GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

MEETING OF THE STANDING & SPECIAL REEF FISH, MACKEREL, ECOSYSTEM
& SOCIOECONOMIC SCIENTIFIC AND STATISTICAL COMMITTEES

WEBINAR

JULY 8-9, 2020

STANDING SSC VOTING MEMBERS
Joseph Powers..
Lee Anderson..
Luiz Barbieri..
Harry Blanchet..
David Chagaris..
Benny Gallaway..
Bob Gill..
Douglas Gregory..
Walter Keithly..
Kai Lorenzen..
Campo Matens..
James Nance..
Will Patterson..
Sean Powers..
Kenneth Roberts..
Steven Scyphers..
Jim Tolan..

SPECIAL REEF FISH SSC VOTING MEMBERS
Jason Adriance..
Judson Curtis..
John Mareska..

SPECIAL MACKEREL SSC VOTING MEMBERS
Jason Adriance..
John Mareska..

SPECIAL SOCIOECONOMIC SSC VOTING MEMBERS
Jack Isaacs..
Andrew Ropicki..

SPECIAL ECOSYSTEM SSC VOTING MEMBERS
Cameron Ainsworth..
Paul Sammarco..

STAFF
Matt Freeman..Economist
Assane Diagne..Economist

1

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 2    Karen Hoak..................Administrative & Financial Assistant
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 4    Mary Levy..................................NOAA General Counsel
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 9    Bernadine Roy......................................Officer Manager
10    Charlotte Schiaffo.....Administrative & Human Resources Assistant
11    Carrie Simmons................................Executive Director
12    Carly Somerset....................Fisheries Outreach Specialist
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16    Shanae Allen................................................FWC
17    Rob Andrews................................................NOAA
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23   Rich Malinowski.......................................NOAA
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26   Jack McGovern.........................................NOAA
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29   Julie Neer............................................SEDAR
30   David Nieland...........................................LA
31   Mike Norberg...........................................FWC
32   Matthew Nuttall.......................................NOAA
33   Kelli O'Donnell.......................................NOAA
34   Joe O'Hop..............................................FWC
35   Meg Oshima................................................
36   Katherine Papacostas......................................
37   Frank Parker..............................................
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39   Kellie Ralston.........................................ASA
40   Adyan Rios...........................................SEFSC
41   Ashford Rosenberg.................Shareholders Alliance
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43   Beverly Sauls..........................................FWC
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10    John Walter.............................................SEFSC
11    Lauren Waters............................................NOAA
12    Joe West...................................................LA
13    Beth Wrege...............................................NOAA
14    Caitlin Young............................................NOAA
15    Yuying Zhang.................................................
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17                              - - -
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1 landings for Tier 3A and 3B of the ABC control rule to
2 reevaluate original assumptions regarding reference periods and
3 the appropriateness of those reference periods. The motion
4 carried on page 203.
5
6   - - -
7

1 The Meeting of the Gulf of Mexico Fishery Management Council
2 Standing and Special Reef Fish, Mackerel, Ecosystem, and
3 Socioeconomic Scientific and Statistical Committees convened via
4 webinar on Wednesday morning, July 8, 2020, and was called to
5 order by Chairman Joe Powers.
6
7   **INTRODUCTIONS AND ADOPTION OF AGENDA**
8
9 **CHAIRMAN JOE POWERS:** Good morning. My name is Joe Powers, and
10 I welcome all of you as the Chair of the Scientific and
11 Statistical Committee of the Gulf of Mexico Fishery Management
12 Council. We appreciate your attendance on this webinar and
13 input in this meeting.
14
15 Representing the Gulf Council is Tom Frazer. Council Staff in
16 attendance are Ryan Rindone and Jessica Matos. Notice of this
17 meeting was provided to the Federal Register, sent via email to
18 subscribers of the council's press release email list, and was
19 posted on the council's website.
20
21 Today's meeting will include the following topics: Adoption of
22 the Agenda, and on the agenda is the discussion of the scope of
23 work for this meeting, which is basically reviewing the
24 recreational fishing estimates and how it's done and how it's
25 being changed over time. In that context, we're talking about
26 the Fishing Effort Survey, the CHTS versus FES, the calibration
27 process, post-processing of estimates, operationalizing the FES
28 data, and case studies of king mackerel and gray snapper. If
29 time allows, we can talk about approaches for those species,
30 which haven't been dealt with yet. Also, we would like to have
31 conclusions and recommendations to the council, and then we have
32 Other Business.
33
34 This webinar is open to the public and is being streamed live
35 and recorded. A summary of the meeting and verbatim minutes
36 will be produced and made available to the public via the
37 council's website.
38
39 For the purpose of voice identification and to ensure you are
40 able to mute and unmute your line, please identify yourself by
41 stating your full name when your name is called for attendance.
42 Once you have identified yourself, please re-mute your line. To
43 signal you wish to speak during the meeting, please use the
44 raise-your-hand function, and staff will display your name.
45 Please remember to identify yourself before speaking and to also
46 re-mute your line each time you finish speaking. Thank you.
47 Attendance.
48

1   **MS. JESSICA MATOS:** Lee Anderson. Luiz Barbieri.
 2
 3   **DR. LUIZ BARBIERI:** Luiz Barbieri.
 4
 5   **MS. MATOS:** Harry Blanchet.
 6
 7   **MR. HARRY BLANCHET:** Harry Blanchet, here.
 8
 9   **MS. MATOS:** David Chagaris.
10
11   **DR. DAVID CHAGARIS:** David Chagaris is here.
12
13   **MS. MATOS:** Benny Gallaway.
14
15   **DR. BENNY GALLAWAY:** Benny Gallaway, here.
16
17   **MS. MATOS:** Bob Gill.
18
19   **MR. BOB GILL:** Bob Gill.
20
21   **MS. MATOS:** Doug Gregory.
22
23   **MR. DOUGLAS GREGORY:** Doug Gregory is here.
24
25   **MS. MATOS:** We said no to Jeff Isely. Walter Keithly.
26
27   **DR. WALTER KEITHLY:** Walter Keithly.
28
29   **MS. MATOS:** Robert Leaf. Kai Lorenzen.
30
31   **DR. KAI LORENZEN:** Kai Lorenzen.
32
33   **MS. MATOS:** Camp Matens.
34
35   **MR. CAMP MATENS:** Camp Matens.
36
37   **MS. MATOS:** Jim Nance.
38
39   **DR. JIM NANCE:** Jim Nance is here.
40
41   **MS. MATOS:** Will Patterson.
42
43   **DR. WILL PATTERSON:** Will Patterson is here.
44
45   **MS. MATOS:** Joe Powers.
46
47   **CHAIRMAN POWERS:** Joe Powers.
48

1   **MS. MATOS:** Sean Powers.
 2
 3   **DR. SEAN POWERS:** Sean Powers is here.
 4
 5   **MS. MATOS:** Ken Roberts.
 6
 7   **DR. KEN ROBERTS:** Ken Roberts is here.
 8
 9   **MS. MATOS:** Steven Scyphers.
10
11   **DR. STEVEN SCYPHERS:** Steven Scyphers is here.
12
13   **MS. MATOS:** Jim Tolan.
14
15   **DR. JIM TOLAN:** Jim Tolan.
16
17   **MS. MATOS:** Jason Adriance.
18
19   **MR. JASON ADRIANCE:** Jason Adriance is here.
20
21   **MS. MATOS:** Judd Curtis.
22
23   **DR. JUDSON CURTIS:** Judd Curtis, here.
24
25   **MS. MATOS:** John Mareska.
26
27   **MR. JOHN MARESKA:** John Mareska.
28
29   **MS. MATOS:** Kari Buck said she could not attend. Cameron
30   Ainsworth.
31
32   **DR. CAMERON AINSWORTH:** Cameron Ainsworth, here.
33
34   **MS. MATOS:** Mandy Karnauskas. Paul Sammarco.
35
36   **DR. PAUL SAMMARCO:** Paul Sammarco, here.
37
38   **MS. MATOS:** Jack Isaacs. Andrew Ropicki.
39
40   **DR. ANDREW ROPICKI:** Andrew Ropicki.
41
42   **MS. MATOS:** We also have some council members that are present.
43   Tom Frazer.
44
45   **DR. TOM FRAZER:** Tom Frazer.
46
47   **MS. MATOS:** Kevin Anson is not present. Martha Guyas.
48

1 **MS. MARTHA GUYAS:** I'm here.
2
3 **MS. MATOS:** Chris Schieble.
4
5 **MR. CHRIS SCHIEBLE:** Chris Schieble, here. Good morning.
6
7 **MS. MATOS:** Good morning. Dave Donaldson.
8
9 **MR. DAVE DONALDSON:** Dave Donaldson, here.
10
11 **MS. MATOS:** Paul Mickle. Lance Robinson. That's all I have for
12 my attendance, Joe.
13
14 **CHAIRMAN POWERS:** All right. Thank you. First after the
15 introductions, we have the Adoption of the Agenda. As I said,
16 the agenda is fairly straightforward. Do we have a motion to
17 adopt the agenda?
18
19 **DR. BARBIERI:** So moved, Mr. Chairman.
20
21 **CHAIRMAN POWERS:** Luiz moves it. Do we have a second?
22
23 **MR. GILL:** Second.
24
25 **CHAIRMAN POWERS:** Are there any objections? Hearing none, the
26 agenda is adopted. Next up is Workshop Objectives. Ryan will
27 give a short little briefing about what we're really trying to
28 achieve here. Ryan.
29
30   **WORKSHOP OBJECTIVE**
31
32 **MR. RYAN RINDONE:** Yes, sir. The objective of this workshop is
33 to promote improved understanding of changes made to estimating
34 the --
35
36 **MS. MATOS:** Ryan, we have Jack Isaacs on the line, and I just
37 want to test his sound, real quick, please.
38
39 **MR. RINDONE:** That's okay. My son decided to turn on the
40 Roomba.
41
42 **MS. MATOS:** Jack Isaacs, do you want to test your sound?
43
44 **DR. JACK ISAACS:** Good morning.
45
46 **MS. MATOS:** Good morning. Thank you. Ryan, go ahead.
47
48 **MR. RINDONE:** All right, and so we're looking at changes made to

1 the recreational estimates of fishing effort through the Marine
2 Recreational Information Program's Fishing Effort Survey. You
3 guys are going to look at several background presentations that
4 are going to be led by NOAA's Office of Science & Technology and
5 also the Southeast Fisheries Science Center, some from the
6 Southeast Regional Office staff, and some from us, the council
7 staff.
8
9 You guys are going to have a chance to ask lots of questions and
10 try to dig in a little bit into the meat of how these
11 calibrations actually occur, and we're going to talk about a
12 couple of example species, Gulf king mackerel and gray snapper,
13 and, recently, we've also added some discussions that use Gulf
14 red grouper as an example species.
15
16 You guys should take all opportunity to seek additional
17 clarification and provide feedback, and also think about what
18 sorts of recommendations you would like to make for the council.
19 This workshop will be followed by another on August 5, hosted by
20 the Gulf States Marine Fisheries Commission and NOAA OST, and
21 that will more closely examine the relationships between the
22 state-generated catch and effort data and the data generated by
23 MRIP. Mr. Chair.
24
25 **CHAIRMAN POWERS:** Thank you. It's pretty open-ended, in terms
26 of the discussions, and there's a fair amount of detail that is
27 being given in the presentations. Just as an overview, and this
28 is kind of my view of recreational estimates, or any sort of
29 recreational estimates, and, basically, you have some measure of
30 the catch rate, catch per participation, and then you couple
31 that with an estimate of the participation, and so,
32 traditionally, and including all the ways that are being
33 suggested here, that's the basic approach to doing this, and how
34 you do it though is very different, depending on how you
35 approach the problem.
36
37 I mention this because, in some of the presentations, there is
38 lots of acronyms, and it's a little hard to ferret through if
39 you aren't aware of what some of those acronyms are and then
40 what side of the equations you're talking about, and are you
41 talking about estimating or re-estimating catch rates or
42 modifying the amount of the estimates of participation, and so I
43 would ask the presenters to try to keep that in mind when they
44 make their presentations, and also be very cognizant about the
45 acronyms being used, because, essentially, some of us aren't
46 aware of what those acronyms originally were set out to be.
47
48 The agenda has the first discussion of CHTS, which CHTS has

nothing to do with charter boats, and it's the Coastal Household
something survey, and then comparing that to the FES. Mr. Rob
Andrews, you're going to make the presentation associated with
this, and can you go ahead, please?

FISHING EFFORT SURVEY – PRESENTATIONS AND QUESTIONS
CHTS VERSUS FES PRIMER

MR. ROB ANDREWS: Good morning, everyone. My name is Rob
Andrews, and I'm with the NOAA Fisheries Office of Science &
Technology. I previously managed the Coastal Household
Telephone Survey, and I provided oversight of MRIP pilot studies
that resulted in the FES design, and the FES is the MRIP Fishing
Effort Survey, and I currently manage the Fishing Effort Survey
for the MRIP Program.

Just a brief overview of what I'm going to be covering today,
and I will provide some comparisons between the CHTS and the FES
designs, and I'll talk a little bit about the performance of the
Coastal Household Telephone Survey, particularly in the most
recent years, and then I'm going to talk about a couple of
different types of survey error, and the first is coverage
error, and the second is a type of screening error that we refer
to as the gatekeeper effect. Then, finally, I will just wrap it
up by talking about the FES estimates and the plausibility of
those estimates.

Both the CHTS and the FES were designed to estimate private boat
and shore fishing effort for two-month reference periods, or
waves, and that's pretty much where the similarities between the
two surveys end.

The CHTS is a random digit dial telephone survey, and, because
it was a telephone survey, the questions were administered to a
survey respondent by an interviewer. The sample frame for the
survey essentially included a list of full-time residential
households with landline telephone service in coastal counties,
and, generally, the designation of coastal counties was any
county that had borders that were within twenty-five miles of
the coast. That varied a bit among states, and even within
states and among waves, but the twenty-five miles was sort of a
standard definition of our coastal counties.

The survey was stratified by state and county, and then, within
those strata, landline telephone numbers were sampled via simple
random sampling, and the CHTS was administered from 1981 through
2017, and it was the official methodology the agency used to
estimate shore and private boat fishing effort. I guess, for

13

1 the purposes of -- Given the instructions at the outset, fishing
2 effort, in this case, is the number of angler trips.
3
4 The Fishing Effort Survey, or FES, is a self-administered mail
5 survey, and the sample frame for the survey is a comprehensive
6 directory of residential addresses serviced by the United States
7 Postal Service. This type of data collection is often referred
8 to address-based sampling, or ABS.
9
10 Sampling from the survey is stratified by state, geographic
11 proximity to the coast, and fishing license status, and, again,
12 the geographic stratification within state is defined by
13 proximity to the coast. Generally, any county that is within
14 twenty-five miles of the coast is in a coastal stratum, and all
15 the other counties within a coastal state are in a non-coastal
16 stratum.
17
18 Within those geographic strata, all addresses on the sample
19 frame are matched to the National Saltwater Angler Registry,
20 which is a list of all anglers who are licensed to participate
21 in saltwater fishing, which identifies two additional strata, a
22 license matched stratum and a licensed unmatched stratum.
23 Again, with those strata, addresses were selected via simple
24 random sampling. The FES was first implemented in 2015, and it
25 was conducted in parallel to the CHTS through 2017, and the
26 methodology was officially adopted and replaced the FES in 2018.
27
28 As I'm sure many of you recall, in 2006, the National Research
29 Council conducted a review of the Marine Recreational Fisheries
30 Statistics Survey, a predecessor program to MRIP. With respect
31 to the CHTS, that review noted that the survey was very
32 inefficient, and so we had to contact a large number of
33 households to collect fishing effort information, and the survey
34 suffered from declining coverage, as a result of the growing
35 popularity of cellphones. The CHTS was a landline survey, and
36 so cellphones were not included in the survey.
37
38 The survey also suffered from declining response rates. In the
39 last years of the survey, response rates were less than 10
40 percent, and, overall, the National Research Council recommended
41 that the CHTS should be completely redesigned.
42
43 Based upon these recommendations, MRIP initiated an extensive
44 effort to explore alternative designs, which culminated in the
45 FES design. The FES is a complete redesign, and it utilizes a
46 different sample frame. The FES uses address-based sampling,
47 and the CHTS was a random digit dial telephone survey. It
48 utilizes a different survey mode, and it's a self-administered

14

1 mail survey, while the CHTS was an interviewer-administered
2 telephone survey, and it's a completely different questionnaire.
3
4 In the FES, we ask each respondent to report the total number,
5 summary counts, of the number of shore and private boat fishing
6 trips that were taken during a reference wave, while, in the
7 CHTS, we asked respondents to provide details of each trip that
8 was taken during a wave.
9
10 As you all know, these differences in designs resulted in large
11 differences in the estimates, and so, here, you can see total
12 effort estimates for shore and private boat fishing in the Gulf
13 of Mexico for 2017, and this was the last year that the CHTS was
14 conducted.
15
16 Private boat estimates are on the left, and the shore estimates
17 are on the right. The CHTS is in orange, and the FES estimates
18 are in blue, and so the FES estimates are quite a bit larger
19 than the CHTS estimates, which is why we're here today talking
20 to you.
21
22 As I noted, the FES was a wholesale redesign, and the survey was
23 developed to address known problems with the CHTS, and so we
24 really shouldn't have expected the estimates to be the same, and
25 we probably would have been more concerned if the estimates were
26 the same, because we knew the CHTS had a lot of problems. We
27 believe that these differences are the result of non-sampling
28 errors in the CHTS, which have increased dramatically in the
29 final years of the survey.
30
31 When comparing FES and CHTS estimates, much of the focus has
32 been on the FES and how much larger the estimates are, but we
33 also need to evaluate the CHTS estimates and explore whether or
34 not they were reasonable.
35
36 Through the early 2000s, the CHTS estimates track loosely with
37 population, and so these are private boat estimates, and the red
38 line is the CHTS private boat estimate, and the blue line is the
39 population estimate, and they are both indexed to the year 2000,
40 just to show the trends.
41
42 Through about 2007, the CHTS estimate tracked pretty closely
43 with population, and then, beginning in the mid-2000s, the
44 effort estimates collapsed, and then there was a steady decline,
45 which continued through the end of the CHTS time series, and so
46 the first question we have to ask is, is this time series --
47 Does it seem realistic, or is it an artifact of the survey
48 design?

15

1
2 According to the CHTS, effort began to collapse around 2007,
3 which happened to coincide with the beginning of a pretty severe
4 economic downturn in the country, and so it's possible that
5 economic conditions resulted in less fishing activity and that
6 fishing activity never recovered, and so, during the recession,
7 it's possible that people stopped fishing, for economic reasons,
8 and then, once the recession ended, in about 2009, or 2010,
9 people just didn't go back to fishing, and they quit fishing
10 altogether. If this were the case, we would expect to see
11 similar trends for other indicators of fishing activity.
12
13 When we look at independent indicators of fishing activity, we
14 see different trends. For example, charter boat effort, which
15 is estimated independently from the FES, declined during the
16 recession, and charter boat effort, which is estimated through
17 the for-hire survey, and it's the blue line here, declined
18 during the recession, after 2007, but it recovered quickly once
19 economic conditions improved. By 2017, charter estimates had
20 increased by 50 percent over the year 2000, and so, for charter
21 estimates, they declined during the recession, and then they
22 recovered pretty quickly.
23
24 We see a similar trend for rod-and-reel imports, and these are
25 based upon customs data, and rod-and-reel imports declined after
26 2007, and they declined pretty sharply, but then, beginning in
27 2010, there was a steady increase that continued through the end
28 of the CHTS time series in 2017.
29
30 Again, here you can see outboard engine sales, and this is
31 information that's collected by the National Marine
32 Manufacturers Association, and there's a pretty sharp decline
33 through the middle of the 2000s, but then, once the economic
34 conditions improved, outboard engine sales increased.
35
36 Then, finally, and this is the number of registered boats in the
37 Gulf states, we don't see a real strong trend, either a strong
38 increase or decrease in the number of registered boats, but the
39 trend is very different from the CHTS, and it was relatively
40 flat throughout the entire time series, and so it shows a very
41 different pattern from the CHTS.
42
43 These independent indicators all suggest that the recession had
44 a relatively short-term effect on fishing activity, which
45 suggests that the CHTS time effort time series does not reflect
46 true fishing activity.
47
48 We believe that the estimates, the CHTS estimates, were

16

significantly impacted by non-sampling errors, and the first type of error that I'm going to talk about is coverage error. Coverage error occurs when the sample frame excludes members of the target population. This will result in bias to the covered and uncovered portions -- The covered and uncovered populations are different with respect to what is being measured.

In the CHTS, the target population is all coastal county households, but the sample frame only included landline households, and it was a landline random digit dial telephone survey, and so CHTS estimates would be biased, because a large portion of the population did not have a landline, and landline and non-landline households were different with respect to fishing activity.

The National Center for Health Statistics began tracking cellphone use in 2003, and this was done through the National Health Interview Survey, which is a face-to-face survey. In 2018, the National Health Interview Survey estimated that nearly 60 percent of adults in the South Region lived in wireless-only households, and so they had no landlines at all, and so that's out here to the far right of the blue line.

In addition, 17 percent of people lived in wireless-mostly households, and so these are households that have a landline, but they don't answer it. It might be for emergency purposes, but it just sits in the corner and collects dust, and so more than 75 percent of the population in the South Region either doesn't have a landline or they don't answer their landline, and so they would not be covered by a landline random digit dial telephone survey. This would have resulted in increasing coverage error in a landline telephone survey.

A similar trend was also reflected in anglers between 2000 and 2012 in the MRIP intercept survey, and we asked anglers about their type of telephone service, and so here you can see the green line is the percent of anglers in wireless-only households, and you can see that tracks very closely with the NHIS estimates, and so the percent of anglers who didn't have a landline was increasing in a very similar fashion to the overall population.

We know that the coverage in the CHTS decreased dramatically over the past decade, and so there was significant coverage error, and this will result in bias if the covered and uncovered populations are different, and so is the landline population different? I think everybody knows the answer to this.

17

1   In addition to the type of telephone service, the National
2   Health Interview Survey estimates age distributions for
3   different domains, and so this graph, or this figure, shows age
4   distributions for the full population on the left, as well as
5   age distributions for the landline population on the right, and
6   what we see in the full population in 2018 is that approximately
7   25 percent of the population was seniors, people older than
8   sixty-five years old.
9
10   When we compare that to the landline population, we see that, in
11   the landline population, approximately 60 percent of the people
12   are seniors, and then, when we look at angler trip data, which
13   is the final bar here on the left, and, again, this was
14   collected through the Access Point Angler Intercept Survey, and
15   this is 2019 data, we see that the age distributions for anglers
16   are more similar to the full population than the landline
17   population. Only about 85 percent of anglers are over the age
18   of sixty-five.
19
20   We also know, from the National Health Interview Survey, that
21   residents of landline households exhibit characteristics
22   associated with poor health, and they are more likely to report
23   that physical tasks are difficult, or not possible, and so the
24   landline population is much older than the full population, and
25   they are in poorer health, and so the population is not
26   representative of the full population, with respect to age
27   demographics and health characteristics, and so we know that
28   estimates derived from landline samples will be biased for these
29   measures. If you conducted a landline survey, if you try to
30   estimate the age of the population, you would get bias
31   estimates.
32
33   The MRIP Fishing Effort Survey, and this is the mail survey,
34   also asks about the type of telephone service, as well as
35   several demographic questions, and so we're able to estimate the
36   demographic characteristics for the full population and the
37   landline population.
38
39   We can compare those estimates to each other, as well as to a
40   gold standard, and, in this case, the gold standard is the
41   American Community Survey, which is administered by the Census
42   Bureau.
43
44   Here we see landline FES estimates are the blue bars, and the
45   census estimates are the green bars, and the first series here
46   are households with children, and we can see that the landline
47   sample underestimates households with children pretty severely.
48   It overestimates households with seniors, and that's the second

18

set of bars, and so the blue bar is the landline sample, and the green bar is the census. It overestimates households with residents age-eighty and older, and it overestimates households comprised of single females, and that's the last set of bars.

The FES landline sample, and, again, these are the bars in blue, would be very similar to what the CHTS sample would have looked like, and this is what the CHTS would have sampled from. The full FES sample, which is the middle bar here, kind of the teal color, is much closer to the American Community Survey, and so it's much more representative of the full population.

We know that landline samples are extremely biased with respect to demographic characteristics. Fishing effort estimates will also be biased if fishing activity is correlated with demographic characteristics.

Looking at FES fishing activity for different demographic characteristics, we find that fishing prevalence, and so fishing prevalence is the percentage of households that reported fishing, is much higher in households with children at home, and so the blue bars are -- This is the households with the particular attribute, and the gray bars are households without the attribute, and so the first set of bars is households with children, and so fishing prevalence is higher in households with children, and it's about 1.7 times higher.

It's lower in households with seniors, and it's about 25 percent lower. Fishing prevalence is lower in households comprised of single females, and it's 72 percent lower, and it's lower in households with landline telephones, and that's this last set of bars here, and so fishing prevalence is about 66 percent lower in households with landline telephones than in households without landline telephones.

Fishing activity is clearly correlated with a household's demographic characteristics, and the demographic groups represented by landline samples are unlikely to fish, and so it follows that effort estimates derived from landline samples would be severely biased. There is large under-coverage error, and the covered and the uncovered populations are very different with respect to fishing activity, and this is a textbook example of bias.

We can evaluate the magnitude of this bias by comparing effort estimates derived from the FES, FES's landline sample, with estimates derived from the survey's full sample, and all of these estimates have been weighted to represent the full

19

1 population, and so here we see -- Again, this is the proportion
2 of households that reported fishing, and the blue bars are the
3 FES landline sample, and the gray bars are the full sample.
4
5 Overall, prevalence is 2.5 times higher for the full sample than
6 just for the landline sample, and so that's overall prevalence,
7 that they reported any type of fishing during the wave. Boat
8 prevalence for the full sample is 2.5 times higher than
9 prevalence for the landline sample, and shore fishing prevalence
10 is about two times higher for the full sample than the landline
11 sample.
12
13 We believe that the CHTS estimates, which are based upon
14 landline samples, were likely biased by a similar magnitude by
15 the end of the time series, because they were based upon non-
16 representative landline samples.
17
18 Now, when we place estimates derived from the full FES sample
19 and the landline sample within the CHTS time series, we see
20 exactly what we would expect, and so this is, again, the CHTS
21 effort time series for private boat fishing. Out here on the
22 right, the lower blue diamond is the FES landline estimate that
23 has been weighted to the full population, and it's very similar
24 to the time series we saw for the CHTS.
25
26 The FES full sample estimate, which is the blue dot at the top,
27 is much higher, but it's not really that inconsistent with the
28 pre-collapse CHTS trend. If the CHTS series was more consistent
29 with the other indicators of fishing activity, and you kind of
30 envision this line coming out here, FES and CHTS estimates would
31 have been much closer.
32
33 This is very similar to the graph that I showed at the outset of
34 the presentation. Here, you see the FES estimates, which are
35 kind of the grayish bars on the left, for private boat fishing
36 and shore fishing, and the CHTS estimates are in orange, and the
37 blue bars are FES estimates when you introduce coverage error.
38 These are estimates based upon the landline sample, and so,
39 effectively, what you're doing is you're producing an FES
40 estimate that is susceptible to coverage error. It's an
41 estimate based upon a landline sample. '
42
43 When we do this, we see that, for private boat fishing, coverage
44 error explains about 50 percent of the difference between the
45 FES and the CHTS, and this was for 2017 estimates. For shore
46 fishing, coverage error explains about a third of the
47 difference, and not quite as much as for private boat fishing,
48 and we know the bias is specific to each individual estimate,

1   survey estimate, and so it's not surprising that an error source
2   has differential effects on different estimates, and so you
3   wouldn't necessarily expect coverage error to have the same
4   impact on private boat fishing that it has on shore fishing.
5
6   What we do know is that additional errors, because this doesn't
7   explain 100 percent of the difference between the FES and the
8   CHTS estimates, but additional errors must be contributing to
9   the differences between the estimates.
10
11 The next type of error that I will discuss is a type of
12 measurement error that we refer to as the gatekeeper effect. In
13 the CHTS, we asked respondents a series of screener questions to
14 determine if the household was eligible for the survey, and
15 these questions were asked of the individual who picked up the
16 telephone, and this is the first person that we spoke to during
17 the interview.
18
19 We asked that person how many people in the household go
20 fishing, how many people participated in recreational saltwater
21 fishing during the past twelve months, and how many people in
22 the household have been recreational saltwater fishing during
23 the past two months.
24
25 If the response to any of these questions was no, then the
26 interviewer was terminated, and the household was classified as
27 a non-fishing household.   Again, these questions were
28 administered, they were asked, of whoever answered the
29 telephone, and we didn't ask to speak to a specific individual,
30 and we didn't ask to speak to an angler. We asked the questions
31 of whomever answered the telephone.
32
33 We observed that females were much more likely than males to
34 answer the telephone, and they were likely to be the screening
35 respondent, and this is common in landline RDD telephone
36 surveys.   This is not unique to the CHTS.   Female household
37 members are more likely to answer a landline telephone than a
38 male household member.
39
40 We also know that females were much less likely to report
41 fishing activity than males.   When males did answer the
42 telephone in respondent screener questions in the CHTS, they
43 were much more likely to report fishing than females, and so we
44 developed a hypothesis, that we refer to as the gatekeeper
45 hypothesis, that the initial respondent was not knowledgeable
46 about household fishing activity, and they were inappropriately
47 screening households out of the eligible sample.   They just
48 didn't know what other household members were doing, and they

couldn't provide accurate answers about household member fishing activity.

We developed an experiment to try and test and quantify the gatekeeper effect, and, in this experiment, we sampled licensed anglers in North Carolina, and then we partitioned the sample into two different treatments. There was a control treatment, where we administered the screener questions to whomever answered the telephone, and so this is the procedure we used for the CHTS.

Then we had an experimental treatment, where we asked for the licensed angler by name, because we were sampling from a license list, and we had anglers' names, and so we could ask for an angler by name, and so we asked for -- In the experimental treatment, we asked for the licensed angler by name prior to administering the screener questions. We hypothesized that the control group would report less household fishing activity than the experimental group, as a result of the gatekeeper effect.

The results from the experiments support our hypothesis. Reported fishing activity was higher when we asked for the licensed angler by name before administering the screening questions, and so, here, you can see -- These are prevalence ratios, and so this is the ratio of experimental prevalence, where we ask for the licensed angler by name to control prevalence, and so a ratio greater than one indicates a higher prevalence in the experimental treatment.

For the full sample, which are the squares, boat prevalence ratios are in blue, and shore prevalence ratios are in green. For the full sample, the boat ratio was 1.14, and, for shore fishing, the full sample ratio was 1.21, and so these are both greater than one, which indicates that prevalence in the experimental group was higher than the prevalence in the control group, and it was a little bit higher for shore fishing than for boat fishing.

We knew there were cellphones on the sample frame that we used for this, which increased the probability that the licensed angler was also the person who answered the telephone, and so it was less likely that a gatekeeper, a random household member, answered the phone, and so the results -- We believe the results likely underestimate the gatekeeper effect.

One of the things we did in this experiment, after we selected sample, is we matched the sample telephone numbers to commercial landline directories, and this allowed us to distinguish between

22

landline telephone numbers and unknown telephone lines, and so, if there wasn't a match, we couldn't say definitively that a number was a cellphone number or it was not a landline number, but we knew, if the telephone matched to a landline directory, that it was a landline, and so we had a landline domain and an unknown domain. This allowed us to observe effects by the telephone domain.

When we had a situation when the telephone number matched to a landline, and so within the landline domain, for boat fishing, the ratio, the prevalence ratio, was pretty similar to the full sample ratio, and it went up to 1.17, and it was a little bit higher, but, for shore fishing, the ratio was much higher. It was 1.44, and this was because fewer households in the control group reported shore fishing within the landline domain, and this domain would have been similar to the CHTS, and so it was a situation where the licensed angler -- We didn't ask for the licensed angler by name, and it was less likely that the licensed angler would pick up the telephone, and we had a much higher prevalence ratio in this case.

Then the final points on this figure are for the unmatched portion of the sample, the unmatched domain, and so this portion of the sample would have included cellphone numbers, and you can see those ratios are not very different from one.

We knew, from the CHTS, that women were more likely to answer a landline telephone and less likely to report household fishing activity, and so this was the basis for the gatekeeper hypothesis. Results from the gatekeeper experiment were consistent with our hypothesis that the screening respondent matters, and, depending on who that screening respondent is, you could get a higher estimate of fishing effort or a lower estimate of fishing effort.

The gatekeeper effect is larger for shore fishing than for private boat fishing, and this might make sense, if you consider the nature of the different fishing activities. Private boat fishing can require a much larger investment, in time and money, than shore fishing, and so it might be more likely that other household members of aware of boat fishing activity than shore fishing activity.

In the pilot study, the gatekeeper effect resulted in an underestimate of fishing effort, by as much as 30 percent within the landline domain, and we believe this domain would be similar to the CHTS sample.

23

Now, going back to this figure, again, you have the FES full
sample estimate, and this is from private boat fishing on the
left and shore fishing on the right, and we have the FES full
sample estimate and the CHTS estimate. The grayish bar is the
FES estimate when we introduce coverage error, and this is
identical to the figures that I showed previously.

Then the green bars are the FES estimate when we introduce both
coverage error and the gatekeeper effect, and so, combined,
under-coverage and the gatekeeper effect explain nearly all of
the difference between the FES and the CHTS estimates for
private boat fishing, and so it gets us from this blue bar all
the way down to this green bar, which is pretty similar to the
CHTS estimate.

For shore fishing, the two error sources explain nearly two-
thirds of the difference between the FES and the CHTS estimate,
and so it explains quite a bit of the difference, the majority
of the difference, between the FES and the CHTS estimates, but
there is still some unexplained differences, but these two
sources of bias, both of which are prevalent in the CHTS,
explain a large portion of the differences for both private boat
and shore fishing.

We know that FES estimates are larger than CHTS estimates, and
we know that CHTS estimates were severely biased and
underestimated fishing effort. We don't believe that the FES is
susceptible to these same biases. The FES sample frame provides
nearly complete coverage of the target population, and so we
don't believe the FES is susceptible to coverage bias, or
coverage error.

We also believe that the mail questionnaire is less susceptible
to the gatekeeper effect than the telephone survey. The
telephone survey is a very personal event, and it's one person
talking to an interviewer, whereas a mail survey will be
delivered to a household, and somebody can open it, and they can
share it with other household members, and they have time to
talk to other household members, and they have time to think
about their responses.

It's more likely that somebody in the household will walk by and
see it and be interested in the survey, and so we don't believe
that the mail questionnaire is susceptible to the gatekeeper
effect, but the question is then are the FES estimates
plausible?

We believe that perceptions about fishing activity are based

24

1 upon historical estimates and what we observe, and so FES
2 estimates may not seem plausible, because they are much higher
3 than what we're used to. They're a lot higher than CHTS
4 estimates, and people are used to the CHTS estimates, and so
5 they don't think the FES estimates are plausible.
6
7 Even though the FES estimates are larger than the CHTS
8 estimates, the survey, the FES, still suggests that fishing
9 activity is a relatively uncommon activity among the general
10 population.
11
12 During July and August of 2019, and this is Wave 4, and this is
13 a pretty high-activity wave, the FES estimated that less than 8
14 percent of the population participated in saltwater fishing, and
15 the average angler took five trips. A majority of trips took
16 either one or two trips, and the median number of trips per
17 angler is less than two, and so a relatively small proportion of
18 the overall population reports fishing activity, and the average
19 angler takes a small number of trips, and most anglers are
20 taking one or two trips.
21
22 MRIP estimates are also consistent with industry estimates of
23 saltwater fishing activity. In their 2019 special report on
24 fishing, the Recreational Boating and Fishing Foundation
25 estimated over 175 million saltwater trips in 2018, and so
26 that's this gray bar here. MRIP estimated approximately 190
27 million trips in 2018, and this included estimates derived from
28 the FES, the for-hire survey, and state surveys in Louisiana,
29 Texas, and the west coast, and so this is the estimate that is
30 included in the fisheries of the United States.
31
32 In contrast, MRIP estimated just over sixty million trips in
33 2016, and this was based upon estimates derived from the state
34 surveys as well as the CHTS, and so you can see the 2016
35 estimate was about a third, which is based upon the CHTS, which
36 was about a third of the RBFF estimate. The 2018 MRIP estimate
37 is much closer to the RBFF estimate.
38
39 We also believe the perceptions of fishing activity are based
40 upon what anglers see when they're fishing, and so, if we're not
41 surrounded by other anglers, then there must not be fishing
42 activity. If there's not a bunch of trailers at the boat ramp,
43 there must not be very many people fishing. If we're standing
44 on a fishing pier and it's not packed with people, there must
45 not be very many people fishing, but what if the large portion
46 of fishing activity isn't readily observable?
47
48 Given the size of the ocean and the nature of the coast, it's

possible, and it's not likely, that a large portion of fishing
activity isn't obvious or observable to other anglers, and so
here you see a map of Florida that shows the MRIP Intercept
Survey access points. These are the sites that we select for
conducting our dockside interviews, and there is approximately
1,500 intercept access points in the state, which is quite a lot
compared to other states.

These are generally publicly-accessible locations, and many of
them are high-use sites, where you would expect to see a lot of
fishing activity, and they are fishing piers, boat ramps, beach
access sites, public marinas, and this may seem like a lot of
access sites, but Florida has thousands of miles of coastline,
and so they're not really densely populated in most areas, and
so I'm just going to focus on a few areas along the coast of
Florida.

Here you see Panama City, and this particular area is about 4.3
square miles, and so it's less than five square miles, and it's
probably kind of hard to see, but there's one MRIP intercept
site in this area, and so 4.3 square miles and one MRIP
intercept site.

The highlighted portions are residential waterfront properties,
and so, in this 4.3-square-mile area, there is 410 residential
waterfront properties. Each of these properties is a potential
private access fishing site, and so there's one intercept site
for the MRIP survey, dockside survey, but there's 410
residential waterfront properties in this one area.

If you zoom in on these properties, you can see there's a
boathouse or a dock on nearly every single one, and so this is a
lot of potential fishing activity in a small area, and these are
the types of sites where a property owner could go down to the
water and throw a line in every day, and no one would even
notice. You could easily launch a kayak or a paddleboard and
take a boat fishing trip, and most people wouldn't even
recognize that as fishing activity, and there are sites like
this all along the coast of Florida. I mean, it's pretty much
the entire coast of Florida.

Moving further down the coast, this is Naples, and this
particular image is about five square miles, and there is
actually five access points in this image, and most of them are
concentrated in this area up here, in the bay, and there's one
the coast, and so I think there's five of them up here, and four
of them are out along the coast.

