

The Data Quality Act (DQA) (Public Law 106-443) effective October 1, 2002, requires the government to set standards for the quality of scientific information and statistics used and disseminated by federal agencies. Information includes any communication or representation of knowledge such as facts or data, in any medium or form, including textual, numerical, cartographic, narrative, or audiovisual forms (includes web dissemination, but not hyperlinks to information that others disseminate; does not include clearly stated opinions).

Specifically, the DQA directs the Office of Management and Budget to issue government wide guidelines that “provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies.” Such guidelines have been issued, directing all federal agencies to create and disseminate agency-specific standards to: 1) ensure information quality and develop a pre-dissemination review process; 2) establish administrative mechanisms allowing affected persons to seek and obtain correction of information; and 3) report periodically to Office of Management and Budget on the number and nature of complaints received.

Scientific information and data are key components of fishery management plans (FMPs) and amendments and the use of best available information is the second national standard under the Magnuson-Stevens Act. To be consistent with the Act, FMPs and amendments must be based on the best information available. They should also properly reference all supporting materials and data, and be reviewed by technically competent individuals. With respect to original data generated for FMPs and amendments, it is important to ensure that the data are collected according to documented procedures or in a manner that reflects standard practices accepted by the relevant scientific and technical communities. Data will also undergo quality control prior to being used by the agency and a pre-dissemination review.

Executive Orders

E.O. 12630: Takings

The Executive Order on Government Actions and Interference with Constitutionally Protected Property Rights that became effective March 18, 1988, requires each federal agency prepare a Takings Implication Assessment for any of its administrative, regulatory, and legislative policies and actions that affect, or may affect, the use of any real or personal property. Clearance of a regulatory action must include a takings statement and, if appropriate, a Takings Implication Assessment. The National Oceanic and Atmospheric Administration Office of General Counsel will determine whether a Taking Implication Assessment is necessary for this amendment.

E.O. 12962: Recreational Fisheries

This Executive Order requires federal agencies, in cooperation with states and tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods including, but not limited to, developing joint partnerships; promoting the restoration of recreational fishing areas that are limited by water quality and habitat degradation; fostering sound aquatic conservation and restoration endeavors; and evaluating the effects of federally-funded, permitted, or authorized actions on aquatic systems and recreational fisheries, and documenting those effects. Additionally, it establishes a seven-member National Recreational Fisheries Coordination Council (Council) responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The Council also is responsible for

developing, in cooperation with federal agencies, States and Tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

E.O. 13132: Federalism

The Executive Order on Federalism requires agencies in formulating and implementing policies, to be guided by the fundamental Federalism principles. The Order serves to guarantee the division of governmental responsibilities between the national government and the states that was intended by the framers of the Constitution. Federalism is rooted in the belief that issues not national in scope or significance are most appropriately addressed by the level of government closest to the people. This Order is relevant to FMPs and amendments given the overlapping authorities of NMFS, the states, and local authorities in managing coastal resources, including fisheries, and the need for a clear definition of responsibilities. It is important to recognize those components of the ecosystem over which fishery managers have no direct control and to develop strategies to address them in conjunction with appropriate state, tribes, and local entities (international, too).

APPENDIX B. SUMMARIES OF PUBLIC COMMENTS RECEIVED

This section will be completed after all comments have been received and the Council takes final action.

OPTIONS TO ESTABLISH A RED SNAPPER SPLIT SEASON FOR VESSELS WITH FEDERAL CHARTER VESSEL/HEADBOAT PERMITS

2.2 Draft Action 2 – Red Snapper Split Season for Charter Vessels and Headboats

Alternative 1: No Action. The red snapper season for federally permitted charter vessels and headboats will open on June 1 and will close on the date when the for-hire allocation of ACT is projected to be reached, or when the combined ACT (charter-for-hire and private recreational quotas combined) is projected to be reached, whichever occurs sooner.

Alternative 2: Effective beginning in 2015, the red snapper season for federally permitted charter vessels and headboats will open on **June 1** and will close on the date when 66 percent of the for-hire ACT is projected to be reached. The season will re-open on October 1 and will close on the date when the for-hire ACT is projected to be reached, or when the total recreational ACT (for-hire and private angling combined) is projected to be reached, whichever occurs sooner.

Alternative 3: Effective beginning in 2016, the red snapper season for federally permitted charter vessels and headboats will open on **March 1** and will close on the date when 66 percent of the for-hire ACT is projected to be reached. The season will re-open on October 1 and will close on the date when the for-hire ACT is projected to be reached, or when the total recreational ACT (for-hire and private angling combined) is projected to be reached, whichever occurs sooner.

Note: Implementation of this action is contingent upon implementation of the sector separation provision in Amendment 40. If sector separation terminates, then the split season in this action will also end. The opening date for for-hire vessels will be the same as for private vessels, unless modified in a subsequent regulatory action.

Discussion:

During the December 2-3, 2014 meeting of the Ad Hoc Red Snapper For-Hire Advisory Panel (AP), the AP passed a motion to recommend that the Gulf of Mexico Fishery Management Council (Council) establish a split season split season for the for-hire component of the recreational sector, with 66% of the ACT allocated for the first season, and following determination of landings, open a second season in the fall for the remainder of the ACT. This split season would be effective for 2015, or until an electronic reporting method is implemented. The purpose of this section is to establish alternatives for the Council to consider such an action.