1 In this five-square-mile area, there is over 3,000 residential
2 waterfront properties, and, again, all of these have docks, and
3 this is a lot of potential fishing sites, where you wouldn't
4 even notice that people were fishing. People could be throwing
5 a line in way up in one of these canals, and no one would ever
6 see them.
7
8 Then, finally, and this is my personal favorite, and this is
9 Cape Coral, Florida. According to the brochure, there is 400
10 miles of navigable canals in Cape Coral, and it's the city with
11 the most navigable waterways in the world even more than Venice,
12 and so I'm going to focus on this little corner of Cape Coral
13 down here.
14
15 This is area is a little less than seven square miles, and there
16 is two intercept sites, and both of them are kind out here on
17 this point, but, in this area, there's more than 4,500
18 waterfront properties, and so this is lots of potential fishing
19 sites, and you would probably never notice someone sitting on a
20 dock in one of these canals throwing a line in.
21
22 Now, admittedly, Florida is pretty unique, and the coast was
23 literally engineered to maximize waterfront properties. There
24 is more than 500,000 of them in Florida alone, but it's not
25 really unique in the fact that people want to have access to the
26 water, and so this is Ono Island, Alabama.
27
28 While I don't have the land parcel use data that I have for
29 Florida, you can see all the docks coming off this island, and
30 every single property on the water has a dock, and you see
31 similar things everywhere along the coast of the Gulf of Mexico
32 and the Atlantic coast of the United States. If you get on
33 Google Earth sometime and zoom in, you just see that the coast
34 is littered with docks.
35
36 We know that people want to live on the coast, and that's
37 because the coast provides direct access to water-based
38 activities, like fishing, and there's a tremendous number of
39 private fishing access sites along our waterways, and each of
40 these is a fishing opportunity, and so the potential magnitude
41 of private access fishing and these unobservable trips is
42 tremendous, and you would never notice them.   It's fishing
43 activity that just would not be obvious to somebody out on the
44 water.
45
46 Just to summarize, in its final fifteen years, the declining
47 coverage in CHTS led to severe underestimates of fishing effort,
48 and we know this.   We know that households with landline

1 telephones are much less likely to fish than the full
2 population, than households without landline telephones.
3
4 Screening errors in the CHTS, what we refer to as the gatekeeper
5 effect, also resulted in underestimates of fishing effort.
6 Combined, these two sources of error, coverage error and the
7 gatekeeper effect, explain a large amount of the difference
8 between the FES and the CHTS estimates.
9
10 Despite the fact that the FES resulted in larger estimates, the
11 survey still characterizes fishing as a rare event, and, just
12 because you can't see it, it doesn't mean it isn't there. The
13 potential magnitude of private access and unobservable fishing
14 trips is enormous, and I believe that is it, and I am happy to
15 take any questions.
16
17 **CHAIRMAN POWERS:** Thank you. I have a quick technical question,
18 I think going back to Slide 30, and this is the one about
19 percent of the -- Percentage of what? You said the population,
20 and the population of the Gulf of Mexico or what?
21
22 **MR. ANDREWS:** This is Florida, Mississippi, and Alabama.
23
24 **CHAIRMAN POWERS:** So it's actually human population and not the
25 population of -- Okay.
26
27 **MR. ANDREWS:** That's correct.
28
29 **CHAIRMAN POWERS:** All right. Thank you. One of the things that
30 comes to mind about this, and which I'm sure we'll get into, is
31 how does one make the transition from the effort estimates from
32 the CHTS, where that's all you have, to the FES, and is it a
33 smooth transition, or is it an abrupt cutoff, or how good were
34 the CHTS estimates up until 2007, issues like that, and that's
35 something that I'm sure that we'll talk about. If you want to
36 make a comment about that, Rob, go ahead, but, other than that,
37 I will open the floor for questions.
38
39 **MR. ANDREWS:** I think the only comment I would make on that is I
40 think that's going to be the focus of the next several
41 presentations, exactly that, that transition between the
42 surveys.
43
44 **CHAIRMAN POWERS:** Sean.
45
46 **DR. POWERS:** I was interested in -- It was a good presentation,
47 and thank you, but how did you do the FES line survey? You said
48 you simulated that, that coverage area, in that survey, and did

1 you run comparisons, or did you actually just do some screening
2 of the data?
3
4 **MR. ANDREWS:** In the CHTS, we ask households what type of -- I'm
5 sorry. In the FES, we ask households what type of telephone
6 service they have, and so those estimates, the estimates where
7 we have a simulated coverage error, it's not really a simulation
8 at all. It's just an estimate based upon the landline portion
9 of the FES sample, and so we took the households that reported
10 having a landline telephone in the FES and produced a population
11 estimate from that portion of the sample.
12
13 **DR. POWERS:** You only did that for one year, and is it possible
14 to go back multiple years and do that?
15
16 **MR. ANDREWS:** Yes, and I only presented it for the one year
17 here, because it was the last year of the CHTS, but, yes, we
18 asked that question in some form since the survey's inception,
19 and so we can produce that from 2015 on.
20
21 **DR. POWERS:** Okay. Thanks.
22
23 **CHAIRMAN POWERS:** Harry.
24
25 **MR. BLANCHET:** Rob, thank you. One of the things that you
26 mentioned that I did not have a whole lot of background on was
27 the RBFF survey, and can you go into a little bit more detail on
28 exactly how that was accomplished and how it relates to either
29 the FES, the CHTS, or to the National Hunting and Fishing
30 Survey? Thank you.
31
32 **MR. ANDREWS:** Sure, and I can't speak in great detail to that
33 survey, but it is sponsored by RBFF and I believe the Outdoor
34 Foundation, and it is a survey that utilizes a national panel,
35 and they -- Every year, the Outdoor Foundation conducts a survey
36 and asks about outdoor activities, including camping and hunting
37 and fishing, and they produce estimates, and they have an annual
38 report that they put out that describes the results, and that's
39 about flyfishing, saltwater fishing, and freshwater fishing, but
40 they are national estimates of -- They produce national
41 estimates of saltwater fishing activity, and it's based upon a
42 national panel, online panel, design. We can provide a link to
43 that report, if folks would like.
44
45 **MR. BLANCHET:** The primary concern that I have with that type of
46 a survey, as well as the National Hunting and Fishing and
47 Outdoor Recreation Survey, is the recall bias when you're
48 talking about long time periods, and so I just -- If you're

1   talking about did you go fish within the last six months, or
2   within the last year, there does tend to be a telescoping effect
3   with time.
4
5   **MR. ANDREWS:** Yes, that's a possibility, and, I mean, recall
6   error is an issue with any survey, and I think telescoping error
7   actually -- The effect of telescoping error is greater for
8   shorter time periods than longer time periods, and so I think
9   recall error would be -- Forgetting trips, omitting trips, would
10 be a larger problem in a twelve-month recall than a shorter time
11 period, and I am not -- We had nothing to do with the RBFF
12 estimates, and so, I mean, if folks are interested in that, like
13 I said, we can provide that link, and people can dig into that,
14 but it's an independent estimate of fishing activity that is
15 pretty consistent with the FES estimates.
16
17 **CHAIRMAN POWERS:** Thank you. Ken Roberts.
18
19 **DR. ROBERTS:** Thank you, Mr. Chairman. I have a question about
20 the page 30, and there was a great deal of time that you spent
21 making the case for the fact that there is a very undesirable
22 amount of people probably who have campsites and canals and
23 whatnot and that these are all possible shore fishing locations.
24
25 The question I have is really -- I don't think it's wise,
26 personally, to focus a great deal of additional effort in that
27 area, because I have a hard time visualizing, and maybe
28 incorrectly, that many adult fish that we have FMPs for really
29 are exposed to that kind of an effort, and so that's just a
30 general comment, and I would appreciate your response. Thank
31 you.
32
33 **MR. ANDREWS:** Sure. Thank you. I think one thing to keep in
34 mind is the FES is a general fishing survey, and so it was
35 designed to estimate all fishing activity and not just fishing
36 activity for federally-managed species or offshore species, and
37 it does not require additional effort to cover this type of
38 fishing activity, because the questionnaire is getting mailed,
39 and we're asking people to report their fishing activity, and we
40 don't ask them to distinguish, in the FES, between different
41 types of fishing activity, other than total number of shore
42 trips and total number of boat trips.
43
44 We're not conducting interviews at these private access sites,
45 and so that's where we would get the catch information, or
46 information about area fished, but I guess the point is that the
47 FES was designed to estimate all fishing activity and not just
48 offshore fishing activity or fishing activity for adult fish or

1   federally-managed species.
2
3   **CHAIRMAN POWERS:** Thank you. As I looked at those, and hearing
4   the discussion, it reminded me of why the differences between
5   species could be very great, because of where the fishing goes
6   on, which is essentially what Ken Roberts was asking as well.
7
8   The other thing that I looked at, when I saw those pictures that
9   you put in there of all the dock sites is, one, all the
10 hurricane risk there, and, two, fishing may not be such a small
11 investment kind of process, if you have to have your own dock
12 and that sort of thing too, which is another story. Another
13 other questions? John.
14
15 **MR. MARESKA:** Thank you. You have done the survey side-by-side
16 since 2015, but you kind of feel like that the FES survey is not
17 subject to the gatekeeper effect, but, since this survey is
18 mailed out as a weather survey, I feel like it's likely that,
19 when someone picks it up, they're going to be the first person
20 to answer, and so have you evaluated the response for Household
21 Member Number 1, to see if it's predominantly female or male, to
22 kind of evaluate the gatekeeper effect with the FES?
23
24 **MR. ANDREWS:** We actually have looked at that, and it's not --
25 It's kind of mixed. Person 1 is -- I don't have the exact
26 numbers in front of me, but it's pretty close to 50/50.   In
27 households with more than one person, it's pretty close to 50/50
28 male and female.
29
30 One of the things we do see a lot, and so we look at a lot of
31 these surveys in our data processing, and we examine -- We
32 scrutinize a lot of the surveys, and we see cases where Person 1
33 will be female, and so one of the first questions we ask is we
34 ask a household-level question, and we ask several questions
35 about weather-related activities and non-fishing activities, but
36 then we ask a question of if anyone in the household has
37 participated in saltwater fishing in the prior twelve months,
38 and it's just a yes and no checkbox. You answer yes or you
39 answer no.
40
41 We see cases where they say no to that, and then the first
42 person who reports will be a female, and they won't report any
43 fishing activity, but the second person will be a male and will
44 have reported trips, and so the information for Person 2 is
45 inconsistent with that initial response, and they said no one in
46 the household reported fishing activity, but then, when you get
47 to Person 2, somebody reports fishing activity.
48

31

It's not real common, but I think that is a gatekeeper effect. That would have been a gatekeeper effect, if Person 1, who is female, answered the phone, and they said no one in the household fished, and the interview was over, but then she either talks to her husband, or her husband picks up -- Person 2 is a male, whether it's her husband or not, or son or whatever, and he picks up the questionnaire and reports fishing activity, and so I think we can actually see it in the mail survey, but it's because it's a mail survey and not a telephone survey, and that household is not classified as a non-fishing household.

That was a bit of a rambling response to that, but the point is I think we can see cases that would have been classified as the gatekeeper in the telephone survey, but we're actually getting the information in the mail survey.

MR. MARESKA: Okay, and I've got one quick follow-up. Is it addressed the resident at the address, or is it a specific person?

MR. ANDREWS: It's state resident, and so, for Florida, for example, it would be addressed to Florida Resident.

MR. MARESKA: Okay. Thank you.

CHAIRMAN POWERS: Before we get to Steven, I have a quick question. Traditionally, the CHTS was done in the Gulf of Mexico outside of Florida, and is that still that case? When you're quoting statistics here for the Gulf of Mexico, is that for the entire Gulf of Mexico or for outside of -- Excuse me. Not Florida, but for Texas. Texas has their own survey, and so what are we talking about here?

MR. ANDREWS: It's the states in the Gulf of Mexico that are covered by the FES and the CHTS, and so it would be only Florida, Alabama, and Mississippi. In the FES, we don't distinguish between east Florida and west Florida. That is done through our dockside survey, and so the estimates also would include the Atlantic coast of Florida.

CHAIRMAN POWERS: Okay, but not Louisiana and Texas?

MR. ANDREWS: Correct.

CHAIRMAN POWERS: Okay. Thank you. Steven.

DR. SCYPHERS: Thank you, Mr. Chair. Hi, Rob, and thanks for the really nice presentation. I wanted to ask a question back

related to the waterfront maps and patterns you showed, and I
was curious if, with FES being an addressed-based survey, if
looking at this question directly is something you could do.
Could you look at respondents from waterfront-based homes versus
non-waterfront, to see if they differ in their fishing patterns?

I think, related to one of the other questions in this area,
would it be possible to then, within that kind of strata
comparison, look at their shore-based trips, which likely
wouldn't get as many of the federally-managed species, versus if
they just differed in their boat trips as well, for the ones
that -- It did look like there were a lot of docks and vessels
in the maps you showed. Then, kind of just a quick related one,
do you happen to have any technical reports or publications
related to a lot of the stuff you showed? Thank you.

MR. ANDREWS: Sure. Thanks. Those are great questions, and we
have the latitude and longitude for each sample unit in the FES,
and so we can actually -- I mean, we can put FES respondents on
those maps that I was showing, and we started to do some of
that, that analysis, and we haven't gotten real far in it, just
because it's almost overwhelming.

We have a lot of data, and we're just trying to figure out what
to do with it, but we can look at the locations of these
addresses and who is responding and who is reporting fishing and
see if there is differences and more fishing activity for people
who are right on the coast versus further inland. That's
something we have plans to do, and we will be investigating that
over the next several months.

The second question is -- So we don't get any catch data on the
FES, and so we can't really look at different types of fishing
activity beyond whether people reported just shore or boat
fishing, and so I can't tell you if somebody who -- An address
where I can see a big boat sitting on the dock and if they took
more offshore trips than shore -- More offshore trips than
shore-based trips or anything like that, because all of that
information comes from the dockside survey, which is conducted
at public access sites, and we don't get any detailed location
or address information from the folks that we intercept in the
dockside survey.

There is also -- When we're looking at specific locations of
people, we get into sample size issues, and so, the more
resolution you have in your stratification or your analysis, the
smaller the sample sizes are going to be in each of those strata
or domains you're looking at, and so we're a little bit limited

1 in some of the analyses that we can do in looking at more
2 specific geographic locations.
3
4 **CHAIRMAN POWERS:** Thank you. Bob Gill.
5
6 **MR. GILL:** Please ignore my hand-raise function. It doesn't
7 work and automatically raises. I will interject if I have a
8 question or a comment. Thank you.
9
10 **CHAIRMAN POWERS:** Okay. Harry.
11
12 **MR. BLANCHET:** Okay. One of the things that struck me, in the
13 pictures of Florida and Alabama, was the diversity of the sites
14 that were being cited as being private access sites, and it
15 brings me back to the issue that you have with trying to expand
16 effort into harvest, because of those half-a-million sites in
17 Florida that have some sort of shore access, and I don't know
18 how many of those folks are fishing and how many folks are
19 drowning worms.
20
21 If you expand by the effort that you are observing at the
22 publicly-accessible sites, which are typically improved, often
23 using public funds to enhance the fishing experience and improve
24 the chances of fishing, catching something, and then try to put
25 that into -- Apply that to somebody drowning a worm in his
26 backyard in a hypoxic canal in Naples somewhere, I don't know
27 that that works, and I don't know how you separate out that when
28 you get to that expansion. Is that --
29
30 **MR. ANDREWS:** I'm sorry, but I missed the last part of that.
31
32 **MR. BLANCHET:** I just wasn't sure that I was clear.
33
34 **MR. ANDREWS:** Yes, it's clear. I guess my response is that
35 situation is not unique to the FES. That also would have
36 happened in the CHTS, and the CHTS was also asking about all
37 types of fishing activity, and it was not limited to people who
38 are going offshore or doing certain types of fishing activity,
39 and so it would not impact -- I understand your point, and it
40 would not have impacted the differences between the CHTS and the
41 FES estimates.
42
43 Your point is a good point, but, again, the FES is a survey of
44 all fishing activity, and the point you make would not impact
45 FES estimates, and it would be on the catch expansion, which I
46 think some of that might be covered in some of the subsequent
47 presentations, but, right now, the catch rates from the dockside
48 survey are based upon intercepts at public access sites, and

34

1 those catch rates are applied to the full FES effort estimates,
2 as you suggest.
3
4 **CHAIRMAN POWERS:** Thank you. Jason Adriance.
5
6 **MR. ADRIANCE:** Thank you, Mr. Chairman. I wanted to circle back
7 around, and my question is similar to what John Mareska had
8 asked about gatekeeper, and have you all looked at any issues
9 with how starting that survey as a -- The mail-out as a weather
10 survey, does that impact response rates at all? Have you looked
11 into that?
12
13 **MR. ANDREWS:** We have, actually. When we first started testing
14 the mail survey design, back in 2012, we experimented with
15 several different versions of the questionnaire, and one of the
16 things we were concerned about with the mail survey was non-
17 response bias, and so we didn't just want anglers to respond,
18 because, if only anglers are responding, then our prevalence
19 rates would be much higher, estimated prevalence would be much
20 higher, and our estimates of total effort would be much higher,
21 because we're expanding this by the total number of households
22 and not the total number of angling households or the total
23 number of anglers, and we wanted to make sure that both anglers
24 and non-anglers responded.
25
26 We experimented with several different versions of the
27 questionnaire, and we had a very explicit saltwater fishing
28 survey, and then we tested some additional versions that had
29 more or less non-fishing questions on there, and what we found
30 is what we hypothesized, that there would be pretty big
31 differences in reported fishing activity between a saltwater
32 fishing survey, a clear saltwater fishing survey, and a more
33 general weather and outdoor activities survey, and we did see
34 some differences.
35
36 I think there was quite a bit more non-response bias in the
37 saltwater fishing survey than the weather and outdoor activity
38 survey, and we also got higher response rates to the weather and
39 outdoor activity survey than the fishing, clear fishing, survey,
40 and so the whole point of the weather and outdoor questions are
41 to increase the interest to a broader audience than just anglers
42 and to try and minimize non-response bias.
43
44 **CHAIRMAN POWERS:** Thank you. Tom Frazer.
45
46 **DR. FRAZER:** Thanks. Rob, real quick, in the FES, for the
47 sampling design, one of the strata is the fishing license
48 status, and that's, I guess, matched to the angler registry, but

1 there's a lot of people that are exempted from having fishing
2 licenses, and I'm just wondering, when you look at the whole
3 domain of potential anglers, what percentage of that domain is
4 represented by people that actually are required to have
5 licenses.
6
7 **MR. ANDREWS:** We don't distinguish people who are required and
8 not required to have licenses. We don't ask people if they have
9 a license, and we don't ask people if they are exempted from a
10 license, and so we are just matching addresses to the National
11 Saltwater Angler Registry to identify households that do match
12 and don't match, and there can be a lot of reasons why they
13 wouldn't match. I guess I will circle back to that.
14
15 We're not trying to monitor exemptions or anything like that,
16 and the reason we do the matching is because it improves the
17 efficiency of the survey, because you're creating stratum that
18 are very different with respect to fishing activity, and that
19 increases the efficiency of the survey.   That makes the
20 estimates more precise.
21
22 We do see, or we find, quite a bit of fishing activity in the
23 unmatched stratum, and so people are reporting fishing in
24 households that don't match to the angler registry. Now, there
25 could be a couple of reasons why households wouldn't match, and
26 I guess that's where I was initially going. We create the
27 sample frame about a month before data collection starts, and
28 so, for example, for Wave 4, which is July and August, we create
29 the sample frame at the beginning of August, and so anybody who
30 got a license in August would not be in that matched stratum.
31 Then there can also be matching errors, and people provide
32 inaccurate addresses and those types of things, but I'm not sure
33 that I really got at your question there, but --
34
35 **DR. FRAZER:** I guess what I'm just trying to figure out is I
36 think there are a large number of anglers who don't have a
37 license, and I'm not shocked at that, and I'm just trying to
38 figure out if there's a way to evaluate the assumption that you
39 get a more precise estimate by targeting those licensed anglers.
40 I don't have the answer either, but it's just something that I
41 was thinking about.
42
43 **MR. ANDREWS:** Well, we know -- I mean, we can identify the
44 strata, and so we can look at fishing activity by stratum, and
45 prevalence is much, much higher in the license match stratum
46 than the unmatched stratum, but the unmatched strata are much,
47 much larger than the matched strata, and so you get fewer -- A
48 lower prevalence in the unmatched strata, but it still can

1 result in a pretty big estimate, but we can look at things, like
2 prevalence in fishing rates and fishing activity by strata, to
3 try and evaluate the effectiveness of the stratification, and
4 that's something we're constantly doing.
5
6 **DR. FRAZER:** Sure. I appreciate it. Thank you.
7
8 **CHAIRMAN POWERS:** Thank you. Ken Roberts.
9
10 **DR. ROBERTS:** Thank you, Mr. Chairman. I want to go back to
11 page 9, I believe it was, the difference in the charter fishing
12 effort versus I think the private boat effort, post-recession,
13 and it must be another one. It's the one before that, probably.
14
15 **MR. ANDREWS:** I think it's maybe Slide 11.
16
17 **DR. ROBERTS:** I don't know which one it was, but that's good
18 enough. The question I've got is that's pretty significant, and
19 I'm wondering if anybody on your team, or anyone anywhere, is
20 working on explaining the post-recession divergence. Is that
21 all related to a certain thing or not, and that was a recession
22 that was brought about by derivative failures in the home
23 mortgage business, and we're in the middle of a recession now,
24 and it's much more broad based into private industry and
25 commercial businesses.
26
27 Anyway, the point is I've got a question. You point out an
28 anomaly there, but is anybody working to try to explain it,
29 because this is going to be something that we're going to live
30 with at least for this calendar year, and it may produce some
31 sort of similar results, but, other than that, I think this is a
32 great presentation, one of the best I've ever seen, and I really
33 appreciate your efforts, Rob.
34
35 **MR. ANDREWS:** Thank you. I appreciate that. When you mention
36 the anomaly, are you referring to the anomaly between the
37 charter estimate and the private and shore estimate?
38
39 **DR. ROBERTS:** Yes, in the private boat estimate, why post-
40 recession it's -- Has anybody really delved into trying to
41 explain that, and that may give us some sort of a help into the
42 future, when we get into a recession situation. Thank you.
43
44 **MR. ANDREWS:** Sure, and, I mean, I think our belief is that the
45 post-recession estimate from the CHTS was inaccurate, and it's
46 not a true reflection of actual fishing activity and that true
47 fishing activity was probably much -- For shore and private boat
48 fishing, it was probably much more similar to the trend we see

37

1 in charter boat fishing effort, and I think the trend we see in
2 this particular graph, with private boat and shore fishing, we
3 believe is an artifact of the CHTS design and not reflective of
4 true fishing activity.
5
6 **DR. ROBERTS:** Since CHTS appears to be dead in the future,
7 because of the landline loss, due to the technology of
8 cellphones, maybe it's not that important, but I'm still a
9 little bit concerned about nobody trying to go back and identify
10 that, since there was a question asked by Joe as to what the
11 committee can offer you, in terms of historically going back and
12 relating changes in FES and CHTS to the FMPs that we're dealing
13 with. Anyway, thank you very much. I appreciate your comments.
14
15 **CHAIRMAN POWERS:** To that question, the charter boat effort is
16 based on -- The more recent charter boat effort is based on a
17 separate survey, correct?
18
19 **MR. ANDREWS:** Yes, that's correct. It comes from the for-hire
20 survey, which collects effort information directly from charter
21 boat operators.
22
23 **CHAIRMAN POWERS:** Then the historical portion of this was --
24 They went through their own calibration process?
25
26 **MR. ANDREWS:** Yes, and so, for the for-hire estimates?
27
28 **CHAIRMAN POWERS:** Yes, for the charter boat, the early part of
29 the blue line.
30
31 **MR. ANDREWS:** Well, so I believe this entire time series was all
32 through the same methodology, the for-hire survey, and I think
33 the for-hire survey was implemented in the Gulf maybe in 1998,
34 the late 1990s, but I do believe the Southeast Center makes some
35 adjustments to account for that design change, and Vivian Matter
36 might be addressing that in her presentation.
37
38 **CHAIRMAN POWERS:** Okay. Thank you. Dave Chagaris.
39
40 **DR. CHAGARIS:** Thank you. My question is going back to the
41 shore-based effort that might be occurring from waterfront
42 properties, and I am wondering if you've looked at, or if it's
43 even possible or would be worthwhile to look at, the -- If you
44 could look at the shore effort for waterfront properties only,
45 and potentially that could be explaining some of the
46 discrepancies in the Coastal Household Telephone Survey and the
47 FES.
48

1 If, for example, these waterfront properties are now responding
2 at a higher and higher rate, and they're fishing more
3 frequently, that effort would then get expanded out to the total
4 population, which could potentially be another bias.
5
6 **MR. ANDREWS:** I mean, we can look at reported fishing activity
7 by distance to the coast and make comparisons between waterfront
8 properties and non-waterfront properties. Again, there is some
9 sample size constraints to doing those analyses, and I think any
10 -- That would be a non-response bias, if that's happening.
11
12 If people were more likely to report fishing because they fish a
13 lot -- If people were more likely to respond because they fish a
14 lot, or if more avid anglers were responding to the survey than
15 less avid anglers, or non-anglers, that would be a non-response
16 bias. I mean, we've done some evaluations and some analyses to
17 try and quantify non-response bias, and we have not seen non-
18 response bias in the survey.
19
20 **CHAIRMAN POWERS:** All right. Thank you. Martha Guyas.
21
22 **MS. GUYAS:** Thank you for your presentation. I have a question,
23 and I guess it's sort of about the questions in the survey, and
24 so it seems that the FES questions are worded pretty generally
25 about whether someone saltwater fished, and so what I'm
26 wondering is how are you handling saltwater fishing trips for
27 species that are not covered by MRIP, and I'm thinking invert-
28 only trips for things like spiny lobster, scallops, blue crab,
29 et cetera, because effort for those can be pretty substantial,
30 and they're not covered by MRIP. I don't think it's clear,
31 maybe, for people who receive this survey, that they would not
32 include those trips in their response.
33
34 **MR. ANDREWS:** You're correct, and we don't -- We do not
35 distinguish between finfish fishing and invertebrate fishing,
36 and so it's possible that the FES would be capturing some non-
37 finfish effort. Our assumption is that that's a pretty small
38 component of that total fishing activity.
39
40 **MS. GUYAS:** Okay. I don't agree with that assumption, but all
41 right.
42
43 **CHAIRMAN POWERS:** Kai.
44
45 **DR. LORENZEN:** Thanks, Rob, for that really clear presentation,
46 and I think it helped me a lot to understand the differences
47 between the surveys. I wanted to follow-up on Tom Frazer's
48 question about the unmatched group, and, to my mind, by far the

1 biggest group that should be in that unmatched category would be
2 over-sixty-five anglers, certainly in Florida, and I'm not sure
3 about the other states, because that's a group of people who are
4 retired and are still fairly physically able, and they will put
5 a lot of recreational fishing effort in, for five to ten years,
6 typically, and who are not captured by the license databases. I
7 was wondering whether there is a way, based on demographic
8 information, of sort of capturing this group more out of the
9 unmatched category that you have.
10
11 **MR. ANDREWS:** We can look at the -- They are covered in the
12 survey, and, I mean, we're stratifying by whether or not a
13 household matches or an address matches to the license database,
14 but we are -- The FES is covering unlicensed anglers, and so we
15 can make comparisons to the demographic characteristics among
16 strata, for example, and so we can look at demographic
17 characteristics of unmatched households, and we can look at the
18 demographic characteristics of unmatched fishing households, and
19 those are certainly things we can do, and I think it could be
20 worth doing.
21
22 **DR. LORENZEN:** I understand that they are included, but it's
23 just your later processing to increase precision, where I was
24 wondering whether there is mileage in trying to have an
25 identified group for those over-sixty-five people who are
26 systematically left off of the license database, in a sense.
27
28 **MR. ANDREWS:** One thing we do is we make some post-data
29 collection adjustments to the weights, and, through a process
30 called raking, we make adjustments to the weights, so that our
31 sample conforms to control totals from the American Community
32 Survey.
33
34 For example, one of the things we do is we compare the
35 distributions from the FES for households with seniors,
36 households with kids, different types of telephone service, and
37 we compare those distributions to the census data, and we make
38 adjustments to our sample weights, to make sure that the FES
39 sample is representative of the overall population, and those
40 adjustments are all done at the state level.
41
42 We currently don't make any of those adjustments at any level of
43 resolution finer than the state level. For one reason, it's
44 hard to find control totals for things beyond a state level, and
45 you also run into some sample size issues when you do that, but
46 we're constantly -- The FES has been in operation for several
47 years now, but it's -- We are constantly looking at ways to make
48 the survey more efficient, either through a stratification or

1 post-data collection adjustments to the weights and that type of
2 thing, and we're currently evaluating auxiliary information, to
3 try and determine if there is any other weighting approaches
4 that we could use, or stratification designs that we could use,
5 to make the survey more efficient, and those are exactly the
6 type of things we can look at and will consider.
7
8 **DR. LORENZEN:** Thank you.
9
10 **CHAIRMAN POWERS:** Thank you. John Mareska.
11
12 **MR. MARESKA:** Thank you. My question is kind of spurred on by
13 Ken Roberts' comments on the divergence of the charter and the
14 private boat effort, and so, looking at the survey instrument,
15 that Question 16, how many days did you go recreational
16 saltwater fishing from a private or rental boat, and so, since
17 this is dispersed as a weather survey, do you feel like there's
18 any issues with the general public not discerning the difference
19 between a rental boat and a charter boat?
20
21 **MR. ANDREWS:** Well, I think we have an instruction right above
22 that asks respondents not to report trips that were taken with a
23 paid captain and crew, and so, to the extent that they're
24 reading the instructions, yes, I think they're probably making
25 that distinction.
26
27 **CHAIRMAN POWERS:** Thank you. Any other follow-up? If not,
28 thank you very much, Rob. This really gave us a good
29 background, and I think it will help us as we evaluate the later
30 presentations as well.
31
32 **MR. RINDONE:** Dr. Powers.
33
34 **CHAIRMAN POWERS:** Ryan.
35
36 **MR. RINDONE:** We also want to try to accommodate any members of
37 the public, if they have any questions also, and it would have
38 been a little bit easier had we been in person, of course, to
39 see if anyone had their hands raised, but, Jessica, can you
40 check and see if there's anyone else that has a question?
41
42 **CHAIRMAN POWERS:** There is. Beverly Sauls.
43
44 **MS. BEVERLY SAULS:** Hi, Rob. Good presentation. That was
45 really interesting stuff. I was wondering, since you guys
46 looked at the potential differences in the FES between people
47 with a phone and without a phone, is there a possible way to
48 look at the age bias in the CHTS and try to correct for it,

1 maybe through a post-stratification method, to see if that
2 brings you a similar result to the FES?
3
4 **MR. ANDREWS:** That's a good question, Bev. We didn't collect
5 age information in the CHTS, and so we don't really have a way
6 to look at the distributions to do that type of adjustment.
7
8 **MS. SAULS:** All right. Thanks.
9
10 **CHAIRMAN POWERS:** Thank you. Joe O'Hop.
11
12 **MR. JOE O'HOP:** Hi there. Thanks, Rob, for the presentation.
13 This question is related more to Florida, but, since we're a
14 fair portion of the statistics for a lot of the FMP species, it
15 might have a bearing on what those estimates are, and I'm
16 wondering -- We did the charter boat telephone survey, to try
17 and get at a better distribution of effort between different
18 regions of Florida, and we saw a pretty marked difference
19 between the CHTS estimates for the coast, basically, because
20 that's all we got out of CHTS, was a coastwide estimate of
21 effort, and so we saw a big difference in the number of trips,
22 but we also saw a difference in the seasonal distribution of
23 trips from north to south as the water warmed up from winter to
24 summer, and then vice versa. From the fall to winter, we saw
25 more effort being shifted down to the southern regions of
26 Florida.
27
28 What I was wondering was, with FES, how feasible would it be to
29 post-stratify those effort estimates by let's say the same
30 regions that we use for the charter boats, like the for-hire
31 survey regions?
32
33 **MR. ANDREWS:** Well, we currently do that just to partition -- We
34 post-stratify the Florida effort estimates into the east and
35 west Florida, based on the intercept data, and so we do produce
36 independent effort estimates for the Gulf of Mexico and the
37 Florida Atlantic coast for total shore and private boat effort.
38
39 **MR. O'HOP:** Yes, I understand, but the -- It would be much more
40 advantageous to stratify the effort by region, and I know you've
41 got that problem of people living in one area and fishing in an
42 adjacent area, but, basically, we saw a big difference between
43 whether you stratify by the intercepts or if the effort was
44 stratified directly by which zone the fishing effort was
45 occurring. That is really my question. Can we -- Would we be
46 able to stratify the FES estimates directly, rather than having
47 to go through the dockside intercepts to try and post-stratify?
48

MR. ANDREWS: Yes, we could do that. The challenge with doing that, and you kind of alluded to it, is that you essentially are then conducting multiple surveys in Florida, and so you have a southwest Florida survey, a southeast Florida survey, a Panhandle Florida survey, and you would be limiting -- At least, using the current FES design, you would essentially have to have a survey that asks about saltwater fishing activity in each of the regions in Florida.

There would be pretty big cost considerations with doing that, and we have talked about doing an east Florida survey and a west Florida survey, and that's something we're considering doing, and we continue to talk about, and there are other ways to do it. There is cost considerations with all of those.

I mean, the current questionnaire, it would be kind of tough to -- The current questionnaire, we're asking about saltwater fishing in Florida, and so it would either require separate surveys that were unique to each region of Florida for a different questionnaire, a more complicated questionnaire, where we asked Florida residents to report the number of trips by different Florida regions, all of which is possible, but it's a bit of a different design.

MR. O'HOP: Okay. Thank you.

CHAIRMAN POWERS: Thank you. Paul Sammarco.

DR. SAMMARCO: Just a quick one. First, thank you very much for an excellent presentation. It was very well documented as to what the issues were with these two sampling regimes, and it was clear, from them, that the first one, your CHTS, had problems, increasing problems, with time and that your FES was head-and-shoulders above that and that it has been doing really well.

You have noted that there are a number of biases with it, and my question is this. Is this considered sort of an active, I guess continually active, review, so that you can tweak it with time when you find that there are issues with FES, or in fact do you let it run for say five years or ten years and then revamp it?

MR. ANDREWS: That's a really good question, and we are continuing to evaluate the methodology, and we have an ongoing research program where we're looking at different sources of bias. For example, we're hoping to administer a non-response follow-up study later this year to try and evaluate non-response bias, and this is something we did previously, when we first developed the methodology, but we're looking to do that again.

1
2 There is several areas where we're looking to test tweaks or
3 alterations to the survey, and I'm sure that everybody is aware
4 though that the challenge is, if you do something and it makes a
5 big difference, then you have issues with your time series, and
6 that's what we're going through now.
7
8 There's a big difference between the CHTS estimates and the FES
9 estimates, and we had to do a calibration, and it created a
10 whole bunch of headaches, and so there's kind of a fine line
11 between making constant improvements to a survey and creating
12 challenges to our customers, and so we're very aware of that,
13 and we're trying to do things in a very methodical,
14 collaborative way, so that we're not making -- We don't want to
15 have to go through the transition and the collaboration every
16 couple of years because we made a change.
17
18 That said, we are always looking at ways to improve the survey.
19 One of the reasons that -- One of the problems we had is that
20 the CHTS ran for thirty years without any changes, and a lot
21 happened with technology during that time, and we ended up
22 running into some real problems, because we didn't advance with
23 the technology or changes in best practices, and so we're
24 constantly evaluating best practices, and we will be considering
25 changes moving forward, but we're not going to be making large,
26 sweeping changes that have large impacts on effort without a
27 collaborative transition process.
28
29 **DR. SAMMARCO:** Thank you. Best of luck to you in the future.
30
31 **MR. ANDREWS:** Thank you.
32
33 **CHAIRMAN POWERS:** Thank you. Sepp.
34
35 **MR. SEPP HAUKEBO:**   Thank you.   Thanks, Rob, for that
36 presentation. I really appreciated that, and I was wondering --
37 Over the years, four of the five Gulf states have built an
38 offshore endorsement into their survey design.   Alabama,
39 Florida, and Louisiana all have a formal endorsement, and it
40 appears that Mississippi has a de facto endorsement, through
41 their mandatory hail-out.
42
43 Over the years, I think a lot of those states have cited many
44 benefits to that design in their surveys, including identifying
45 about 5 to 10 percent of the total saltwater licenses are
46 actually offshore anglers, and so, Rob, I was wondering if this
47 FES design --Does that build off of any of those learnings or
48 leverage any of those -- Kind of that designated universe, and,

1 if not, is there a future opportunity to learn from those?
2 Thank you.
3
4 **MR. ANDREWS:** I mean, there is certainly opportunities to learn
5 from any other methodology, which is why, for example, we are
6 incorporating information from the National Saltwater Angler
7 Registry into the FES design, and that was something we wanted
8 to do to improve the efficiency of the survey.
9
10 The FES, as I mentioned previously, it's a general fishing
11 survey, and so we're trying to capture both offshore fishing
12 activity and nearshore fishing activity, inland fishing
13 activity, and so, given the questionnaire, we don't really have
14 a lot of opportunity to try and distinguish between different
15 types of fishing activity, but we are constantly evaluating
16 external auxiliary sources of information, to try and make the
17 survey more efficient and improve the accuracy of the estimates,
18 and so I think the answer to your question is, yes, there are
19 opportunities to learn from other surveys and try and find
20 opportunities to make the survey more efficient, and we are
21 constantly exploring that.
22
23 I don't know that we're actually looking at specifically at any
24 offshore endorsements, but, if they are included in the National
25 Saltwater Angler Registry, if those endorsements would be
26 included in that, they would be included in the licenses that we
27 are matching our sample to.
28
29 **CHAIRMAN POWERS:** Thank you. Next up is Kevin Anson.
30
31 **MR. KEVIN ANSON:** Thank you, Mr. Chair. Rob, for the portion of
32 the presentation that I did see, it was a good presentation, and
33 thank you. I am going to kind of rehash some portion of the
34 presentation that I did not hear this morning, and I just want
35 to confirm, based on prior knowledge, and so I have a couple of
36 questions.
37
38 The first question is to make sure that I understand that the
39 Coastal Household Telephone Survey and the FES take the raw
40 estimate, or the raw numbers, that are generated after their
41 expansion and then they apply an adjustment based on the
42 proportion of anglers that are interviewed at the dockside
43 survey that are not from the coastal counties that are covered
44 in either the Coastal Household Telephone effort or the FES
45 effort, and is that still true, or hold true, for both surveys?
46
47 **MR. ANDREWS:** It is true that FES and CHTS estimates are, or
48 were, expanded by correction factors derived from the dockside

1 survey. The CHTS was only conducted in coastal counties, and so
2 there was a correction for non-resident anglers and anglers who
3 lived in non-coastal counties. The FES is conducted in all
4 counties within coastal states, and so we only have a non-
5 resident correction factor, and that comes from the dockside
6 survey, and that is correct.
7
8 **MR. ANSON:** All right, and so my -- Well, to follow-up then on
9 that, I just -- On page 5, you note that your sampling design is
10 stratified by state and proximity to coast, and so, for Alabama
11 for instance, and for Mississippi for instance, you're saying
12 that you will contact folks that are residents in the northern
13 part of those states and not be considered close to the coast?
14
15 **MR. ANDREWS:** Yes, that is correct. We stratify by proximity to
16 the coast, and the coastal stratum in the FES is identical to
17 the counties we sampled in the CHTS, but we also have a non-
18 coastal stratum in the FES that includes counties that are
19 further away from the coast.
20
21 **MR. ANSON:**   Then my last question would be would it be
22 appropriate, I guess, or have you all done some surveys or
23 looked at the question then to determine if the proportion of
24 those folks that are accessing public sites that would be
25 interviewed in the dockside survey and then be used to adjust
26 boat numbers -- Would the same proportion of those that are non-
27 residents be also -- Well, they wouldn't be contacted, because
28 they are part of the mailing address. All right. Thank you.
29
30 **CHAIRMAN POWERS:** Thank you. Kai Lorenzen.
31
32 **DR. LORENZEN:** Sort of really following on from that, and it's
33 more of a question of understanding the distinction between the
34 coastal and the non-coastal strata, and I just looked it up, and
35 what I found is twenty-five miles is the borderline, I
36 understand, and I was wondering whether more exploration has
37 been done on how to stratify by distance from coast, bearing in
38 mind that, for example, in northern Florida here, a lot of the
39 coastal effort really is from people who live outside the
40 coastal counties, and so people who are in the greater Orlando
41 area, for example, going out to the coasts, or, where I am here
42 in Gainesville, a lot of the Cedar Key fishing effort comes from
43 people who live in Gainesville, from thirty or forty miles away,
44 and so I just wondered how that stratification is done and
45 whether there has been more analysis of how best to do that.
46
47 **MR. ANDREWS:**   In Florida, we don't stratify by geographic
48 proximity to the coast. All Florida counties are considered

coastal, because it's high fishing activity throughout the state. The current stratification, the current geographic stratification, for the FES was really based upon the coverage of the telephone survey, and so the CHTS was only conducted in coastal counties, and we wanted to create a stratum that overlapped exactly with the CHTS, so we could make direct comparisons between the CHTS and the FES.

That was sort of the starting point for the FES stratification, and so the coastal stratum in the FES is identical to the coverage of the CHTS, and, now, we're currently going through a process where we're currently evaluating the FES stratification, to see if we can find more effective ways to do that. Now that the CHTS is not happening, we no longer have to have a stratum that matches up directly with the CHTS, and so we are exploring other alternatives for stratification.

It varies a lot, or it's likely to vary a lot, by state, and so it's going to be, you know, a pretty labor-intensive project to look at this on a state-by-state basis and find out what the ideal stratification is, but we have staff now who are working on that, and we're likely to be changing the stratification at some point moving forward, and the goal of that is to try and find strata that are very similar with respect to fishing activity, but it's something that we're constantly looking at, and we're going through that exercise now.

DR. LORENZEN: Thank you, and so Florida is not stratified, but all the other states where you conduct the FES are stratified by coastal and non-coastal?

MR. ANDREWS: Not all the states. Delaware, and there is only three counties in Delaware, but Delaware, Rhode Island, and I think that might be. Delaware and Rhode Island are not stratified by geographic proximity to the coast. I mean, they're just small states.

DR. LORENZEN: Okay. Thank you.

CHAIRMAN POWERS: Thank you. Paul Sammarco again.

DR. SAMMARCO: I did not have another question, and I think my hand is down on my computer. Sorry. There seems to be a glitch there.