If the Council chooses to adopt a split season, this action can be added to the Framework Action to Adjust Recreational For-Hire Red Snapper Management Measures.

The alternatives presented use the AP's recommended allocation of 66% of the ACT in the first season. This allocation is based on the 2/3 and 1/3 of quota allocation used in the commercial red snapper sector from 1996 until implementation of the IFQ program in 2007. Also, in the event that the combined for-hire and private vessel ACT is taken prior to the October opening, which would result in not having a second season, this assures that the for-hire component will have had the opportunity to take the majority of its ACT. However, the Council can choose a different split when it adopts a preferred alternative.

Alternative 1, the no action alternative, retains the single season the for-hire component. The red snapper for-hire season will open on June 1, the same as the private-angling season. Season lengths have not been determined as of the writing of this document, but the for-hire component is expected to have a longer season in federal waters than the private-angling component. However, private vessels will likely have additional fishing days in state waters off several of the Gulf states. For-hire vessels, as a condition of their federal permits, are required to adhere to the more restrictive of state or federal regulations when fishing in state waters. Depending upon the state regulations, private-anglers may be able to participate in extended state seasons while for-hire vessels are constrained by the permit condition.

Alternative 2 establishes a split season as recommended by the AP beginning in 2015. This alternative opens the red snapper for-hire season on June 1 but closes it when 66% of the for-hire ACT is projected to be reached. The for-hire season would then re-open October 1 to allow the remainder of the ACT to be taken. The expected pounds of red snapper available for each season from 2015 through 2017 is shown in Table 2.2. The second season will be adjusted for any over or underharvest in the first season. As a result, the second season could have more than 34% of the ACT remaining, or less, depending on how many red snapper were caught in the first season. In addition, the total amount of ACT could be reduced if there is an overharvest in the preceding year. Any unused ACT will not be carried over to the following year. This would allow for-hire vessels to provide a limited number of trips to customers who would prefer to fish for red snapper in the fall. However, if NMFS determines that the entire recreational ACT (for-hire and private anglers combined) was caught during the first season, then there would be no fall season opening.

Alternative 3 establishes a split season with the first season opening on March 1 rather than on June 1. This alternative is otherwise similar to **Alternative 2**. This alternative cannot be implemented for 2015 due to the time required to review and implement a framework action. However, the Council could choose to adopt **Alternative 2** for 2015 and **Alternative 3** for 2016 and beyond. There is currently a fixed closed season from January 1 through May 31 that would need to be modified as part of this action. The primary benefit of this alternative is to move the for-hire red snapper season out of the summer when heat and frequent storms may discourage some fishermen from fishing. In addition, there seems to be a positive correlation with temperature and depth and mortality of released fish. Shifting the red snapper open season to spring or fall could improve the survival of release fish because the likelihood of barotrauma being fatal is higher in hotter months (Loftus and Radonski 2012). This alternative moves the

for-hire open season out of the red snapper spawning season, which occurs from early April through late August with a peak in late May through July (Lyczkowski-Schultz and Hanisko 2007). Red snapper do not form large spawning aggregations and there is no evidence that fishing for red snapper during spawning season has any greater impact on the stock than fishing at other times. However, many fishermen feel that it is inappropriate to target fish when they are spawning.

The Council could choose to adopt both **Alternative 2** and **Alternative 3** as preferred alternatives. If both alternatives are adopted, the 2015 for-hire season for red snapper would open on June 1. In 2016 and beyond, the season would open on March 1.

Table 2.1 Calculation of recreational red snapper recreational sector component ACTs. Assumes that headboat collaborative EFP does not continue after 2015.

Year	ABC	Recreational ACL (49% of ABC)	HBC portion 3.9894%	Sector Separation		ACT	
				CFH quota 42.3% of ACL minus HBC portion	Priv. quota 57.7% of ACL	CFH 80% of quota	Priv. Vess.
2015	13,000,000	6,370,000	254,125	2,440,385	3,675,490	1,952,308	2,940,392
2016	13,210,000	6,472,900	0	2,738,037	3,734,863	2,190,429	2,987,891
2017	13,320,000	6,526,800	0	2,760,836	3,765,964	2,208,669	3,012,771

Table 2.2 Season allocation of CFH ACT based on a 66%:34% split. Season 2 quota will be adjusted for any Season 1 over or under harvest. ACT may be reduced if overages occur in the prior fishing year.

Year	CFH ACT	Season 1 66%	Season 2 34%
2105	1,952,308	1,288,523	663,785
2016	2,190,419	1,445,677	744,742
2017	2,208,669	1,457,722	750,947

References

Loftus, A.J. and G.C. Radonski. 2012 FishSmart Gulf of Mexico/South Atlantic workshop

on improving the survival of released fish focusing on barotrauma. Workshop summary. 27 p.
http://www.fishsmart.org/sites/g/files/g1490811/f/201404/FS_GULF_12_Full_Report.pdf

Lyczkowski-Schultz, J. and D.S. Hanisko. 2007. A time series of observations on red snapper larvae from SEAMAP surveys, 1982-2003: seasonal occurrence, distribution, abundance, and size. P. 3-23 *in*: Patterson, W. F., III, J. H. Cowan, Jr., G. R. Fitzhugh, and D. L. Nieland, editors. 2007. Red snapper ecology and fisheries in the U.S. Gulf of Mexico. American Fisheries Society, Symposium 60, Bethesda, Maryland

For the reasons set out in the preamble, 50 CFR part 622 is proposed to be amended as follows:

PART 622--FISHERIES OF THE CARIBBEAN, GULF OF MEXICO, AND SOUTH ATLANTIC

1. The authority citation for part 622 continues to read as follows:

Authority: 16 U.S.C. 1801 et seq.