CHAIRMAN POWERS: All right. Thank you. Are there any other questions? If not, again, thank you, Rob. This really, I think, gave us a lot to consider and to focus our discussions as

1 we go along later today and tomorrow. At this point, let's take
2 a ten-minute break, and we'll come back in ten minutes. Thank
3 you.
4
5 (Whereupon, a brief recess was taken.)
6
7 **CHAIRMAN POWERS:**   The next agenda item is moving into the
8 calibration process, and the first presentation is Dr. Jay
9 Breidt, who is making the presentation on the FES calibration
10 methods. Jay.
11
12   **CALIBRATION PROCESS**
13
14 **DR. JAY BREIDT:** Good morning, everyone. My name is Jay Breidt,
15 and I'm a professor of statistics at Colorado State University,
16 and this is joint work with Teng Liu, who is my former PhD
17 student at Colorado State University and John Opsomer, who is my
18 former colleague at Colorado State University, and he's now at
19 Westat.
20
21 I thought I would start off with a couple of quotes from the
22 survey literature, to let you know that you're not alone in this
23 problem, and so the first one is from a paper in *The*
24 *International Statistical Review* this year: "A key requirement
25 of repeated surveys conducted by national statistical institutes
26 is the comparability of estimates over time, resulting in
27 uninterrupted time series describing the evolution of finite
28 population parameters.   This is often an argument to keep
29 survey processes unchanged as long as possible.   It is
30 nevertheless inevitable that a survey process will need to be
31 redesigned from time to time, for example, to improve or update
32 methods or implement more cost-effective data collection
33 procedures."
34
35 This seems exactly relevant here, and, in fact, this transition
36 from telephone to mail is being faced by all kinds of survey
37 organizations and government agencies, not only here, but around
38 the world, and it was a focus of a recent AAPOR, and that's the
39 American Association of Public Opinion Research, task force
40 report on the transition from telephone surveys to self-
41 administered modes, like mail, or mixed modes, and I just wanted
42 to emphasize that many surveys are facing this transition right
43 now, and, again, you're not alone.
44
45 The last quote, again, is from that 2020 paper: "Survey samples
46 contain, besides sampling errors, different sources of non-
47 sampling errors that have a systematic effect on the outcomes of
48 a survey. As long as the survey process is kept constant, this

1 bias component is not visible for the comparability over time.
2 If, however, one or more components of the survey pro are
3 modified, the biases induced by these non-sampling errors are
4 changed, likely to be visible and misinterpreted as finite
5 population parameter changes. Major redesign of the underlying
6 survey process, therefore, generally has systematic effects on
7 the survey estimates, disturbing comparability with figures
8 published in the past." This is exactly what MRIP has been
9 facing and what Rob Andrews did a nice job of outlining in the
10 previous presentation.
11
12 The discontinuity here is in fishing effort, a major change in
13 the survey methodology that leads to major changes in the survey
14 estimates, and, from the beginning, MRIP made a commitment to
15 develop a calibration method that would enable the construction
16 of a consistent time series, so that you would have some
17 comparability over time, and our approach to that, of course, is
18 statistical, and, when we think of doing things statistically,
19 we think about identifying sources of uncertainty and variation,
20 making any assumptions explicit, and so write them down
21 mathematically.
22
23 Once we have those assumptions, figure out what the best
24 practices are, theoretically, under those given assumptions, and
25 then try to assess the sensitivity to the failure of those model
26 assumptions.
27
28 This presentation is going to involve the FES, which I will just
29 refer to as the mail survey, and the CHTS, the telephone survey,
30 and so I'll just call those mail and telephone, and, as you
31 know, from Rob's presentation and earlier, there is large
32 differences in the effort estimates from those two surveys.
33 Here is an example from Alabama, and I'm just showing this, and
34 these are the mail survey estimates, and these are the telephone
35 survey estimates, and notice there's a pretty short window of
36 overlap and a large difference. This is on a log scale, and
37 most of my analysis will be on a log scale, for modeling and
38 mathematical convenience.
39
40 I want to address this calibration problem, which MRIP stated
41 they wanted to come up with estimates that best represent what
42 would have been produced had the new FES design been used prior
43 to 2017, in order to have some kind of comparability, and so we
44 approached this problem by asking is there a way to sort of
45 think of telephone units, and so think of like currency units or
46 something, and can we convert from these telephone units to the
47 mail units, and vice versa.
48

1 We have to come up with some modeling assumptions in order to do
2 this, and there's no way out of that, and, the way we've
3 approached this, even though we are certain the FES design and
4 methodology is a better, improved design, the calibration
5 methodology doesn't care. It actually makes no judgment that
6 one method is correct, or even better, but it just says they're
7 different and let's figure out how to do the unit conversion
8 between these two methodologies.
9
10 As statisticians, we start off by identifying sources of
11 variation, and we're combining all the data across all the
12 states, across time and space, and, of course, there's a lot of
13 variation, and this is focused on the telephone estimates, and
14 there is variation across time and across space, and this is
15 variation state-to-state, and these are just box plots of all
16 the effort estimates on a log scale.
17
18 This is variation wave-to-wave, so you can see that seasonal
19 pattern that you would expect to see, and this is variation
20 year-to-year, and so there is a lot of variation in here, but
21 you can see some of that trending that Rob described earlier.
22
23 Our approach to this is to start off by trying to explain as
24 much of that shared spatial-temporal variation as we can, and
25 shared spatial-temporal variation meaning the temporal variation
26 that both the mail survey and the telephone survey see, and then
27 model the difference between the mail and telephone surveys.
28
29 When we think of those sources of variation in a time series,
30 the classical statistical approach to that is to break it into
31 three pieces. There is trend, and so we know that effort varies
32 over years, and, in part, we would expect that to be due to
33 changes in the overall size of the population. We know there is
34 variation seasonally, and so the effort varies wave-to-wave, as
35 we would expect, and we expect that pattern to vary state-to-
36 state.
37
38 Anything that is left after we sort of explain trend and
39 seasonal is referred to as just irregular, and so there is
40 additional variation in the true effort that is not explained by
41 this regular pattern of trend and seasonal, and so we think of
42 the true effort, which we don't get to see, as composed of the
43 trend, the seasonal, and the irregular, and that effort pattern
44 varies state-to-state, and so that's kind of a basic underlying
45 model here.
46
47 Again, that's called the classical decomposition in time series
48 analysis. Effort is trend plus seasonal plus irregular, and

1 that model holds in each state, and, of course, we don't get to
2 observe effort directly, because we have to base our estimates
3 of effort on a sample, and a sample has both sampling error and
4 non-sampling error, which I'm going to refer to here as a method
5 effect.
6
7 The effect of the method is the effect due to the telephone
8 method or the effect due to the mail method, but that's a
9 collection of non-sampling errors, and so, again, I'm going to
10 be working on a log scale, but the basic equation then says that
11 a telephone estimate is composed of three pieces.
12
13 There is the telephone method effects, which are all the non-
14 sampling errors, and there is the true effort, that we don't get
15 to see, and there is the telephone sampling error, which we
16 actually know quite a lot about, because we know how the survey
17 is designed, and then, similarly, the mail estimates are
18 composed of any non-sampling errors in the mail method, the true
19 effort, which we don't get to see, and then the mail sampling
20 error, which, again, we know a lot about, because we know the
21 design of the sample.
22
23 I will talk a bit more about the model for effort, and then I
24 will talk about the sampling error, and then I will talk about
25 the method effect.
26
27 To model trend in effort, we have used state-specific population
28 sizes from the U.S. Census Bureau, and we've got that
29 information, and it's good quality information, and it's
30 consistent across years, and it's consistent across space.
31
32 The way they get these population values is they take the
33 decennial census in the census years. In between census years,
34 they use demographic methods, counting up births and deaths and
35 immigration and emigration, and they have very precise values
36 for population, and so this is just kind of giving an
37 indication, for Delaware, of that overall trend that we would
38 sort of expect to see.
39
40 The seasonal pattern follows a very standard statistical
41 modeling approach, which is to create what are called dummy
42 variables, or indicator variables, for those waves, and so this
43 basically says that, yes, there's some trend, but, in addition,
44 there's a seasonal pattern that just bumps the effort off of
45 that overall trend, wave-to-wave, each wave having its own
46 pattern that repeats across years, and so you expect more
47 fishing effort in the summer, and so it's a pretty similar
48 model.

The trends plus seasonal model consists of state effects, the log population, the state-by-log population interactions, and so that gives each state its own trend line, and this part gives each state its own seasonal pattern.

That is a very simple model, but it actually accounts for lots and lots of the variation in the telephone estimated series, and so, if you look at something like the adjusted R-square value, it accounts for about 85 percent of the variation in the shore mode and in the boat mode, and so a large proportion of the variation is explained by this simple model that just says the classical time series decomposition.

What's left there is what we call irregular, and that's, conceptually, the true effort has additional real variation that is not explained by the pattern we just described with the trend in the seasonal, and, by definition, we can't explain it, and so we have to model it somehow, and, in statistics, when we don't know something, we model it as a random quantity, and, here, we say that that trend plus seasonal model is basically right, but these irregular components are random variables with mean zero and some unknown variance that we're going to have to estimate, and so we say that these are independent, and they're identically distributed. We assume they're normal, and so that's a modeling assumption that we have to assess down the road, and there's an unknown variance component side that we'll have to estimate down the road.

That is the basic underlying model for true effort. It's a very simple model that describes a lot of the variation, and now we move on to the other pieces, the first of which is sampling error, and sampling error -- All this means is you have sampling error because your sample is not as large as your frame, and you couldn't afford to sample everyone, and so you have sampling error, and the nice thing about sampling error is that we know its properties, because we designed the surveys, and these particular surveys happen to be stratified random samples of the relevant frame population, and so we know a lot about the properties of these sampling errors.

If you look at sampling error, one of the things we know about sampling error is that sampling error is unbiased for zero, and so, on average, it's zero, and so that's zero mean, and what that means for us is that, if you look at the telephone estimate, the telephone estimate consists of three parts, the telephone method effects, the effort estimate, and the telephone sampling error.

52

1
2 This part is unbiased for zero, and so telephone estimates
3 themselves are unbiased for the effort plus the telephone method
4 effects, and so there is a non-sampling error bias that the
5 telephone is an unbiased estimator of. The telephone is an
6 unbiased estimator of what I will call the telephone target,
7 which is true effort plus these biases due to the telephone
8 method.
9
10 That's one thing we know about the sampling error, is that it's
11 zero mean, and the other thing we know about it is that it has
12 some variance that we can estimate from the sample itself, which
13 is one of the beauties of survey samples, and so we have good
14 estimates of the design variance, that variance of the sampling
15 error.
16
17 We also know that that sampling error is from a stratified
18 sample of moderate to large size, and, once we start having
19 moderate to large sizes, and we start averaging those things, we
20 have, in statistics, a theorem known as the central limit
21 theorem, which says that those average sampling errors should be
22 approximately normal, and so these sampling errors are based on
23 samples of moderate to large size, and so we expect them to be
24 normal, and we expect them to be independent across states and
25 waves, years and waves, because of the stratified nature of the
26 sampling, and there is zero mean, by design of the samples, and
27 they have some variance, which we can estimate from the survey
28 itself, and, similarly, the mail sampling error has mean zero,
29 and it's got some variance that we can estimate, and so sampling
30 error is the nice error, and we know a lot about it, based on
31 the design of the surveys.
32
33 A slight technical problem here is that, when we get estimated
34 variances from the telephone survey or from the mail survey,
35 those are on the original scale, and we're actually doing our
36 modeling on the log scale, and so we have to do something to fix
37 that, and there are some common approaches.
38
39 It turned out that we needed to develop a bit of new methodology
40 here to make things work out nicely, and I'm just going to
41 breeze past some technical details, but the point is we can do
42 that, and we do it really well, and we wind up with estimates of
43 sampling variances on the log scale that enforce some analytical
44 consistency, because we did this non-linear transformation.
45
46 I just skipped ahead a few slides, past the technical details of
47 that variance estimation, and now I want to turn to the method
48 effects. Method effects are non-sampling errors, and non-

53

sampling errors are not nice errors. We like sampling errors, and non-sampling errors not so much, and, again, sampling error occurs because the sampling frame is not the same thing as the sample, but we understand all kinds of properties of sampling error, and we can estimate the properties of sampling error from the sample itself.

Method effects, these non-sampling errors, are everything else, and they include these potential biases, which Rob Andrews described in detail in his presentation.

Coverage error is the fact that the population is not equal to the sampling frame, and so the households with landlines are not equal to all households that might contain anglers, and non-response error, because not everybody responds to your sample, and measurement error, because the true effort is not equal to your measured responses, maybe because a gatekeeper said, no, nobody fishes here, or whatever it might be.

In any survey, we try to use good sampling protocols, good measurement protocols, and we try to really minimize these method effects, these non-sampling errors, but they're always problematic. We cannot see them from the sample itself, and they require some kind of special study, or they require overlapping surveys of some type.

Another problem with these non-sampling errors is that they can change over time. They can have trend, they can have seasonal, and, because of that, they can't be entirely disentangled from the true effort. They can be confounded with the true effort, and so telephone, for example, the telephone estimates, that's an unbiased estimator of the telephone method plus the true effort, but the non-sampling errors in the telephone method can have trend, and, in fact, we know that they do.

There is change in the quality of the frame over time, as the wireless-only households increased in their penetration, and there could be changes in overall response rates over time, because of the changing demographic characteristics, and there could be changes in measurement protocols over time, as the survey evolves, if that's not reflected in changes in the estimation.

The non-sampling errors might have seasonal patterns, and so there could be varying non-response by wave, and the non-sampling errors could have their own irregular idiosyncratic, but true, effects that vary state-to-state and wave-to-wave in unpredictable ways, and the same thing for mail.

54

Mail is an unbiased estimator of true effort plus any method effects that are in the mail survey, and those might have their own trend, seasonal, and irregular components. Based on the design, we expect these effects to be much smaller than those of the telephone method, especially in later years, but it's in there, and we can't tell the difference.

We can't disentangle these method effects from the true effort, and that's true in every survey, as that initial quote alluded to. There is always non-sampling errors in surveys, and we try to minimize them, but we do that through everything we do in surveys, and so we try to have good frames. We develop those frames, and we try to maintain those frames, and we monitor the quality of those frames.

We have non-response follow-up and adjustment procedures, and we test our measurement protocols, and we train our field staff. Whatever it is we do, we try to minimize those method effects, and, again, Rob Andrews' presentation gave you a good idea of the ongoing research effort to look at method effects in the mail survey going forward.

Then, again, just to repeat, a problem with method effects is that you cannot estimate them from the sample itself. If you could do that, you would just estimate it and get rid of it, and you would be done, but you can't do that, and so you really just have to work on good measurement protocols to try to mitigate it.

Putting things together, just repeating, our mail estimate consists of these three components, and the telephone estimate consists of these three components. We can't disentangle the mail method from its effort, the telephone method from its effort, but, because we have overlapping estimates, we can, in principle, just subtract, and, when we do that, the true effort subtracts out, and what we're left with is the difference between the mail method and the telephone method, which is interesting, and these other two components are the mail sampling error and the telephone sampling error.

The nice thing about these sampling errors is that they have zero mean, and so this difference is actually an unbiased estimate of the difference in the method effects, and so that tells us that, with overlapping estimates, we can theoretically identify this difference in the methods. We can't ascribe one of those methods more to one or the other, but we can see the difference.

1
2 Because we can do that, that gives us the potential for a
3 calibration methodology. If we can estimate the difference in
4 method effects, using the overlap between the surveys, we can
5 then use that model difference to extrapolate either back in
6 time, to the time when the mail survey was not being conducted
7 and we want to know what would the mail survey have looked like
8 in the past, or we could extrapolate forward in time and say,
9 well, what would the telephone survey have looked like going
10 into the future.
11
12 An immediate problem is that we have limited overlapping data
13 with which to explore the difference, and so, in our modeling,
14 we've got to be pretty humble here, and not try to take on too
15 much complexity in our model, because we're going to have to
16 extrapolate this model, but, if we can model that difference, we
17 can extrapolate to other time points that don't have overlapping
18 data.
19
20 In order to do that, we need covariates that have explanatory
21 power for this difference in the method effects, and we need
22 covariates that are available consistently, with consistent
23 quality in time and in space, so that we can extrapolate forward
24 and backward in time. We don't want to replace the problem of
25 calibration with a problem of trying to predict covariates that
26 we don't have and then have sort of a two-layer model.
27
28 That's the plan. If we can estimate the difference between the
29 mail method and the telephone method, using the overlapping
30 surveys, model that difference using covariates that are
31 available in time and in space, that gives us a calibration
32 methodology that allows us to map back and forth between the
33 telephone target and the mail target, so we can do this sort of
34 unit conversion between the two different currencies.
35
36 We need some covariates, and, before we launch into this
37 problem, extrapolation is always a problem. It has its usual
38 dangers, and there is no real way to know if this model holds
39 over time. If it doesn't hold over the full range of time, the
40 calibrated values can be badly wrong, and we want to do whatever
41 we can to assess sensitivity to the failure of that model
42 stability over time, recognizing that that's just not entirely
43 possible to do that.
44
45 What kinds of things are changing over time?   Could the
46 measurement error be changing over time?   Would there be
47 covariates that explain such a change? One major source of
48 measurement error that Rob Andrews described was that gatekeeper

56

effect, and so is it possible that the gatekeeper effect, decades ago, when someone answered their landline telephone, is similar to what it is today? Well, I don't know, but maybe that's not a crazy assumption.

What about non-response error? Is that changing over time? Do we have any covariates that would explain such a change? What about coverage area changing over time? Are there covariates that explain such change? That's an obvious one. We know that the coverage error for the mail survey has changed over time, because of the penetration of wireless-only households.

This is referring to the same data source that Rob Andrews talked about, and this is from the National Center for Health Statistics, which conducts the National Health Interview Survey, and they provide estimates twice per year for each state of the wireless-only households, and they give these estimates of proportions of wireless-only households, and we use this in our modeling, and, basically, we fitted a model, because we wanted to extrapolate back in time, before these values were available, and, to some extent, extrapolate forward in time, and so we built a model for these proportions of wireless-only households and used that in our modeling, and this model is very sensible. If you extrapolate it back in time, you get basically zero, once you get back beyond 2000.

One of the things we do right away is to say let's incorporate that wireless penetration into the model, to help explain some of the variation in these method effects, and we think that that wireless effect will certainly vary state-to-state, because the amount of wireless telephone penetration varies state-to-state, and maybe it varies wave-to-wave, and maybe it varies by size and population, and so we can start interacting this wireless effect with these other effects, to see how much impact it has, and it absolutely has an effect.

It's highly significant statistically, and it's important for improving the fit of the model, but it's not an enormous effect, and this is similar to what Rob was showing you in his presentation, and so you do definitely get a reduction in the residual standard error, and you do get an improvement in the proportion of explained variation, but that's not going to explain all of the difference, and that alone will not affect the calibration that we want to conduct.

We'll definitely include wireless and its interaction, but, other than that, we want to allow for other differences in the measurement error, and so I'm going to write this in the

following way. The notation here -- When I use Greek letters, like this M and this Γ, these are unknown parameters that we'll have to estimate, and these other things are things we know, and so we know these elements of B, and we know the wireless, and we know the elements of C.

We are going to put in known covariates, into B and C, and we approach this empirically, meaning we're going to build up a model based on the data we have at hand, but we want to do this parsimoniously, because, whatever model we build for the calibration strategy, it's going to have to be extrapolated over long time windows, and so we want that as parsimonious as possible. Complicated models don't extrapolate well, and so we'll try to keep this as simple as we can.

One of the things to notice here is that, if we were to just turn off this first piece, that would say that the only difference between mail and telephone is due to the wireless, and, if you turned off that piece and used only the wireless component, then, basically, in the distant past, there would be no difference -- Let me say that differently.

The wireless effect basically disappears around 2000, and so this would be gone if you go back into the distant past, and so, if you didn't use this piece, and you only used this piece, and you allowed it to die off back in 2000, then you wouldn't really be doing any adjustment in the distant past. You would say that mail and telephone behaved the same, just as kind of a baseline for comparison.

This is now just a recap on the model, and the telephone is its non-sampling errors plus the true effort plus its sampling error. I am composing that as the telephone target plus sampling error. Mail is mail target plus sampling error, and the conversion, the calibration, is going to allow us to map between the mail target and the telephone target, and so we still don't get to see true effort, but we do get to do sort of the currency conversion between telephone target and mail target.

In notation, if I put a hat on something, that means an estimate, and so this is just the estimate from the survey, and that's the natural log of the telephone effort estimate in state and year-wave, and this is the telephone target, and the telephone sampling error is assumed to be normal. M with a hat is the mail effort estimate, and M is the mail target. E^M is the mail sampling error, and we have an irregular term that is that true variation in true effort that is sort of idiosyncratic and

very state-to-state and wave-to-wave in unpredictable ways, which we model as a random variable.

We put it all together into this horrible series of equations, but there is really just four equations here. This is an observation equation, and so I get to observe T with a hat. It's telephone target plus error. What is T? Well, T is the telephone target, which means it's got the true response in there, and so the true response is this piece, which is trend in seasonal, and then this irregular piece, and then it's got these differences between the method effects.

Then, similarly, M with a hat is an observation equation, and you get to see this, and it's the mail target plus the mail sampling error. We know a lot about the mail sampling error. The true mail target is the true trend in seasonal plus the irregular, and then it's got these covariates that explain the differences in the method effect.

When you write this all down, it turns out to be very closely related to a very classical model in survey statistics called the Fay-Herriot Model, and, more generally, this is a model that falls in the large class of extremely well known statistical models called linear-mixed models, which are extremely varied, and they have all kinds of flexibility to do many different things, and linear-mixed models are basically the workhorse of applied statistics, and you will see these all over the place, and, in survey statistics, they take the form of what's called the Fay-Herriot Model.

It's convenient to do a bit of rewriting here, so that, if I've got a mail estimate, I'll just take T with a hat, the telephone estimate. If I've got a -- Sorry. If there is no mail estimate, I will just take my telephone estimate. If there's no telephone estimate, I will just take my mail estimate. If I've got both, I'm just going to average them, and this is just a computational trick, and it doesn't really mean anything beyond that.

When I do this, I can write down this model in a particular way that makes this model exactly what's known as a Fay-Herriot Model, and a Fay-Herriot Model is a model that's used in essentially every statistical agency on the planet, as well as contract research organizations and anybody who deals with survey data.

They use this classic paper on small area estimation, which goes back to 1979. Fay and Herriot worked on estimates of income for

59

1 small places, and this paper is extremely standard, well
2 studied, and it's been cited 1,400 times in Google Scholar, and,
3 basically, it takes the estimation and prediction techniques of
4 linear-mixed models, which are extremely powerful theoretically,
5 and applies them to this important problem of small area
6 estimation, and we can borrow that theory and methodology for
7 the calibration problem.
8
9 The theory here is extremely strong, and it gives us really
10 optimal ways to do the calibration, and it gives us methods for
11 estimating the uncertainty of our calibrated estimates, and it
12 is supported by software, and so we happen to be using a package
13 in the statistical software R called SAE, which stands for small
14 area estimation, to use the Fay-Herriot methodology.
15
16 The theory here, and this is a bunch of equations, but the big
17 news here is that this is standard theory and methodology in
18 statistics, and so Fay-Herriot says, first of all, I have to
19 estimate those unknown regression coefficients, the coefficients
20 of all those covariates that I think are, in part, explaining
21 the true effort, trend in seasonal, and, in part, explaining the
22 difference in the method effects, and so I have to estimate all
23 those things, but I know exactly how to do that, once I've
24 written it in this linear mixed-model form.
25
26 It turns out that we use what's called the best linear unbiased
27 estimator, or BLUE, and we would do that if we knew this
28 variance component, Ψ, and we don't know it, and so we have to
29 estimate it. We use a well-known estimator for Ψ called
30 restricted maximum likelihood, and we plug it in, and we get
31 what's called the empirical B with a hat, and so we know exactly
32 how to estimate those parameters. It's a standard thing to do,
33 and it's standard in software.
34
35 Once we have a fitted model, we can start answering questions
36 like these calibration questions, and so we might ask the
37 question of what would be the mail target equivalent in a past
38 year-wave T for some state when there is no mail estimate
39 available? Well, what I would have to do is go back in time and
40 estimate the trend, seasonal, and irregular, and I would have to
41 make these adjustments for the covariates the explain the
42 difference between mail and telephone, and so I know how to do
43 that.
44
45 I plug in the appropriate covariates, and this is what I do,
46 theoretically, if I knew everything, and I don't know B, and so
47 I will have to estimate it, and I don't know this random
48 irregular component, and so I will have to predict that as well,

1 but I know how to do that using standard methodology, and,
2 similarly, if I wanted to know what would the telephone target
3 equivalent be in the future, when there is no telephone
4 estimate, again, I could just plug in the appropriate values.
5
6 Here, this would be plugging in the appropriate values if I
7 didn't want to remove that effect of wireless, and another
8 possibility would be I want to do the same thing, but I want to
9 get rid of the effect of wireless, and so I could do that, and
10 so this methodology would allow me to assess any of those
11 questions in a consistent way.
12
13 The way Fay-Herriot does prediction is, again, it appeals to the
14 theory for linear-mixed models, and, for linear-mixed models, we
15 use what is -- We know how to do this optimally, and so, if we
16 knew B and we knew Ψ, we could plug everything in, and we would
17 just get an optimal predictor, the best mean square predictor,
18 of that unknown quantity, and we don't know B, and we don't know
19 Ψ, but, for the moment, if you imagine that you did know Ψ, then
20 you could plug in an estimate of B, the BLUE, and you would get
21 what's called the BLUP, and so that's the best linear unbiased
22 predictor. We know how to do that.
23
24 Since we don't know Ψ, we have to estimate it, and, again, we
25 know how do that. We put a hat on that thing, and here's our
26 final answer, the empirical best linear unbiased predictor, well
27 supported by theory.
28
29 The way that Fay-Herriot works then is we have to estimate those
30 unknown parameters, and we have to then predict various unknown
31 quantities, using this empirical BLUP, and we also want a
32 measure of uncertainty, so that we can describe how uncertain
33 these calibrated values are, and this is actually pretty complex
34 for empirical BLUPs. We have to approximate the mean squared
35 error and then estimate that mean squared error, and this -- I
36 am just going to flash past this, but this is pretty
37 complicated, but, again, a well-developed theory that we had to
38 modify for this particular situation, but we know how to do
39 that, and so we come up with an estimator of a mean square error
40 approximation.
41
42 One of the issues in this modeling is remember that I said that
43 the model for the irregular term -- We said let's assume that's
44 normal, and I don't know what it is, and I can't predict it,
45 and, as a statistician, I'm going to describe that as a random
46 variable, with some properties, and I assumed it was normal.
47

That's a simple assumption that makes a lot of the math work out nicely, but it could certainly be wrong, and so one of the things to do is to assess the quality of that assumption by simulation, and one of the things we want to know is, is our measure of uncertainty affected by that assumption?

We want to look at our mean square error approximation and the resulting estimating, using simulation, and the way we did that is to take a model, a Fay-Herriot Model, and fit it to the overlapping data. In this particular case, we had two years of overlapping data, the telephone, and we find a model that is similar to the final model that I will present later, and it's not exactly the same, because we had to add a different dataset when we did this, but it's very similar.

We looked at different design variance patterns that were reflective of the actual design variance patterns that we see, but we also said, okay, let's play with this, let's bang on it, let's take the same pattern, but reduce the design variance, and let's take the same pattern and increase the design variance, and then we also changed the densities for that unknown irregular term.

The assumption of the model is that it's normal, and so it would look like this first curve, but we also looked at this Laplace distribution, which has heavier tails than normal, and it has more chances of generating more outlying values, which you can kind of see here. Then we did something that was extremely skewed. It's centered here, but it's obviously got a highly skewed distribution.

The upshot of that is that mean square error approximations work really well, and the estimates, and so these are basically just a thousand reps, and the only thing to see here is that the dots fall pretty close to the one-to-one reference line, which is what we would like to see.

Once we do all this stuff, eventually we have to walk back to the original scale, because we're working on the log scale, but, again, this is something we know how to do. Let me just say that the mean square approximation, the estimator, they work well in simulation, and they are robust to non-normality of the irregular terms, and so that really didn't make much difference at all.

Once we have that mean square approximation in hand, we can use that to map back to the original scale, and it's a key component of how we map back, and so all the theory is in place, and all

the methodology is in place, and now we just have to come up
with a model, a linear-mixed model, using this Fay-Herriot
structure, that will hopefully describe our calibration problem
pretty well.

We looked through a whole suite of models, and the smallest of
those models was the model that said there is no non-sampling
errors, there is no mail method effects and there is no
telephone method effects, and it just drops all this stuff. The
only thing in it are these state-specific trend and seasonal
patterns, and so that smallest model we would expect to be badly
wrong, but it's just in there as sort of a baseline.

The largest model that I will describe here starts with that
simplest model and then adds to it the effects for mail that can
vary from state-to-state and wave-to-wave, and then can trend
with time, and it adds also these wireless terms that can vary
state-to-state and trend with time. Then, in between those two
models, the smallest model and the largest model, we considered
essentially all of the other models in between them that had at
least some kind of effect of mail and telephone, and we actually
considered a lot more models than this, but these are the ones
that I will focus on.

If you look at this model, what this notation means is that mail
shows up as a main effect, but mail also interacts with state
and interacts with the log population, and it interacts with
wave, and, if you look at just these three interaction terms and
add them to these four interaction terms, there is seven
interaction terms, which might either appear or not appear in
the final model, and so, if you take two of the seven, and so
two possibilities here, two, two, two, two, two, two, that's two
to the seven, and there's 128 possible models between that
smallest model that at least adds mail and wireless and the
largest model, but not all of those models are feasible, because
some of them we actually wouldn't allow in statistics.

If I have this term, wireless by state by log population, that
three-way interaction, then a standard rule says, well, I have
to have any lower order interactions, and so this model, which
drops wireless by state, is not legitimate, because wireless by
state by log population is included.

We drop these sort of invalid models and look at all the rest,
and the results in eighty different models. We look at those
models and compare them by various methods, one of which is
known as AIC, or Akaike's Information Criterion, which is a
pretty standard model comparison tool.

63

1
2   Basically, it's a measure.   It's a measure from the sample
3   itself of expected out-of-sample prediction, and the way it
4   works is that models that fit the observed data well are
5   rewarded, but, if they have too many parameters, then they start
6   getting penalized, and so it wants you to fit the data well, but
7   not by using -- Not by just adding a whole bunch of parameters,
8   and so a smaller AIC is better.
9
10 We have also done out-of-sample prediction mean squared error,
11 and so, for this particular choice, we're doing out-of-sample
12 prediction for Waves 1 and 2 of 2018, and these were not used in
13 the fit at all, and so this is pure out-of-sample prediction,
14 and smaller mean square error means better predictions and then
15 degrees of freedom.   If we have more degrees of freedom, all
16 that means is that we have fewer estimated parameters, and so we
17 like models that have low AIC, low prediction mean square error,
18 and high degrees of freedom.
19
20 This is for shore fishing, and so the table is a little
21 complicated, but, if you take the largest model that I described
22 and subtract off the terms in each row, that's the model that
23 I'm talking about, and so, for example, the largest model, minus
24 all the mail and all the wireless, is our smallest model, and
25 the smallest model has terrible AIC.   It's the largest in this
26 table, and it has high degrees of freedom, because it's not a
27 big model, but it has terrible out-of-sample prediction mean
28 square error, and so we know this model is no good.
29
30 The best -- These models are ranked by their AIC value, and I
31 have highlighted three of them.   I have highlighted these three
32 because these three show up for shore fishing and for private
33 boat fishing, and we wanted to choose a model that was the same
34 between the two modes, just for simplicity.
35
36 These are the three competitors.   These are the three that are
37 the same on both modes, fishing modes, and, among these three,
38 we like the yellow highlighted one, because it has lower
39 prediction mean square error, and it's not the lowest here.
40 This is slightly lower, but it's almost identical, and it has
41 pretty low AIC, which is competitive with these other models,
42 not quite as low, and it has higher degrees of freedom, because
43 it's a simpler model.
44
45 Similarly, for private boat fishing, those three models show up
46 in the same places, and you can see that the model we ultimately
47 chose has lowest prediction mean square error, and it has
48 competitive AIC, and it has higher degrees of freedom, because

64

1 it's a smaller model.
2
3 We wanted the same model for both fishing modes. We wanted a
4 highly parsimonious model, because we knew we would have to
5 extrapolate this thing into the past. Among the three models
6 that are AIS best in both fishing modes, we chose the model that
7 dropped mail by log population and mail by state, because it has
8 competitive AIC, and it had smaller out-of-sample prediction and
9 mean square error, and it was more parsimonious. It had more
10 degrees of freedom, because it had fewer parameters.
11
12 Aside from the wireless piece, this particular model that we
13 chose is dropping the mail by state interaction and the mail by
14 log population interaction, and so it just has this main effect
15 of mail and the mail by wave interaction, which means that it
16 has a wave-specific adjustment once you get past any wireless
17 period.
18
19 As I mentioned before, this methodology requires extrapolation
20 over a long time window, and so it does assume that there are
21 stable differences between the telephone and the mail outside of
22 the wireless effects over that window. If the differences are
23 not stable, anything is possible, and let me just summarize.
24
25 The models here for calibration attempt to account for various
26 sources of variation, including the trend, seasonality, and
27 irregularity of the true effort, which we don't get to see, the
28 sampling error, which we know a lot about, because we know about
29 the design of the surveys, and the non-sampling method effects,
30 which we know some things about, because of the special studies
31 that Rob Andrews described, but we don't know everything about
32 it.
33
34 The model assumes these measurement and non-response differences
35 between the surveys are stable over time, because we don't
36 really have ways to predict otherwise, and it does assume that
37 the coverage error has changed over time, due to the growth in
38 wireless-only households, and that is explicitly accounted for
39 with the choice of the wireless penetration covariate.
40
41 The way we formulated this model, it turns out that the
42 calibration methodology is exactly a standard and well-
43 established procedure, this Fay-Herriot small area estimation
44 procedure, which, in the broader context of statistics, is
45 exactly an application of linear-mixed model estimation
46 prediction theory, which is the most standard part of
47 statistics, and it yields optimal predictions, and predictions
48 here mean the calibrated values, under the assumptions of this

1 model, and so we have a way to do it. We have a way to assess
2 its uncertainty, and it's well-grounded in theory.
3
4 That's it, and there's just some acknowledgements to Rob Andrews
5 and John Foster for assisting with some problem formulation and
6 the data compilation, and then NOAA affiliate Ryan Kitts-Jensen
7 and Mike Brick for useful discussion, and so that's the end of
8 my presentation. Thank you.
9
10 **CHAIRMAN POWERS:** Thank you. Let's have a short discussion.
11 The agenda says that we're having lunch now, at 11:30, but let's
12 take a short discussion, and then we'll come back after lunch to
13 this as well, and so let me open the floor for questions or
14 comments. First up is Sean Powers.
15
16 **DR. POWERS:** At the beginning of your presentation, you couched
17 a lot of this in terms of saying that some of these assumptions,
18 and particularly I think it was the sampling error, were fine
19 for moderate to large datasets. Now, obviously, taken together,
20 the whole dataset is large, but, once you start narrowing it
21 down by putting the state effect in that -- Some of these states
22 are smaller, and some are larger, and some have -- How much does
23 that factor in, with small state size?
24
25 **DR. BREIDT:** Thanks for the question. When we looked at the
26 question for the estimates that we had, our methodology is based
27 on state-level estimates, and so it's for a wave, and none of
28 those sample sizes are very small, even for the smallest states,
29 and so the sampling error assumption, assuming that those are
30 approximately normal, is a pretty good assumption, almost right
31 off the bat, for the kinds of surveys we're talking about here.
32
33 Once we get within a stratified sample, down to the level of a
34 state, with simple random sampling within those segments, and
35 moderate to large sample size, and I'm trying to remember what
36 the minimum sample size was for a wave, but it was never very
37 small, and so that's pretty solid.
38
39 There is no real concern there, and the assumption of normality
40 of the sampling errors is -- This whole methodology is much less
41 sensitive to that assumption than it is to the assumption of
42 normality of the irregular terms, which it turned out that at
43 least our mean square error approximations were not sensitive to
44 in our simulations, and so, that one, we feel pretty good about
45 that assumption. That's pretty solid. That's central limiting
46 effect takes effect very quickly, and the sample sizes are just
47 not that small. Some of the sample sizes are quite large.
48

1 **DR. POWERS:** My next question was on the wireless effect, and
2 you said that the model actually includes the possibility or
3 quantifies effects over time that weren't due to the wireless
4 effect, and how does it do that? I understand how the wireless
5 effect is factored in, but what other factors are being taken
6 into account except for the wireless trend?
7
8 **DR. BREIDT:** The way it does that is because, if you look at the
9 way the model is structured, it says that there is a true
10 effort, for which we have a model, and then there is this
11 difference in method effects, and that difference in method
12 effects can have its own trend, its own seasonal, its own state-
13 level variation, and so all of that is built into the model
14 through the terms that said things like mail by state, mail by
15 log population, mail by wave, and those terms say that there is
16 some difference between mail and telephone that can vary state-
17 to-state and wave-to-wave, and it can trend in time.
18
19 The reason we get to see that difference in method effect is
20 because of the overlapping estimates, but what it doesn't do is
21 say this much of that difference in method effects is due to
22 mail and this much is due to telephone. They are just
23 different, and so there is some difference. Is that addressing
24 your question?
25
26 **DR. POWERS:** It is. I'm just trying to figure out that, if you
27 go back in time, obviously, the wireless effect would
28 theoretically go away, but the other bias, whatever other biases
29 were there, would still stay.
30
31 **DR. BREIDT:** That's right, and so the way this model describes
32 that is it says, for example, if there's a gatekeeper effect
33 now, it says that there was a gatekeeper effect in the past, and
34 the model has no way of knowing otherwise.
35
36 **DR. POWERS:** Okay.
37
38 **MR. JOHN FOSTER:** Just to chime in on that, and, Jay, correct me
39 if this is wrong, but, basically, it's saying that whatever the
40 differences are, whatever is driving the differences, it's all
41 there in aggregate, and so there is no way to parse any of the
42 other effects out, but it's just the aggregate, the net, effect
43 between the two different methods, other than the wireless in
44 the time period that it's in the model.
45
46 **DR. BREIDT:** That's exactly correct, John, yes.
47
48 **DR. POWERS:** So there's no way to vary that over time then?

1
2 **DR. BREIDT:** To vary it over time?
3
4 **DR. POWERS:** Yes, because, obviously, the Y is changing over
5 time, but these other biases, you don't have enough information
6 to change them over time.
7
8 **DR. BREIDT:** That's exactly correct. For example, we don't have
9 a way to know if the gatekeeper effect has changed over time,
10 and what the model assumes is that the difference between mail
11 and telephone now, the difference in the way people respond to
12 telephone, given that they are responding in a mail survey,
13 given that they're responding, is the same now as it would have
14 been in the past.
15
16 **DR. POWERS:** Okay. Thanks.
17
18 **CHAIRMAN POWERS:** Thank you. Doug Gregory.
19
20 **MR. GREGORY:** My question, concern, was similar to what Sean
21 had, and, first off, it was a great presentation. I got lost
22 there near the end, and you explained the mail component to
23 Sean, and I had similar concerns. It seemed like the wireless
24 component was the concern originally, and you had data, as a
25 covariate, going back to 2007, and I imagine that it started
26 then, and it's interesting, a coincidence, that 2007 is when the
27 original iPhone came out. Going back to 1995, phones were
28 cheaper, but they were more like bag phones or cordless phones,
29 and so they probably weren't that plentiful.
30
31 I would expect the gatekeeper effect, or the mail effect, prior
32 to 2000, could be quite minimal. Is that the case? I mean,
33 because I haven't seen any numbers of species, that I recall, of
34 the difference between the household telephone survey and the
35 effort survey going back prior to 2000, but is indeed that
36 effect minor, relatively minor, prior to 2000?
37
38 **DR. BREIDT:** Sorry, but the gatekeeper effect or the --
39
40 **MR. GREGORY:** The non-wireless, all the non-wireless effects, in
41 the model for the interaction effects as a covariate.
42
43 **DR. BREIDT:** In this model, there are effects that just say mail
44 and telephone are different, and that effect persists through
45 time. There is also the effects that are wireless effects,
46 wireless interactions, and those effects die out by 2000, and
47 they're gone, as you go back into the past, but the other
48 effects persist, and so that calibration adjustment -- Once the

1 wireless dies out, it's a constant adjustment across time.
2
3 **MR. GREGORY:** My question is was it a minor adjustment?
4
5 **DR. BREIDT:** Is it a minor adjustment? No.
6
7 **MR. GREGORY:** Okay. That's my concern. Thank you.
8
9 **CHAIRMAN POWERS:** Thank you. Andrew Ropicki.
10
11 **DR. ROPICKI:** First off, very good presentation, and I did have
12 one question, and maybe I missed it, or I'm not figuring out the
13 model right, but, on Slide 50, the last bullet point on the
14 selected model, does this mean that the wireless effects are
15 also assumed to be level fits for each wave or no?
16
17 **DR. BREIDT:** What do you mean by level fits for each wave?
18
19 **DR. ROPICKI:** You said the selected model implies past
20 adjustments, or that's only past adjustments pre-wireless,
21 right?
22
23 **DR. BREIDT:** Right, yes, because the wireless effect basically
24 dies out by 2000, and so, once you get back into the more
25 distant past, then they are just level shifts.
26
27 **DR. ROPICKI:** Okay. Sorry. I was missing something. Thanks.
28
29 **CHAIRMAN POWERS:** Thank you. Any other quick questions? At
30 this point, Jay, were you planning to come back after lunch?
31
32 **DR. BREIDT:** I have a few conflicts. Your lunch goes from now
33 until --
34
35 **CHAIRMAN POWERS:** An hour.
36
37 **DR. BREIDT:** I will be in another meeting at that time, but I
38 can try to join after.
39
40 **CHAIRMAN POWERS:** Okay. All right. Then let's break for lunch
41 now, and then, when we come back, we'll move on to the next
42 agenda item, and, if somebody has other questions later in the
43 day, then we can impose on Jay again, when he comes back. With
44 that, let's adjourn for the next hour and come back at 12:45.
45 Thank you.
46
47 (Whereupon, the meeting recessed for lunch on July 8, 2020.)
48

- - -
 2
 3   July 8, 2020
 4
 5   WEDNESDAY AFTERNOON SESSION
 6
 7   - - -
 8
 9 The Meeting of the Gulf of Mexico Fishery Management Council
10 Standing and Special Reef Fish, Mackerel, Ecosystem, and
11 Socioeconomic Scientific and Statistical Committees reconvened
12 via webinar on Wednesday afternoon, July 8, 2020, and was called
13 to order by Chairman Joe Powers.
14
15 **CHAIRMAN POWERS:**   Next up, and hopefully everybody is back, we
16 have the discussion of the calibration process, the comparison
17 of effort calibration, by John Foster. John, are you back and
18 ready to go?
19
20 **MR. FOSTER:** Yes. Thanks.
21
22 **CHAIRMAN POWERS:** All right. Then take it away then.
23
24   **COMPARISON OF EFFORT CALIBRATIONS TO HISTORICAL REGIONAL**
25   **POPULATION ESTIMATES, FISHING LICENSE NUMBERS, AND/OR OTHER**
26   **QUANTIFIABLE CENSUSING DATASETS**
27
28 **MR. FOSTER:**   Thanks again for the opportunity here to come to
29 present this information on our calibrations and survey design
30 changes. Hopefully this will be helpful for the committee and
31 the council, more largely, and I am going to talk a bit about
32 the overall impacts of the calibrations on the effort time
33 series, both in this presentation, with some general slides at
34 the end, and also in some slides in the case studies
35 presentation for king mackerel and gray snapper, but I wanted to
36 make sure that everyone had a good sense of the other major
37 calibration that we undertook for the Access Point Angler
38 Intercept Survey design change, which took place near the
39 beginning of 2013.
40
41 While it's certainly fair to say that the calibration and the
42 design change going from the Coastal Household Telephone Survey
43 to the Fishing Effort Survey, in general, had the largest
44 impact, systematic impact, for private boat and shore modes, for
45 individual point estimates, the APAIS calibration had a fairly
46 substantial impact as well, and not always simply increasing the
47 estimate, but, in some cases, offsetting, to some extent, the
48 FES calibration, particularly in the catch estimates, more so

1 than the effort estimates, but we'll get into some of those
2 specifics in the case studies presentation.
3
4 Again, for this one, I would like to go through sort of what the
5 APAIS calibration was, kind of what it was attempting to correct
6 for, in terms of the intercept survey design change, and then,
7 again, I have a few slides at the end to show the sort of
8 cumulative impact on the effort estimates from both the Fishing
9 Effort Survey calibration as well as the Access Point Angler
10 Intercept Survey calibration.
11
12 The APAIS calibration, just a quick bit of background, this was
13 completed and peer reviewed in 2018, and there is a link to all
14 the reference materials from the workshop, the peer review
15 workshop, on our website, and it involves a review by CIE
16 experts, as well as representatives from the regional council
17 SSCs, and the Atlantic States Fisheries Commission, and I will
18 leave it at that.
19
20 The issue of why we needed to calibrate the intercept survey for
21 its design change, there is sort of three components, or time
22 periods, that we were trying to align. Just as we were trying
23 to adjust for the difference going from the phone survey to the
24 mail survey, we needed to do a similar exercise here for the
25 intercept survey, when we made design changes at the early part
26 of the 2013.
27
28 There were three basic pieces here of the time series, going
29 back to 1981. From 2013 forward, we have the new design. It's
30 fully design-based and fully weighted estimation. Really, it's
31 what we had been working towards for a long time, since the
32 beginning of the new MRIP and the transition away from MRFSS.
33
34 Prior to that, from 2004 through the end of 2012, we had the
35 original MRFSS-based estimates, and they were estimates that
36 were essentially unweighted, data collected through the existing
37 MRFSS intercept survey, which had a number of sort of procedural
38 issues with it, that were then all addressed and corrected when
39 we transitioned to the new APAIS design, but, from 2004 through
40 the end of 2012, we were able to develop sort of pseudo-weights
41 that incorporated the design information we had as well as some
42 model components for information that we didn't have, and that
43 work was done in coordination, again, with Jay Breidt, and also
44 Jean Opsomer, at the time at Colorado State University.
45
46 There was some model components, and the weighting there was not
47 fully design-based, but it was our best attempt at the time to
48 correct those estimates, using the information we had, and so

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1 that created an additional stream, or series, of estimates.
2
3 Then, prior to 2004, the design information that we had, in
4 terms of frame information, for example, for the intercept
5 survey, the fishing site pressure information, and all of that
6 became much less consistent and available the further back we
7 went in time, and so we really decided that we couldn't do this
8 pseudo-weighting approach going beyond earlier than 2004, and so
9 we just had the original MRFSS estimates prior to 2004, and so
10 we wanted to get all three of these pieces essentially
11 calibrated.
12
13 Now, we couldn't go with the FES calibration model, essentially,
14 for a couple of reasons. One, there was just no large-scale
15 benchmarking or an overlap period where we conducted the old
16 MRFSS intercept survey design alongside the new MRIP APAIS
17 design. It was just too expensive, and we would have samplers
18 sort of stepping over each other at the access points, trying to
19 get information, and it just wasn't -- It really wasn't going to
20 be feasible.
21
22 Another reason that we couldn't necessarily do it is the FES
23 calibration model works with the estimates themselves, in part,
24 and, again, it's trying to produce a calibrated series for
25 essentially two types of estimates, the private boat effort
26 estimates and the shore-mode effort estimates, but, here, we
27 would have -- Considering the entire coast, from the Gulf
28 through New England, we would have hundreds of different catch
29 estimate series, to try to build these models for, varying
30 across the modes, across species, across the different catch
31 types, landings, releases, landings in numbers, landings in
32 weight, and so, again, with no overlap, and given the daunting
33 size of the number of estimates to be calibrated, it was really
34 too much to try to fit with a similar approach.
35
36 Instead, what we used for this, and, again, this work was done
37 in conjunction with primarily Jean Opsomer from Colorado State,
38 and now at Westat, and it was to use what's known as a raking
39 ratio adjustment, or just simply raking, also known as iterative
40 proportional fitting, and this is, again, a very standard
41 approach in survey methodology, and it's not something that we
42 developed independently, and it's applied when there is a need
43 to adjust sample weights, and, again, in our case, by adjusting
44 the intercept survey sample weights, we were calibrating for
45 those important design changes, and I will speak more to that in
46 just a minute.
47
48 Essentially, this is an iterative process, where the weights,

1 and I will describe how, are systematically-adjusted along a
2 number of different dimensions, until, as the iterations
3 continue, those changes to the weights converge, or the weights
4 stop changing with additional iterations.
5
6 Again, as I mentioned, we sort of broke the time series up into
7 two pieces, based on a number of factors, but one of which was
8 sort of the design information that we had at hand, and so this
9 next part, again, is starting with the 2004 through the end of
10 2012 piece, and so, again, just sort of a schematic of how the
11 process would work.
12
13 Essentially, in the far right here, we have, conceptually, the
14 data, the estimates, the sample weights available under the new
15 design, and it's fully design-based, and there's no modeling
16 components.   It's what we were working towards, and then,
17 stepping back in time, the next component is the data collected
18 through the MRFSS intercept design, but with these pseudo-
19 weighting adjustments that had been made, and so that would be
20 the first piece that was then calibrated using this raking
21 approach.
22
23 Once that piece was calibrated, then the process would step back
24 further in time, and the remaining time series was also broken
25 into roughly ten-year periods, sort of to help balance the
26 adjustment process, and I will speak to that more in a few
27 slides, but it was essentially just a systematic stepping back
28 through time and making these adjustments.
29
30 Again, the first step for the 2004 -- Well, it went technically
31 through Wave 1 of 2013, and, for this approach, the dimensions
32 in which we adjusted the weights took into account five
33 important variables, or fields, that we collect information on
34 in the survey, and so those were area fished, and, again, this
35 is sort of the general area that the angler's trip took place
36 in, either inshore, or inland, nearshore, open ocean, state
37 territorial seas or offshore, and so in the federal EEZ.
38
39 Then the next two fields, household status and for-hire frame
40 status, those are the coverage adjustment information that we
41 use for the effort surveys, and so household status was used,
42 and it was used for the Coastal Household Telephone Survey, and,
43 essentially, was an intercepted angler a resident in a coastal
44 county of the state that their trip ended in, or were they a
45 resident, but in a non-coastal county, or were they an out-of-
46 state resident.
47
48 In the for-hire frame status, again, was this trip -- This is,

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again, for the charter boat mode, but was this intercepted
angler trip on a vessel that was on the for-hire sample frame or
not, and so, essentially, allowing us to correct for any vessels
that might have been coming from out-of-state, transient-type
vessels, new vessels, accounting for that effort for those for-
hire vessels.

Then, finally, also by sub-state region, and the reason that's
included is, when we went to the new intercept design, again, in
2013, many of the larger states were sort of spatially
stratified into smaller strata, again to help improve sampling
efficiency or to help with logistics of the new design, because
the new design was a bit more burdensome, because it had less
flexibility, much less flexibility, than the old design, and so
we needed to be able to align the sample sizes with available --
Our state partners' available staffing, especially, again, in
those larger states, but we wanted to make sure that we
accounted for that change, again, going back through time,
because that hadn't been in place under the old MRFSS intercept
design.

Just a little bit on what the calculations for this raking ratio
method looked like, and, essentially, starting with the top
equation here, we have an initial sample weight, before any
adjustment is made, and that's multiplied by a ratio to get the
adjusted weight, and then that ratio is defined as sort of the
ratio of a target estimate, which could be a number of things.

It could be -- As Rob was describing, it's control total
information, and so population totals or population proportions
from say the Census Bureau, along demographic dimensions of age,
race/ethnicity, gender, any of those things, and so it's some
information that is the target, what you want to adjust to.
Then, in the denominator, it's whatever the information is you
have from your existing sample.

In this case, and, again, these estimates could be totals, or
they could means, or they could be proportions. They simply
need to be sort of in the same type of estimator, comparable
quantities.

Just to give sort of an illustration of what these estimates
were that we used for the raking, here is just an example
figure, and this is for Florida private boat mode. Along the X-
axis, we have year and wave time series, and then, along the
vertical here, we have the sum of the intercept survey sample
weights, and so these would be the sum of the individual trip-
level sample weights, coming directly from the intercept survey,

1   the APAIS or the previous MRFSS intercept.
2
3   It's nothing to do with the effort survey at this point, and
4   this is all internal to the intercept survey, and so, again,
5   each of these points represents the sum of those individual
6   angler trip-level weights, again, for all of the trips that are
7   intercepted in the sample.
8
9   You can clearly see there is a big disconnect, and so the blue
10 open circles are those sums from 2004 to 2012, under the old
11 design, with those pseudo-weights that I mentioned, and then the
12 red open circles here are what we have once we implemented the
13 new APAIS, the fully design-based intercept survey under MRIP.
14
15 The adjustment -- This is clearly a shift that coincides exactly
16 with the change in the intercept survey methodology, and so the
17 idea is we want to apply this raking ratio approach to
18 essentially align this cloud of points with that, and we're
19 going to do it by, again, making that ratio adjustment to the
20 individual weights in this earlier time period, and, again,
21 because it's a multiplier, it's not simply going to shift this
22 cloud up, but it's also going to increase the spread of these
23 points, the variation in those points, to be much more in line
24 with what we see under the new design.
25
26 The way we did that was essentially, if you imagine sort of an
27 average across this time period of these values, and an average
28 across the more recent time period, those are the values that
29 would be plugged into this ratio, and so we would do that,
30 again, along a number of dimensions, the variables that I
31 mentioned previously of area fished, the coverage adjustments,
32 sub-state regions, and then we do it one variable at a time, and
33 then we iterate. We repeat the process over and over, again,
34 until those adjustments have converged and there are no
35 additional changes.
36
37 That's essentially what this figure is getting at, and, again,
38 we start with one variable and make the adjustment and move on
39 to the next and so on, and then, once we got through all the
40 variables on the first pass, the first iteration, we would
41 continue to do that, again, until, at the final step, these
42 weights have converged, and so there's no more changing the
43 weights.
44
45 That was the -- Things are essentially the same, in terms of the
46 methods, but there are a couple of differences going back into
47 the earlier time period, prior to 2004. Primarily, the
48 difference is we needed to add a couple of additional important

design variables, kind of day and this site activity class, and, essentially, it collapsed -- For each site that we sample at, we have an estimate for an expected activity level, and that information is used in the sample draw process, through a probability proportional to size, or PPS, sampling approach, and I will speak more to that in the weight estimation presentation, but, essentially, it means that high-activity sites have a higher chance, or higher probability, of being selected, and so they will be visited more often, and so more of the intercepts will come from those sites.

Well, under the old MRFSS intercept design and estimation, there was no weighting, sample weighting, to account for that difference, and so, in essence, the higher-activity sites, data coming from those sites, were overrepresented compared to the trips intercepted at the lower-activity sites, which had less of a chance of being selected for sampling, and, similarly, for kind of day, which is just weekend versus weekday within a month.

Weekend days were sampled at a higher rate relative to weekdays, and, again, we would want to do that, from an efficiency standpoint.   There   are   certainly   more   trips,   relatively speaking, taken on the weekends than the weekdays, but we need to account for that different selection probability in the estimation, and, again, that was not done under the old design, and so that's why these two variables were added, again, to adjust the periods prior to 2004.   These had been, in effect, accounted for from 2004 through 2012, because of the pseudo-weighting that I mentioned, and so that's why they weren't present earlier.

One more complication for the earlier time periods, 1981 to 2003, was we really didn't have any starting weights. Essentially, the data were all fed in unweighted, and we didn't even have the pseudo-weights, because we had much less reliable, or reliably available, design information to construct those pseudo-weights.

In essence, these weights would have all been one, but the problem -- As a starting weight, but the problem we ran into was we found that there were different sampling levels across this earlier time period, and so more assignments done in some waves or years versus others, and we -- If we didn't account for that in some way, if we just said, okay, the starting weights are all going to be one for this raking process, it wouldn't have accounted   for   those   differential   numbers   of   assignments conducted over this time period, and so we essentially accounted

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for that in the initial weights, by calculating a ratio of sort of the total number that had been done within the time period and adjusting those other periods that had less assignments done, so that they all essentially started on an equal footing before the raking then was conducted.

One concern we had, and certainly anybody looking at doing a calibration over such a long time period would have, is are we simply over-adjusting if we use this approach? Are we simply -- If we're simply just making this entire time series look just like this segment of it, that could smooth away any real changes that occurred within these previous time periods, and we didn't want to do that.

We did not want to sort of over-smooth, and we needed to make the adjustments to correct biases, but we didn't want to, again, sort of eliminate any real changes that had occurred over these periods.

To do that, essentially, what we did was a test for a trend within these periods, and so, if I go back just for a minute to this figure, imagine if, instead -- Here, again, there is very little evidence of any trends in this particular example, but imagine instead that, within this window, these blue points had trended upward, and they're still compressed, in terms of their variation, but there had been some trend, and we wouldn't want to lose that trend. We would want to retain it.

For all of these different variables, for all of these different time periods, we did regression analysis to determine if there were any significant trends, and, if there were significant trends, then, instead of using sort of the average of this entire time period, we would limit it just to three years at the end of the window of time that we were going to adjust, and so that three-year period would then, essentially, line up with what we were calibrating it to, but the trend would still be retained, so that -- Again, we did not want to smooth away all of the potentially real effects that were in the data.

Again, just to sort of summarize quickly the raking approach, it's a standard methodology for adjusting sample weights, and we developed this in cooperation, or consultation, I should say, with primarily Jean Opsomer, who was a statistician, professor, at Colorado State University, and he's now with Westat, which is a survey research and statistical research firm in Maryland, and it was peer reviewed, again, in 2018.

I will show a bit here of the effects of this calibration, in

conjunction with the Fishing Effort Survey calibration, and then, again, I will have more specific, detailed information to present in the case studies presentation.

Here is a set of figures to sort of look at the trends. On the left half of the screen, we have private effort plots. On the right-hand side of the screen, we have shore-based, or the shore mode, plots, and I apologize that it's not on the screen, but this is limited to -- It's a Gulf regional estimate, but it is limited to Mississippi, Alabama, and Florida. It does not include Louisiana, because of not having it through the entire time series.

Again, we do see the large -- Starting on the top-left, the dark blue series is the now fully-calibrated private boat effort series, again in terms of angler trips at the annual level, and, again, accounting for both the CHTS to FES calibration as well as the Access Point Angler Intercept Survey calibration, and we can see noticeably larger -- The overall difference here is roughly a little more than two-times, but it does vary across the time period, most notably in the more recent years, where that wireless effect that Jay Breidt spoke of was included in the calibration model.

The figure below on the left-hand side is -- Yes, there's a big sort of scalar difference there, but this is sort of comparing the trends, and so both of these series, in this figure, have been calibrated to their individual series mean, and so the mean value over this entire time period, and so to create an index, essentially, and you can see that, when we take out that scaling difference, really, much of the trend information is still preserved, or it's not that different over the entire time period.

Yes, the absolutely estimates are different, but the trend information is similar. Now, where we see some divergence is certainly in the earlier part of the time series, and some of that is coming from the APAIS calibration, and there were certainly some idiosyncrasies, I guess we could say, in the intercept data early on, stemming from a lot of the field procedures, or protocols, that were in place that early on in the survey.

Then there's also some divergence here, although not in every single case, in the more recent part of the time series, and that's being driven, in large part, by the wireless effect, but, again, the overall trend across the entire time series is still relatively similar, despite there, again, being a scalar

difference in the absolute values.

It's a somewhat similar story for shore mode now, and, again, the dark-green series is the fully-calibrated FES and APAIS fully-calibrated estimate series, and the light green is the original CHTS-based series. Again, when we sort of index both of those to their individual series means, again, there's more noise here, in some respects, and a fair amount still of alignment, again with some differences in the early part of the series, as well as in the later part, for similar reasons, particularly the wireless effect in these more recent years, and some earlier issues with the intercept data in the early 1980s.

Then, if we look at the effort series, the new effort series, the dark blue here being the private boat fully calibrated for FES and APAIS changes, the dark green being the shore fully calibrated for APAIS, FES and APAIS, changes, and then the gray series here is the census, U.S. Census Bureau, population estimates, and, again, this is still just limited to Mississippi, Alabama, and Florida.

We do see that these effort estimate series, again, when indexed, are tracking the population trend as well, and then, unfortunately, we don't have the license series over a long period of time to really give sort of a meaningful comparison, but it is either level or showing a very modest increase in trend over this short time window, which is not very much out of alignment with what we're seeing in the other trends.

Again, there will be more detailed information -- Not exhaustive, but there will be more detailed information on the calibration effects in those case study presentations, and so just a quick summary on this.

Again, the APAIS calibration used a well-established statistical technique of ratio raking for adjusting sample weights, and, again, we took this approach for a number of reasons, two of them, as I mentioned earlier, being we had no overlap, no benchmark period, where we had data, even a short three-year window of overlap data, that we could use to develop a more sophisticated model, and, again, the number of estimates that were going to need to be calibrated was orders of magnitude larger than the number of estimates we were calibrating with the Fishing Effort Survey transition.

This would allow us to make all of those calibrations with this one approach, by focusing on the sample weights for the actual intercepted trip data, as opposed to working with the estimates

themselves, and we did our best to preserve any real trend
information that may have been in the data over this long period
as part of this raking ratio adjustment procedure.

When we look at the cumulative total effects of both of these
calibrations, the full series, for both shore and private boat
combined, it's about 2.7 times increase from the original CHTS-
based estimates to the new calibrated series, but that varies by
mode, and it's about a little more than two-times for private
boat, and a little more than three-times for shore, and, again,
yes, there are these striking differences in the absolute
estimates, but, the trends that we see in the relative trends,
that information is still fairly similar over time, with some
differences that we would expect. That's the end of the
presentation, and so thank you very much, and I'm certainly
happy to take questions.

CHAIRMAN POWERS: Thank you. Are there any questions? Jim.

DR. NANCE: Thank you.   John, that was an excellent
presentation, and I appreciate you giving that. I've got a
question for you.   When you're doing your sample weight
adjustments, and you use ten-year increments, which seems like a
pretty long timeframe, would it have been different to use five-
year increments? Would that give different results that may be
more in line with shorter periods of time?   Would that help,
maybe? I don't know.

MR. FOSTER: Jim, that's certainly a fair question. The issue
with -- One factor to keep aware of with the raking approach is
you can think about it as essentially adjusting to have the
marginal totals, or estimates, line up, as opposed to the joint
distributions of all these different variables, but, even with
that, we still have sample size limitations, and so, because of
the number of variables that we were -- That's why, for example,
we couldn't include any catch variables in this approach, and it
just -- We would have run out of data to work with, and it would
have led to extreme weight adjustments, but that's still a
factor, if we shorten the window of the adjustments down too
much. It would have -- We could have run into the same issue.

We did look at different ranges of years, but, when we -- That's
part of why we included that regression analysis, to identify
significant trends and where trends were present. Again, we
sort of changed the -- Instead of going to adjust the weights in
a time period based on the full average of those weight totals,
we would limit it just to the N, and so you can think of it as
just sort of anchoring the adjustment at the one N of the time

80

1 period, and, again, that has the effect of helping preserve that
2 trend within the period of time, within that ten-year window,
3 that's being adjusted.
4
5 We looked at that, and, again, we felt that going with the ten-
6 year period, even though it was long, we had that safeguard of
7 the regression analysis, and we could just go with that.
8
9 **DR. NANCE:** Thank you. I appreciate that, and sample size is
10 important to keep, and so thanks for that answer.
11
12 **CHAIRMAN POWERS:** Thank you. Joe O'Hop had a question, or a
13 comment.
14
15 **MR. O'HOP:** John, thank you for the presentation, and it was
16 very good, and I enjoyed it. I had a question about the
17 interview weights by Area X. At the PSU level, it looked like
18 all the interview weights for each Area X were the same, by and
19 large, and there are exceptions, but they all got the same
20 interview weight, and how does that go into -- Can you explain a
21 little more about the interview weighting for the different Area
22 X that you would observe at a sampling event?
23
24 **MR. FOSTER:** Sure, Joe. Yes, in general, for a given PSU, the -
25 - Well, there are some nuances there, and I will talk a bit more
26 about the design in the weight estimation presentation, but,
27 just to address your question, in general, it's a fair statement
28 to say that, at the PSU level, the weights will be the same for
29 an angler trip, regardless of whether it was in one area or
30 another, but, again, there will be differences in the weights
31 across PSUs, and so, again, we will see a diversity of areas
32 fished across PSUs, again depending on the characteristics of
33 the site, is it far inland, is it near the coast, what sort of
34 facilities does it have for boat sizes, things like that.
35
36 When you total those up then, and so you total all of the
37 individual angler trip level weights by area fished, those
38 totals won't be equal, because we'll have different proportions
39 of trips by area in the data, and then, within those areas, not
40 all of the trips would have the same -- Not all of the
41 individual angler trips would have the same sample weights, and
42 so there is several levels there that will lead to those weight
43 totals being different, but, again, the raking was done, again,
44 within area fished, so that those weight totals for the inland
45 trips, let's say, that would be raked, and then the weight
46 totals for the state sea trips, nearshore open-ocean trips,
47 those would be raked, and then, similarly, for the EEZ offshore
48 trips.

1
2 **MR. O'HOP:** Okay. Thank you very much.
3
4 **MR. FOSTER:** Sure.
5
6 **CHAIRMAN POWERS:** Thank you. Sean.
7
8 **DR. POWERS:** The APAIS survey still only does public access
9 points, right, and they don't have for private docks and
10 marinas, and we're just assuming that the catch composition is
11 similar?
12
13 **MR. FOSTER:** Yes, that's correct, Sean. All of the estimation
14 components that we produce using the APAIS data, the intercept
15 survey data, it's all limited to sites that are on the frame,
16 and, yes, those would typically be the public access sites.
17 Certainly they would not be private residences, gated
18 communities, things like that, and that's a limitation that was
19 present under the old design, and, really, in every intercept
20 survey, fisheries intercept survey, that I am familiar with,
21 but, yes, it's present.
22
23 **DR. POWERS:** Have you all had any studies, limited studies, or
24 funded any studies, to look at that yet?
25
26 **MR. FOSTER:** We have, sort of in a couple of areas. One is we
27 did a -- It was sort of in the early days of MRIP, when there
28 were a number of pilot projects being conducted, and there was a
29 panel study conducted to try to look at that among some other
30 objectives, and the issue -- Unfortunately, it didn't really
31 private meaningful information.
32
33 The issue was that the -- There was no clear indication one way
34 or another, and that mostly was the result of sample sizes and
35 trying to get, one, individuals in the panel in a representative
36 way that fished from private access, and it was difficult to
37 recruit, I think, those folks. Then the available data, catch
38 data, again, at the species level was very sparse, and that was
39 another sort of data-limiting step there, and so it was
40 essentially inconclusive.
41
42 However, we also, in the -- Again, not in the Gulf, and not for
43 all species, but the large pelagic survey that we administer
44 primarily for the Atlantic bluefin tuna fishery along the
45 Atlantic coast, again in the Mid-Atlantic and New England areas,
46 that information -- That survey, again, has a telephone
47 component survey and a dockside component survey, and, on the
48 telephone survey there, it does collect a bit more detailed

1 information, and it's a short two-week recall period. It's a
2 specialized survey, and, in there, we do have some catch
3 information, and, again, in that case, it has not shown large
4 differences in the catch rates between the private access and
5 public access, but, again, it's specialized.
6
7 The regulations on those species tend to be restricted, and we
8 don't ask catch information on the telephone component for all
9 species, and it's just a limited number, and so I would be
10 hesitant to want to generalize too much from that information,
11 but it is an ongoing open area of research. I think that's fair
12 to say.
13
14 **DR. POWERS:** Does the FES survey give you an idea of how big the
15 problem is? In other words, do you have any estimate on what
16 percentage of those trips are taken, of the total trips are
17 taken, from private access points versus public?
18
19 **MR. FOSTER:** We do not get that information directly from the
20 FES, because it's just asking for summary -- As Rob Andrews
21 mentioned, it's just asking for summary trip information by
22 household member, and I should have -- Thank you for the follow-
23 up, and I should have mentioned in the first part of my response
24 that we do have a pilot plan for the FES, and we are tentatively
25 calling it the Private Boat Survey, or the Boat Survey, that is
26 looking to get some more detailed information.
27
28 It would still not go all the way back to trip profiling
29 individual trips, but it would try to get -- It would ask to get
30 more detailed information for area fished, in particular,
31 because I think that's probably one of the more significant
32 variables that could be affected by private access versus public
33 access, and it will also ask a bit about boat type, vessel type,
34 and so there's a number of categories to that, but we're asking
35 that question in particular, not just to get a sense of the
36 difference between sort of large offshore-capable boats versus
37 smaller inshore boats, but also growing personal watercraft,
38 jet-ski, use for fishing, as well as kayaks, paddleboards,
39 canoes things like that, and so there's sort of two efforts
40 there, and it's asking those things, again, by access type, or
41 it will include access-type questions as well, so we can sort of
42 cross that information, to see if we're seeing big differences.
43
44 **DR. POWERS:** Okay, and my last question might be more for Jay,
45 but is then the FES calibration -- When you went back, did the
46 Coastal Household Survey -- Are you all sure that that did not
47 include wireless phones? I mean, could you all tell? It was a
48 landline survey, but did you know for sure that it wasn't

1 wireless phones?

2

3 **MR. FOSTER:** I believe the short answer is, yes, absolutely, but
4 I will ask Rob Andrews to chime in on that as well.

5

6 **MR. ANDREWS:** Thanks, John. It did exclude cellphones. Prior
7 to sampling, area codes, exchanges, and blocks of telephone
8 numbers that are known to be wireless were removed from the
9 survey.

10

11 That may be a less effective procedure now, because it's
12 possible to port telephone lines from one location to another,
13 and I don't know how much mixing of area codes and exchanges
14 there is, but, at the time that the CHTS was conducted, there
15 were pretty well-known databases of known cellphone area codes
16 and exchanges that could be removed from the landline samples,
17 and the reason for that, primarily, is because it's illegal to
18 use auto-dialing technology, or predictive-dialing technology,
19 to contact a cellphone, and so survey companies are very, very
20 careful to not include those in random digit dial landline
21 samples.

22

23 **DR. POWERS:** Okay. Thanks.

24

25 **CHAIRMAN POWERS:** Any other questions? Go ahead, Paul.

26

27 **DR. SAMMARCO:** Just a quick question, please. You mentioned
28 that, in terms of your sampling regime, you had been sampling
29 daily, basically daily, through the week, and then you increased
30 your sampling on weekends to get more reliable data, mostly, and
31 that would be increased number of fishers and increased amount
32 of weight and increased number of species, et cetera.

33

34 I was wondering, when you go to analyze, what is your unit, what
35 is your time unit, because, if you're using a week, that would
36 work out okay, and you know what your bias is and so forth. If
37 you're using a day as your time unit, that would be a bit more
38 problematic, but a week or a month or a year would work out,
39 because all that stuff was averaged out.

40

41 **MR. FOSTER:** Sure, Paul, and so the estimation domain -- There's
42 a couple of, I think, parts to the response, and I will speak a
43 bit to this in a later presentation, but the estimation domain
44 for the catch estimates, for everything, essentially, for our
45 MRIP estimates is, in terms of time, is a two-month wave.

46

47 The year is divided up into six two-month waves, and that's the
48 level, temporally, at which we calculate catch rates from the

intercept survey. The APAIS, we calculate the effort estimates, and then, when we multiply those two components together, we get the catch estimates, again, at the two-month level, but the fact that we -- Oversampling certain strata is not a problem, in terms of a bias, if that oversampling is accounted for in the sample weighting.

For survey estimation, survey methodology, and, again, this isn't NMFS or NOAA Fisheries or Science & Technology, but this is just sort of textbook sampling statistics, but the things that -- The minimum requirements for the unbiased estimates are the selection probabilities, or the inclusion probabilities, for sample units that are in the sample, and those inclusion probabilities must be used in calculating the sample weights for those individual datapoints, and then those sample weights must be used in the estimation procedures for calculating a total or a rate or a mean or a proportion, and so it's possible to sample at higher rates in different strata, but we have to account for that in the sample weighting, and that is -- That is what is done now, since 2013, and it's what we were accounting for in the earlier part of the time series with the calibration.

DR. SAMMARCO: That makes perfect sense. What you're doing, essentially, is standardizing the data, so they're comparable, or at least that's what it sounds like.

MR. FOSTER: Yes, and that's it.

DR. SAMMARCO: Thank you very much.

MR. FOSTER: Sure. Thank you.

CHAIRMAN POWERS: Thank you. Any other questions or comments? The conclusion that was given there is essentially the effort, in the examples given there anyway, the effort trends are about the same, but the scale is different.

Now, one of the things that -- If in fact the catch rates reflected the different units you were talking about, then that shouldn't make a difference, but, of course, the effort that's being estimated is number of angler trips, and, ideally, what you would like is to be able to say that the catch rates are reflective of the same measure of angler trips, in which case whether you use the higher one or the lower one wouldn't make that much difference, but clearly, in this particular case, the catch rates are the answer to a basic set of observations. We do have another hand up from Ryan.

MR. RINDONE: Thank you, Mr. Chair. I just wanted to remind and double-check and see if there are any members of the public that had a question for Dr. Foster.

CHAIRMAN POWERS: We already had one from Joe O'Hop, but another one.

MR. RINDONE: If there are none, then we can move along, but I just wanted to double-check.

CHAIRMAN POWERS: Again, sort of to summarize, the impacts are, basically, that the FES estimates of effort are scaled higher, but the trend is not necessarily the same. If that gets translated into the catches, which we'll see some examples, it won't be a direct one-to-one scaling with the catches, I'm sure, but we'll go from there.

Let's move on then. Let's move on then to Item c, post-processing of MRIP estimates, and we'll begin with the weight estimation procedures. In this case, this is -- I am not sure who is giving this. Vivian, are you giving this?

MS. VIVIAN MATTER: I think that presentation is from S&T.

MR. FOSTER: You're stuck with me again.

CHAIRMAN POWERS: Okay. Go ahead.

MR. FOSTER: I don't know if you would like to have a break or if you want me to just dive in, and I'm happy to do it.

CHAIRMAN POWERS: All right. Let's take a five-minute break.

(Whereupon, a brief recess was taken.)

CHAIRMAN POWERS: All right. Go ahead, John.

MR. FOSTER: I'm here, and I can start, but I think Jay Breidt has been able to join us, and it sounds like he may not be able to be on for the entire rest of the afternoon, and so does it make sense to see if there are any additional questions for Jay, and then I'm happy to get started.

CHAIRMAN POWERS: Okay. Good point. Then let's return to the questioning about the calibration model that Jay presented. Are there any further questions or comments that people want to have about it, the one that we did right before lunch? If not, and I'm not seeing any, then go ahead, John. Thank you, Jay, for

1 providing the information.
2
3 **DR. BREIDT:** You're welcome. If anyone does have follow-up
4 questions, feel free to email me.
5
6 **CHAIRMAN POWERS:** Okay.
7
8   **POST-PROCESSING OF MRIP ESTIMATES**
9   **DESCRIPTION OF MRIP WEIGHT ESTIMATION METHOD**
10
11 **MR. FOSTER:** I am going to talk about how we produce estimates
12 in weight, and I'm going to try to -- I will go quickly through
13 it, but I'm going to try to sneak in a little bit about the
14 APAIS design and then the weighted estimation approach, which is
15 -- It has the same basic structure for estimates of catch in
16 numbers and also estimates of catch in weight, in pounds or
17 kilograms, but there is an important additional step for the
18 estimates in weight, and I will speak to that in particular.
19
20 Again, just a quick overview of the Access Point Angler
21 Intercept Survey design, and, as everyone I'm sure is familiar,
22 this is an in-person interview, dockside and shoreside fishing
23 access points, where anglers are sampled at the end of the
24 conclusion of their fishing trip, and, again, it is essentially
25 used to calculate -- It collects the detailed catch and trip-
26 level information, and it's used to calculate catch rates, catch
27 per trip, but there are some additional components as well
28 related to the effort estimates.
29
30 In particular, for private boat and shore modes, we calculate
31 the area fished proportions from the intercept survey, and we
32 also calculate, as I mentioned earlier in the calibration talk,
33 coverage adjustments for the effort surveys, and, again, for the
34 FES, that's the out-of-state effort component, and that comes as
35 a proportion, and we calculate from the APAIS data, and
36 similarly for the for-hire survey. It's trips on vessels that
37 are not on the frame for a given state, and those trips are
38 accounted for by the coverage adjustment from the intercept
39 survey.
40
41 The APAIS design is complex, and it includes stratification,
42 where strata are both spatial and temporal, and they're
43 stratified by state, and, in many cases, sub-state regions.
44 Temporally, we stratify by wave, two-month wave, and we stratify
45 by month within wave, and we stratify by kind of day, weekend or
46 weekday, and we also stratify by a combination of six-hour time
47 intervals, and so each sampling assignment is six hours, and
48 those windows of time are stratified essentially into nighttime

1 components, twelve hours that are basically nighttime, and
2 twelve hours that are daytime, and then there's an additional
3 peak time interval that is overlaid on top of the two daytime
4 six-hour intervals.
5
6 In addition to stratification, the design is clustered, and,
7 again, a primary stage unit that's drawn could be a cluster of
8 one or two sites, fishing sites, and so those sites are sampled,
9 sub-sampled, within the cluster, if there are two sites and not
10 just one.
11
12 Then we have separate stages within the design, and so, at the
13 first stage, the primary stage unit is a site cluster/day/time
14 interval combination, and then, within primary stage units, we
15 have a temporal sub-sampling, and so, unless it is a single site
16 cluster, samplers will not be at an individual site for the full
17 time, and there can be other reasons that they're not sampling
18 for the full time, even if it is a single site cluster, and so
19 there can be sub-sampling within the PSU on time.
20
21 A third stage nested within these is the angler trip stage, and
22 so, at a low-activity site, we may be able to sample every
23 angler that returns within the time interval, but, at a high-
24 activity site, it's highly unlikely we could do that, and so
25 there will be sub-sampling of the angler trips, and so that's
26 another stage of sampling.
27
28 Then, finally, within the catch itself, there can be sub-
29 sampling, and so, again, if all the trips that come in have very
30 little catch, and very cooperative anglers, we may be able to
31 sample all of the catch, count and measure all of the fish, but,
32 frequently, that's not the case. There are too many anglers
33 returning, or it's a very high-activity site, where anglers are
34 in a hurry, and so samplers can only measure a sub-sample of the
35 catch, and so there's another fourth stage of sampling.
36
37 Another complication with the APAIS design is that the
38 probability of selecting the PSUs is not equal. It's unequal,
39 and it's based on fishing pressure, sort of as I mentioned
40 earlier, and so these are expected numbers of -- These fishing
41 pressures are based on expected numbers of angler trips at the
42 site, and they are identified by the state samplers and managers
43 of the programs, the data collection programs within the states,
44 the state agencies, and we use these fishing pressure values,
45 again, to have different selection probabilities for the sites,
46 and so a higher-activity site, where we are more likely to get
47 fishing trips intercepted, has a higher probability of being
48 selected.   Lower-activity sites have lower probabilities of

1 being selected.
2
3 Again, that's done to improve the sampling efficiency, and, as I
4 mentioned earlier, by taking into account these different
5 selection probabilities in the weighting of the data, when we
6 calculate estimates, we have accounted for what would otherwise
7 be a potential bias, if we simply didn't weight the data and we
8 assumed that all of the sites had been selected with equal
9 probability, essentially simple random sampling, but, again,
10 because we're accounting for the difference in those selection
11 probabilities, in the weighting and in the estimation, it's not
12 an issue, and this is also a standard survey sampling technique
13 to improve efficiency in samples, make them more cost-effective
14 and cost-efficient.
15
16 That's a quick, just very quick, brush of the APAIS design, and
17 so now I'm going to move on to essentially data-imputation, and
18 this is where the weight, estimation of landings in weight,
19 really differs from or is an additional component to that
20 estimation compared to just estimating the catch in numbers.
21
22 Again, just a very brief review, and we have three very basic
23 types of catch that we record in the APAIS. Type A is what is
24 directly observed by a sampler, including identifying fish and
25 counting them and, as best they can, as time allows, measuring
26 the fish for lengths and weights. The B1 is harvest that is
27 unobserved by the APAIS sampler, and so this could fall into a
28 couple of different categories.
29
30 It could be dead discards at-sea, or it could be fish that were
31 used for bait, or filleted at-sea, or it could be fish that came
32 back whole, but, for whatever reason, the sampler was unable to
33 see those, and the counts of fish and the species identification
34 was all provided just by the angler, and so there's a mix of
35 different dispositions in that B1, but all of those fish -- The
36 commonality is they were all harvested, in the sense that they
37 were not released alive. Then the final type is the B2, which
38 are the live releases at-sea, and, again, reported by the angler
39 and not observed by samplers.
40
41 The A plus B1, or the total of those two dispositions, are used
42 to estimate total landings, both in numbers as well as in weight
43 units, and they also are used to estimate mean weights and
44 lengths, and including length frequencies, and, of course, the
45 B2 are just for estimates of numbers of fish released alive, and
46 then the total catch is simply the sum of the landings in
47 numbers plus releases in numbers.
48

1   What do we do when we don't have length or weight data? Again,
2   the samplers can't possibly get to all of the fish, to weigh and
3   measure them, and there's just too many trips coming back
4   sometimes, and anglers are in a hurry, and they don't want to
5   get fish out of the cooler, whatever the case may be, and so we
6   want to account for that, to help fill in those data gaps, and
7   so there's two cases of missing data.
8
9   We could have one of the length-weight observations, and just
10 not the other, or we may not have either. If we have the length
11 or the weight, then we simply use standard length-weight
12 relationships to fill in the missing piece, and these
13 relationships are estimated from our observed APAIS data over a
14 range of years, and it's actually a two-step process, where we
15 use the most recent year of data as a first pass, and, if there
16 is an issue with model convergence, then we include more years
17 of data, to calculate the relationship and to fill in the
18 missing length or weight.
19
20 It's a more complicated situation when we are missing both the
21 length and the weight for an individual fish. In this case, we
22 use, again, a fairly standard survey methodology approach called
23 hot deck and cold deck imputation, and, essentially, what we are
24 going to do is impute up to five length-weight pairs, length-
25 weight observation pairs, for a given species on a given trip,
26 again depending on how many fish were either counted by the
27 sampler or reported by the angler, and so we don't impute more
28 than five.
29
30 If there are fewer than five fish counted, or reported, we only
31 impute up to the number counted, and the process, which I will
32 describe in more detail in a couple other slides, again, starts
33 with a hot deck and transitions to a cold deck, and, basically,
34 and this is a little bit of a distinction without too much of a
35 difference, but it's the same basic process, but hot deck just
36 means it uses data from the current sampling period, and cold
37 deck refers to bringing in data from, in our case, an earlier
38 time period, and that is essentially the only difference between
39 these two.
40
41 In terms of the computations, they are basically the same, but
42 it's just the difference in the dataset that's being used to
43 impute from, and so our process has five rounds, up to five
44 rounds, of attempted imputation. We start with the most
45 detailed current cell, sampling cell, and then we expand
46 outwards, including bringing in data from the prior year as a
47 way to help impute.
48

1 The majority of the data -- I will mention the details of these
2 rounds in the next slide, and the majority of the imputations
3 for all of the species are completed within three rounds, and so
4 we don't get -- In most cases, we're not getting too large in
5 the aggregation of these imputation cells, and we're staying as
6 specific as we can, realizing that, as we get larger imputation
7 cells, we could be doing things like imputing from areas,
8 states, with different regulations and different areas where the
9 fish sizes may be different, all of those kinds of regulatory
10 and biological issues, life history issues, that we really don't
11 want to -- We want to try to avoid that as much as possible.
12
13 In all cases, and it seems obvious, but we stay within the same
14 species and sub-region, and one other technical note is, at this
15 point, we do not include sample weights into the imputation, and
16 the basic reasoning for that is we could end up with a case
17 where, if we included the sample weights, which would basically
18 mean unequal selection probabilities for the imputed data, the
19 complete cases, we could end up with a very small number of fish
20 being used many, many times to impute, and, to the extent that -
21 - Because trips with very high sample weights, that would factor
22 into this process, if we used those weights, and, given that
23 those weights typically come from weekdays at low-activity
24 sites, less-sampled units, less-frequently-sampled units, we
25 wouldn't want to -- There might be differences that we can't
26 account for, in terms of species compositions or size
27 distributions, and, at this point, we have not implemented
28 weighted imputation, but that is an option, and we are still
29 looking at this process as we move forward.
30
31 Some details on the rounds then, and so the first round, again,
32 which, in most cases, in many cases, is all we need to do, we
33 are staying essentially within our estimation cell, and so we
34 produce estimates by year, two-month wave, sub-region, state,
35 mode, fishing mode, area fished, and species, and so we're
36 imputing within the same estimation cell, and, again, that's
37 taking care of a large fraction, and it varies by species, but a
38 large fraction of the imputations.
39
40 The next step down, we aggregate over waves, up to half a year,
41 and so Waves 1 through 3 in one cell and 4 through 6 in the
42 other, and still sub-region, and that's really, at this point,
43 just applicable to Florida. Then state, mode, and species, and
44 so, again, there, we're collapsing over area fished, and I
45 realize that can have issues too, but, for the common species
46 that we generally have to impute for, they're being taken care
47 of in that first round that still includes area fished.
48

Then, the third round, we include the current data, but we bring
in the most recent prior year of data, but we go back to the
most detailed estimation cell, and so, again, wave, sub-region,
state, mode, area fished, and species, and so bringing in the
prior year, but sticking with the most detailed estimation cell.