2. In § 622.38, paragraph (b) (3) is revised to read as follows:
§ 622.38 Bag and possession limits.

* * * * *

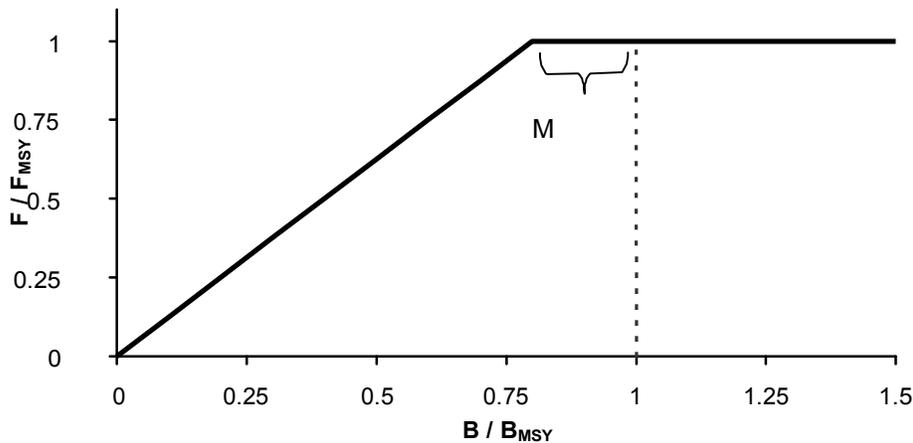
(b) * * *

(3) Red snapper--(i) Federal charter vessel/headboat component bag limit--~~X~~. The Federal charter vessel/headboat component bag limit applies to persons fishing aboard a vessel that has been issued a valid Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year. However, no red snapper may be retained by the captain or crew of a vessel operating as a charter vessel or headboat. The bag limit for such captain and crew is zero.

(ii) Private angling component bag limit--2. The private angling component bag limit applies to persons that fish under the bag limit and are not fishing aboard a vessel that has been issued a Federal charter vessel/headboat permit for Gulf reef fish any time during the fishing year.

Comment [SS1]: Action 1, No preferred alternative has been selected.

Minimum Stock Size Threshold (MSST) for reef fish stocks with low natural mortality



Options Paper to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico

January 2015



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA10NMF4410011.

This page intentionally blank

ABBREVIATIONS USED IN THIS DOCUMENT

Council	Gulf of Mexico Fishery Management Council
FMP	Fishery Management Plan
FMU	Fishery Management Unit
GMFMC	Gulf of Mexico Fishery Management Council
Gulf	Gulf of Mexico
M	Instantaneous Rate of Natural Mortality
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	Maximum fishing mortality threshold
MSST	Minimum stock size threshold
MSY	Maximum sustainable yield
NMFS	National Marine Fisheries Service
NS1	National Standard 1 guidelines
OY	Optimum yield
SEDAR	Southeast Data, Assessment and Review
SPR	Spawning potential ratio

Table of Contents

ABBREVIATIONS USED IN THIS DOCUMENT	i
LIST OF TABLES	iii
LIST OF FIGURES	iv
Chapter 1. Introduction	5
1.1 Background	5
1.2 Purpose and Need	7
1.3 History of Management	7
Chapter 2. Management Alternatives	9
2.1 Action 1 – Define (or re-define) Minimum Stock Size Threshold for Species in the Reef Fish Fishery Management Unit with Low Natural Mortality Rates.....	9
2.2 Action 2 – Default Minimum Stock Size Threshold	13
Chapter 10. References	15

LIST OF TABLES

Table 1.1. Proposed MSY, OY, MFMT, and MSST definitions in the Generic Sustainable Fisheries Amendment.	8
Table 1.2. Stocks with status determination criteria assigned.....	8
Table 2.1. Reef fish species with natural mortality estimates of 0.15 or lower (Option a).....	11
Table 2.2. Reef fish species with natural mortality estimates of 0.20 or lower (Option b).	11
Table 2.3. Reef fish species with natural mortality estimates of 0.25 or lower (Option c).....	12
Table 2.4. Reef fish species with natural mortality estimates above 0.25.	12

LIST OF FIGURES

No table of figures entries found.

CHAPTER 1. INTRODUCTION

1.1 Background

Gulf of Mexico Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 17 voting members, 11 of whom are appointed by the Secretary of Commerce, the National Marine Fisheries Service Regional Administrator, and 1 representative from each of the 5 Gulf states marine resource agencies
- Responsible for developing fishery management plans and amendments, and for recommending actions to National Marine Fisheries Service for implementation

National Marine Fisheries Service

- Responsible for conservation and management of fish stocks
- Responsible for compliance with federal, state, and local laws
- Approves, disapproves, or partially approves Council recommendations
- Implements regulations

What Actions Are Being Proposed?

This Amendment to the Fishery Management Plan for the Reef Fish Fishery of the Gulf of Mexico proposes to modify the definition of minimum stock size threshold (MSST) for select reef fish species with a low (less than 0.15, 0.20, or 0.25) natural mortality rate, and to consider setting a default definition of MSST for all stocks in the reef fish fishery management unit.