Then we collapse. Again, we retain the prior year, but we're
collapsing out across waves and area fished, but we retain mode,
state, and sub-region, and then, if we have to go to the last
round, it's the current and prior year, but we collapse the sub-
region across modes and states and areas fished, and, again,
these are very rare imputations at this point.

Then the other thing I will mention is the minimum number of
observations, complete observations, required to impute, and so,
if we don't have that minimum number, we don't impute at that
level, and these numbers were derived based on looking at
distributions of complete case counts across all of our data, to
try to look at -- We wanted to balance having a robust pool of
observations to impute from against the need to fill in these
estimates, or to fill in the gaps, and that is what we came up
with, but, again, all of this is ongoing in terms of reviewing
how well it's working, and it could potentially be revised at a
later date.

The final point on this slide then is, if we get through the end
of all five rounds, and we're unable to impute length and
weight, then we stop. We don't keep going, and we don't cross
species, and we don't go back to earlier years, and we just
leave it as a missing value, and, in our estimate queries
online, as well as the estimate datasets, we now have a field
that is called missed fish, and it essentially gives the
estimated number of fish from the landing estimate that don't
have a weight estimate, a corresponding landings estimate, in
weight, and so that gives information, again, on what is still
missing after this length-weight imputation process.

That really, and I don't have a slide on it, but this has
reduced considerably the number of data gaps, or estimate gaps,
from the old MRFSS approach, which would essentially create an
average weight, based on the observations that were available in
a cell, and, if there were no -- I think it had to have a
minimum of maybe two observations, or some other value, but then
it wouldn't do anything else, and so, if there were no data, it
just wouldn't impute -- It wouldn't create an estimate.

In this case, we're trying to make better use of the data we do
have, to help fill in those estimates, and I don't want to speak

to Vivian's presentation, but, again, there are additional steps, potentially, to the weight estimation that Vivian will describe, but this is as far as we take it for the MRIP estimates.

Then, moving to just, in general, how we do this weighted estimation, which includes landings in weight, and others have already mentioned the basic calculation is a catch rate times an effort estimate, and catch rate in catch per angler trip times an effort estimate of total angler trips equals the total catch estimate.

From the APAIS data, again, for catch rate, there is components, three components, that basically correspond to the stages that I described earlier for the design, coming up with the weights, the sample weights, and then, using those sample weights, we calculate the catch rate using a standard weighted mean estimator.

The effort includes both the initial effort estimate that comes from the Fishing Effort Survey, or the for-hire survey, with the addition of the adjustment factors that come from APAIS, and so one is the coverage adjustment that accounts for the out-of-state angler trips, and, again, the Fishing Effort Survey only covers the coastal state resident trips, and then, second, again from APAIS, we use the area fished distributions from the APAIS data to essentially partition the FES estimate into inland, nearshore, and offshore areas. Then those, combined, again, give us our catch estimates.

I am just going to get all of these on the screen and talk about them at once, and so, essentially, we have to account for the sub-sampling that can occur at each of the stages of the intercept sampling, and, again, the first stage, this information is coming directly from our sample draw process, and that process calculates the inclusion probability and the chance that that unit was drawn, and, again, in standard sampling statistics, your sample weight is simply the inverse of your inclusion probability.

A simple example is, if I have ten units in my frame, I'm going to sample one of them. I then want to take that one sample and its information and expand it back up to represent all ten. The one unit that was selected, if it's equal selection probability, had a one-out-of-ten chance of being selected. The weight then is just the inverse of that, and it goes back to being ten, and so that one unit is going to be weighted up to represent all ten units that were in the frame.

93

Similarly, at the second stage, if we are -- If we sub-sample the time interval at a given site, that will be reflected here. If the length of the -- Again, if we sample the site for the entire time period, then the time spent sampling is equal to the length of the interval, and this stage weight is just one, and, essentially, there is no sub-sampling, but, if we only spend half the time sampling at a site for the entire time interval, then, again, this weight would turn into a two, and essentially it would be six hours divided by three hours, and that stage weight would be two. Again, that's just sort of simple examples.

At the third stage, and, again, this is the angler trip stage, we have, as the weight, the total number of anglers that were observed at a site, that would be intercepted and counted, and so, if they were just counted or intercepted, we sum those together to get the total angler trips observed at a site over the number that we actually intercepted, and that's the third stage of weighting.

Then, finally, for the estimates that deal with the catch sub-sampling, there's another stage for that, the number harvested by the angler divided by the number that were sampled, in terms of lengths and weights, and so that's again, a stage specific to the catch, but some of the catch estimates, but it's another stage that we account for when it's appropriate.

To put all of those weight elements together, the appropriate way to do that is to multiply each of the stage weights together to come up with the final stage weight, and this slide is describing the catch rate, which, again, is just a simple weighted mean within our estimation domains, and so the individual -- The sum of the individual weighted observations for catch in the numerator here divided by the sum of the weights gives us our weighted catch rate, and, again, this could be in numbers of fish, or it could be in weight units for the landed fish.

I will just quickly describe a bit on the FES sample weights. Again, these data are weighted as well. It's a different design. The weights are appropriate for the design, and there is a base -- Several stages here, or adjustment stages, and there is the base weight that comes directly from the draw process, and there is a non-response adjustment, which, again, is set up in a way to minimize the potential for non-response bias, and so, for example, we know whether selected units matched to the license list or didn't match to the license list,

and so, when we get responses, and this is, again, a simplified
example, but the license matched respondents are only upweighted
to match the license matched non-responders, and likewise to the
unmatched.

We wouldn't want to take license matched responses and upweight
them to also represent the non-matched sample, and so, in doing
that, we help minimize the potential for non-response bias, and
then there's a post-stratification adjustment, and Rob mentioned
this. Rob Andrews mentioned this earlier, but it's to help us
make sure that the demographics of our sample match those from
the U.S. Census Bureau demographic data, again coming from the
American Community Survey, and so, again, by doing this, this
helps, again, eliminate any potential biases, to the extent that
response and fishing activity are corelated with demographic
dimensions, and Rob showed earlier in his presentation that they
are.

By accounting for that here, again, we're helping to minimize
any potential biases by over or underrepresenting different
demographic groups in the sample.

The effort estimates, they come out of the Fishing Effort Survey
directly, our simple weighted totals, and so we have, again, a
final weight at the household level that represents all of the
different adjustments that I just mentioned, as well as the
total count of trips taken by the household, and this would be
separate by fishing mode, and the weighted sum of all of those
units in the sample gives us our effort estimate, total, again,
in terms of numbers of angler trips.

This really just reworks that first slide, that simple
multiplication step of effort multiplied by the catch rate, and
that gives us our catch estimate within an estimation domain
cell, and then we simply sum those up over waves and whatever
other levels of aggregation are needed to get to an annual
estimate or a higher-level estimate. We can sum across states
to get to a regional estimate and things like that.

Thanks for hanging in, and I'm almost done, and just a few quick
slides on sort of data and estimate QA/QC, and so there's a
number of steps to this process, and they start really at the --
This is a bit of a dated slide, and it should be updated. As
we're moving to implement data collection and the APAIS directly
tablet, there are a number of additional checks that are being
built in, and that is in place on the Atlantic coast, and it is
moving to be in place I think by the start of next year in the
Gulf coast, and so, in addition to those checks that will be in

1 place at the point of data collection, subsequent to data
2 collection, there are these additional steps.
3
4 Our state agency partners, as well as, and I apologize that it's
5 not on this slide, as well as our regional FIN partners, Gulf
6 States, GulfFIN in this case, are running checks on the data
7 after it's been collected, logic checks and looking for errors
8 in counts, looking for errors in lengths and weights, anything
9 that could be an error related to the other data collected about
10 the sample assignment itself, start and end times, counts of
11 anglers not interviewed. All of those types of data elements
12 are reviewed in these steps.
13
14 Then the data come to us, and we run similar checks against the
15 data, again just as an extra layer on the process, and then
16 anything that's flagged at any of the steps is reviewed, to see
17 if corrections are needed. There is also a process, of course,
18 for the Fishing Effort Survey, as well as the for-hire survey,
19 and that's not been a focus here, but a similar process exists
20 for that as well, and, essentially, it's doing the same kind of
21 review.
22
23 There are some things that are done by the contractor conducting
24 the Fishing Effort Survey, and that's Research Triangle
25 Institute, or RTI, and they conduct a number of surveys for
26 federal agencies, national-level surveys and regional-level
27 surveys for federal agencies, including our Fishing Effort
28 Survey.
29
30 When we receive the data, we also do a number of checks, looking
31 for item non-response, illogical responses, where values don't
32 comport with earlier responses or household-level responses
33 versus the individual household member-level responses, and can
34 make edits as needed, or potentially remove data from the
35 sample.
36
37 Also, it checks, again, for extreme values, and, if values are
38 flagged as non-representative -- An extreme example could be
39 something like someone in a household that is 200 miles from the
40 coast reporting 300 trips, something like that, and those are
41 the kinds of extreme cases that we would be talking about that
42 would have weight adjustments to reflect the fact that that's
43 not -- That's very atypical in a non-representative sample, and
44 I should also mention that we're not talking about large numbers
45 of observations, and those are very limited.
46
47 Shifting to estimate review then, prior to the public release,
48 estimates are reviewed within S&T internally, and we have a

96

number of checks that we run, including some sort of time-series-type checks, to look at changes not only from one wave to the next, but also over time, to see if values may be high, but they're in line with a trend, or they're out of line with a trend, or they're just even beyond changes, increases or decreases, outside of any sort of trend, and those get flagged for review.

We also have regional representatives from the offices and Science Centers that help flag estimates for review as well, and then, based on the cases that are flagged, we do data investigations, and that may involve going back to our data collection partners, both regional and state, for data corrections, or exclusions may happen at that point, and, again, that's all part of investigations into potential outlier estimates.

At the end of that though, if the data all come back, and there are no errors determined or obvious issues that contributed to that estimate, we leave them in there, and we don't try to smooth the estimates, and we don't try to use our own judgment about what an estimate should or shouldn't have been. We don't have the fundamental experience with all of the different fisheries available.

Certainly some of us are more familiar with some fisheries than others, but, again, we're not trying to smooth out the data, based on what we feel like might be the correct answer, and so we leave that in the data to be transparent and allow others to comment on particular point estimates and how they or may not be used in subsequent steps in the fisheries management process.

Finally, I'm wrapping it up, and so, again, the weighted estimation for landings and weight, as well as the estimates in numbers and all of the other estimates that are produced, sort of reflect our complex survey designs, and we appropriately account for the selection probabilities, and we use those to calculate sample weights, and we use those in weighted estimation techniques, again, that are standard procedures in survey statistics.

We do use imputation to fill in missing data, again for the lengths and weights, as needed, and we do our best to minimize disruptions to what would be the distribution of data, of lengths and weights, without imputation, but, again, we're trying to add value to the dataset and minimize work needed downstream of us by analysts using the estimates and using the data.

1
2 I should mention, in the public use datasets that we make
3 available that have the microlevel data, the trip level data
4 from the APAIS, with the analysis weights that could be used to
5 calculate our estimates, and custom estimates, we do flag the
6 records that represent -- That have imputed values, whether it's
7 just a length or a weight that was calculated using a length-
8 weight relationship or it was both the length-weight pair that
9 was imputed.
10
11 There are flags in those datasets to identify them, and so, if
12 people don't want to use the imputed data, for whatever their
13 analysis is, they can do that using those datasets.
14
15 Again, we have a layered data QA/QC and estimate QA/QC process
16 before anything is released publicly, and, again, after the
17 release, if errors are discovered, or estimates are flagged, we
18 routinely do additional data investigations, and, depending on
19 the results of those, we may make revisions to the estimates,
20 again on a case-by-case basis. That is all I have. Again,
21 thanks very much, and that was a lot of material to cover, but I
22 appreciate everyone hanging in there, and, again, I'm happy to
23 take questions.
24
25 **CHAIRMAN POWERS:** Thank you. One basic question. As I recall,
26 in the old days, the size frequency sampling was kind of spotty
27 at times, and has that improved nowadays? In other words, what
28 proportion of, generally, are there of fish where you have
29 neither weight nor length?
30
31 **MR. FOSTER:** In terms of the length-weight observations, I would
32 say, over time, yes, it has improved, particularly as the state
33 agencies have taken over, and we certainly -- I think all of the
34 partners have tried to make that a priority, to get more lengths
35 and weights.
36
37 Now, that said, there is -- There are logistical constraints to
38 that. Samplers in the field are doing the best they can to
39 juggle a number of tasks, but, again, it is a priority, and so I
40 would say, yes, overall, it has improved, but, again, just
41 because of the limitations of the field conditions, I can't give
42 you, off the top of my head, a proportion of data that are
43 filled in using imputation, but it's still a sizeable amount,
44 but that's a -- Given the number of jobs that the field samplers
45 are doing, it's just hard to, I think, minimize that much
46 further, but it is a priority, and do we work on it.
47
48 **CHAIRMAN POWERS:** One of the things that arises from that is --

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1   It used to be this way anyway, when I was doing assessments, but
2   you relied on the numbers estimates, and that would be what was
3   fitted in an assessment model, and then you have size frequency
4   or whatever, and the size frequencies would be internal to the
5   model fitting process, but what that ends up with is you get
6   somewhat different overall catch weight, or catch in weight,
7   that is different from the, quote, unquote, official that comes
8   out of that, which has some problems, because the official one
9   is what is used for quota allocation and things like that.
10
11 I am not sure if that's still an issue with how the assessments
12 are done, but that's something to think about. The other
13 question I was going to have is what about sizes of discards?
14 You don't attempt to do anything with those, do you?
15
16 **MR. FOSTER:** The second question, that's correct. We do not
17 collect -- In the Gulf region, we do not collect any size
18 discard information for the live releases. The B2s --
19
20 **CHAIRMAN POWERS:** And you don't try to impute it from some other
21 way either?
22
23 **MR. FOSTER:** That's correct. Now, the B1s though are covered by
24 the imputation, in terms of -- Because they are mined with the
25 Type A, the A type harvest, observed harvest, to create the
26 total landings and numbers estimate, and so we do impute for --
27 B1s can be included in what is imputed for, because we are
28 trying to create that landings in weight estimate that is
29 representative of the landings in numbers estimate, and so
30 that's why we do impute some for the B1, if the case meets that
31 five-fish -- If there are B1s on a trip, they are subject to
32 imputation as well.
33
34 I guess, back to the earlier part of the question, I would just
35 mention, again, that Vivian Matter will be talking about what
36 the Science Center does sort of after, or downstream, of what we
37 do to come up with those weight estimates.
38
39 **CHAIRMAN POWERS:** Okay. Thank you. John Mareska.
40
41 **MR. MARESKA:** Thank you. John, that was indeed a lot of
42 information, and I may have missed it in your presentation, but,
43 on Slide 25, where you're talking about the APAIS sample
44 weights, how is the time spent sub-sampling at a site -- How is
45 that calculated?
46
47 **MR. FOSTER:** The samplers, as part of the sort of assignment-
48 level data that they record, they record start and end times of

1 their sampling at the individual sites, and we can look at those
2 start and end times to calculate the duration, and then that --
3 We can see what fraction of the six hours that duration
4 represents, and so that's, essentially, how that stage is
5 calculated.
6
7 **MR. MARESKA:** Okay. I have another question, and so I think,
8 earlier, in responding to someone else's question, you indicated
9 that, in the FES mail survey, that area fished was going to be
10 included in the future. Did I hear that correctly?
11
12 **MR. FOSTER:** Sort of. It is part of a pilot project that we
13 have planned that would use the FES design and, as a pilot,
14 collect that information, to see -- Testing a number of things.
15 One is seeing what we get, in terms of those data, using the
16 FES-type design, but also allow us to compare the area fished
17 information that comes through the mail survey, which covers
18 both private and public-access trips, to what we get from the
19 intercept survey, the APAIS, which, again, would just cover the
20 public trips, the public site access trips.
21
22 **MR. MARESKA:** That was, I guess, some of my concern, and so I
23 currently see that area fished is being partitioned from the
24 dockside survey from the catch, but the, when you're trying to
25 match the catch and effort, there is no area fished from the
26 effort survey, and so, basically, all of the private boat effort
27 gets partitioned from the dockside survey into the inland,
28 nearshore, and offshore, and so I think it would be interesting
29 to see your results, and I think it would be an improvement to
30 the survey itself, if you were actually getting that effort from
31 the effort survey, so that it could be imputed into your
32 calculation of the efforts that you presented on Slide 32,
33 because, right now, it's just the number of trips within that
34 household, but it's not by the different fishing areas, or areas
35 fished.
36
37 **MR. FOSTER:** Yes, that's correct, and, yes, we are also very
38 interested to see what the results of that pilot will show us.
39
40 **MR. MARESKA:** Okay. Thank you.
41
42 **CHAIRMAN POWERS:** Thank you. Joe O'Hop.
43
44 **MR. O'HOP:** Thank you, John. That was a very clear
45 presentation. I have a question about -- This may be a very
46 small question, but there are a certain number of trips that get
47 sampled where no catch is claimed by the anglers, and I was
48 wondering, in the older MRFSS methodology, the number of -- The

1 total number of trips sampled in the mode is used to basically
2 correct the number of fish of each type by the number of sampled
3 trips in that mode, and then multiplying out by the trips by
4 area, or trips by area and mode, and that's where you get the
5 total catch estimate. Is that no longer necessary in the APAIS
6 methodology?
7
8 **MR. FOSTER:** Well, Joe, I'm not totally sure that I follow the
9 question, but I will -- First, I will speak to there is a change
10 in the intercept design related to fishing mode, and so I will
11 speak to that, and then, if I haven't addressed your question,
12 please follow-up.
13
14 Under the old MRFSS intercept design, assignments were mode-
15 specific, as drawn. Now, there was some deviation from that to
16 alternate modes, which could be handled, but, essentially,
17 samplers were supposed to stay within an assigned mode and
18 exclude trips from other modes.
19
20 In the new design, in the new APAIS design, that's no longer a
21 limitation. What we have done -- But we want to retain the
22 ability to try to target sample two certain modes, to make sure
23 that we don't just get an overwhelming number of trips from the
24 most common mode or modes, and so, in particular, we want to
25 make sure that we get sufficient charter sample, which is
26 generally the one that can be the most difficult, or the most
27 challenging, to get sufficient samples in.
28
29 Anyway, the new design separates sites based on their expected
30 activity levels, their expected fishing pressures, by mode, into
31 different site groups, and so we call it site group
32 stratification, and the different groupings are defined based on
33 the different mode pressures, and so, for example, there is a
34 charter site group that we will draw a sample from and a private
35 boat site group and a shore site group, but that doesn't mean
36 that -- Then, when samplers go on those assignments, they were
37 allowed to collect interviews from any of the modes, and, again,
38 in a representative way.
39
40 They are not told to focus primarily on the mode of the site
41 group that that site is in, and they are to get a representative
42 sample of all the modes that are present, and we did our best,
43 and really the state partners did the lion's share of the work,
44 to look at the existing sites and determine if there were better
45 ways to potentially split up the sites, to make them somewhat
46 more mode-specific, or at least easier to navigate around in to
47 get that representative sample.
48

While the new design is more flexible, in that it allows
samplers to interview in any of the modes that are present, it's
done so in a way that we can account for that correctly in
estimation, with the sample weights, and by defining estimation
domains using mode of fishing, even though it's no longer a
formal stratification variable, and so I will stop there and see
if that answers your question.

MR. O'HOP: Actually, I was getting more toward how do you
calculate the number of fish caught at a site, and let's say at
one interview someone catches one fish, and the interview weight
is twenty, and so that would be twenty fish, and that's a real
simple example, but that is how I understand the calculation.

If you had let's say ten trips, and that fish is only caught on
one of those ten trips, then it's still twenty fish, and I was
just wondering how -- If an angler, or a boat or anything, came
back with no fish, no fish at all, how does that zero-catch trip
get moved into the calculations, or does it?

MR. FOSTER: Okay. Sorry I took us down that rabbit hole. Yes,
the short answer is those zeroes are still accounted for, and,
in fact, they're critical, because there will certainly be a
number of trips reported through the effort surveys that would
have corresponded to trips with no catch, and so we don't want
to bias the catch estimates by having the intercept survey, the
APAIS catch rates, only reflect trips with positive catch, and
so, for the trips that reported zero catch, we still report what
the mode of that trip was, and also the area fished, and so that
zero then goes into the catch rate calculations for all of the
different catch rates, all of the different species-specific
catch rates, within that estimation cell, and so, again, state,
sub-region, wave, mode, area fished, and so the zeroes are
included, and they are included in the estimation cell where
that trip with zero catch occurred.

MR. O'HOP: Okay. I just haven't seen that in the domain catch
programs, how that is actually accomplished, but I will look for
it.

MR. FOSTER: In there, there will be trip records in the public
use catch datasets that have the trip-level catch information.
there will be records in there for trips that did not have any
catch, and they just have -- I don't remember the field coding,
but they either have zeroes or missing values for the trip catch
fields, as well as the species identifier fields, and it will
just be blank or missing, but they are in there.

1 **MR. O'HOP:** I don't recall seeing them in the catch side, and I
2 know they're on the trip side, but I will take a look at it, but
3 thank you very much.
4
5 **MR. FOSTER:** Sure.
6
7 **CHAIRMAN POWERS:** Thank you. Ken Roberts, did you have a
8 question?
9
10 **DR. ROBERTS:** Thank you, Mr. Chairman. Thank you for the
11 presentation. It was very informative. I have a question, in
12 general, about the future. Would you be better off having more
13 intercept points, I mean the actual observations and not
14 locations, or would it be better to have more detail with the
15 intercepts that you actually are able to afford?
16
17 I didn't see anything in the presentation that tells me what's
18 the trend line, in terms of number of intercepts actually being
19 taken, and so my question is do we need more intercepts in any
20 of the particular modes? You mentioned the mode of charter boat
21 fishing is a little difficult, and should we be spending more
22 money trying to correct that or just increasing the overall
23 number of intercepts?
24
25 **MR. FOSTER:** Thanks. That is a great question, and the short
26 answer is we can always use more sample, and I think, generally
27 speaking, it would be -- Well, the detailed answer, the nuanced
28 answer, I think is that it would depend on the specific
29 assessment or management needs.
30
31 On the one hand, there certainly could be additional detail that
32 we collect in the intercepts, the APAIS intercepts, now. On the
33 other hand, that lengthens the interview, and it puts more
34 burden on the angler, and so we always want to be thoughtful, I
35 guess is a good way to say it, about how much additional
36 information we may want to collect from the anglers.
37
38 In terms of the intercepts, increasing the sample sizes,
39 certainly that would help with a number of issues. There are
40 rare-event species, and there are pulse fisheries, and there are
41 short-season fisheries, and all of those types of issues,
42 challenges, could be addressed, to some degree, again, given
43 resources that are available, if we could increase sample sizes,
44 and we're always looking for ways to do that.
45
46 Fortunately, we were able to, very recently, increase our
47 spending, our budget available, to go to the cooperative
48 agreement that supports APAIS sampling and some of the other

1 state program sampling in the Gulf region by about $1.2 million,
2 and I'm hopeful that those funds can move us in that direction,
3 help address some of these issues, and that will take time to
4 fully implement.
5
6 We're dealing with the current situation beyond fisheries at the
7 moment, but, once that, hopefully, gets back closer to normal,
8 and state partners have time to work in this new funding, I'm
9 hopeful that we can make those sample size increases and start
10 addressing some of those issues.
11
12 I know that's not a great, specific answer, but, again, I think,
13 if the choice is between collecting more data at the intercept
14 level or increasing the number of intercepts that we can obtain,
15 and that's all we can do, I would generally favor increasing the
16 number of intercepts, but it really depends on the specific
17 needs, I think.
18
19 **DR. ROBERTS:** Thanks so much. I appreciate it.
20
21 **CHAIRMAN POWERS:** Thank you. Any other questions? If not, we
22 need to move along then, and thank you, John, for both
23 presentations and giving a good understanding of the process and
24 how it has evolved over time. With that, then we are moving to,
25 I believe, Vivian Matter to talk about some specific Southeast
26 issues relative to the MRIP modifications.
27
28   **DESCRIPTION OF SEFSC WEIGHT ESTIMATION METHOD AND MRIP VERSUS**
29   **SEFSC PLOTS OF GULF KING MACKEREL AND GRAY SNAPPER WEIGHT**
30   **ESTIMATES**
31
32 **MS. MATTER:** Thank you very much. My presentation is going to
33 cover two agenda items, and they're both dealing with, as was
34 mentioned, the modifications that the Southeast Fisheries
35 Science Center does while receiving all of this information from
36 MRIP that you have just been introduced to and explained in
37 great detail.
38
39 The first one is the weight estimation procedure, and so John
40 has just gone through and explained all of the imputations that
41 are done from the intercept survey, and I want to start out by
42 saying that we use all of the imputed information that John has
43 described in the Southeast Fisheries Science Center weight
44 estimation, and we also are applying -- I will get to the
45 method, but, in a nutshell, it's calculating average weights by
46 strata and applying those average weights to the MRIP estimate
47 of landings in A and B1, and so all of the modifications that
48 have been presented from S&T, the weighting to account for the

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site probabilities and all that, has already been applied to the
A and B1 estimate in number of fish, and so we are using all of
that information in our resulting weight estimates.

The reason that we go ahead and do a separate weight estimation
on our end is because we want to ensure that we have a
consistent methodology across all years, and we also have an
added -- In the Gulf, we also have an added survey, the Texas
Parks and Wildlife in Texas, and they do not estimate landings
in weight, and we have to do that at the Southeast Science
Center as well, and so we use a methodology that we're able to
apply to all data sources that we're having to estimate weight
for, and it's consistent across all years.

John has mentioned that there are still some cases where there
will be an estimate of catch for a species in number of fish,
and there won't be a corresponding weight estimate, and so, for
our stock assessments and our management ACL files that we
provide, we want to make sure that we don't have any holes in
those weights, and so that's, in a nutshell, why we have a
weight estimation methodology at the Center.

We first developed this methodology back in SEDAR 22, and we
further refined it a bit in SEDAR 32, and so I put those sources
there, if you have any further questions, but, as I said, we
calculate the average weights by strata, and we use the MRIP
public datasets, and, like I said, we do use the new MRIP files
that include all the weight estimation imputations.

We then calculate the average weights according to this
hierarchy here of species, sub-region, year, state, mode, wave,
and then area fished, and so that's the finest level that you
will see there, is the strata hierarchy. As I said already, we
include the weights imputed, and we've been using the new size
datasets, and so the change in the minimum sample size -- We
used to use thirty, and it was changed to fifteen last year,
after a sample size analysis. That's the SEDAR citation there.

Basically, what that says is that, if you have at least fifteen
fish, all the way up to area fished level, then that's the
average weight that will be calculated and applied to MRIP's
estimate of A and B1 in number, and, if you don't have fifteen
fish, area fished would be dropped, and you would do it by wave,
and so on and so forth, and so that's the weight estimation
process.

The next slide will show you comparisons of the two case studies
that we were asked to present today, and this was for gray

1 snapper, and so, in these two graphs, this one and the following
2 one, the red line indicates the MRIP weight estimate provided by
3 S&T, and the green line indicates the SEFSC weight estimation
4 methodology, using the fifteen minimum sample size, and the
5 dashed-blue line is the Southeast Fisheries Science Center using
6 a thirty-fish minimum size.
7
8 As you can see -- Of course, a lot of this is going to depend --
9 Differences will depend on, obviously, how frequently a species
10 is intercepted by the survey, but this will show you the -- This
11 shows you the gray snapper implications. I will sit here for a
12 bit, just so you can take it in, and, when you're ready, we can
13 move to the next slide, and it will show you king mackerel.
14 Again, it's the same color changes here. What we are using now
15 is the green line for our weight estimates.
16
17 I don't know if you want to stop for questions here, or the next
18 portion of my presentation is regarding the for-hire survey
19 change.
20
21 **CHAIRMAN POWERS:** Let's just stop here and ask if there are any
22 questions.
23
24 **MS. MATTER:** Okay. Great.
25
26 **CHAIRMAN POWERS:** This is the -- For the king mackerel, the one
27 you're showing there, with the high point of roughly ten million
28 pounds, this includes what? Does it include --
29
30 **MS. MATTER:** This includes all modes, and it's for all MRIP
31 estimates in the Gulf of Mexico, and so Sub-Region 7.
32
33 **CHAIRMAN POWERS:** Okay. Paul.
34
35 **DR. SAMMARCO:** A quick question, please. In your previous
36 slide, I think it was, you showed that the sampling size had
37 been dropped from thirty to fifteen after a sample analysis,
38 which can be very helpful, and was that done sort of with an eye
39 to say increasing the areas that you were looking at or the
40 number of sites or something like that, or, in fact, was it
41 simply that's the way the analysis worked out and it was
42 convenient to do that? Actually, it would drop, probably,
43 effort on the group's part, but I was just curious.
44
45 **MS. MATTER:** We were looking at the minimum number of size and
46 how increasing it would reduce the PSE and kind of finding a
47 spot where any increase, further increase, in the minimum sample
48 wasn't improving the PSE by a great deal, and so we were trying

1 to find that balance between the minimum number of fish required
2 and the precision of the resulting estimate.
3
4 **DR. SAMMARCO:** Right, and so your variance was pretty much there
5 by the time you hit fifteen fish, and is that right?
6
7 **MS. MATTER:** Yes.
8
9 **DR. SAMMARCO:** Great. Okay. Thank you.
10
11 **MS. MATTER:** You're welcome.
12
13 **CHAIRMAN POWERS:** Thank you. Jim Nance.
14
15 **DR. NANCE:** Thank you, Mr. Chairman. Just a question. Is
16 Louisiana out of the survey now, in the last couple of years?
17
18 **MS. MATTER:** That is correct.
19
20 **DR. NANCE:** Has that impacted estimation techniques and things
21 like that, not having that, when we only have three states now,
22 as opposed to four?
23
24 **MS. MATTER:** Well, yes, and so, when we calculate the average
25 weights by strata, we are using -- I am going to get to
26 Louisiana in a second, but I'm going to start with Texas,
27 because Texas doesn't collect weights at all in their program,
28 and so we use length-weight relationships to apply to their
29 length data to get Texas weights that then can be used to apply
30 to their estimates.
31
32 For Louisiana, we are working with GulfFIN right now to make
33 sure that we're able to use the lengths collected in Louisiana
34 since 2014, which is when they were no longer participating in
35 the MRIP survey, and we haven't yet done that, but we are
36 working towards getting those weight observations into this
37 process, and we're just currently not there yet, in terms of
38 trying to integrate it.
39
40 **DR. NANCE:** Thank you.
41
42 **MS. MATTER:** You're welcome.
43
44 **CHAIRMAN POWERS:** Thank you. Harry.
45
46 **MR. BLANCHET:** Just not necessarily for this meeting, but, for
47 me, this particular presentation, this particular graphic, what
48 we have on the screen here, could be a little bit easier if you

1 were just looking at the estimated average weight, instead of
2 trying to demonstrate the effects on landings, because, to me,
3 it shows more if you're just looking at estimated weight, the
4 average weight by mode, or however, over time, and how stable or
5 how trendy or how variable between cells that estimate is and
6 not have the complex factor of how many trips went out and how
7 successful were they for the discussion, in terms of how you
8 estimate the weights, and it just seems that this particular
9 presentation is a bit more complex than it needs to be.
10
11 **MS. MATTER:** Okay.
12
13 **CHAIRMAN POWERS:** Thank you. Mike Travis.
14
15 **DR. TRAVIS:** A question for Vivian, and I thought Harry or Jim
16 was going to beat me to this, and so my question is, for gray
17 snapper, it's harvested quite a bit off of Louisiana, and my
18 question is, for the years 2015 forward, what effort estimates
19 are you using, because MRIP doesn't exist in Louisiana post-
20 2015.
21
22 **MS. MATTER:** I would have to go back and look, but I believe
23 that these include all of the Gulf. This is just showing you
24 MRIP estimates, so that you can see the comparison, and so this
25 does not include LA Creel for that portion of the timeframe.
26 This is all the Gulf states that is being shown right here.
27
28 **DR. TRAVIS:** So the most recent years -- Wait a minute. So
29 either these estimates only cover the eastern Gulf or they have
30 just lopped off Louisiana in the last four years?
31
32 **MS. MATTER:** This is simply to show the difference in the weight
33 estimation methodology, and so we're only graphing the data that
34 we have from MRIP, and so for whatever states they're available,
35 for whatever years they're available, and it's just intended to
36 make sure that those three lines are covering the same exact
37 data, and this is not intended to show total Gulf of Mexico gray
38 snapper landings, because there are other surveys that aren't
39 included in here.
40
41 **DR. TRAVIS:** Right, and so it would cover Florida, Alabama, and
42 Mississippi then.
43
44 **MS. MATTER:** And Louisiana through when we have data for
45 Louisiana.
46
47 **CHAIRMAN POWERS:** Thank you. That sort of makes Harry's point
48 about the real issue is the average weights. Is there any other

1 comments or questions? If not, then go ahead with the next part
2 of your presentation, Vivian. Thank you.
3
4 **MS. MATTER:** Sure, and so the next thing that we need to do at
5 the Southeast Fisheries Science Center is to adjust for that
6 change in the for-hire catch estimates, and Rob Andrews spoke to
7 it a bit, and John Foster referenced it, that the charter and
8 headboat fishing modes underwent a change in methodology in 2000
9 in the Gulf of Mexico and in 2004 in the Atlantic, and so that
10 was a change from the Coastal Household Telephone Survey to the
11 For-Hire Survey, which is a survey of the charter operators.
12
13 The For-Hire Survey was found to provide more efficient and
14 precise charter angler effort estimates than the telephone
15 survey, and so we at the Science Center have been adjusting for
16 this change for sixteen years. The first time we looked at this
17 was way back for SEDAR 7, for Gulf red snapper, I believe, and
18 we have been -- Recently, the newest change was we conducted a
19 new analysis after S&T released new recreational catch
20 estimates.
21
22 Part of that reason is, when that data was released, as has
23 already been covered, it showed changes in the APAIS design, and
24 it also covered changes in the FES, and so FES, obviously,
25 doesn't impact the charter mode, but, as John indicated, the
26 APAIS does impact charter/for-hire estimates, because they use a
27 portion of that to correct for the off-frame charter vessels
28 that are encountered.
29
30 Because of that, we went ahead and did a model-based -- We
31 developed model-based conversion factors for the charter effort
32 estimates, and, again, this is on effort and not on catch, and
33 this new analysis basically used the overlap years, where we had
34 the telephone survey and the for-hire survey, and, in the Gulf
35 of Mexico, those overlap years were from 2000 to 2004, and so,
36 for the charter mode in those years, we developed model-based
37 factors that were by wave, state, and area.
38
39 It used the GLM with a gamma response, and it's detailed in that
40 working paper referenced there from SEDAR 61, and it also has a
41 table of all the conversion factors that were used. In some
42 places, the factor increased estimates, and, in others, it
43 decreased it, and so, again, the next two slides will show the
44 effect of that calibration on gray snapper and on king mackerel.
45
46 In these plots, you will see that the first panel is landings,
47 and these comparisons are in number of fish, and the lower panel
48 shows the discard estimate comparisons. The red line and red

1 error bars are the CHTS charter estimates, in this case for gray
2 snapper, and the dashed-blue line shows the calibration to
3 account for the for-hire survey change. The next slide shows
4 king mackerel.
5
6 The next slide just summarizes that the weight estimation
7 procedure applies to all modes, and it does not impact the
8 calibration between the Coastal Household Telephone Survey and
9 FES, because it's conducted after all the calibrations are
10 completed, and the for-hire survey adjustment, which, obviously,
11 applies just to the for-hire models, doesn't impact the
12 calibration to FES, because those impact the private and the
13 shore modes.
14
15 That's a summary, a brief summary, of the two modifications that
16 the Science Center does with MRIP estimates after S&T provides
17 them to us, and I'm happy to take any questions.
18
19 **CHAIRMAN POWERS:** Okay. Thank you. Are there any questions?
20 If not, then let's take a short ten-minute break, and I don't
21 know if that's short or not, but a ten-minute break, and then
22 we'll come back to the next agenda item, and so let's take a
23 break now then. Thank you.
24
25 (Whereupon, a brief recess was taken.)
26
27 **OPERATIONALIZING FES DATA**
28 **FES ESTIMATES AS USED FOR QUOTA MONITORING AND MANAGEMENT**
29 **DATA AVAILABILITY AND CERTIFICATION**
30
31 **CHAIRMAN POWERS:** The next subject is operationalizing of the
32 FES data. I think there's a couple of presentations, and I'm
33 not sure who is giving them, but will the first one start, and
34 then we'll go from there?
35
36 **MR. RINDONE:** This first item on here is FES estimates is used
37 for quota monitoring and management, this is more just a
38 discussion, and so we have seen, as we have received the red
39 grouper information and the vermilion snapper information, the
40 differences in the projected yields for these species and what
41 that essentially means for quota monitoring, and I can actually
42 pull up an example of what I mean.
43
44 If we're looking at the recreational data, and this is NOAA's
45 ACL monitoring website, and we look at the history of the
46 recreational landings for different species, we can see where
47 some of these transitions occur, and the effort portion of these
48 isn't always denoted, but we'll use gag grouper here as an

110

1 example, where we have a transition from the Marine Recreational
2 Fisheries Statistics Survey to MRIP, as adjusted for CHTS and
3 APAIS, beginning in 2016 for quota monitoring for gag.
4
5 We have a stock assessment for gag that is underway right now,
6 SEDAR 72, that will transition us from CHTS to FES for gag, and
7 the same here for cobia, and these data for cobia are shown in
8 CHTS values, and, when we get the update assessment for cobia
9 that you guys will review in a couple of weeks, that will
10 transition cobia to FES as well.
11
12 When we're talking about how we operationalize these data, we do
13 have to consider what currency these things are in and if the
14 currency change is actually going to happen, or is going to be
15 necessary, and the reason why this matters is because, in a lot
16 of cases, this change in quota monitoring can't occur until we
17 actually change that data currency through an ACL update, in a
18 framework action or a plan amendment or however that happens,
19 and so there is a delay there.
20
21 Speaking of delays, that gets into the second point about data
22 availability and certification. The data that we receive from
23 MRIP, as some of you may know, and some people in the public may
24 not know, there's about a forty-five-day delay from the end of
25 the wave until when those MRIP data for that wave are made
26 available, and so, for instance, the data that are resulting
27 from Wave 1, or January to February, aren't typically certified
28 and available until mid-April, and sometimes it's been even
29 later than that.
30
31 Those data can still be changed year over year, as additional
32 QA/QC happens, or if there's a change in weight estimation
33 procedures, as occurred last year, and some of those data can
34 change, and so this can have an effect on management downstream.
35
36 I have brought all this up just to see if there are any
37 questions about this part of the process and just to kind of
38 remind everybody that, when these changes have to occur, they
39 often cannot occur overnight. The plan amendment process is
40 longer than the framework amendment process, the latter being
41 about six months, give or take, between initiation and final
42 action, and the former being a year or more, depending on the
43 actions involved, and then there's the NMFS approval process,
44 which can take another six months to a year before regulations
45 actually change.
46
47 **CHAIRMAN POWERS:** Thank you. Under this agenda item, there are
48 a couple presentations, or at least PowerPoints, that were

1 submitted there. Was somebody going to present those, or are
2 those just for background information?
3
4 **MR. RINDONE:** I am going to be presenting Number 2 there, the
5 effects of calibration on fishing season duration.
6
7 **CHAIRMAN POWERS:** I wasn't sure.
8
9 **MR. RINDONE:** Sorry. Jeff Pulver is going to present that one,
10 and I'm presenting the next one. Excuse me.
11
12 **CHAIRMAN POWERS:** This is the subject that I sort of alluded to
13 before, is that there is the scientific use of the catch data in
14 the assessment process, and there is also in terms of quota
15 monitoring and allocation and issues like that, and it makes it
16 very difficult when, for either one of those things, the changes
17 in the calibration, and so you do want to resolve it, as much as
18 possible, but recognize that, from both an assessment standpoint
19 and the management implications, it is an ongoing thing.
20
21 This is going to come up again with what was going to be the
22 July 13 meeting, but it will now be, I guess, the week of August
23 5, and so this is a -- It's an important issue, and I'm not sure
24 what we can do about it at this point, other than recognize that
25 there are conflicting interests there, in terms of how this is
26 going on, and, as I mentioned before, in terms of assessment,
27 you can use the catch estimates in numbers and then, indirectly,
28 within the model, estimate what the catch in weight might be,
29 and there's various ways of dealing with it, and I'm not sure --
30 It probably varies between species.
31
32 Whereas, in the quota monitoring and things like that, you have
33 to have something stable, so that people know what they're being
34 judged against, and I am not sure what else we can say about
35 that, other than to indicate some of the issues that are related
36 to it. Before we get into the effects of calibration on fishing
37 seasons, does anybody have any further comments on this?
38
39 All right. Then we'll move ahead then to the presentation about
40 fishing season duration and how those get projected and how the
41 catch estimates relate to those.
42
43   **EFFECTS OF CALIBRATION ON FISHING SEASON DURATION PROJECTIONS**
44
45 **MR. JEFF PULVER:** Thank you for allowing me to present here to
46 the committee. This is a slightly modified version of the
47 presentation that I gave at the June Gulf of Mexico council
48 meeting regarding Amendment 53, and this short presentation is

1   just an example of how the FES landings are being used for red
2   grouper, which is, I believe, the first species to use FES
3   landings in the assessment, and so other species would have
4   potentially different outcomes, such as vermilion snapper, which
5   has just concluded, which also used FES landings.
6
7   For a little background, for red grouper, the current annual
8   catch target is being tracked using CHTS-equivalent landings,
9   the reason being is MRIP-CHTS was used in the previous
10 assessment, during SEDAR 42, which concluded in 2015, and so the
11 table below included the most recent three years of landings, in
12 MRIP-CHTS currency.
13
14 This is a file we get from the Science Center, and, currently,
15 we're getting three separate files for the different surveys,
16 the survey in MRFSS, the survey in CHTS --
17
18 **MR. RINDONE:** Hold on just a second. If everyone could make
19 sure that they are muted if they're not speaking. That way, we
20 reduce the probability of there being an echo. Thank you so
21 much. Go ahead, Jeff.
22
23 **MR. PULVER:** Thanks, Ryan. We currently get three different
24 datasets from the Science Center, and the first one is the MRFSS
25 dataset, MRIP CHTS, which is what many of our species are being
26 monitored in currently, and MRIP FES. The status of that is it
27 includes data from MRIP, and so the private mode and shore mode,
28 but, additionally, it contains landings from the headboat sector
29 and charter estimates that Vivian kind of detailed previous to
30 me.
31
32 We monitor species in one of these three files. For red
33 grouper, it is currently the CHTS, and you can see the ACT in
34 the bottom table, in the far-right column, and that came out of
35 SEDAR 42, and that's about 2.3 million pounds, and the landings,
36 in the CHTS currency, have been well below that ACT. Last year,
37 the ACT was reduced, in a framework action, to a little over
38 900,000 pounds, but still landings, in CHTS currency, have been
39 below the ACT, and so there hasn't been any recreational closure
40 in the fishery since 2015.
41
42 Additionally, in 2015, there was a reduction in the bag limit,
43 from four fish to two fish, that also probably tended to slow
44 the harvest rate.
45
46 This presentation here focuses on analyses that are currently
47 being used in Amendment 53, which is based on the results of
48 SEDAR 61, which was just concluded last year, and the committee

1 saw the ABC values that are currently in Amendment 53 in the
2 January 2020 meeting.
3
4 The purpose of the amendment is to revise the allocation between
5 the commercial and recreational sectors. Because the FES
6 landings are so much higher, the historical landings have
7 changed, and Ryan is going to go over that in more detail after
8 my presentation, and, also, the result of that would be to
9 update the ACLs basically through allocations, and there's also
10 an action in the amendment to change the buffers as well.
11
12 For the Amendment 53, SERO was asked to project season length
13 using the MRIP FES landings, which are what were used in SEDAR
14 61. Down in the table at the bottom, we have the most three
15 recent years of landings, and so the landings contain headboat,
16 charter, and also we had mentioned that Texas and LA Creel are
17 included in the landings, but, in the case of red grouper, there
18 are either none or very small landings from those states.
19
20 You can see the FES landings are typically about two-and-a-
21 quarter-times higher compared to the CHTS landings in the ACL
22 file received from Vivian Matter there, and the average for FES
23 landings, using these three most recent years of data, is almost
24 1.8 million pounds.
25
26 For the analysis for Amendment 53, this is kind of a standard
27 review here that are kind of done at SERO, if you take the most
28 recent years of data, and, in this case, we took the most recent
29 three years of data, for each wave, those are broken up into
30 months, assuming uniform landings within a wave, and so, if the
31 two months are each thirty days, the landings are broken up 50
32 percent in one month and 50 percent in the other. If there are
33 more days in one month versus the other, it's allocated
34 proportionally.
35
36 This chart here shows the most recent three years of landings by
37 wave, as well as the predicted future landings that were used to
38 predict the closure. For the chart, we have landings in the Y,
39 or left, axis, in pounds gutted weight. At the bottom, or the
40 X, axis, we had each two-month wave period, January/February,
41 March/April, and the blue line represents 2017. The green line
42 represents 2018, and the black line represents 2019.
43
44 The dashed-red line represents the predicted future landings,
45 just taking the average of those waves between the three years,
46 and you can see there's a pretty high seasonal component to
47 landings in the fishery, and so landings generally increase in
48 early spring, or late spring/early summer, and so May/June is

the wave with the highest, and there are still some high
landings in late summer or early fall, and then it tapers off
later into the fall. The predicted landings here are what were
used to predict the closure date, and so that's the red-dashed
line.

Taking that red line, you can just, once again, sum the landings
over time, by producing that monthly catch rate into a daily
catch rate, and so this figure is similar to the previous. We
have landings on the Y-axis and months on the X, or bottom,
axis. Starting in January, you get the cumulative landings over
time, which is the solid-red line, and you can use that red line
and compare it to the different ACT values that are currently in
Amendment 53 to get a predicted closure date. There are some
dashed lines here to represent uncertainty, just by taking the
variation between the years from the waves.

You can see that the landings -- You can just add them up over
time and get that three-year average of landings, annual
landings, which is almost 1.8 million pounds.

By comparing those cumulative landings to the different ACTs
that are in Amendment 53, this table here has the ACTs in the
far-left column, just sorted from smallest to largest. Some of
these ACT values are in there for multiple combinations of
alternatives from Action 1 and Action 2. For instance, the same
buffer is in multiple alternatives for alternatives in Action 2,
but the commercial buffer may be different, for instance.

You can see, for the smallest ACT of 1.07 million pounds, the
fishery has a predicted closure date in late July. For most of
the ACTs in there, at around 1.6 million pounds, it's early to
mid-November, and then, for 1.93 million pounds, there's no
closure predicted, and the predicted annual landings are about
1.8 million pounds.

I just thought I would -- Once the amendment comes into effect,
we would likely have some waves, through whatever year it was in
effect, to be able to update certain waves of landings, and so,
for instance, if it was already say September, we would likely
have maybe Waves 1 or 2 or 3 from that year, and so we would
only need to project using Waves 4, 5, and 6 for a closure date
in the fishery. That's all I have. I will take any questions,
and, once again, thank you for the opportunity to present.

CHAIRMAN POWERS: Thank you. It's clear that all those graphs
change when you change the estimate, and this is something that
I guess we'll get into more tomorrow too, when we talk about

115

specifics, but it seems that this calibration process really gets initiated through the assessment. In other words, the assessment makes some judgement about what the best catch estimates are, essentially, and then, of course, that will get reviewed by the SSC.

The assessment generates the management criteria, ACL and ACT and so on, and that would be in whatever units that are in the assessment, and then, therefore, the management and the allocations should go accordingly, but the problem is this transition, and, at this point, I'm not sure what could be done, other than move through the assessment process, and, again, that's going to take some time. Were there any other comments about that? Harry.

MR. BLANCHET: Thank you. I may have missed it, because I stepped out at a critical point, but, on the first slide, on the first bullet, you have something about the red grouper ACT being tracked using the CHTS equivalents, and you show numbers through 2019, and so is this basically a model estimate, going back through the ratios between the CHTS and the FES?

MR. PULVER: I may not be the expert on this, and so I know that the MRIP CHTS and FES were conducted side-by-side, I believe from 2015 through 2017, and so, since 2017, the CHTS survey has not been in place, and so those estimates of landings are from the FES survey, and I would have to defer to John Foster or someone else from S&T on how exactly those landings are calculated from the FES survey, but, yes, those landings also include headboat and charter estimates and LA Creel and Texas, which wouldn't change between the two files, but the CHTS, I believe, for 2018 and 2019, is calculated from the FES.

MR. FOSTER: As Jay Breidt mentioned in the FES-CHTS calibration presentation, the calibration model is constructed so that it can work in both directions, and so we are able to produce the, and we typically call them CHTS-like estimates, by running the calibration model forward in time, instead of its original intent, which was to produce the calibration going back for the historic series, and so that -- We do produce those estimates, and we provide them to the Center, I believe, but that's, I believe, what those reference.

MR. PULVER: Yes, that is correct.

CHAIRMAN POWERS: I guess I have misconstrued something. Looking at the same figure then, the -- One of those columns is in FES units, and are both of them in FES units?

1
2 **MR. PULVER:** In this slide here, this is just the CHTS, and the
3 next slide has landings in both units on there, and so it's not
4 broken up by mode, and so it does include headboat and charter
5 in there. I can tell you, for red grouper, typically, at least
6 for the private landings, they're more than half of the overall
7 landings, I think about 60 percent.
8
9 **CHAIRMAN POWERS:** I guess what is the solution? Is the solution
10 to use the CHTS estimates and compare that to the ACT or to use
11 the FES landings and adjust the ACT?
12
13 **MR. PULVER:** In this case, the current ACT is being monitored
14 with MRIP CHTS. As you recall, earlier, Ryan showed the ACL
15 monitoring page, where, for instance, red grouper was tracked
16 using MRFSS prior to 2015, and so, once the ACLs and ACTs from
17 SEDAR 42 went into effect, these were in CHTS, and that's the
18 currency, per se, that the ACL and ACT are tracked in, and, so,
19 once this Amendment 53 goes final, that's when the FES landings
20 would be used to monitor against the quota, and so, currently,
21 it is the CHTS.
22
23 **CHAIRMAN POWERS:** Well, this is kind of what I was alluding to
24 before. I mean, the ideal way is to start through the whole
25 assessment process and put everything back on the same scale,
26 and it just seems obvious that, if you're going to use the CHTS
27 landings, then that should be compared to the ACT that we had
28 before, or vice versa. If you use the FES landings, then you
29 have to adjust the ACT, and I'm not sure that it -- Neither of
30 which is a very palatable sort of solution, but it's a short-
31 term solution.
32
33 **MR. RINDONE:** Just going back to something that Jeff had said,
34 that Amendment 53 to the Gulf Council's Reef Fish Fishery
35 Management Plan is considering changing the currency for --
36 Well, the fact is it would change the currency for red grouper,
37 based on the SSC's recommendations for OFL and ABC, and those
38 values are what is shown there, and, again, just to caveat for
39 red grouper specifically, based on the red tide analyses and the
40 interim analyses that followed SEDAR 61, the SSC decided to
41 reduce their recommendation for what the council should consider
42 for an ACL considerably from what the ACL status quo was,
43 because of the estimates of the severity of the 2018 red tide,
44 and so that is one thing that makes at least the numbers that
45 you see different than they may be for another species, just in
46 terms of magnitude, but the underlying principles remain the
47 same, as far as how the entire process works to calibration the
48 CHTS landings into the FES currency.

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1
2 As Mr. Foster had talked about, that process can work forwards
3 and backwards, and so, for the species that are currently being
4 monitored under CHTS, those landings are being collected in FES,
5 and then the model is being used essentially in reverse, to
6 generate those CHTS-like estimates that are then used to
7 determine whether or not the quota has been met.
8
9 **CHAIRMAN POWERS:** Okay. I suppose that's -- Then it's with the
10 existing ACT. Shannon.
11
12 **DR. CALAY:** My comment is probably not timely anymore, but, when
13 you initially spoke about kind of the short term at least
14 paradigm, we have a white paper that we have provided the SSC a
15 few times, and, right now, the guidance is to do the stock
16 assessments in FES units, and that's what we have done.
17
18 **CHAIRMAN POWERS:** Thank you. Harry.
19
20 **MR. BLANCHET:** This is a good example where we have a model that
21 we're using, and several people have said earlier that there's
22 really two main components to this model. One is the gatekeeper
23 and the other is the cellphone adjustment, and, while the
24 gatekeeper might be a relatively stable thing, as we're moving
25 forward in time, we're assuming that that projection is going to
26 be able to capture that change in that cellphone component as
27 well, and so, the further we get away from that point where we
28 have both sets of data, the more tenuous we are going to be with
29 those relationships.
30
31 I recognize that they're doing everything they can to capture
32 that using that initiative survey, but it's still -- There's an
33 awful lot of translation error that is potentially, if you get
34 further down the road -- If we're still using the CHTS-type
35 landings four or five years from now, to me, that's a lot more
36 tenuous than turning it into something that we are actually
37 sampling, instead of having to use a translation.
38
39 **CHAIRMAN POWERS:** Thank you.
40
41 **MR. PULVER:** I can see Harry has expressed some concerns about
42 the further down the road that the CHTS estimating will get a
43 little more difficult over time, and I would let John Foster
44 chime in, if he's still on, about that.
45
46 **MR. FOSTER:** Sure. Thanks, Jeff. I was going to, but I would
47 agree with Harry's comments on that. Just to maybe clarify,
48 that wireless proportion of households that are wireless only,

1 or wireless mostly, coming from the National Health Interview
2 Survey, that is still ongoing, and those estimates are still
3 available, and so we do include them every time they come out
4 with -- Again, it's twice a year, and there is also delay in
5 when they release those, but, whenever the new estimate is
6 available, we do incorporate it into the model, but I wholly
7 agree with Harry that, the further away we get from the overlap
8 years, certainly, speaking personally, the more uncertain I
9 would be about using those, but, again, just to make sure that
10 everyone understands that we continue to feed in those wireless
11 estimates as they become available into the calibration model.
12
13 **CHAIRMAN POWERS:** Thank you, but I think, along those lines, I
14 think the first priority with the calibration was to kind of
15 recreate the past, or put it on the same scale as the present,
16 and less so about the future, but, nevertheless, that's what we
17 have. Any other comments? Doug.
18
19 **MR. GREGORY:** Thank you. What I wanted to say is I hope, within
20 the next three years, we will have made the transition, and
21 everything will be in FES, and we won't have to worry about
22 converting back and forth. Now, it seems like things are
23 slowing down, and so we may not get there in three years, but
24 the major populations, or stock assessments, that we're doing,
25 we should be fully converted and not have to worry about running
26 the model backwards to get CHTS data from an FES collection.
27
28 **CHAIRMAN POWERS:** Well, running it backwards, you think of it
29 the other way. It's converting the historical CHTS into the FES
30 scale, and, once that's done, hopefully you don't change it, if
31 you're working just into the future.
32
33 **MR. GREGORY:** When I said backwards, I meant converting FES to
34 CHTS in the future, which we should very little need to do that.
35
36 **CHAIRMAN POWERS:** Neither need nor desire. Paul.
37
38 **DR. SAMMARCO:** Thank you, Mr. Chairman. Just a very quick
39 comment, and I agree with the last comment that, looking
40 forward, FES is probably the appropriate tool to use. CHTS was
41 a great tool in its day, and it has since -- It has been flung
42 by the wayside, and probably more heavy reliance on FES will
43 prove to be more fruitful. That's just a comment, and I agree
44 with the last comment. Thank you.
45
46 **CHAIRMAN POWERS:** Thank you. All right. We have one more
47 presentation, and I believe that Ryan was giving it.
48

1   **MR. RINDONE:** I am.

2

3   **CHAIRMAN POWERS:** Okay.

4

5   **CALIBRATION OF HISTORICAL LANDINGS DATA AND EFFECTS ON SECTOR
6   ALLOCATIONS**

7

8   **MR. RINDONE:**   All right, and so this is about how the
9   calibrations may affect sector allocations, and I want to thank
10 Dr. Skyler Sagarese for letting me plunder and loot her red
11 grouper presentations to put pieces of this together.

12

13 Under our status quo allocation scenario for red grouper, this
14 is established under Reef Fish Amendment 30B, and it based the
15 commercial and recreational allocations on the average landings
16 from 1986 to 2005, and this was using MRFSS data from SEDAR 12
17 in 2005, and it was finished in 2006, and so 2005 was the
18 terminal year of data used in that model, and that gave us the
19 current recreational and commercial allocations for red grouper
20 of 76 percent commercial and 24 percent recreational.

21

22 SEDAR 42, which I think was 2015, and they all run together
23 after a while, and I think I started at SEDAR 22, and now we're
24 at SEDAR 75, but SEDAR 42 used the Coastal Household Telephone
25 Survey version of MRIP, as adjusted for APAIS, and which, of
26 course, is no longer supported, and SEDAR 61, the most recent
27 standard assessment of red grouper, updated red grouper to FES,
28 and these include FES-calibrated landings back through 1981 and
29 show a large proportion of the total landings coming from the
30 private recreational sector.

31

32 You can see the cover page there to the paper to which Shannon
33 alluded, and it's been provided to the SSC a few times, and this
34 is the one that talks about the use of FES data for stock
35 assessments as best available science at present, as we continue
36 to evaluate other available data sources over time and consider
37 their inclusion also.

38

39 Here, we're looking at a couple of plots.   In the upper-left-
40 hand side is the data from SEDAR 42, showing the charter fleet
41 in blue, the private fleet, private boat fleet, in gray, the
42 shore mode is going to be in yellow, and headboats are in red,
43 and this is just recreational landings in thousands of fish,
44 from about 1981 through about 2014, which would have been the
45 terminal year for SEDAR 42.

46

47 Then, if we go down to the lower left, we can see a definite
48 signal from the institution of the eighteen-inch total length

1 minimum size limit, which shows up in the data, and that was in
2 1990, I believe, is when that came into effect, and you can see
3 the increase in scale there of the private recreational landings
4 compared to everything else, and so the charter and the headboat
5 landings go up a little bit in the early part of the time
6 series, but, really, the greatest increase in signal that we see
7 is from the private vessels.
8
9 Then, if you look over to the right-hand side of the slide, you
10 can see the stacked bar plots essentially showing you the same
11 information, showing you the proportion of the total
12 recreational sector's landings attributable to each mode, and,
13 again, blue is charter, gray is private, yellow is shore, and
14 red is headboat.
15
16 When we're comparing these landings, we used a single fleet, a
17 single combined recreational fleet, for SEDAR 42, and you can
18 see the difference on the left-hand plot there in the magnitude
19 of the landings in thousands of fish for the combined
20 recreational fleet between the SEDAR 42 estimate, using CHTS,
21 and SEDAR 61, using FES.
22
23 Then, borrowed from a previous Foster and Co. Presentation on
24 the MRIP calibrations, you can see the difference in magnitude
25 illustrated for private boat effort between the mail survey and
26 considering the wireless effect and just how we would expect,
27 moving from CHTS to FES, to see an increase in the landings,
28 especially for the private fleet.
29
30 When we're comparing these landings from what came out of SEDAR
31 12, versus what we're using today, this stacked bar plot shows
32 you pounds gutted weight for all the red grouper landings,
33 commercial and recreational, as were used in Amendment 30B to
34 determine the allocations, and so it's pretty clear here that
35 commercial is running the show, as far as who was landing the
36 most fish during that time period prior to there being sector
37 allocations. I will encourage you to pay attention to the scale
38 of these landings on the Y-axis, in pounds gutted weight.
39
40 This slide shows the same data for the same time period, using
41 the SERO ACL monitoring dataset, which uses the FES data from
42 MRIP and the commercial logbooks, and not commercial IFQ.
43 Sorry. That's a typo. That's as of May 2020, but, again, we
44 see the scale on the Y-axis has increased, and a larger number
45 of fish are thought to have been landed, or estimated to have
46 been landed, and we also see the proportion of fish landed by
47 the recreational sector has increased, in some years
48 considerably so.

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1
2 The other consideration here has to do with discards, and the
3 number of recreational discards increases considerably between
4 SEDAR 42 and SEDAR 61, and this shows discards in thousands of
5 fish, with the red line being the SEDAR 61 estimates, and the
6 SEDAR 42 is shown in the dashed blue, and is worth noting that
7 estimates of discards are one of the most uncertain things that
8 are put into the model, and so not to say consider it with only
9 a grain of salt, but just to bear that in mind.
10
11 Why are the discards of this important? Most of this has to do
12 with the fact that the recreational fleet is selecting for
13 smaller fish, on the whole, than the commercial fleet, and so
14 you can see the recreational fleet selectivity by length in the
15 blue line, and then the red lines characterize the commercial
16 vertical line, longline, and the historical trap data for the
17 size of the fish that those commercial fleets select for, all
18 notably larger.
19
20 At present, the red grouper stock is skewed towards the smaller
21 side of its size spectrum, and so there are more smaller fish
22 than there are larger fish, as is true with many of our species
23 that we manage in the Gulf, especially those that are managed
24 with size limits, and, in the case of red grouper though, for
25 the sake of this, the recreational fleet is selecting knife
26 edge, just about, at the minimum size limit, but it's
27 discarding, still, a large proportion of fish that occur under
28 that size limit, and so they're selecting a larger proportion of
29 smaller fish, and this increases discards from what is
30 essentially the bulk of the biomass.
31
32 What does this all come out to? The SSC, in September, looked
33 at the model results from SEDAR 61, which used FES, and, based
34 on the current status quo allocation of 76 percent commercial
35 and 24 percent recreational, it had recommended an OFL of 5.3
36 million pounds and an ABC of 4.9 million pounds, and you can see
37 the probability of overfishing shown there on the right-hand
38 side, and, obviously, these considered the 2018 red tide event
39 and considered it to be commensurate in magnitude and severity
40 with the 2005 red tide event on the west coast of Florida.
41
42 When we go back and we're thinking about how would these FES
43 data, if we were to apply them to our previous allocation
44 equation which was to use the average landings from 1986 to
45 2005, what is that going to do for the allocations, and so this
46 is one of the things that Amendment 53 is examining, and one of
47 the decisions that the council is going to have to make is to
48 decide which year range to use when determining what the

1 allocation is going to be.
2
3 If the council were to do nothing, the biomass that is thought
4 to have increased as attributable to the recreational fleet,
5 based on a larger number of fish landed historically, and
6 therefore a larger proportion of landings, and, if no
7 reallocation occurs, then credit for that would go towards the
8 commercial sector, as opposed to the recreational sector, from
9 whence it's presumed to have come.
10
11 We see the options in the table there, and the status quo time
12 period, using FES data, would result in 59.3 percent commercial
13 and 40 percent recreational, and then, if we looked at just the
14 pre-IFQ time series, it's marginally higher, and it's marginally
15 lower if we look at the entirety of the time series that we had
16 available at the time when we had done this analysis.
17
18 These are similar, but they do have some differences, which will
19 bring us back to our conversation about discards and
20 selectivity. This shows the difference in the OFL. This table
21 shows the OFL and ABC and the rest of the catch limits as they
22 relate to each of those options against the unadjusted MRFSS
23 status quo allocation of 76/24 against everything else.
24
25 The first thing that you should notice is that, the larger
26 percentage of the ACL that's ultimately allocated towards the
27 recreational sector, it seems that the lower the catch limits
28 for everybody tend to trend, comparatively anyway, and so the
29 question here then becomes why?
30
31 This gets us back to this selectivity slide here, and it's
32 because, as you allocate more of the harvest towards the
33 recreational sector, the presumption is that there's going to be
34 more discards as well, and the recreational sector is selecting
35 for this proportion of the fleet, or this proportion of the
36 stock, this smaller length composition of the stock, compared to
37 the commercial fleet, and, because of where the minimum size
38 limit occurs, the presumption is that there's going to be a
39 large number of discards associated there also, and, if you
40 remember the increase in the discards estimated between SEDAR 42
41 and SEDAR 61, it was considerable.
42
43 Regardless of the proportion of discard mortality that you
44 apply, some increase in mortality is going to be presumed there,
45 just by a factor of the portion of the stock that's being
46 selected by this fleet.
47
48 The last bit about all of this has to do with how this affects

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the IFQ program, and so FES results in an increase in the estimate of historical biomass, because it's presuming that the recreational fleet has been catching more fish than was previously estimated under CHTS or MRFSS, and, without reallocation, the commercial ACL, or quota, depending on the stock, and it's just the various terminology, is going to increase, and that increase won't be attributable to any difference in the commercial landings, but rather it's attributable to an increase in the estimate of the recreational landings, which is why the council is taking up the action they are in Amendment 53.

With FES and the status quo allocation formula, the commercial ACL and quota would remain largely unchanged, and the pounds are the same, but the portion of the stock that's attributable to the commercial sector, or allocated to them, is proportionally less, but it's not that they're getting fewer fish. Deviating from the status quo allocation formula though is going to have different results, as we saw in those tables. That should be it.

CHAIRMAN POWERS: These allocations are totally within the bailiwick of the council, and they don't have to be on the basis of historical catches, but quite often they are, and for good reasons, because it's what people are used to, and therefore it's -- I mean, it's what the fishermen are used to, and so any major shifts in allocations could cause a management problem.

I think it really is important that these be revisited through Amendment 53, because there are ramifications of it, and reallocation -- Well, it basically ends up as reallocation, in terms of impacts, and that can be very important. I think Doug Gregory.

MR. GREGORY: Thank you. Two points, and one is minor. The size limit back then, in 1989, was eighteen inches in state waters, but the council implemented a twenty-inch size limit, and the other thing that still concerns me is that big increase in estimated landings in 1989.

You do not see that increase in past stock assessments, and I just recently went back to the 2009 stock assessment, SEDAR 12, and what you do see is high landings prior to 1990, and then, after the implementation of the twenty-inch size limit, the landings went down, but there is no spike in 1989, and so I really think the Center or somebody should look into that and find out where that spike is coming from. Thank you.

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1 **CHAIRMAN POWERS:** Thank you. Anybody want to bite on that or
2 take it as a recommendation or a thought recommendation? What
3 we're leading to is kind of what people knew ahead of time, is
4 that this calibration has some real significance in the
5 assessment process and the management process, and so, the
6 quicker that we can come to a resolution, the better, but it
7 seems also that that resolution is more or less on a stock-by-
8 stock basis, and, tomorrow, we'll get into some details of two
9 particular stocks and how that might be approached. Is there
10 further discussion? I am finding people running out of gas, and
11 I believe we're at the end of today's agenda, and is that
12 correct?
13
14 **MR. RINDONE:** That's correct. If you wanted to adjourn here, we
15 could pick up tomorrow with the case studies.
16
17 **CHAIRMAN POWERS:** Yes, it would seem to be a convenient place,
18 and, like I said, the case studies get into some details about
19 how this is going to work, and so one of the things, when we
20 reconvene at 8:30 tomorrow morning and listen to the king
21 mackerel and gray snapper activities that are done at the SEFSC,
22 then also start thinking of what kinds of recommendations or
23 general comments we want to make to the council to provide some
24 guidance to them, and then, if you look at the agenda for
25 tomorrow too, establish approaches for the use of FES
26 assessments for unassessed species, and it's kind of like the
27 data-poor sorts of approaches would also have to be dealt with,
28 in terms of a different scale.
29
30 With that guidance, I don't think we're gaining anything by
31 trying to continue on today, and so let's adjourn for the
32 evening, or afternoon, and reconvene tomorrow morning at the
33 specified time, which was 8:30 Eastern Daylight Time. All
34 right. With that, then let's adjourn.
35
36 (Whereupon, the meeting recessed on July 8, 2020.)
37
38   - - -
39
40   July 9, 2020
41
42   THURSDAY MORNING SESSION
43
44   - - -
45
46 The Meeting of the Gulf of Mexico Fishery Management Council
47 Standing and Special Reef Fish, Mackerel, Ecosystem, and
48 Socioeconomic Scientific and Statistical Committees reconvened

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1 via webinar on Thursday morning, July 9, 2020, and was called to
2 order by Chairman Joe Powers.
3
4 **CHAIRMAN POWERS:** Good morning. Yesterday, we went through a
5 very elaborate and helpful discussion and presentations of how
6 the actual estimates of the recreational, particularly private
7 boat, catches are made, and, through that process, we talked
8 about revisions in the effort estimates that were done through
9 that and also the changes in the sampling at the sites and the
10 mechanisms for adjusting historical effort and catch rates.
11
12 Now we're bringing it around to actually how it's implemented in
13 a particular example, assessments, and then carry that forward
14 into what that means in terms of catch projections and typical
15 sorts of management advice, and so, in the agenda here, we have
16 basically presentations for the actual estimation of the catches
17 and so on, and this is the one that was in the agenda that's
18 titled Gulf of Mexico Fishery Management Migratory Group King
19 Mackerel and Gray Snapper. Ryan, you just mentioned that there
20 was a revised presentation that is just being sent out now?
21
22 **MR. RINDONE:** Yes, and so John Foster had indicated that there
23 was a small typo on one of the slides, and so he had just wanted
24 that swapped out, and so I think Bernie has taken care of that
25 at this point.
26
27 **CHAIRMAN POWERS:** Okay. I wasn't sure -- Okay. That's the
28 first one then, correct?
29
30 **MR. RINDONE:** Yes.
31
32 **CHAIRMAN POWERS:** Okay. All right. Then let's start then with
33 the broad overview of how this relates to the two examples of
34 Gulf group king mackerel and Gulf gray snapper, and so, John, if
35 you will take over and make that presentation.
36
37   **CASE STUDIES**
38   **GULF OF MEXICO MIGRATORY GROUP KING MACKEREL AND GRAY SNAPPER**
39
40 **MR. FOSTER:** Again, thanks very much for the time to present
41 here, and we'll go through two case studies here on both king
42 mackerel and gray snapper, and the information that I will be
43 presenting, again, is on the estimate changes.
44
45 We will look at trends in both the landings and releases, and,
46 essentially, I will be presenting three series in all of this
47 information, what we'll label as base, which are the
48 uncalibrated, or pre-calibration estimates, and the ACAL series

1   will be estimates that have been calibrated for the APAIS design
2   change only, and then the FCAL series will be those that are
3   fully calibrated for both APAIS and the FES design changes, and
4   we will be looking at 1981 through 2017.
5
6   Again, we'll look at the trends over time, and we'll look also
7   at change ratios, sort of end into time blocks, for both the two
8   species, but then also see how they relate sort of in the larger
9   context of all of the changes for all species, as well as with
10 some effort information in there for shore and private boat
11 changes, and then we'll dig into some example point estimates
12 that sort of illustrate the drivers for some of these changes,
13 and, in particular, sort of in the outlier type, or large
14 change, situations.
15
16 Staring with king mackerel, here we have two panels on the top,
17 and we have total landings for the Gulf, and, again, in this
18 case, this is Louisiana through the Gulf coast of Florida, and
19 the green series represents the FCAL, the fully calibrated for
20 FES and APAIS design changes. The red series is the ACAL, and
21 that's just the APAIS design change calibration applied, and
22 then the blue, or sort of purple, is the base series, the pre-
23 calibrated estimates.
24
25 As you can see, in the top panel is landings, total landings in
26 numbers of fish, and, again, we can see the effect of primarily
27 the FES calibration showing up in the green line, and it has
28 created a systematic increase over time, throughout the whole
29 range, and the red and the blue series there are much closer
30 together, by comparison, although there are some points that
31 diverge, but, again, if we index these series to their
32 individual means, we can see, in the bottom panel then, that,
33 overall, the trends really don't diverge that much between these
34 series, even with the large scalar change in there related to
35 the FES.
36
37 Again, you can see that all three of the series are generally
38 much closer, in terms of their relative year-to-year changes and
39 overall relative trends, once we index them. Now, there are, of
40 course, some differences, and one of them, in particular, is an
41 example we'll look at back there in this earlier part of the
42 time series, and that's the 1982, where there is actually a
43 reduction overall from the original estimate, and then one of
44 the other points we'll look at is this increase here in 2009,
45 again, in the landings.
46
47 That is landings, and, again, the take-home is that, while the
48 scalar is there, with the increase overall, the relative trends

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1 generally still match up well. When we look at releases for
2 king mackerel, again, it's a very similar story. The scalar is
3 there, and, when we look at the absolute numbers, of course, we
4 see the big increase that we're all aware of, but, again, once
5 they are indexed to look at sort of the relative changes and
6 trends, they are still lining up reasonably well, with some
7 individual changes, differences. Now, to put sort of the
8 changes for Gulf --
9
10 **MR. RINDONE:** John, can you go back one slide? I wanted to just
11 interrupt for a second, if I could. The second-to-last
12 datapoint, is that 2014, perhaps?
13
14 **MR. FOSTER:** The point I've got the cursor over?
15
16 **MR. RINDONE:** Yes.
17
18 **MR. FOSTER:** This would be 2016.
19
20 **MR. RINDONE:** The reason why I ask is, in 2014, the Gulf
21 kingfish landings for the recreational sector were considerably
22 higher, like almost 60 or 70 percent higher, than they were in
23 the previous three years, and the just about subsequent three-
24 year running average for those, and so can you go back to the
25 landings again, one slide back?
26
27 **MR. FOSTER:** Sure.
28
29 **MR. RINDONE:** I just don't see that spike there anymore, and so
30 it's just curious that that showed up in the landings data at
31 that time, but it doesn't appear to exist anymore. I guess
32 maybe this touches on a little bit about what we talked about
33 yesterday with constant QA/QC of the data and how some of these
34 things can change over time, as the data are examined further.
35
36 **MR. FOSTER:** Okay, and I can certainly follow-up on that. That
37 just wasn't a point that had jumped out here, but we can
38 certainly explore that one and follow-up with the committee.
39
40 **MR. RINDONE:** All right. Thanks.
41
42 **DR. TOLAN:** I just wanted to interject on the point that Ryan
43 brought up, and I was just curious. Ryan, are you talking about
44 commercial or recreational landings, and are we showing all
45 landings, or have those been split out, because I know what
46 you're talking about, that 2014 increase, and I don't see it.
47
48 **MR. RINDONE:** This was just recreational landings that had that

spike. Commercial landings have been at or just above the commercial ACL, and the commercial sector for kingfish closes when NMFS closes it, and there is, obviously, some estimation error about exactly when all those trips will come in and what the final weights will be, and so sometimes it's a few percent over on the commercial side, but the recreational side for kingfish hasn't caught its quota in over twenty years, and, typically, it's around 40 percent of its ACL.

In 2014 though, there was a peculiar spike, and there is quite a bit of that effort that occurs in the northern Gulf, and so I was just curious why there is -- It seemed like there was no signal at all there for those data, and so I guess it would be interesting to see what the other states show also.

DR. TOLAN: Sure. Sorry to hijack your talk.

MR. RINDONE: No, absolutely, and that's what this is for, and it's good discussion.

MR. FOSTER: Sure, and, Ryan, I guess, on that, specifically what you were looking at, were those landings in numbers or in weight, pounds?

MR. RINDONE: They're numbers converted to weight, and so they were originally published, at least for us to see, on the SERO ACL monitoring webpage, and then, when we get the official landings reports from SERO at the council meetings, they showed up there as well, and, again, that total for Gulf-wide, I am interested to see where that signal pops up, if it continues to pop up, because it was kind of peculiar to, obviously, members of the SSC, but the council also, why there was this sudden spike in kingfish landings that didn't occur the following year or the year after that, despite even an increase in the bag limit for recreational kingfish in the Gulf from two to three.

MR. FOSTER: Okay, and so I apologize that I don't have information on the estimates in weight here, in this presentation, but we can look to see if something -- If that might have been where that large increase came from, if it wasn't so much from the landings in numbers estimate as it was on the weight side.

CHAIRMAN POWERS: The other explanation would be that perhaps north Florida contributed to that spike.

MR. FOSTER: Okay.

1 **CHAIRMAN POWERS:** Because this is just Louisiana.
2
3 **MR. FOSTER:** I should remove that label. That was to remind me
4 that I had two series of these plots, one with and one without
5 Louisiana included, and they were very minor differences. This
6 includes Louisiana, but it is not just Louisiana. I'm sorry,
7 but this is Gulf-wide. I apologize for that confusion.
8
9 **MR. BLANCHET:** I have been trying to figure out how we landed
10 that many fish in Louisiana, and I could not come up with it.
11
12 **MR. RINDONE:** Harry, what are you guys doing over there? Well,
13 I think that echoes that point a little bit more then, about
14 what happened to that spike, and that is a good point, John,
15 about the difference between numbers and pounds.
16
17 I think though that, at least based on the data that we've seen
18 in the past, the average weight of kingfish, while it certainly
19 can vary year-to-year, it would have had to have gone up quite a
20 bit for the increase that we saw, which seems improbable, given
21 the rest of the time series.
22
23 **MR. FOSTER:** Sure, and, again, we'll look into that. I don't --
24 I am not sure, from this information, just what have might have
25 gone on there.   In what we're seeing here, it's not a
26 particularly unusual point, and so I will need to dig in, or
27 we'll need to dig in, further on that and follow-up.
28
29 **CHAIRMAN POWERS:** Just to make clear, for future slides that
30 you're going to be showing, when it says, "minus LA", that means
31 without Louisiana?
32
33 **MR. FOSTER:** No, and it means it's just -- It's not a minus, and
34 it's a dash, and it includes Louisiana, but I can certainly, I
35 think, just very quickly -- Again, I apologize for the
36 confusion.
37
38 **CHAIRMAN POWERS:** Okay, and so, basically, just ignore that LA
39 thing.
40
41 **MR. FOSTER:** Yes.
42
43 **CHAIRMAN POWERS:** All right. Thank you.
44
45 **MR. FOSTER:** It will be in a couple of other slides, and I
46 apologize, but, yes, these do include the Louisiana estimates,
47 where we have them.
48

1 **CHAIRMAN POWERS:** Okay. Let's proceed.
2
3 **MR. FOSTER:** Okay. Shifting gears a little bit now, from the
4 trends to looking at change ratios, and what I am showing here -
5 - Again, the first plot here is of all of the Gulf-region-wide
6 annual landings change ratios across all species for the year
7 ranges that you see here, 1981 to 1992, 1993 to 2003, 2004 to
8 2012, and 2013 through 2017, and, again, this is just to give
9 some context for how -- I will be bringing in the king mackerel
10 change ratios next, and so just to see how they compare to
11 everything, and these ratios are, again, for landings, total
12 annual landings, and they are comparing FCAL to base, or the
13 original, and so these are the fully-calibrated estimates being
14 compared to the base.
15
16 Again, as you can see, they are generally centered around two,
17 and so a two-times increase from the original estimates to the
18 fully-calibrated estimates, but, of course, they have a long
19 tail, which would reflect the sort of larger increases that we
20 see with the shore effort changes.
21
22 Again, these are all species, and these are the king mackerel
23 ratios, and so, in general, they fall sort of within the core
24 distributions of the overall changes we see, and there is a bit
25 of divergence there, but it's a wide range of species, and there
26 is a lot of complexity in the data and individual distributions
27 of data across the years, but, basically, what we're seeing is
28 that they're in line with the bulk of the distribution, and
29 they're not somewhere out in the tails here, and so, generally,
30 they're in line with what we've seen across-the-board for other
31 species.
32
33 To give some sense of how these change ratios compare to the
34 effort change ratios, again for private boat and shore modes,
35 again, they are basically similar to the change ratio, the
36 average change ratio, for the private boat mode, much closer to
37 that than they are to the shore change ratios, and that makes
38 sense, because, again, the bulk of these landings are coming
39 from the boat modes and private boat mode.
40
41 That is for landings of king mackerel, the ratios of the fully-
42 calibrated estimates to the original base estimates. If we look
43 just at the ratios for only the APAIS calibration compared to
44 the base, or original, estimates, again, it's a fairly similar
45 story. The first thing to note, of course, is that these ratios
46 are much closer to one, and more centered around one, compared
47 to the fully-calibrated ratios, which were, again, centered more
48 around two.