Who is Proposing the Action?

The Gulf of Mexico Fishery Management Council (Council) is proposing the action. The Council develops the amendment and submits it to the National Marine Fisheries Service (NMFS) who publishes a rule to implement the amendment on behalf of the Secretary of Commerce. NMFS is an agency in the National Oceanic and Atmospheric Administration within the Department of Commerce.

Why are the Council and NMFS Considering Action?

This amendment would define (or re-define) the MSST for select reef fish species with low natural mortality rates to reduce the likelihood of the stock entering an overfished status due to normal year-to-year fluctuations in biomass levels. MSST is a biomass level set below the level corresponding to maximum sustainable yield (MSY) to allow for fluctuations in abundance while maintaining the capability to produce MSY on a continuing basis. The current definition of MSST used by the Council for most stocks where it has been defined is $(1-M) \cdot B_{MSY}$ (or proxy for B_{MSY}) or $0.5 \cdot B_{MSY}$ (or proxy), whichever is greater. M is the natural mortality rate and B_{MSY} (or proxy) is the biomass or biomass proxy when the stock is at the maximum sustainable yield (MSY) level and considered to be rebuilt. This can be measured in terms of female spawning stock biomass, total (male plus female) spawning stock biomass, or estimated spawning stock egg production. Using this formula, the buffer between MSY and MSST is very small for long-lived stocks that have a low M . Such stocks tend to have smaller natural fluctuations in abundance than high- M stocks, but even small fluctuations in biomass due to natural variations not related to fishing mortality may cause a stock to vary between an overfished or not overfished condition based on current definitions. When a species is identified as overfished, the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires that a plan be implemented to rebuild the stock. Redefining MSST for species with low natural mortality rates would help to prevent unnecessary overfished designations when small drops in biomass are due to natural variation in recruitment or other environmental variables, and ensure that rebuilding plans are applied to stocks when truly appropriate.

This amendment would also consider establishing a default MSST for all reef fish stocks in the management unit. A previous attempt was made to define MSST as a certain spawning potential ratio (SPR) level for all reef fish species in the Generic Sustainable Fisheries Act Amendment (GMFMC 1999) was rejected by NMFS. Subsequent to that action, the Council began to define MSST and other status determination criteria for stocks as they were assessed, but only if needed in order to establish a rebuilding plan for overfished stocks. MSSTs have not been set for stocks without assessments or assessed stocks that were not in need of a rebuilding plan. Consequently, MSST has been defined for only 6 of the 31 species in the reef fish fishery management unit (Table 1.2).

1.2 Purpose and Need

The purpose for the action is set MSST for reef fish stocks taking into consideration natural mortality rates, and to establish MSST for all stocks in the reef fish fishery management unit. The need for the proposed action is to comply with the National Standard 1 guidelines requiring that stocks have an MSST while giving consideration to preventing reef fish stocks with low natural mortality rates from frequently alternating between overfished and non-overfished conditions due to natural variation in recruitment and other environmental factors.

1.3 History of Management

Following passage of the Sustainable Fisheries Act of 1996, the National Marine Fisheries Service (NMFS) published updated National Standard Guidelines that included the introduction of status determination criteria. The updated guidelines for National Standard 1 (NS1) described maximum fishing mortality threshold (MFMT) to determine when overfishing is occurring, and minimum stock size threshold (MSST) to determine when a stock is overfished. The NS1 guidelines further required that each fishery management plan (FMP) must specify, to the extent possible, objective and measurable status determination criteria for each stock or stock complex covered by that FMP and provide an analysis of how the status determination criteria were chosen and how they relate to reproductive potential.

In 1999, the Council submitted its Generic Sustainable Fisheries Act Amendment (GMFMC 1999), in which it attempted to define MSST and MFMT along with other biological reference points of maximum sustainable yield (MSY) and optimum yield (OY) for stocks under management. All of the definitions were based on static¹ spawning potential ratio (SPR). For reef fish stocks, the amendment proposed the following MFMT and MSST definitions (Table 1.1).

¹ SPR is a measure of reproductive capability, but is measured in two different ways. Static SPR is a measure of spawning-per-recruit relative to the level of spawning-per recruit that would occur in the absence of fishing. It is analogous to yield-per-recruit and is the level of spawning that would occur at equilibrium if fishing occurred at the same rate and selectivity pattern. Transitional SPR is a measure of spawning production per recruit in a given year relative to the spawning production that would have occurred in that year if there had been no fishing. Static SPR is directly related to fishing mortality and can be used as a measure of overfishing. Transitional SPR can be used to indicate how close the age structure of a stock is to being rebuilt, but does not necessarily correlate to absolute biomass levels (GMFMC 1996). Although these terms have fallen out of common use, phrases such as “a mortality rate of 30% SPR” or “yield when fishing at 30% SPR” refer to static SPR.

Table 1.1. Proposed MSY, OY, MFMT, and MSST definitions in the Generic Sustainable Fisheries Amendment.

Stock	MSY	OY	MFMT	MSST
Nassau grouper Jewfish (goliath grouper)	50% static SPR	50% static SPR	Fishing mortality rate equivalent to 50% static SPR	To be implemented by framework measure as estimates of BMSY and MSST are developed by NMFS, the Reef Fish Stock Assessment Panel, and the Council.
Red snapper	26% static SPR	36% static SPR	Fishing mortality rate equivalent to 26% static SPR	
All other reef fish stocks	30% static SPR	40% static SPR	Fishing mortality rate equivalent to 30% static SPR	

On November 17, 1999, NMFS notified the Council that, while it approved the definitions of MFMT based on static SPR, it disapproved all SPRs submitted as proxies for MSY, OY and MSST because SPR is not biomass-based and is not an acceptable proxy for biomass reference points.