1
2 The APAIS calibration, essentially, had variable effects. In
3 some cases, it was increasing catch rates, and in some cases it
4 was reducing catch rates, and it depended really on the specific
5 data distributions and any individual estimation cell, year,
6 wave, state, mode, areas fished, but, overall, again, king
7 mackerel is generally similar to the overall -- What we see
8 overall across all species, and so change ratios are much
9 smaller for the APAIS calibration, and they are variable,
10 meaning sometimes they result in increases and sometimes they
11 result in decreases, and king mackerel generally lines up with
12 what we've seen for other species.
13
14 Switching gears, this is still king mackerel, but now it's the
15 release, live release, estimates, switching from the landings,
16 and I have squeezed both panels here, because it's, again, very
17 similar results. The top panel is the fully-calibrated to the
18 base ratios, and, again, it's generally centered around two, a
19 little bit more than two.
20
21 When we look just at the ratios for the APAIS calibration,
22 calibrated estimates to the base calibrated estimates, again,
23 it's much closer, and it's centered around one. There are
24 variable adjustments up or down, and king mackerel is not that
25 different than what we see across all species.
26
27 Taking a look at some specific point estimates, and, again, I
28 apologize for not having that 2014 number for the landings, but
29 this is just to give sort of some examples of what can cause the
30 large changes, and so, for landings, we'll look at two points,
31 1982 and 2009, and then another two points, 1989 and 2016.
32
33 I am not going to go through all of these numbers, but just to
34 have them up here for reference, and so, starting with the 2009
35 landings estimate, which went from -- Originally, it was around
36 500,000 fish landed in numbers, again, for the Gulf, and it went
37 up to about 1.1 million, and so about a 600,000 increase, and,
38 in terms of sort of a percentage of that overall change, a
39 little more than a quarter of it was the result of the APAIS
40 calibration, and the remaining almost three-quarters came from
41 the FES calibration.
42
43 When we dig in to look at where the bulk of this change came
44 from, it was primarily from the Florida Gulf coast private boat
45 and shore estimates. Of the little over 600,000 fish, they
46 account for more than two-thirds of that overall change.
47
48 One thing to look at to sort of see the effect of the FES

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1 calibration is to look at the difference between the estimates
2 after they have been calibrated for the APAIS change and then
3 the full calibration, which includes both, and so, when we look
4 at those ratios, we see that the landings change ratios and the
5 effort change ratios are pretty similar. They are generally
6 roughly around two, and so just to sort of demonstrate that that
7 change in effort and the change in landings, again, are similar
8 there.
9
10 The change related to APAIS, that can be more variable as to
11 what the cause is, and, in this case, the change was related to
12 the area fished variable, and so, again, because that variable
13 was included as one of the raking variables in the APAIS
14 calibration, we can see that being a driver for some of the
15 changes, again, that come in with the APAIS calibration.
16
17 To sort of illustrate that, again, for our two cells here of
18 interest, we've got Florida private boat and Florida shore, and
19 then the information included in the panel -- We have the --
20 Well, starting with what the color-coding means, and so the blue
21 bars correspond to inland area fished, and the red bars
22 correspond to the combined ocean areas, and so state territorial
23 seas as well as EEZ offshore waters all combined.
24
25 Originally, in the data, prior to the calibration, the inshore
26 trips in the data accounted for a little more than 60 percent of
27 the data in the private boat mode for 2009, and the combined
28 ocean areas were, again, about 37 percent.
29
30 After the raking calibration for the APAIS, that adjusted those
31 percentages. It lowered the percentage for the inland trips,
32 essentially downweighting the inland trips and upweighting the
33 ocean-area trips, and, in doing so, when we look at where the
34 king mackerel intercepts -- Their distribution, as expected, the
35 very large majority of those trips are in the ocean areas, and
36 so, in effect, what's happening here is that those trips are
37 being upweighted, whereas those inshore trips are being
38 downweighted, and, because the majority of the king mackerel
39 trips are, of course, in those ocean areas, that leads to an
40 increase in the catch rate for king mackerel.
41
42 Some of the driver for this area fished change -- Before the
43 APAIS design change in 2013, there was sort of much less
44 structured coverage across the full day, and there certainly was
45 some coverage, and I'm not saying that there wasn't, and
46 particularly in Florida, but it was less structured, and it was
47 essentially unweighted.
48

1 With the new design, everything was formally stratified, and the
2 weights could be calculated correctly, and what we saw was those
3 later day trips in particular, the later afternoon, tended to be
4 upweighted under the new design more than they had been, or,
5 said the other way, they were underrepresented in the old
6 intercept design, which was less structured and had less formal
7 protocols with relation to sampling during the day.
8
9 Those later-afternoon trips tended to be more ocean trips
10 relative to inland trips, and that's sort of the mechanism for
11 why the area fished distributions changed, and a similar result
12 for the shore mode. Again, under the old design, there were
13 more -- More of the weight went to the inland trips, whereas,
14 under the new design, there was a shift to upweighting the ocean
15 trips, and, again, this is shore, and so we're just talking
16 about that first ocean area, zero to three miles, but, again,
17 we're just talking about the Gulf-facing shore, as opposed to
18 bays and sounds and coastal rivers.
19
20 Again, a shift in the weight from the inland trips to the ocean
21 trips, and, of course, those ocean intercepts represent the
22 large majority of the trips with king mackerel, and so, in this
23 example, it was the area fished variable that contributed to the
24 changes that were contributed by the APAIS calibration.
25
26 In 1982, for king mackerel landings, and this is sort of an
27 unusual one, and it goes in the opposite direction, and so, in
28 this case, we see a reduction from the original estimate to the
29 fully-calibrated estimate, and that reduction is coming entirely
30 from the APAIS calibration result.
31
32 The FES calibration really only -- It only increases effort.
33 There aren't any cases where the FES calibration was reducing
34 effort, and so, in this case, the APAIS calibration is
35 offsetting that reduction and resulting in a net decrease in the
36 landings estimate, and, in this case, that cell is the Alabama
37 private boat mode.
38
39 To look at what causes that, in this case, it's not area fished.
40 It's coming from the angler resident type, and so, again, this
41 information that's collected by APAIS, it's where does the
42 angler live, in terms of their state and county, and that's all
43 that's asked for in the intercept survey, and, again, that is
44 used to account for the -- Under the old design, it was used to
45 account for trips by both state residents that didn't live in
46 coastal counties as well as out-of-state anglers.
47
48 When we look at the original data distribution, again, back in

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1 1982, and, in this case, it was Wave 5 in particular, September
2 and October, the original unweighted data back this far, about a
3 third of the trips were the instate coastal residents, and two-
4 thirds were instate non-coastal, and that is a very different
5 distribution than what we see under the new design, and even
6 under the old intercept design.
7
8 Again, back this far in time, the field procedures were much
9 less structured than they are now, certainly, and even under the
10 MRFSS intercept in later years, and they were just very unusual
11 distributions in the data going back that far, and so, when we
12 apply the APAIS raking calibration, we see a large shift, and
13 that gets us -- While it's striking here on the plot, it gets us
14 much more in line with what we see, again, certainly under the
15 new design, but even under the old intercept design for most of
16 the time series.
17
18 I apologize that I forgot to mention the coding here, and so the
19 blue bars represent the instate coastal resident trips, and the
20 red bars are the instate non-coastal residents, and so, again,
21 you see that, when we apply the calibration, the distribution of
22 the trips, or the sample weight associated with those trips,
23 shifted dramatically.
24
25 However, all of the king mackerel intercepts were, in this
26 particular case, were taken by non-coastal, instate non-coastal,
27 residents, and so, when this dramatic shift happened, it
28 essentially downweighted all of these trips, and so that would
29 reduce the catch rate for king mackerel considerably, and that
30 resulted in the large reduction in the estimate, which, in
31 general, that's certainly not typical. This one point estimate
32 result is not typical of what we see, but it can happen, and
33 this is one of the mechanisms for it. Those were the two king
34 mackerel landings points.
35
36 Shifting gears now to releases, and starting in a point in 2016,
37 and, in this case, again, we had a large increase in the
38 releases, going from about 194,000 fish up to 651,000 fish with
39 the fully-calibrated estimate.
40
41 Most of that overall change did come from the FES calibration,
42 about 95 percent of it, and only 5 percent from the APAIS, but,
43 to sort of illustrate another mechanism for these changes, I'm
44 going to focus on one cell, west Florida, in this case shore
45 mode, Wave 3 in 2016, which does account for over half of this
46 total change. In this particular case, the APAIS change is more
47 significant. It's about 20 percent of the overall change, with
48 the remaining 80 coming, again, from the FES.

135

1
2 When we look at what drove the APAIS calibration change here, in
3 this case, it's a little outside of the calibration itself, and
4 it's a result of a sample weight correction that we made.
5 Again, this is in 2014, and so this is after the new APAIS
6 design has already been put into place, and the reason for this
7 weight adjustment comes from the fact that, to increase our
8 productivity -- When we first introduced the APAIS in 2013, we
9 noticed large reductions, or reductions I will say, and they
10 varied from state to state, but reductions in the number of
11 intercepts that we were collecting per assignment.
12
13 We needed to get those numbers back up, but do it in a way that
14 we could account for statistically, and so one of the things we
15 did was looked at our sampling time intervals, and, again, we
16 had -- As I mentioned yesterday, we took the full twenty-four
17 hours of the day, and we had cut it up into six-hour sampling
18 time intervals that did not overlap, and they were exclusive
19 six-hour time intervals, but we saw that it would be very
20 helpful to have another interval that covered sort of the core
21 hours of fishing during the day.
22
23 We created what we called a peak time interval, and that ran
24 from roughly 11:00 a.m. to 5:00 p.m., and we overlaid that onto
25 the existing time intervals, but, in doing so, we had to make
26 some corrections to the sample weights to account for that
27 overlap, because now we didn't have true strata that did not
28 overlap, and we had -- We created this overlap time interval,
29 and, again, working with the consultants, we came up with the
30 correct way to fully account for this overlap, and, in doing so,
31 what it ended up doing was increasing -- This is just one
32 example for Florida shore in May/June, and so that's Wave 3 of
33 2016, and it increased the sample weights in the afternoon
34 hours, whereas it decreased the sample weights sort of in the
35 earlier part of this interval, and so from 11:00 to 1:00.
36
37 When we compare that change in the sample weights to the
38 distribution of the king mackerel intercepts, we can see that
39 there is a higher proportion in the time window that was
40 upweighted compared to a lower proportion of the king mackerel
41 intercepts in the proportion that was downweighted, and, again,
42 we're talking about releases here, and this weight correction
43 ended up driving the APAIS contribution to this increase in the
44 2016 estimate of king mackerel releases.
45
46 Now, shifting gears to the release estimate for 1989, again,
47 this comes primarily in the Florida shore mode, and this one is
48 fairly straightforward. The biggest cell contributing to the

1 change was, again, the west Florida shore mode.
2
3 Only 2 percent, a very minor increase, comes from the APAIS. 98
4 percent is coming from the FES, and, again, to show how those
5 line up, if we look at the change from ACAL to FCAL, in the
6 release estimate, that ratio is about 3.1. If we look at the
7 effort in the same cell, again, that change ratio is also very
8 close, at 3.2.
9
10 That is what I have for king mackerel. The next slides, similar
11 set of slides, are for gray snapper, and, again, I apologize. I
12 will update this presentation and send it, but just ignore this
13 part of the title. These are the Gulf-wide, excluding Texas,
14 Gulf-wide gray snapper total annual landings estimates, again,
15 in numbers of fish.
16
17 Here are the series, again, the absolute numbers. We see that
18 systematic increase for the fully-calibrated time series for
19 both the APAIS and the FES changes. When we look at just the
20 calibrated series for APAIS only, as well as the base series, we
21 see those are much closer together, but, again, if we index
22 them, the overall relative trends and the relative changes from
23 year to year are all still very similar across the full time
24 series, once we remove that scalar and just look on a relative
25 scale.
26
27 This is for landings, and, again, it's a similar story for the
28 releases, again, in numbers of fish. Absolute numbers are on
29 the top panel, the relative index series. On the bottom panel,
30 we still see, again, the relative changes are very similar, even
31 after making both of these calibrations.
32
33 Similar plots to what we saw for king mackerel, and, again, to
34 put the changes for gray snapper in the context of all of the
35 other species, and, again, overall, they're very much in line
36 with what we see for other species, when we look at either the
37 change from the base to the fully-calibrated estimates in the
38 top panel here or if we just look at the change from the base to
39 the APAIS-only calibrated estimates. They are still very much
40 in line with what we see for the other species.
41
42 Those were landings, and here are the same plots for releases,
43 again, for gray snapper. Basically, it's the same story. Gray
44 snapper is pretty much in line with what we see for all of the
45 other species.
46
47 Again, a few more points to look at as examples for what drives
48 the changes. For landings, we'll look at 1984 and 2012, and,

1 for releases, 2008 and 2017.
2
3 Starting with the landings, in 2012, the overall Gulf landings
4 went from about a million fish up to about four million fish,
5 and so about a three-million-fish change. About 87 percent of
6 that came from the FES calibration and 13 percent from the APAIS
7 calibration.
8
9 The majority of this total change, again, was from the west
10 Florida, or Gulf coast Florida, private boat mode, and that's
11 sort of a similar distribution between the contributions from
12 the two different calibrations.
13
14 To look at what drove the APAIS calibration component, again, it
15 was related to the area fished raking variable, and so a similar
16 setup. The blue bars are the inland trips, and the red bars are
17 the combined ocean area trips, and we see that, originally, the
18 inland trips were about 64 percent of the total trips, compared
19 to the ocean trips, which were roughly 35 percent, but that
20 narrowed, by about eight percentage points, and so a shift, an
21 upweighting of the ocean trips and a downweighting of the inland
22 trips.
23
24 Said another way, the inland trips had been overrepresented, and
25 the ocean trips had been underrepresented under the old design,
26 and then, when we look, again, at the distribution of the gray
27 snapper data, again, the majority of it, almost 62 percent, are
28 coming from the ocean areas, and so, again, as we shifted weight
29 to the ocean-area trips, that's going to upweight more of the
30 gray snapper data and result in an increase in the landings
31 estimates, again, related to the APAIS calibration component.
32
33 When we look at 1984, this is a simpler explanation. In this
34 case, it's almost entirely due to the FES calibration, and so it
35 went from about three-and-a-half-million fish landed to almost
36 9.7 million fish, a little over six-million-fish increase. Most
37 of that came from a single cell, the west Florida private boat
38 Wave 6, again, for the 1984 estimate.
39
40 Again, over two-thirds of the total change came from this one
41 cell, and this was driven entirely by the FES change. The
42 difference between the base and the ACAL is just a few thousand
43 fish, on an estimate of almost 1.8 million fish, and so, again,
44 the large driver here is the FES change, and you can see that
45 when we look at the change in the landings estimate. That ratio
46 is 3.4. When we look at the change in the effort estimate in
47 the same cell, that is also 3.4, and so, again, it's driven
48 entirely by the FES calibration, in this particular case.

1
2 When we look at the 2017 releases, again, and I won't drag you
3 through all the numbers, but the difference -- There is no
4 difference between the base and the ACAL in these cases. Again,
5 we're under the new design, and there were no changes here in
6 the adjustments to the sample weights, and so those line up, and
7 so this is entirely due to the FES calibration, in these cases.
8
9 Now, looking at the releases for 2008, and, again, this was
10 another large increase year, we have an increase from about 5.8
11 million fish released to almost 14.8 million fish, and so almost
12 a nine-million-fish increase. Again, the bulk of that, the
13 large majority of that, is coming from the FES change relative
14 to the APAIS calibration change.
15
16 When we look at the two biggest cells that contribute to this,
17 again, west Florida private boat, west Florida shore. In these
18 cases, the FES change, again, is accounting for the large
19 majority of these increases, relative to very minor
20 contributions from the APAIS change.
21
22 Just a quick summary, and then I'm certainly happy to take
23 questions, and, of course, the FES calibration is accounting for
24 this systematic increase in the catch estimates, both the
25 landings and the releases, over time. That's exactly what we
26 would expect to see, but what may be surprising though is that,
27 because of both the APAIS and the FES calibration, the trends
28 and the relative year-to-year fluctuations, in general, are
29 still very similar.
30
31 Of course, there are some changes. There are some increased
32 differences in the more recent years, and that's being driven,
33 where we see it, largely by that wireless effect that was in the
34 APAIS calibration model, and then there are some fluctuations,
35 often early, very early, in the time series, and that generally
36 is related to unusual distributions of data in the intercept
37 survey from that long ago, again, when the field procedures were
38 looser than they have been for much of the rest of the time
39 series.
40
41 Th changes we see for king mackerel and gray snapper are, again,
42 generally in line with what we see overall for other species.
43 Of course, there are individual point estimates that are
44 unusual, and we've gone through some examples of what drives
45 those changes. Again, they are very case-specific though, and
46 so, other than the FES piece being in there for everything, it's
47 hard to generalize what may drive an individual change, and we
48 just have to dig in for each point, but, almost always, it's

1 related to the variables that were included in the APAIS
2 calibration, and so area fished is a very big driver. We see
3 that in a number of cases.
4
5 As I showed here, the residency information of the angler that's
6 collected in the intercept survey, that can also have an effect,
7 particularly if it results in a large change to the
8 corresponding effort estimate, as it did in the one case we saw
9 for king mackerel, but, occasionally, there can be others.
10
11 We didn't go through any of the charter estimates, and I'm not
12 sure that there were any large changes there for king mackerel
13 or gray snapper, but sometimes we do see adjustments there as
14 well, and, of course, those come entirely from the APAIS
15 calibration, and then one other thing just to remember is, with
16 the FES calibration in particular, that's essentially a
17 multiplicative scalar.
18
19 If we start with a point that was already a high point in the
20 time series, because we're going to be multiplying those
21 original numbers, in a sense, that high point is still going to
22 be a high point, but the overall spread will have increased,
23 because we're not making a simple additive adjustment, and it's
24 a multiplicative, and so not only will the estimates increase,
25 but the spread between those estimates will also increase.
26
27 That's all I have for this one, and, again, I apologize for
28 putting out so much information, but I'm happy to take any
29 questions that you have. Thank you.
30
31 **CHAIRMAN POWERS:** Thank you very much. We'll start the
32 discussion about this and questions, but let me begin by -- If
33 you can go to the presentation, and I think it was one of those
34 box or whisker plots, either one of them.
35
36 **MR. FOSTER:** I turned over the screen, but --
37
38 **CHAIRMAN POWERS:** This is fine. One of the things that comes to
39 mind is that, with the FES calibration, by and large, that's
40 just shifting the catch effort down, or actually up, and so what
41 that is saying is that -- What you've shown in these particular
42 examples is the catch trend is the same, and, when you carry
43 that through to the assessments, the effect on the assessment is
44 pretty predictable.
45
46 You get higher stock sizes, a little bit, but productivity is a
47 little bit higher, and the relative -- The catch advice that you
48 give relative to the existing catch levels is roughly -- I

1 wouldn't say the same, but certainly similar, and so it's
2 changing all those sorts of things, and catch is what scales the
3 stock assessment, and so, for those species where this trend
4 where you're giving an example here of gray snapper and king
5 mackerel, like I said, those are pretty predictable, about what
6 the effects on the assessment is going to be.
7
8 To me, what would be very interesting is are there important
9 recreational or commercial or economic species that are outside
10 that range, that are kind of outside that original box, and,
11 since you have the data there, I'm sure you could actually give
12 a list of individual species in those sorts of ranges, and I
13 think that would be very illuminating, in terms of a priority
14 setting, about are there ones where you would expect a big
15 change in the assessment, other than scaling. That's more of a
16 comment, I think, than anything else. A number of you have your
17 hands up, and we'll start with Harry.
18
19 **MR. BLANCHET:** Good morning. My question goes to your slide on
20 page 28. You say that the primary influencer in this change was
21 the Wave 6 west Florida boat mode, and it looks like that one
22 cell accounts for over half of the total FCAL landings for that
23 year, and, I guess, is that a reasonable estimate, given that
24 west Florida fishery? Is it typically that your Wave 6 would be
25 anything like 50 percent or more of your annual landings, or is
26 that a flare? Did any sort of review go into at that wave
27 level?
28
29 **MR. FOSTER:** Harry, that's a good question. The short answer is
30 the earliest years of the survey that the data -- There are a
31 number of outlier unusual points in those earliest years, and I
32 would say 1981 through 1985 or 1986, and so I can't speak to how
33 similar or not, and my sense is that this is an outlier point.
34
35 I haven't personally done a very extensive dig into this
36 particular series, just focusing on explaining this one
37 particular estimate, and so I can't speak to the distribution of
38 one wave compared to the year for this species, but I would say,
39 in particular, that this does seem unusual, at least, and, if I
40 were working with this point, I would definitely want to dig
41 into it further and see if it made sense to try to use it as-is
42 or do something else.
43
44 I will say that we have not had time to try to go in for every
45 point estimate that is in the series, and there are hundreds of
46 thousands of individual point estimates, or catch estimates,
47 down at the detailed cell levels, and so we have really -- We
48 just don't have time to do data investigations on all of them,

1 but, clearly, I would hope folks would look at the PSEs, and
2 they would look at the relation of the trends over time and
3 consider things like regulations, consider things like weather
4 and economic conditions when they're making judgment calls on
5 what to do with the estimates, but we do our best to try to stay
6 out of smoothing estimates for those kinds of considerations,
7 again, not having the direct experience with all of these
8 fisheries.
9
10 **CHAIRMAN POWERS:** Thank you. Again, at the assessment level, in
11 some cases, depending on what kind of assessment is done, you
12 are fitting to the catch, and so the fitted catch can actually
13 smooth some of those things out, but, again, it depends on how
14 you do the assessment. Doug Gregory.
15
16 **MR. GREGORY:** Thank you. This was a very enlightening
17 presentation, and it explained a lot of what my concerns were,
18 particularly with the first ten years of the data stream, the
19 1980s, and, there at the end, you were explaining that part of
20 the variation we're seeing in the first ten years is due to, I
21 guess, the sampling design was not as robust in those early
22 years, as well as to APAIS calibrations and FES calibrations,
23 and I'm glad Harry mentioned the 1984, because that's very
24 interesting.
25
26 In the FES calibrations, it looked like, as you go back in time,
27 your adjustments are less and less, which makes sense, but,
28 here, in this example, you've got a ratio of 3.4 instead of the
29 2.2, and APAIS has a minor influence on it, and so that's very
30 curious, because 1984 is like the -- It's now estimated to be
31 the highest year of landings, because of this adjustment, and so
32 this certainly begs for further investigation, and this explains
33 my concerns with the red grouper landings, adjusted landings,
34 for those first ten years, particularly 1989.
35
36 At our stock assessment review, it was kind of mentioned that,
37 well, this is probably because people were fishing extra hard
38 prior to the size limit being implemented. Well, that does not
39 show up in previous stock assessments, estimates of the
40 landings, and so either we need to choose years in our
41 assessments, or prior to our assessments, choose years that look
42 anomalous and try to find out why, or maybe just downweight or
43 not use the MRIP numbers for the 1980s, for that first ten
44 years, because they are so highly variable, and it's not that
45 they are not important.
46
47 The Gulf Council is considering using landings from the 1980s to
48 reallocate fish, and, if these recreational landings are now, in

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1 our knowledge, that we know them to be less reliable than
2 earlier years, more recent years of landings, that could have an
3 undue influence that's not realistic, but, again, thank you for
4 this presentation. This helped me to understand these
5 adjustments a lot better than I did before. Again, thank you.
6
7 **MR. FOSTER:** Sure. Thank you.
8
9 **CHAIRMAN POWERS:** Thank you. Jeff Pulver.
10
11 **MR. PULVER:** Thank you. I just wanted to address the issue that
12 was raised about the lack of the spike in the king mackerel
13 landings. I was able to look into it a little bit more, and,
14 for the king mackerel fishery, it is landed on a non-calendar-
15 year basis, or tracked, and so, for instance, referencing the
16 2014 landings, those are actually landings from July 1, 2014
17 through June of 2015.
18
19 Additionally, the landings I think that John presented wouldn't
20 include the headboat landings or Texas Parks and Wildlife
21 landings, and, additionally, also, I think we're missing the
22 charter estimates, and so that explains the discrepancy there,
23 or at least most of it, I believe.
24
25 **CHAIRMAN POWERS:** Thank you. That's good to hear, I think.
26 Sean Powers.
27
28 **DR. POWERS:** John, thanks a lot for the presentation. Like
29 Doug, it has really helped me understand this process. Can you
30 go to your Slide 10, the ratio by year graph? I am struck by
31 how similar they are over time.
32
33 We had a lot of discussion yesterday about the effects of
34 cellphone coverage and people shifting to cellphone coverage, as
35 well as the recession impacts, and this seems not to show any
36 kind of time variation. Does the FES -- My impression was the
37 FES calibration was going to vary over time, and I would expect
38 to see the changes getting larger over time.
39
40 **MR. FOSTER:** Right, Sean, and can we back up? This one is
41 presenting the APAIS calibrations to the base ratios, and can we
42 back up one slide? This doesn't change your point very much,
43 but there is a bit more of an adjustment if you look at --
44 Again, it's very slight, but, if you look at the black lines,
45 you do see very modest increases from the 2004 to 2012 block to
46 2013 to 2017 block, but, again, they are modest, and one thing I
47 would say, along those lines, is we tended to see smaller
48 changes relative to, in the Gulf and South Atlantic regions,

relative to the Mid-Atlantic and New England regions with
respect to the wireless.

I think part of that reason is that the health survey that the
data, the wireless data, come from -- Again, we use U.S. Census
Bureau regions, and so the south would include both South
Atlantic and Gulf in their estimates, Gulf regions, states in
those regions, and what their series show is that the South
region was -- Rob, I believe you're on the line too, and so
correct me if I'm wrong. Rob Andrews, correct me if I'm wrong
about this, but I believe the southern region had the fastest
increase in wireless use, relative to the other regions, or
certainly to the Northeast.

Because of that, I think that we see -- I am trying to think of
how to explain it, but I think it resulted in perhaps less of an
effect, because the changes in wireless during our benchmark
overlap period may have been less in the southern region than
what we saw in the Northeast, Mid-Atlantic and Northeast,
because folks had started adopting cellphones at a much higher
rate, wireless phones at a much higher rate, in the south.

I think that sort of -- Because, when we look at these plots in
other regions, the differences are more striking over time,
particularly the difference between the last time block there,
the 2013 to 2017 and the prior ones, and so, Rob Andrews, am I
generally correct in how I have characterized the wireless
trends?

MR. ANDREWS: John, I'm sorry, but I kind of missed part of that
conversation.

DR. POWERS: I am fine with that, John. That seems to make
sense, and so, if it isn't the wireless effect that's driving
this in the Gulf, what is it? Is it all in just the noise or
the irregular effect that we talked about yesterday?

MR. FOSTER: Well, it would be that overall method effect then,
plus whatever contribution is coming in from the wireless, and
so, again, during the overlap, we still saw the same consistent
differences in the mail survey estimates and the telephone
survey estimates.

The mail survey estimates were two to three or four times higher
than the telephone survey estimates had been, and, again, that
was a consistent difference that we saw in all of the regions,
not just the Gulf or the South Atlantic, and so, yes, it's that
same difference that is still adjusting the effort series back

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1   through time. There is just less of that wireless effect making
2   a difference in the last years, the last few years, relative to
3   some of the other regions.
4
5   **DR. POWERS:** Okay. My next question is Slide 27, and it's
6   similar to Harry's. My question is this seems to be a huge
7   change in the estimated landings on a relatively small shift, if
8   you can go back to the slide before, and you can see that it has
9   jumped from one million to four million, based on the
10 explanation that you're just making a slight change in the
11 percent ocean trips.
12
13 **MR. FOSTER:** Right, but, again, 87 percent of that large change
14 is still coming from the APAIS, and only 13 percent is coming
15 from -- I'm sorry. I said that wrong. 87 percent of that big
16 change is still coming from the FES calibration change, the
17 direct effort change, and only 13 percent of that is coming from
18 the APAIS contribution, and so it's really just that 13 percent
19 that is resulting from the information that you see on Slide 27,
20 that shift in the area fished.
21
22 **DR. POWERS:** But that was only in west Florida, and so you had a
23 huge change in effort in west Florida?
24
25 **MR. FOSTER:**   That's right, and so that change ratio of 2.84
26 overall is what we saw for -- Again, that's the annual level,
27 2012, change in west Florida, or Gulf Florida, private boat
28 effort.
29
30 **DR. POWERS:** Okay. Thanks, Joe.
31
32 **CHAIRMAN POWERS:** Thank you. Next up is John Mareska.
33
34 **MR. MARESKA:**   Thank you, Mr. Chairman.   My question is related
35 to Slide 4. John, looking at the FCAL estimations, there is a
36 large variance around that, and so my question is I'm wondering
37 -- When the side-by-side was done from 2015 through 2017, have
38 you been able to compare what the actual FES estimates would
39 have been for these species for that time period compared to
40 what these calibrated estimates are?
41
42 **MR. FOSTER:** Yes, and they are very similar, and so the results
43 of the calibration on the years -- I have to go back and double-
44 check how we did it. The calibrated estimates for those years,
45 in terms of the effort estimates, are very similar to what we
46 got from the survey itself, and the estimates during the
47 benchmark period from the FES had higher variances than they do
48 now after the benchmark, because of funding limitations, because

1 we were still operating the telephone survey, the CHTS, at its
2 full sample, original sample, sizes.
3
4 We didn't have the funding available to put into the FES during
5 those years to get its estimates as precise as they are now,
6 because we essentially shifted all of the CHTS funding into the
7 FES, to boost its sample sizes, and so that's contributing here,
8 as well as the model variance, the uncertainty coming from the
9 modeling component, and so both of those pieces sort of
10 contribute to those higher -- The wide range of confidence
11 intervals that you see here in the plots.
12
13 **MR. MARESKA:** So, in the future, we can expect the variance
14 around an FES estimate to be very similar to what the base, or
15 the ACAL, estimates are, the variance? It's going to be much
16 smaller?
17
18 **MR. FOSTER:** The percent standard errors will be similar, and
19 smaller than what they are under the calibration years, and
20 that's true. The fact that these estimates are larger, at the
21 same relative PSE, they're going to have a wider confidence
22 interval, because the estimate itself is much larger, but, in a
23 relative sense, yes, the precision will be similar.
24
25 **MR. MARESKA:** Okay. Thank you.
26
27 **CHAIRMAN POWERS:** Thank you. Luiz.
28
29 **DR. BARBIERI:** Thank you, Mr. Chairman. Good morning, John, and
30 thanks for the excellent presentation. I really, really enjoyed
31 this one today, as well as the ones yesterday. Great stuff.
32
33 My question is, or my first question is, again, related to how
34 we handle some of the -- As the SSC is looking, reviewing, stock
35 assessments and using that information to generate management
36 advice, is how to handle some of the situations that are
37 unusual, and so what you call here outliers, unusual situations,
38 and so how often do you guys, or when in your process, do you do
39 these adjustments that you mentioned today, that you showed us
40 some examples today? Is this done on a regular basis?
41
42 **MR. FOSTER:** The datapoints that I've gone through here are --
43 To explain these changes, they are based on the results of the
44 calibrations, and so they are explaining what drivers in the
45 calibrations kind of resulted in the changes that we see.
46
47 That is sort of separate from kind of the standard QA/QC
48 process, and so, in terms of a rate of how often we make a data

1 correction or some other kind of statistical adjustment, I would
2 say, in the overall picture of things, it's very infrequent,
3 and, again, it's driven by sort of the data QA/QC perspective,
4 the data and estimation process QA/QC. We don't make
5 adjustments -- We don't try to make adjustments based on sort of
6 external information or our own sense of what a fishery may or
7 may not be doing.
8
9 We just don't feel we have an objective way to do that, and so,
10 when we look at the data, we do back through a standard QA/QC
11 process, either the -- As you're familiar, going back to the
12 samplers, even at that level, if they report something that's
13 amiss with the data, then, if it's obvious what a correction
14 would be, we would make that correction.
15
16 If it's determined to be a data point that's just unreliable, we
17 can remove it from the data series, but we don't want to smooth
18 the estimates ourselves, because we just don't feel like we have
19 that context, or knowledge, to be able to do it, but, again, in
20 the overall scheme of things, the adjustments that we would
21 make, either data corrections or corrections to sample weights,
22 is relatively infrequent. I'm not sure if I answered your
23 question, but I'm happy to --
24
25 **DR. BARBIERI:** You did, John. Thank you. That was very
26 helpful.
27
28 **CHAIRMAN POWERS:** May I interject here? By and large, when the
29 historical catch calibration is done, and it would seem to me,
30 functionally, if there are individual cells or issues that are
31 taken up, it's unlikely that, as John said, that that would be
32 done at the S&T level, but it would be looked at in terms of the
33 stock assessment level, and this is what I alluded to before, is
34 one way to deal with that is you downweight particular estimates
35 or to actually change particular cells.
36
37 If something particular notable comes out, then that would be
38 referred to S&T, and they would go through the process that John
39 just mentioned, but, from a functional standpoint, those sorts
40 of changes in the historical data would have to come probably
41 though the assessment.
42
43 As far as the future, basically, then you're relying on the
44 APAIS and FES process anyway, and so, I guess, you kind of have
45 to separate the historical, and are we talking about changes to
46 the historical data, and, yes, it can be done, but it seems to
47 me that the process would be more functional if it's done kind
48 of at the assessment level, and then, if it's all agreed to,

then you could talk about S&T actually formally making the changes. Thank you.

DR. BARBIERI: Joe, if I may, I think this makes perfect sense. It's kind of what I was trying to get to here, is to have sort of like an idea of how to handle the situation, and it's not necessarily historic in nature. Right now, it's not going thirty or forty years back, and it's not necessarily just related to the calibrations or the outcome impacts of the calibration on the data, but what we find things -- Like, if we look at that slide right there that John has up, Slide 4, that point that seems to be like 2008 or 2007, John, that spike there on landings.

MR. FOSTER: Right, and I think that's 2009, but yes.

DR. BARBIERI: 2009, and so, Joe, we look at a species like king mackerel that we know has a lot of age classes in the fisheries, and, if we were detecting strong year classes, we would see that spike carry over in time, and, often, we find ourselves, in reviewing assessments, looking at this time series and trying to understand why we have some of those spikes that we can't really explain easily, through the assessment process, and so trying to find out -- Usually the assessment is trying to say, well, we can handle those, other than through the modeling process, the smoothing or downweighting, but trying to resolve some of those issues.

Is there a resource, John, in S&T that we can go to and try and get some of these issues resolved or help with some of these cases, through the review process?

MR. FOSTER: One thing that I have neglected to mention, and thanks for the question, and it finally -- That part of my brain woke up enough to remember it, but we have an ongoing effort that we call the rare-event species project, or rare-event species working group, and that group is essentially looking at ways that -- Initially fairly simple ways that it could be used, and, again, the genesis is sort of the rare-event species, things like the rare reef fish species that are still managed, but the same methods, once those are developed, could potentially be applied to unusual or outlier-type points in a series that otherwise has fairly robust sample sizes that support it, support those estimates.

Just a little detail is it would be looking at things like how does a moving average compare to something like a larger estimation domain, looking at an estimate produced at the annual

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1 level initially, as opposed to produced at the two-month-wave
2 level and then summed across waves to the annual level, or an
3 estimate that uses some range of years, and essentially a
4 smoothing-type approach, but one that would still be tied to the
5 data and the design, because it would incorporate the sample
6 weights from the design in calculating these estimates, to see
7 what the results are.
8
9 Does it stay as a large outlier, or is it smoothed down in some
10 way? The results are -- These methods still would be somewhat
11 agnostic, in terms of external -- They wouldn't necessarily be
12 folding in external data series, like you might in a more
13 traditional modeling approach, but they would be readily
14 available, and they would use existing data, and they would be
15 something that could be applied, and so, again, that work is
16 ongoing.
17
18 It has taken a while, and it's certainly not near completion,
19 but we've had some initial evaluations done of a handful of
20 methods by, again, Jean Opsomer, a consultant that works with us
21 who is now at Westat, and some of their statisticians have been
22 working on it, and we're sort of nearing a point with a draft
23 report that we may be able to come up with a recommendation on a
24 method to use, an initial method.
25
26 I think, longer term, we might be moving towards maybe not
27 something as sophisticated as what Jay Breidt presented for the
28 FES calibration model, but something that's more in the arena of
29 a small area estimation approach, sort of building that as
30 potentially a way that could be baked in, in a sense, to our
31 standard estimation approach.
32
33 Again, these are very sort of longer-term goals, and there's a
34 lot of things that could happen between now and then that could
35 adjust what's ultimately done, but the short answer is, yes, we
36 are working on things. I wish we had a turnkey solution
37 available now, but it is a priority, and it is something we're
38 working on.
39
40 **DR. BARBIERI:** That's very good to hear, John. Thank you so
41 much.
42
43 **CHAIRMAN POWERS:** Thank you. Next up is Ryan, and after him
44 will be Sean Powers. Ryan. Then let's go on to Sean.
45
46 **DR. POWERS:** Thanks. John, can you give me a little
47 clarification? Can you go back to Slide 7 again? This is just
48 a follow-up. The method effect does not vary with time?

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1
2   **MR. FOSTER:** The method effect would not vary with time prior to
3   roughly the year 2000, but, after the -- From 2000 forward,
4   there would be the variable component that's coming from the
5   wireless effect, and that's right.
6
7   **DR. POWERS:** Okay, and so it doesn't vary by number of
8   respondents or participation or any of those, because we saw
9   that, over time, you are losing people answering your
10   questionnaire, and so you would think that there would be some
11   variation, and I guess you just can't pick that up, since you
12   only ran three years of comparison.
13
14   **MR. FOSTER:** That's an excellent point there, Sean, and even --
15   That is one of the limitations of the approach, is that limited
16   window of overlap, and, really, not just that it's limited in
17   the years included, but also which years were included, and so,
18   if we could have captured the entire range of the wireless
19   effect as it increased, say in the mid or early 2000s, or even
20   the late 2000s, that could have changed the results, and
21   certainly, if we had other indicators that we could feed into
22   the model, or other input series, that could help us tease out
23   the different method effects.
24
25   There's going to be a method effect for an in-person interview
26   or an interviewer-assisted interview versus a self-administered
27   questionnaire, and certainly that should be something that is
28   more robust to changes over time, and it should be fairly
29   constant, but that would be one change, but then just a change
30   for the form of the questionnaire.
31
32   Again, we went from profiling individual trips in the telephone
33   survey, a very sort of detailed, higher-burden approach, to just
34   asking for trip counts in a self-administered questionnaire that
35   the respondents had as much time as they cared to take in
36   responding, and so there's a number of things there, many of
37   which would have been, I think, fairly constant over time, but
38   certainly some of them could have varied, and I think the
39   gatekeeper could have been one of them. We just don't have the
40   data to really dig into that, as you're pointing out.
41
42   **DR. POWERS:** Okay, and so the next question is Slide 17. Here,
43   I was confused a little bit that you seem to be talking about a
44   correction that was outside of the raker model for APAIS or the
45   FES calibration.
46
47   **MR. FOSTER:** Yes, that's right, and so, again, this was -- I
48   apologize if I cut you off, but did you just want me to explain

1 further, or was there a specific question?

2

3 **DR. POWERS:**   No, and it's more of a general question of I
4 thought all of the changes that you were talking about were
5 either because of the APAIS raker model predictions or the FES
6 model predictions.   Here, you seem to be talking about another
7 change, and I was wondering how prevalent these other changes
8 were.

9

10 **MR. FOSTER:**   I really shouldn't have labeled it as an APAIS
11 calibration effect, but it's coming from the APAIS.   The source
12 of the change that I'm explaining here is coming from the APAIS,
13 the intercept survey, as opposed to the FES and the effort
14 survey, and so that's why I bundled it in under the APAIS
15 calibration label, but you're correct that it's not technically
16 part of the APAIS calibration model itself, the raking method.
17 It is related to a design change though.

18

19 It was this inclusion of the additional overlap time interval
20 sampling period and a need -- Once we introduced that in 2014,
21 which was after the new design was implemented, we needed to
22 correct these sample weights and recalculate the components that
23 come out of APAIS, and so we folded it in with the overall APAIS
24 calibration effort, but it is a separate change.   It's just,
25 again, related to the APAIS survey, and it's not related to the
26 FES survey or its calibration.

27

28 **DR. POWERS:** So how frequent -- Was this applied to all species,
29 or this came up once in a while, or -- That's what I'm trying to
30 get a grip on.