All stocks have an MFMT from the Generic Sustainable Fisheries Act Amendment or as later modified. Other status determination criteria and biological reference points were adopted on a stock-by-stock basis as stocks were assessed, but only if the stock was determined to be in need of a rebuilding plan. Stocks for which MSST has been adopted are shown in Table 2.1.

Table 1.2. Stocks with status determination criteria assigned.

Stock	MFMT	MSST	Source
Gag	F_{MAX}	$(1-M)*fSSB_{MAX}$ ($M = 0.15$)	Amendment 30B (GMFMC 2008a)
Red grouper	$F_{30\% SPR}$	$(1-M)*SS_{female gonad wt_{MSY}}$ ($M = 0.2$)	Secretarial Amendment 1 (GMFMC 2004a)
Red snapper	$F_{26\% SPR}$	$(1-M)*B_{MSY}$ ($M = 0.1$)	Amendment 27 (GMFMC 2007)
Vermilion snapper	$F_{30\% SPR}$	$(1-M)*B_{MSY}$ ($M = 0.25$)	Amendment 23 (GMFMC 2004b)
Gray triggerfish	$F_{30\% SPR}$	$(1-M)*eSSB_{30\% SPR}$ ($M = 0.27$)	Amendment 30A (GMFMC 2008b)
Greater amberjack	$F_{30\% SPR}$	$(1-M)*B_{MSY}$ ($M = 0.25$)	Secretarial Amendment 2 (GMFMC 2002)

Several other reef fish species have had stock assessments, but were not in need of rebuilding plans (or in the case of goliath grouper, harvest was already prohibited), and therefore were not assigned status determination criteria. These stocks include mutton snapper, lane snapper, yellowedge grouper, goliath grouper, black grouper, tilefish, and hogfish.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1 – Define (or re-define) Minimum Stock Size Threshold for Species in the Reef Fish Fishery Management Unit with Low Natural Mortality Rates

Alternative 1: No Action. MSST for species that have a defined specification will not be changed. MSST will remain undefined for species that do not have a definition specified.

Alternative 2: Define (or re-define) the MSST for select species in the reef fish management unit with low natural mortality rates to 75% of B_{MSY} (or proxy). The threshold for adopting this MSST is if the natural mortality rate (M) from a peer-review report (e.g., a SEDAR stock assessment) is

Option a. the estimation of M is 0.15 or lower

Option b. the estimation of M is 0.20 or lower

Option c. the estimation of M is 0.25 or lower

Alternative 3: Define (or re-define) the MSST for select species in the reef fish management unit with low natural mortality rates to 50% of B_{MSY} (or proxy). The threshold for adopting this MSST is if the natural mortality rate (M) from a peer-review report (e.g., a SEDAR stock assessment) is

Option a. the estimation of M is 0.15 or lower

Option b. the estimation of M is 0.20 or lower

Option c. the estimation of M is 0.25 or lower

Discussion:

If any species are added to the management unit, or if the estimate of M is changed in a peer-review report or SEDAR assessment for any existing species in the management unit, the intent of this action is that MSST will be set based on the most recent estimate of M and the actions specified in Action 1 and Action 2.

This amendment does not address what proxy to use for B_{MSY} (e.g., $B_{26\% SPR}$, $B_{30\% SPR}$, B_{MAX} , etc.). Those proxies, where not currently set, will be set in the Generic Status Determination Criteria Amendment or will continue to be set on a case-by-case basis as needed. The purpose of this action is to establish the buffer between B_{MSY} and MSST regardless of what proxy is used.

Alternative 1 makes no changes to MSST. Currently only six species have MSST defined: red snapper, vermilion snapper, red grouper, gag, greater amberjack, and gray triggerfish (Table 1.2). For these species $MSST = (1-M)*B_{MSY}$ (or proxy). The M values for these stocks range from

0.09 to 0.28, and the resulting MSST levels range from 72% to 91% of B_{MSY} (or proxy). The remaining reef fish stocks do not have MSST defined, but have M values ranging from 0.07 to 0.44. For two species, lesser amberjack and Almaco jack, M values could not be found in the published literature. When MSST is only slightly below B_{MSY} , even small fluctuations in biomass levels not related to fishing mortality may cause a stock at or near B_{MSY} to drop below MSST.

Natural fluctuations for stocks with low M values tend to be smaller than those for stocks with higher M values. Such stocks are longer-lived and, when healthy, have a large number of year-classes in the population. The addition of a particularly strong or weak year-class will have less impact and cause less fluctuation in the stock biomass than for a high- M stock that has only a few year-classes. However, the determination of M is imprecise and is an approximation at best. Many different methods exist to estimate M , and can produce dramatically different results. For example, Kenchington (2008) estimated M for the Gulf of Mexico gag stock using 23 different methods, and produced M values ranging from 0.07 to 0.59. Although the extreme estimates may be outliers, the true value of M cannot be known with certainty. Furthermore, when functions are used that allow the estimate of M to vary with age (e.g., Lorenzen 1996), the overall true M may vary when the age distribution of the stock varies. Setting MSST too close to B_{MSY} may not allow for uncertainty and variation in the true M when determining a stock's condition.

Alternative 2 sets $MSST = 75\%$ of B_{MSY} for selected stocks that have M at or below a certain value. This MSST is mid-way between B_{MSY} and 50% of B_{MSY} , which is the smallest value allowed under the National Standard guidelines. For the selected stock, this creates a larger buffer than under **Alternative 1**, reducing the likelihood of an overfished determination due to natural fluctuations. The possible M value thresholds are **Option a**: $M=0.15$, **Option b**: $M=0.20$, or **Option c**: $M=0.25$. The stocks included under each option are shown in Tables 2.1, 2.2, and 2.3.

Alternative 3 sets $MSST = 50\%$ of B_{MSY} for selected stocks that have M at or below a certain value. This is the smallest MSST value allowed under the National Standard guidelines. This alternative creates a larger buffer than either **Alternative 1** or **Alternative 2**. While this would reduce the likelihood of a stock being declared overfished even further, once a stock is declared overfished, it would require a more restrictive rebuilding plan to rebuild the stock within the time constraints of the Magnuson-Stevens Act and the National Standard 1 guidelines. This MSST definition is currently used for stocks managed by three of the Regional Fishery Management Councils (NEFMC, MAFMC, and NPFMC). In addition, the SAFMC sets $MSST = 50\%$ of B_{MSY} for dolphin because the natural mortality rate for dolphin is estimated at $M = 0.68-0.80$, which would place MSST beyond the 50% limit allowed by the National Standard 1 guidelines (SAFMC 2011). As with **Alternative 2**, the possible M value thresholds are **Option a**: $M=0.15$, **Option b**: $M=0.20$, or **Option c**: $M=0.25$. The stocks included under each option are shown in Tables 2.1, 2.2, and 2.3.

Table 2.1. Reef fish species with natural mortality estimates of 0.15 or lower (Option a).

Common Name	Scientific Name	M	Source
Snappers			
Mutton snapper	Lutjanus analis	0.11	SEDAR 15A (2008)
Red snapper	Lutjanus campechanus	0.094277	SEDAR 31 (2013)
Groupers			
Yellowedge grouper	Hyporthodus flavolimbatus	0.073	SEDAR 22 (2011a)
Goliath grouper	Epinephelus itajara	0.12	SEDAR 23 (2011c)
Red grouper	Epinephelus morio	0.14	SEDAR 12 (2007)
Black grouper	Mycteroperca bonaci	0.136	SEDAR 19 (2010)
Gag	Mycteroperca microlepis	0.134	SEDAR 33 (2014a)

Table 2.2. Reef fish species with natural mortality estimates of 0.20 or lower (Option b).

Common Name	Scientific Name	M	Source
Snappers			
Mutton snapper	Lutjanus analis	0.11	SEDAR 15A (2008)
Red snapper	Lutjanus campechanus	0.094277	SEDAR 31 (2013)
Yellowtail snapper	Ocyurus chrysurus	0.194	O’Hop et al. (2012)
Groupers			
Yellowedge grouper	Hyporthodus flavolimbatus	0.073	SEDAR 22 (2011a)
Goliath grouper	Epinephelus itajara	0.12	SEDAR 23 (2011c)
Red grouper	Epinephelus morio	0.14	SEDAR 12 (2007)
Black grouper	Mycteroperca bonaci	0.136	SEDAR 19 (2010)
Gag	Mycteroperca microlepis	0.134	SEDAR 33 (2014a)
Tilefishes			
Tilefish	Lopholatilus chamaeleonticeps	0.13	SEDAR 22 (2011b)
Other Species			
Hogfish	Lachnolaimus maximus	0.179	Cooper et al. (2013)

Table 2.3. Reef fish species with natural mortality estimates of 0.25 or lower (Option c).

Common Name	Scientific Name	M	Source
Snappers			
Mutton snapper	Lutjanus analis	0.11	SEDAR 15A (2008)
Red snapper	Lutjanus campechanus	0.094277	SEDAR 31 (2013)
Lane snapper*	Lutjanus synagris	0.30 0.11-0.24	Ault et al. (2005) Johnson et al. (1995)
Yellowtail snapper	Ocyurus chrysurus	0.194	O’Hop et al. (2012)
Vermilion snapper	Rhomboplites aurorubens	0.25	SEDAR 9 (2006a)
Groupers			
Yellowedge grouper	Hyporthodus flavolimbatus	0.073	SEDAR 22 (2011a)
Goliath grouper	Epinephelus itajara	0.12	SEDAR 23 (2011b)
Red grouper	Epinephelus morio	0.14	SEDAR 12 (2007)
Black grouper	Mycteroperca bonaci	0.136	SEDAR 19 (2010)
Gag	Mycteroperca microlepis	0.134	SEDAR 33 (2014a)
Tilefishes			
Tilefish	Lopholatilus chamaeleonticeps	0.13	SEDAR 22 (2011c)
Other Species			
Hogfish	Lachnolaimus maximus	0.179	Cooper et al. (2013)

* Lane snapper may or may not be included in Option c depending on which reference is used for the natural mortality estimate.

Table 2.4. Reef fish species with natural mortality estimates above 0.25.

Common Name	Scientific Name	M	Source
Jacks			
Greater amberjack	Seriola dumerili	0.28	SEDAR 33 (2014b)
Other Species			
Gray triggerfish	Balistes capriscus	0.27	SEDAR 9 (2006b)

2.2 Action 2 – Default Minimum Stock Size Threshold

Alternative 1: No Action. Except as specified in the proposed alternative of Action 1, MSST for species that have a defined specification will not be changed. MSST will remain undefined for species that do not have a definition specified.

Alternative 2: $MSST = (1-M) \cdot B_{MSY}$ (or proxy) or $0.50 \cdot B_{MSY}$ (or proxy), whichever is greater, for all reef fish stocks in the reef fish management unit except where otherwise specified in this amendment or other subsequent management action.

Alternative 3: $MSST = 0.75 \cdot B_{MSY}$ (or proxy) for all reef fish stocks in the reef fish management unit except where otherwise specified in this amendment or other subsequent management action.

Alternative 4: $MSST = 0.50 \cdot B_{MSY}$ (or proxy) for all reef fish stocks in the reef fish management unit except where otherwise specified in this amendment or other subsequent management action.

Discussion:

As with the previous action, if any species are added to the management unit, or if the estimate of M is changed in a peer-review report or SEDAR assessment for any existing species in the management unit, the intent of this action is that MSST will be set based on the most recent estimate of M and the actions specified in Action 1 and Action 2.

This action would consider establishing a default MSST for all reef fish stocks in the management unit other than those for which MSST is set in Action 1. This action only sets the formula for MSST. The specific MSY proxy to be used for each species (e.g., 30% SPR, maximum-yield-per-recruit, etc.) will be established in the Generic Status Determination Criteria Amendment (currently under development) or on a case-by-case basis as needed.

Alternative 1 leaves MSST undefined for reef fish species except for those species included in Action 1 or which already have a defined parameter (Table 1.2). Depending upon which alternative is selected in Action 1, up to 13 species may have MSST defined, leaving 18 or more species without a defined MSST. For these species, MSST will continue to be set on a case-by-case basis as needed.

Alternative 2 sets the MSST at $(1-M) \cdot B_{MSY}$ (or proxy) or $0.50 \cdot B_{MSY}$ (or proxy) for those reef fish species not included in the preferred alternative of Action 1. This is the MSST that is most commonly adopted on a case-by-case basis. This alternative was recommended as the default proxy by Restrepo et al (1998). It allows the buffer between B_{MSY} and MSST to vary between species depending upon life-history characteristics. Long-lived species with a low natural mortality rate (M) have populations consisting of a large number of age-classes, or cohorts. Consequently, the introduction of a particularly strong or weak cohort is likely to cause only a small fluctuation in biomass levels. Therefore, even if MSST is close to B_{MSY} , with only small

year-to-year natural fluctuations there is less likelihood of those fluctuations dropping below MSST and triggering a false or transient overfished determination. The benefit to having MSST set close to B_{MSY} is to allow a stock that is in decline to be identified early before highly restrictive management measures are needed to rebuild the stock. Conversely, short-lived species with a high M have only a few age-classes in the population, and the introduction of a particularly strong or weak cohort will result in greater fluctuations in biomass levels. In such cases it is more advantageous to have a larger buffer between MSST and B_{MSY} to avoid a false or transient overfished determination.

Status determination criteria include both MSST and a maximum fishing mortality threshold (MFMT). MFMT cannot be set any higher than F_{MSY} (or proxy), whereas MSST can (and usually is) set below B_{MSY} (or proxy). This makes MFMT a more restrictive criterion than MSST. The Magnuson-Stevens Act requires that overfishing be ended immediately once it is determined to be occurring whereas an overfished stock is allowed a rebuilding period of ten years or less (or more if it cannot be rebuilt in ten years) The more restrictive MFMT requirements make it more likely that stock management will be controlled more by the MFMT than by MSST even if the buffer between MSST and B_{MSY} is small, provided it is large enough to account for natural fluctuations.

Alternative 3 sets MSST at a fixed $0.75 * B_{MSY}$ (or proxy). If the M for a given stock is less than 0.25, this would result in a wider buffer between MSST and B_{MSY} than **Alternative 2**. For species other than those in the selected alternative in Action 1, if M for a given stock is greater than 0.25, this would result in a smaller buffer than **Alternative 2**. If **Action 1, Alternative 2 or Alternative 3** is selected, this would have no effect on species with M less than that selected in Action 1 ($M = 0.15, 0.20, \text{ or } 0.25$) since Action 1 will have already set MSST for those species to either 75% or 50% of B_{MSY} . **Alternative 3** allows greater natural fluctuations in biomass than **Alternative 2**, but increases the likelihood that restrictive measures will be needed to rebuild the stock if it drops below MSST and is determined to be overfished.

Alternative 4 sets MSST at a fixed $0.50 * B_{MSY}$ (or proxy). This is the smallest MSST allowed by the National Standard Guidelines. No reef fish stocks currently in the Reef Fish FMP have M equal to or higher than 0.50. Therefore, this would result in a wider buffer between MSST and B_{MSY} than **Alternative 2 or Alternative 3** for all stocks not included in Action 1. **Alternative 4** allows the greatest natural fluctuations in biomass of the alternatives in this action. It greatly increases the likelihood that restrictive measures will be needed to rebuild the stock if it drops below MSST and is determined to be overfished. However, if management is successful at maintaining the fishing mortality rate at or below MFMT, the likelihood of the stock biomass dropping to this level of MSST is small.

CHAPTER 10. REFERENCES

Ault, J.S., J.A. Bohnsack, and G.A. Meester. 1998. A retrospective (1979-1996) multispecies assessment of coral reef fish stocks in the Florida Keys. Fishery Bulletin 96(3):395-414 .

<http://fishbull.noaa.gov/963/ault.pdf>

Cooper, W., A. Collins, J. O'Hop, and D. Addis. 2013. The 2013 Stock Assessment Report for Hogfish in the South Atlantic and Gulf of Mexico (SEDAR 37). Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida.

http://www.sefsc.noaa.gov/sedar/download/SEDAR37_Hogfish_SAR.pdf?id=DOCUMENT

GMFMC. 1996. An evaluation of the use of SPR levels as the basis for overfishing definitions in the Gulf of Mexico finfish fishery management plans. Gulf of Mexico Fishery Management Council, Tampa, Florida. 46 p

GMFMC. 1999. Generic sustainable fisheries act amendment, includes environmental assessment, regulatory impact review, and initial regulatory flexibility analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Generic%20SFA%20amendment%201999.pdf>

GMFMC. 2002. Secretarial Amendment 2 to the Reef Fish Fishery Management Plan to set greater amberjack sustainable fisheries act targets and thresholds and to set a rebuilding plan includes environmental assessment and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Secretarial-Amendment-2-RF.pdf>

GMFMC. 2004a. Secretarial amendment 1 to the reef fish management plan to set a 10-year rebuilding plan for red grouper, with associated impacts on gag and other groupers includes environmental assessment, regulatory impact review and final regulatory flexibility analyses. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Secretarial-Amendment-1-RF.pdf>

GMFMC. 2004b. Final amendment 23 to the reef fish fishery management plan to set vermilion snapper sustainable fisheries act targets and thresholds and to establish a plan to end overfishing and rebuild the stock, including a final supplemental environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/VS%2023%20Oct%20Final%2010-21-04%20with%20Appendix%20E.pdf>

GMFMC. 2007. Final amendment 27 to the reef fish fishery management plan and amendment 14 to the shrimp fishery management plan including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 490 pp with appendices.

<http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20RF%20Amend%2027-%20Shrimp%20Amend%2014.pdf>

GMFMC. 2008a. Final Amendment 30B: gag – end overfishing and set management thresholds and targets. Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance including environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida.

http://www.gulfcouncil.org/Beta/GMFMCWeb/downloads/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2008b. Final reef fish amendment 30A: greater amberjack – revised rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida.

<http://www.gulfcouncil.org/docs/amendments/Amend-30A-Final%20208.pdf>

Kenchington, T.J. 2008. The natural mortality rate of gag grouper: a review of estimators for data-limited fisheries. Unpublished manuscript, Gadus Associates. 31 p.

http://www.sefsc.noaa.gov/sedar/download/S19_RD27_Kenchington%20Mortality%20Estimators%20Summary.pdf?id=DOCUMENT

Lorenzen, K. 1996. The relationship between body weight and natural mortality in juvenile and adult fish: a comparison of natural ecosystems and aquaculture. *Journal of Fish Biology* 49:627-647.

O’Hop, J., M. Murphy, and D. Chagaris. 2012. The 2012 stock assessment report for yellowtail snapper in the South Atlantic and Gulf of Mexico (SEDAR 27). Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, St. Petersburg, Florida.

http://www.sefsc.noaa.gov/sedar/download/YTS_FWC_SAR.pdf?id=DOCUMENT

Restrepo, V. R., G. G. Thompson, P. M. Mace, W. L. Gabriel, L. L. Low, A. D. MacCall, R. D. Methot, J. E. Powers, B. L. Taylor, P. R. Wade, and J. F. Witzig. 1998. Technical guidance on the use of precautionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. NOAA Technical Memorandum NMFS-F/SPO-31. NOAA, National Marine Fisheries Service, Silver Spring, Maryland.

<http://www.nmfs.noaa.gov/sfa/NSGtkgd.pdf>

SAFMC. 2011. Comprehensive annual catch limit amendment for the south Atlantic region. South Atlantic Fishery Management Council, North Charleston, South Carolina. 691 p.

<http://safmc.net/Meetings/SSCMeeting/SSCBBApril2012/Comp%20ACL%20Am%20101411%20FINAL.pdf>

SEDAR 9. 2006a. Stock assessment report Gulf of Mexico vermilion snapper. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 9. 2006b. Stock assessment report Gulf of Mexico gray triggerfish. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 12. 2007. SEDAR12-Complete Stock Assessment Report 1: Gulf of Mexico Red Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>

SEDAR 15A. 2008. Stock assessment report 3 (SAR 3) South Atlantic and Gulf of Mexico mutton snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 19. 2010. Stock assessment report Gulf of Mexico and South Atlantic black grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011a. Stock assessment report Gulf of Mexico yellowedge grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 22. 2011b. Stock assessment report Gulf of Mexico tilefish. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 23. 2011. Stock assessment report South Atlantic and Gulf of Mexico goliath grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 31. 2013. Stock assessment report Gulf of Mexico red snapper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 33. 2014a. Gulf of Mexico gag stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.

SEDAR 33. 2014b. Gulf of Mexico greater amberjack stock assessment report. Southeast Data, Assessment, and Review. North Charleston, South Carolina. <http://www.sefsc.noaa.gov/sedar/>.