31

32 **MR. FOSTER:**   This was -- It affected all of the trips that were
33 collected during this time window, and so from the 11:00 a.m. to
34 5:00 p.m. time window.   The trips that came in, that were
35 intercepted during that window, the sample weights for those
36 trips, the APAIS sample weights, were subject to these changes,
37 and, as you see, there's a window in the middle where there was
38 really no change to the weights, and it's only just on the ends
39 of these, and so it would apply to all of the species, but,
40 again, for the most part, these changes --

41

42 Characterizing them generally, the changes are modest compared
43 to the FES calibration change, but, in some particular point
44 estimate cases, it could have a noticeable effect, and so that's
45 why I wanted to make sure it was one of the examples that we
46 presented, but, again, it would have applied to all of the trips
47 coming in during this range of time, and so any of the species
48 on those trips could have been influenced and could have had

1   some changes to their estimates.
2
3   **DR. POWERS:** Okay, and this would go back in time? You applied
4   this back in time or just to 2014 to 2017?
5
6   **MR. FOSTER:** It's just limited to 2014, 2015, and 2016.
7
8   **DR. POWERS:** Okay. Thanks.
9
10 **CHAIRMAN POWERS:** Thank you. Doug Gregory.
11
12 **MR. GREGORY:** Thank you again. I still am a little confused,
13 and, of course, I apologize for my ignorance, but this is a very
14 complex situation.   The analyses and the calibrations are
15 amazingly complex, but, again, with your 1984 gray snapper
16 landings, and I'm glad you showed that, it's mainly due to FES
17 changes, and that's 3.4, which is not near your average of 2.2,
18 and so it's not a constant thing back in time. There is some
19 other variables, and maybe it's the intercept data being poor,
20 that's affecting this.
21
22 What I would like to suggest for the SSC to consider, and maybe
23 a motion later, is that, similar to the issue that we had a
24 couple of years ago with stock ID and how complex that can be,
25 SEDAR has started, with some stock assessments, conducting a
26 stock ID workshop prior to the assessment.
27
28 I know what Joe said about the assessment is supposed to take
29 this up, but everybody is busy, and the assessment scientists
30 are busy, and the councils want assessments, and the assessment
31 process is changing, and that's getting more complicated, and so
32 what I would like to suggest for people to consider is that
33 SEDAR, prior to an assessment, actually have an MRIP calibration
34 workshop for that species, where people, and probably, in my
35 mind, it's the state employees, who are most familiar with the
36 data and the collection of the data, review that species trend
37 and investigate these anomalous estimates.
38
39 When I say anomalous, I mean large differences in trend from
40 previous assessments and the calibrated assessments. Again, the
41 2009 gray snapper sticks out, and the 1989 red grouper really
42 stands out and has a major impact, and I just can't help but
43 think there's something amiss there, and, no matter how much
44 analysis is done in the distance, with computers and scientists
45 in D.C., maybe the state people need to take a closer look at
46 some of this and give us more confidence that, going back in
47 time, the trends are reliable. Thank you.
48

CHAIRMAN POWERS: Thank you. I'm sure we'll take this up, and one of the things is the SEDAR process, the more detailed ones anyway, start with a data workshop, and, presumably, that's where some of this should be issued, but I think, Doug, you're really saying let's expand that and to actually have specifically reviewing the recreational catch estimates, and that might be beneficial, in some cases.

MR. GREGORY: Yes, because I think this is going to take a lot more work than the typical data workshop that we've held in the last twenty years.

CHAIRMAN POWERS: Yes. All right. Paul Sammarco.

DR. SAMMARCO: Thank you. Just a quick question, and more of a technical question than anything else, but, if we could go back to that Slide 4, or even 5, please. I was just wondering, and, as I looked more and more at these slides, it's pretty obvious that there's a correlation between the variance and the mean in these various populations, and, of course, what the group is trying to do is pull these things apart, to tell them apart, and it's easier if you can get that out of there.

I have noticed that what's been used is a series mean to try to do that, and, indeed, it has compressed it, to some degree, but I was just wondering why a simple technique like a transform, such as a log or a square root transform, on the data -- Why was a series mean used in preference to that? Basically, would it do the same thing, or do you have more confidence in a series mean? That's all.

MR. FOSTER: Sure, Paul, and thanks. There are a number of ways that this could be looked at. The reason I chose the series mean, again, was to sort of just index all of these to a fixed level point, and using a mean is sort of a standard way to do that, and it's part of the -- In a sense, it's part of like a Z transform, although this is not a Z transform, but, again, it's just trying to take out that scaling factor in a way that would still leave the relative year-to-year and overall trend information in there.

Again, it's just trying to take out the scaling effect, and certainly we could look at it in other ways, but it was a convenient one to use at the time, and, again, to show that, relative to the series itself, each of the series themselves, just wanting to look at, again, those relative changes year to year in a trend over time, and that's why I chose the means of the series.

1
2 **DR. SAMMARCO:** Right, and it seems like it's a good way to go
3 forward for comparisons of these series, and, also, I presume
4 that you did not use running means for these analyses, and is
5 that right?
6
7 **MR. FOSTER:** Yes, that's correct. This is just dividing each
8 individual point estimate in a series by the grand mean for that
9 same series.
10
11 **DR. SAMMARCO:** Right, and so leveling the playing field.
12
13 **MR. FOSTER:** Yes. That's right.
14
15 **DR. SAMMARCO:** Thank you very much.
16
17 **CHAIRMAN POWERS:** All right. Thank you. Thank you, John, for
18 this presentation. I think it generated a much better
19 understanding about this whole process and a better
20 understanding as we go forward. Before we go into the next set
21 of presentations, now would be a convenient time for a ten-
22 minute adjournment. Ryan, was that what you were going to
23 suggest?
24
25 Apparently we're getting mixed signals here, but we're going to
26 have a ten-minute adjournment, and we'll come back to the next
27 set of presentations, which take the ramifications of the king
28 mackerel and gray snapper a little bit further. All right.
29 Thank you. Ten minutes.
30
31 (Whereupon, a brief recess was taken.)
32
33 **CHAIRMAN POWERS:** We have another presentation, and I'm not sure
34 who is giving it, actually, in terms of how this affects catch
35 recommendations and so on, both pre and post-FES, and so whoever
36 is giving the presentation.
37
38 **MR. RINDONE:** It's Shannon.
39
40 **CHAIRMAN POWERS:** Okay. While she's getting ready, I believe
41 Kevin Anson wished to speak.
42
43 **MR. ANSON:** Thank you. I meant to ask this question yesterday,
44 and it may actually be for Rob, if it's still on, but I'm
45 curious, Rob or John, did you all look at any of the license
46 information, the recreational license sales, that were made
47 throughout the time series and compare that to each state, or
48 within states, relative to number of shore trips and then PR

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1 trips, broken out by nearshore waters, offshore waters, and
2 inland?
3
4 **MR. ANDREWS:** We have looked some at the license information.
5 One of the challenges with doing that though is -- Not just for
6 the Gulf of Mexico, but we've looked at it kind of globally, and
7 one of the challenges with doing that is that the license
8 requirements have changed in some states quite a bit over the
9 years, largely as a result of the National Saltwater Angler
10 Registry requirements.
11
12 It's a little challenging to tease out those changes a little
13 bit, for example with exemptions closed or things like that, and
14 so we have done some of that, and nothing for the entire time
15 series, because of some of these changes, and I can't really
16 talk a whole lot to what exactly we've seen right now, without
17 going back and looking at some of what we did, but that's
18 definitely a source of information that we have looked at.
19
20 I actually had -- I think I went back and looked at Gulf
21 licenses for like -- In the presentation that I gave yesterday,
22 I showed co-indicators of fishing activity, and I tried to
23 compile those numbers for the Gulf of Mexico, going back through
24 time a bit, for the states in the Gulf of Mexico, and I think I
25 could only get back from like 2017 to 2015 or 2014, in a way
26 that I thought that was -- Where the licenses were pretty
27 consistent.
28
29 During those years, the license sales were fairly stable, and
30 maybe a little bit of an increase from 2014 to 2017, but it's a
31 very good point, and it's something we have looked at, and we'll
32 continue to look at it moving forward.
33
34 **MR. ANSON:** Thank you. I just was, I guess, curious if you did
35 have at least some information and what, again, the proportions
36 of those trips were being made amongst the states and whether or
37 not they were similar, similar as far as let's say 20 percent of
38 the trips that were generated, or estimated, through FES, 20
39 percent of one state and what percentage was the offshore trips
40 in another state, is kind of what I was looking for, and so,
41 essentially, you have that information. Did you all produce a
42 document related to that, or a presentation, from that
43 information?
44
45 **MR. ANDREWS:** No, we don't have any documentation of it. It's
46 been a pretty ad hoc analysis, and I'm not sure that I quite
47 understand what you're suggesting there about the offshore and
48 nearshore though, and can you repeat that?

1
2 **MR. ANSON:** I'm just wondering if the proportion of trips within
3 each state are similar. For instance, one state may have 20
4 percent of their trips, and this doesn't necessarily tie into
5 licenses, but 20 percent of the trips are offshore trips and
6 what proportion of those estimated PR trips would be in another
7 state. If Alabama, for instance, had 40 percent offshore trips,
8 relative to Florida having 20 percent, I'm just curious if you
9 had that information, if that was available, just to look at and
10 compare. Thank you.
11
12 **MR. ANDREWS:** Okay. I mean, we have the distribution of effort
13 by area fished, but that information doesn't come from the FES.
14 It's from the dockside, and we don't have that by license status
15 or not, because we don't ask any license questions in the
16 dockside survey, and so we can't -- We can look at the percent
17 of trips that came from households with a matched license by
18 fishing mode, and so either shore or private boat, but we can't
19 look at -- And we can look at the distribution of effort by area
20 fished for shore and private boat mode, but we can't cross the
21 license matched with the distribution of effort by area fished.
22
23 **MR. ANSON:** All right. Thank you.
24
25 **CHAIRMAN POWERS:** Thank you. Ryan, did you want to say
26 something before Shannon starts?
27
28 **MR. RINDONE:** I just wanted to remind everybody that's on that,
29 if you want to speak, just raise your hand, and, typically,
30 we'll go through the SSC members that have those questions
31 first, and then council members and the public and like that,
32 but, if you do have a question, just raise your hand on the
33 webinar, and you will be added to the list, and so just like
34 yesterday.
35
36 **CHAIRMAN POWERS:** Thank you. Shannon.
37
38   **COMPARISON OF LANDINGS, EFFORT, AND DISCARDS PRE AND POST-FES**
39
40 **DR. CALAY:** Thank you very much. I wanted to start off by
41 thanking the team who helped me put this together, and, in
42 particular, Michael Schirripa, who is working on the king
43 mackerel assessment as we speak and helped me put together a
44 number of these slides.
45
46 The objectives of this presentation are to show you a comparison
47 of the landings and discards as they were used in the stock
48 assessment. You can refer to all of the previous presentations

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1 you've just seen for further details, but, frequently, we do
2 aggregate modes, or do an additional calculation, that makes
3 some of our inputs difficult to directly compare.
4
5 We'll also be showing you the effect of the FES changes and
6 changes in the recreational statistics on the stock assessment
7 catch recommendations, and, to do that, I retained the old base
8 models, and so what you're looking at is the actual catch
9 recommendation that came from the base model and then the update
10 of that base model with the new recreational statistics, and so
11 I did retain the old base models.
12
13 The king mackerel statistics have actually been updated as part
14 of the update assessment, which is nearly complete and will be
15 presented to the SSC in September, and so these figures come
16 directly from the stock assessment report, and what you're
17 looking at on the top panels are the removals in metric tons,
18 and headboat on the top left, and the private/charter mode on
19 the top right. In these figures, the black lines are the
20 updated information, and the red is SEDAR 38, and so you will
21 see, especially in the private/charter mode, the removals are
22 much higher coming from the FES estimates.
23
24 However, for headboat, the new updated estimates for the
25 headboat mode removals are actually somewhat lower, and that has
26 to do with this being removals, and so it does include the dead
27 discards, and, in fact, the headboat discards were estimated as
28 a ratio of private/charter mode discards, and so this becomes
29 complicated, but that is the result.
30
31 On the bottom, you have the discards in thousands of fish, and
32 you will see that the headboat discards now estimated as a ratio
33 of the private/charter mode are lower for the headboat mode in
34 the updated FES headboat statistics, and they were higher in
35 SEDAR 38, but, as you will expect to see, the discards for the
36 private/charter boat mode are actually higher for the new FES
37 estimates, and so that's a lot to take in, and it's further
38 described in the SEDAR 38 update report.
39
40 What are the effects on the stock assessment model? In general,
41 across all of the sources of removals, the new recreational
42 statistics do increase the landings, the total removals, that
43 are in the stock assessment, and so the stock assessment
44 responds by increasing, essentially, the spawning stock biomass
45 in the unfished condition, and so the black line there shows you
46 the new estimates with the new FES and headboat adjustments, and
47 the red line is the SEDAR 38 base case, which was CHTS
48 estimates.

1
2 What it boils down to, in terms of the catch recommendations,
3 and I see an error on this slide, and so I will read you what's
4 in that bullet that is now obscured, but what I wanted to point
5 out here is that, although I have plotted the OFL from the SEDAR
6 38, as well as from this new FES update on the same figure, I
7 just want to make sure that people understand that these are in
8 different currencies, and so you have to manage in the same
9 currency that -- The management advice has to either be
10 converted to the monitoring currency or you need to manage in
11 that same currency that you're monitoring in, and so it's
12 complicated, but my point being that these differences may look
13 large, but they're in different currencies.
14
15 As you expect to see, the black line, which is the SEDAR 38 with
16 the new recreational statistics, gives you a higher estimate of
17 both OFL and ABC, and those differences are between 17 and 21
18 percent, and they are tabulated here.
19
20 I do just want to give you the caveat that these are not the
21 official projections of the SEDAR 38 update assessment, which
22 will undergo SSC review in September of 2020, and this is just
23 an update of the FES statistics in the previous stock
24 assessment, and so what you will see in September will differ.
25
26 Moving on to gray snapper, these are the gray snapper landings,
27 and the gray snapper assessment actually has significant catches
28 in the shore mode, and so it was modeled as a separate strata in
29 the model, and so here we have the shore mode, and, again, the
30 black line shows you the new FES statistics, and the red shows
31 you the SEDAR 51 base model now, and you will see that the shore
32 landings are larger for the new FES estimates, and the
33 charter/headboat mode is one of these combined modes, and so it
34 includes both the charter boats and the headboats, and the way I
35 was able to update those statistics are by looking at the ACL
36 monitoring file that is provided by the Southeast Fisheries
37 Science Center.
38
39 You will see, in this case, the SEDAR 51 estimates are actually
40 slightly larger than the new FES-adjusted estimates that are in
41 black, but, also, I want you to note that the landings that come
42 from the headboat/charter mode are quite a lot smaller, in
43 general, than both the shore modes and the private mode, and so
44 you're talking about something on the average of 200,000 to
45 300,000 fish a year, as opposed to millions in the shore mode
46 and the private mode.
47
48 The private mode, as you will expect, given the previous

1 presentations, the FES estimates for the private mode are
2 substantially larger than the SEDAR 51 estimates, and I did cut
3 off the outlier. It is very large, and it requires further
4 investigation, and I will show you some of the effects of that
5 outlier during this presentation.
6
7 Moving on, the gray snapper model actually uses a fraction
8 discarded rather than discards in numbers, and so what I am
9 showing you here, again, is SEDAR 51 in red and the FES
10 adjustments in black, but, in general, the fraction of the total
11 catch that is discarded is quite similar between the two
12 assessments, although the FES, the new FES, estimates are a
13 little bit larger across the modes.
14
15 The effects on the gray snapper assessment are higher in
16 magnitude, and that has to do with the fact that the
17 recreational landings of gray snapper are higher as a percentage
18 than in king mackerel, which has an important commercial
19 component as well, or more important commercial component, and
20 so you will see here that the estimate of the spawning stock
21 biomass, with the new updated FES estimates, is around 35,000
22 metric tons, as opposed to about 22,000 metric tons in 1945, and
23 that there is an offset throughout the series, and the FES
24 produces a higher estimate of spawning stock biomass in every
25 year.
26
27 The effect on the catch recommendations is also larger for the
28 gray snapper assessment, and that's not surprising, and so,
29 again, the black line is the new OFL and the new ABC, with the
30 updated FES estimates, and the red line is the OFL produced, and
31 the ABC, from SEDAR 51, and so you see, in this case, that the
32 differences are between about 97 percent and 61 percent,
33 depending on the year, and they are much larger. The OFL
34 produced and the ABC produced in FES units is higher than the
35 one produced in CHTS units, but, again, I note that these are
36 different currencies.
37
38 There is an enormous outlier, as you see in the private boat
39 mode, and I wanted to see -- The results that I showed you, I
40 just naively put in the estimates from the FES, as they were,
41 including the 1984 outlier, and, because SEDAR 51 was conducted
42 a few years ago, using SS 3.24, we did have any ability to
43 include an annual standard error on this catch estimate, and so
44 the entire time series has a CV assigned to it, which is larger
45 than the CV for the commercial mode, but you can't, in the SEDAR
46 51, assign a specific year larger CV estimate to 1984, and so
47 what I have showed you previously is just put the time series in
48 as it was and assume it has a low CV, which, of course, we

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1 probably would not do in a SEDAR.
2
3 Now, for this new analysis of this outlier, I have just chosen a
4 simple approach, and I retained the SEDAR 51 base case
5 configuration, and I have just replaced the 1984 estimate with
6 an average of the surrounding years, and so I replaced it with
7 the average of 1982 through 1986, excluding 1984.
8
9 It does have an effect, and the green line is the effect, and it
10 does reduce the OFL and the ABC estimates if you do not include
11 that 1984 outlier, and, really, the point of this slide is just
12 that we will have to be cautious as we move forward,
13 particularly with old assessments that we're updating that don't
14 have the flexibility to handle an outlier with a year-specific
15 standard error. We will have to be careful about how we treat
16 these outliers.
17
18 Now, I did want to point out that I heard Doug Gregory's
19 recommendation, and, to actually do this case-by-case, with
20 existing staff at the Southeast Fisheries Science Center, is
21 likely to be unnecessarily time consuming, and probably also
22 will not have all of the experts available to us that we might
23 require, and so I think a better approach to that would be to
24 create a flag that years that have a CV -- Basically, there is
25 two cases here.
26
27 There are outliers that could be identified with a CV, or a
28 standard error, and, for that, we can use an interannual
29 estimate of the standard error in the model directly, and the
30 model will downweight that estimate if it conflicts with other
31 sources of information in the model.
32
33 The other thing that can be done is, years that abhorrent, but
34 do not have a high CV, if there is something unusual about that
35 year, we propose that we flag it, and that would be a task
36 probably that would occur hopefully at the Office of Science &
37 Technology, and they would help us understand how to flag data,
38 but that needs to be done essentially across all species, so
39 that we can treat these catch data properly in the stock
40 assessment, but actually trying to do that case-by-case tends to
41 result in inconsistent decisions from one assessment to the
42 next, based on the participation in the room, and that has not
43 been a productive approach.
44
45 Moving on, the conclusions, as expected, or as you have all
46 heard, is recreational removals are generally higher for FES
47 than for MRIP Coastal Household Telephone Survey or APAIS, and
48 annual estimates of spawning stock biomass and catch

1 recommendations, such as OFL, ABC, and ACL, were affected by
2 changes in the FES estimates, and the magnitude of that effect
3 depended on the fraction of removals that were from recreational
4 fisheries, and so, obviously, for our stocks that have the
5 highest recreational components, the effects will be larger, and
6 I did want to note, again, that the OFLs and ABCs that are
7 calculated in FES units must either be monitored in FES units or
8 converted to that desired monitoring currency. That concludes
9 the presentation, and I'm happy to answer questions.
10
11 **CHAIRMAN POWERS:** Thank you, Shannon. Adding to those
12 conclusions, it also suggests that allocations have to be
13 thought of in the same currencies as well.
14
15 **DR. CALAY:** That's correct.
16
17 **CHAIRMAN POWERS:** That becomes -- From a management standpoint,
18 that becomes a bit of a problem, because, traditionally,
19 allocations are based on some sort of historical, and, in fact,
20 if we are basing it now on a different perception of what
21 historical is, in terms of split, then you have to rethink what
22 it is you mean by historical. All right. First up is Luiz.
23
24 **DR. BARBIERI:** Thank you, Mr. Chairman. Shannon, thank you for
25 that presentation. It was very good, and I think you touched on
26 some of the issues that I had been also thinking about, and so
27 you should put up there your Slide Number 10 there.
28
29 You see there, and I know that this workshop and the discussions
30 that are having today are primarily about the calibration to FES
31 and all the other calibrations that we've had with MRIP and the
32 impacts of those on the data and the assessments, but, as you
33 can see there, the 1984 spike is the highest point in the time
34 series of landings, and it was magnified by the FES, but it
35 existed even before the calibration was accomplished, and,
36 Shannon, I think your comments are great, in terms of us trying
37 to identify what process can we put in place, what kind of
38 resources can we try to tap into, to handle some of these
39 situations.
40
41 Yes, the stock assessment process, the panels and the workshops
42 that SEDAR conducts, will help us deal with those on a case-by-
43 case basis, and that's fine, but, sure, we're going to have
44 inconsistencies in how those issues are handled, and not
45 necessarily the right type of expertise in the room, to help us
46 get those results, and so I just wanted to thank you for that
47 comment and reemphasize the points that you made there, that we
48 would greatly benefit by developing some kind of a process,

1 ideally coordinated with S&T, and John has alluded to some of
2 the things that they have going on right now, processes they
3 have been developing right now to address these types of issues,
4 so we can handle some of this in our assessments.
5
6 By the time that we get to the place of having the assessments
7 reviewed by the SSC, we have reasonable at least explanations
8 for why some of those outliers exist and how they've been dealt
9 with. Thank you.
10
11 **DR. CALAY:** I do agree, Luiz, that ultimately would be helpful
12 to understand why these spikes arise, and I think an initial
13 recommendation that might be very useful is to identify a
14 process to flag data that require some specific treatment in the
15 stock assessment, data that are not considered reliable,
16 essentially, and I think that process we could probably find a
17 way to fund.
18
19 I am concerned that, if we move that process into each
20 individual SEDAR -- The trouble is that it comes at the expense
21 of throughput, of stock assessment throughput, but I did want to
22 remind the SSC that our newer models, and I believe BAM is one,
23 and SS 3.3, both can handle interannual CVs, essentially, on the
24 catch, and so the catch can be estimated with error, and we
25 could use a large CV for these outliers, if that's what OST has
26 estimated, and the model would essentially downweight that
27 estimate. Some of our older models don't have that flexibility,
28 and that's where we would have to use some other process.
29
30 **CHAIRMAN POWERS:** Thank you. Will Patterson.
31
32 **DR. PATTERSON:** Thanks, Joe. Hi, Shannon. In looking at this
33 when you went through it the first time, and this slide is
34 perfect to illustrate this, the discussion has been kind of that
35 this is an FES recalibration issue, but that spike existed when
36 the last assessment was done, but it wasn't handled in any way
37 that I remember, and so the recalibration just magnified the
38 issue, but it always existed in the data.
39
40 **DR. CALAY:** It was handled. You will see here the SEDAR 51
41 private boat mode estimates that came directly from -- I think I
42 got those directly from the ACL monitoring file. If you
43 actually look at what appears in the data file itself, they
44 match except in 1984, but I think Jeff put in a value of closer
45 to 1,500 thousands of fish, and so it was handled by replacing
46 it with some recent mean, I suspect.
47
48 **DR. PATTERSON:** So it was just kind of ad hoc.

1
2 **DR. CALAY:** Ad hoc, and so it would be helpful to have more
3 standard approach to identifying data that are unreliable. What
4 I note about this 1984 estimate for gray snapper is I believe
5 that the PSE for that year is only about 35, which is not
6 unusually high, and so there might be some other reason to
7 consider this data unreliable, but just the interannual standard
8 error is probably not going to downweight this point enormously
9 in the stock assessment model.
10
11 **DR. PATTERSON:** I found the earlier discussions about just the
12 recalibration, especially walking through the king mackerel and
13 gray snapper data, when one year seemed kind of wacky, for
14 whatever reason, to go in and look at what was driving that, and
15 was it the APAIS recalibration, or what percentage of it was
16 being driven by FES, and it seems like, in a case such as this
17 here, to go all the way back to the intercept data and say,
18 okay, what's driving this, what wave did it occur, what region
19 did this occur, what's causing this.
20
21 I mean, if the PSE is only 35 percent, then it doesn't appear
22 that there was one huge outlier that's driving this big spike,
23 or else you would see that variance estimate jump up, but,
24 anyway, I think -- I don't know the best way, or I don't have a
25 suggestion for the best way to handle that, but clearly the data
26 providers should have some best practices for screening this
27 type of information and maybe have some latitude to explore what
28 is causing that in the raw data that inform these estimates, and
29 that might be easy to isolate.
30
31 **CHAIRMAN POWERS:** Thank you. Sean.
32
33 **DR. POWERS:** Shannon, your comment about varying the CVs each
34 year is great, that we can do that. Now, have we done that with
35 any model yet? Have we allowed the CV to in proportion to the
36 PSE?
37
38 **DR. CALAY:** In the Gulf of Mexico, until SS 3.3, we did not have
39 that capability, and I can't tell you for certain. I am looking
40 at our group chat, if anyone is going to jump in, and it was not
41 done for red grouper, and I don't believe we've done it for
42 cobia, because that is an update of a previous assessment, and
43 so it is not a flexibility that we have typically taken
44 advantage of, although there may be certain stock assessments
45 that did that I just am not aware of the nuance.
46
47 **DR. POWERS:** So what do we usually fix the CV at for the
48 recreational versus the commercial?

1
2 **DR. CALAY:** I think it has depended from one assessment to the
3 next. We always use a larger CV for the recreational sector
4 than for the commercial sector. For red grouper, it was 0.15
5 for the commercial and 0.3 for the recreational, and so that's a
6 recent example.
7
8 **DR. POWERS:** All right. I was just wondering if you allowed it
9 to vary with the PSE scores, or if you all had experience with
10 that, and whether the model converges or what happens, because
11 sometimes there is a lot of variability that has to be taken
12 into account.
13
14 **DR. CALAY:** Yes, and that is something that we're going to need
15 to explore further, and I think that -- I was just looking
16 through the chat text, because I think Katie said that BAM has
17 the capacity to use the interannual CVs, but that they haven't
18 done it for base runs and only an uncertainty analyses, because
19 the model can be unstable when the catches aren't fit closely,
20 and so we may encounter some of the same issues.
21
22 **DR. POWERS:** That's what I fear, yes, but thanks.
23
24 **CHAIRMAN POWERS:** Thank you. Dave Chagaris.
25
26 **DR. CHAGARIS:** Thank you. I have two questions, but I also have
27 a comment, and I just wanted to say that I agree with what Luiz
28 is saying, that we need to think about a process to put in place
29 and not try to go after these outliers on a case-by-case basis,
30 and I think that will drastically improve efficiency, and so we
31 can come back to that, if there is a motion or something, but my
32 questions are pertaining to -- The first one is like Slide 8,
33 the plots of spawning stock biomass, and just to clarify that,
34 in these models, like the minimum stock size threshold would
35 also shift upwards, and is that correct, Shannon?
36
37 **DR. CALAY:** Yes, and they -- You mean the actual MSST?
38
39 **DR. CHAGARIS:** Right, or whatever measure we're using.
40
41 **DR. CALAY:** They can shift, and they typically shift less,
42 because the estimate of the proxy is also re-estimated, based on
43 that higher productivity of the stock.
44
45 **CHAIRMAN POWERS:** If you go to the next slide, that kind of
46 shows that. The table at the bottom, if you look at, for
47 example, the right-hand column, that percentage -- A way to
48 think of that is it's basically you are updating the current

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baseline level of catch, and that has been adjusted by a
percentage, and it shows better in the king mackerel.

For the king mackerel, that column is roughly about the same,
which means those lines above them are parallel, and this one is
not quite parallel, but it shows similar sorts of things, and so
all you're really doing is scaling the catch levels, the
biomass, and the productivity, and so, in a relative sense, it's
not deviating that much. In an absolute sense, it certainly is,
and that's where it becomes important.

DR. CHAGARIS: That was what I wanted to point out, is that, in
the figures where the biomass is higher, it doesn't necessarily
mean that a stock would shift from being overfished to not
overfished, because the threshold is also likely increasing, but
not quite as high.

My second question is, if you look at Slide 10, you see that
there's this increase in the last few years in landings with the
FES that is not in the SEDAR 51, and just something to look out
for, as another effect of this in this assessments, is that
that's likely driving the recent recruitment deviations as well,
and I don't know, and you would have to look at it, but that
could explain why you see this declining trend in the OFLs on
the following slide, if there's a strong -- Since we've been
exploring the effect of those recruitments on projections,
something to look out for in these cases is that it could be
changing the recent recruitment estimates that would then be
feeding into the projection scenarios.

DR. CALAY: Yes, it is possible.

DR. CHAGARIS: That was all. Thank you.

DR. CALAY: Thanks.

CHAIRMAN POWERS: Thank you. Let me keep this to the SSC
members, and then we'll get to the public a little bit later,
and so next was Benny Gallaway.

MR. GREGORY: Joe, this is Doug. I don't know why you're
skipping over me.

CHAIRMAN POWERS: Because I don't like you.

MR. GREGORY: Well, I figured that, but that's not a good
reason.

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1 **CHAIRMAN POWERS:** I am sorry. I thought it was -- Go ahead,
2 Doug. I messed up, and I apologize.
3
4 **MR. GREGORY:** It's accepted. Thank you. Thank you, Shannon,
5 and this presentation has been very helpful, and it does go a
6 long way to address my concerns that I expressed earlier in the
7 day, and I don't want to be misunderstood.
8
9 I, in no way, wanted to suggest an ad hoc approach to every
10 species, and I do understand that people don't want more
11 meetings, and we have enough already, but there's two processes.
12 There is a process for identifying outliers, and then there's a
13 process for fixing them, and so I'm glad that's being looked at.
14
15 You also answered my other question, in that this was not done
16 for the red grouper assessment, and so I would like to
17 respectfully request that the Center take a look at the red
18 grouper landings, particularly 1989, which is as much of an
19 outlier as the one we've been discussing here in 1984, and just
20 a second look at it and see if that has an effect on any of the
21 outcomes. If that can't be done easily, can we request an
22 update assessment that incorporates such an analysis? Thank
23 you.
24
25 **DR. CALAY:** Well, the council, of course, is at liberty to make
26 requests of the Science Center, and they need to go through the
27 appropriate channels. I think we would have to have a very
28 specific request.
29
30 From what I hear from Sky, they have attempted, for the scamp
31 assessment, to include interannual CVs, and it's not as simple
32 of a process as just putting them in and running it. It
33 requires a lot more delving into the details, to make sure that
34 that hasn't created instability, and so, if there is a specific
35 year that you are concerned about, and you want to see the
36 effect of using, for example, a recent average, that's the kind
37 of recommendation that doesn't take a great deal of time.
38
39 Requesting an update assessment requires negotiation with the
40 SEDAR calendar, if you're asking for an update assessment, and
41 it's very unlikely that an update assessment could be added to
42 the calendar until 2022, and it would come at the expense of
43 another assessment, for at least some fraction of the workload.
44
45 **MR. GREGORY:** Right, and I understand, and I wouldn't want to go
46 that far for something as simple as taking an average of the
47 adjacent years and seeing what effect that has, and that could
48 be accomplished, and I assume that would probably have to be a

1   motion from us to the council to request.
2
3   **CHAIRMAN POWERS:** Yes, it would have to be, but let's finish
4   some of this discussion, because there's a number of different
5   ways that we might approach this, in terms of actually making
6   motions, and I would like to delay that a little bit, because we
7   do have time, if that's all right, Doug. Benny Gallaway.
8
9   **DR. GALLAWAY:** Thank you, Shannon. As always, your
10 presentations typically take very complex issues and present
11 them in a very straightforward and understandable manner, and I
12 really appreciate it, and I also appreciate that it appears that
13 there is going to be some additional scrutiny applied to early
14 time series outliers, whatever the forum may be, and I just want
15 to make the comment that I hope this same scrutiny applies to
16 the bycatch time series as well, and I'm sure it would, but I
17 just wanted to put that on the record.
18
19 **DR. CALAY:** Yes, and thank you.
20
21 **CHAIRMAN POWERS:** Thank you. Let me skip ahead to Harry.
22
23 **MR. BLANCHET:** Real quick, Shannon, you mentioned that there was
24 a pretty good PSE on that one outlier, and that's something that
25 I have seen on some of the others, where we've got something
26 that shows up as a wave estimate that is a real outlier, and
27 it's not real sure where that number came from, and it's still
28 got a pretty good confidence limit around it, and so I'm not
29 quite sure how in the derivation of the estimate and the PSE we
30 end up with that kind of precision, but where I'm going is that
31 precision of those estimates doesn't necessarily seem to relate
32 to the consistency with what the observations are, if that makes
33 any sense, because, a lot of times, you're talking about
34 something like the early 1980s gray snapper.
35
36 That was not -- At least in Louisiana, that wasn't a commonly-
37 occurring species, and so estimates were probably based upon a
38 relatively low number of observations. Now, in Florida, maybe
39 they had more, but we certainly didn't see that kind of variance
40 from year to year in the fisheries back then, and this is all
41 pre-regulation, for the most part, pre-contention, I will call
42 it, and everybody pretty much every year was consistent, in
43 terms of how people were fishing, and we didn't see that kind of
44 jumping around of people from fishery to fishery that we might
45 in more recent years.
46
47 **CHAIRMAN POWERS:** Thank you. That's something that basically
48 Shannon highlighted, is it's not just the precision, but it's

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1 also, essentially, the accuracy, and is there some other reason
2 to question the accuracy. All right. Will.

4 **DR. PATTERSON:** Skip.

6 **CHAIRMAN POWERS:** All right. Then let's move on to John
7 Froeschke. We're dealing with the non-SSC members now.

9 **DR. FROESCHKE:** Thanks, and my question is for Shannon, and I'm
10 trying to understand the process for migrating the stock
11 assessment to the new Stock Synthesis 3.3, I believe it is, and
12 so is it correct that, if an existing assessment was done in the
13 older version, that it requires, I guess, a research track or a
14 benchmark now to move it upwards?

16 **DR. CALAY:** No, and we are trying to move them as we can into
17 3.3, and it's not -- I mean, it does take time. The results are
18 identical when you get it correct, but there are -- It's
19 actually quite time consuming to get the thing migrated
20 correctly, and so we've done most of our stock assessments now
21 in 3.3, but the most recent ones that were requested are our
22 last updates, and there are no more update assessments, and now
23 we have operational and research track, and so the, for the two
24 updates, we'll be presenting 3.24 stock assessments to you, but,
25 for cobia, we also -- Hot news off the flash, and cobia has also
26 been finalized in 3.3 now.

28 We are migrating them to 3.3 as we can and confirming that we
29 can replicate the results between 3.24 and 3.3, and so we're
30 doing that outside of the research track process, and it's not
31 really necessary. In SS, the guts of it are exactly the same,
32 but it just gives us some new features that we can use.

34 **CHAIRMAN POWERS:** Thank you. Paul Sammarco.

36 **DR. SAMMARCO:** Thank you. Just a quick point, and a lot of
37 people have been talking about this spike that you have and how
38 anomalous it might be and so forth, and these things occur from
39 time to time in the data, and you wonder where they came from,
40 and they're there, and they're there for a reason, either
41 somebody has misplaced a decimal point somewhere along the line
42 or it's real. It might be real, and you never know.

44 If it is real, it's important, but I do know one thing, that,
45 during that year, if that really was the catch, every fisherman
46 would be talking about it for ten years, because they always
47 talk about, well, you remember the catch and how it was in 1984,
48 and they never forget something like that, and it was what

1 looked like about a tenfold increase.
2
3 I just was wondering whether, before throwing the data out, I
4 was just wondering whether there is any way to do a quick very
5 small sub-sample back in the data, or even to those fishers that
6 were involved, to find out whether there's any suggestion that
7 that was real, or if it's just a daydream, because, if it's
8 real, that's pretty interesting.
9
10 **CHAIRMAN POWERS:** Thank you, and that's what we're going to get
11 to, is what's the best process to deal with it. All right.
12 Let's open it up for public comment, and Michael Drexler wanted
13 to make a comment or a question or whatever.
14
15 **MR. DREXLER:** Thank you, and thank you to NMFS for providing
16 this information and the Gulf Council for the meeting. It's
17 been very informative, and I have certainly learned a lot. It's
18 clear these results demonstrate a commitment by NMFS to
19 recreational data collection, and my questions, and I have two,
20 are not about the FES numbers directly, but they're how they
21 integrate with the rest of the region.
22
23 Zooming out, for most of the Gulf stocks, the management unit
24 spans the entire Gulf. If we look at red snapper, 62 percent of
25 the stock habitat occurs in Texas and Louisiana, and, if you
26 look at gray snapper, 25 percent of the CHTS-era landings come
27 from those two states. This previously suggested that a
28 substantial portion of our stock biomass and landings occur in
29 non-MRIP states now, and that's changing, and I'm trying to
30 understand how these changes might impact stock assessment and
31 reference points, where our understanding of effort and landings
32 have fundamentally changed in one side of the Gulf and not the
33 other, and so I have two questions, and they're as much for Rob
34 and John and Shannon.
35
36 First, yesterday, Rob was able to attribute 50 percent of the
37 difference between FES and CHTS, due to the coverage error, and
38 so landline usage, and 30 percent to the gatekeeper effect for
39 offshore trips, and, in the plausibility section, you noted the
40 large number of waterfront parcels, which are presumably related
41 to the coverage area, and so do you have any thoughts about
42 whether any of these known biases might also be present in the
43 other Gulf states not participating in MRIP, and, obviously,
44 acknowledging the methods are different in those two states, but
45 I'm wondering if those biases may still be present.
46
47 **MR. ANDREWS:** What we were looking at were specifically
48 comparisons between the FES and the CHTS, and so we worked with

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some of the other states to help them develop their methodologies, and we've had some consultants review those designs, and we're in the process of working on calibration methods for some of those other surveys, but I can't really speak right now to whether or not those surveys would be subject to similar biases.

I mean, the CHTS was a landline random digit dial telephone survey, and none of those other surveys utilize that methodology, and so the coverage error that I was explaining resulting from landline telephones is unique to landline telephone surveys, and so coverage error is a pretty broad topics, and all sorts of non-sampling errors are -- There is a wide range of them, but I can't really speak right now to any of those other survey designs.

MR. DREXLER: Thank you, and I have one more, if that's okay, Mr. Chair.

CHAIRMAN POWERS: Yes.

MR. DREXLER: Thank you for that answer. That was helpful. The second question is, going back to the gray snapper example, incorporating our new understanding of effort in the east will no longer align with the west, and I pointed out that 25 percent of the landings previously occurred in Texas and Louisiana, and so, with this shift, presumably a much smaller proportion of those landings would occur in the west, when you triple the landings in the east, and so, when you simply add those landings together, the western signal gets swamped in the stock assessment.

I have been thinking about how to deal with this discrepancy, and, obviously, this discrepancy is mostly driven by effort estimation, and so the obvious place to look would be effort, and so, given all these uncertainties, has MRIP considered implementing an effort survey in all five states simultaneously?

Then, thinking if there's any other information there, and we have some recent years of effort in Louisiana, and I was wondering if maybe there are some additional effort estimations in Texas that could be used to better understand the shift. Thank you.

CHAIRMAN POWERS: Thank you. John Foster, do you care to get into that?

MR. FOSTER: Sure, and I guess the first comment I would make is

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1 there is another workshop coming up, the first week of August,
2 and I believe it's August 5, that will be specifically
3 addressing the red snapper calibrations among the different
4 programs that are in the Gulf, and so I will try to give a brief
5 sort of summary, but I think that really is the workshop that
6 will focus specifically on red snapper and the various programs,
7 and so clearly much more information will be presented there.
8
9 As far as -- Those are certainly good ideas for things to look
10 at. We have looked at effort differences across the states
11 between FES and other state programs, but it will take a fair
12 amount of additional work to try to tease out what the drivers
13 are for those differences, and, in some of that, you're not
14 necessarily coming up with the exact design ideas for pilot
15 studies or future work, but sort of planning for that work or
16 deciding how best to proceed with that or not will be the focus
17 -- Not the focus, but one of the potential topics for that
18 upcoming workshop.
19
20 I would just say, at this point, that that's all work that
21 really still needs to be done to fully investigate those
22 differences, and I will just stop there, and thanks.
23
24 **CHAIRMAN POWERS:** Thank you. The August 5 meeting I'm sure will
25 be focused on red snapper, but hopefully it will provide some
26 insight for effort in general for other species, but that's the
27 crux of it. All right. Another comment from Richard Cody.
28
29 **DR. CODY:** I just wanted to reiterate John's points that he made
30 just in reference to Mike's questions and just to make the point
31 that, right now, we have no plans to do an effort survey in
32 Louisiana or Texas, and, as you pointed out, you have MRIP
33 restricted to the eastern part of the Gulf.
34
35 The calibration workshop that we'll have coming in August, and
36 August 5 I think is the date that we've agreed on, has a section
37 in there that deals with, as John pointed out, looking at some
38 of the drivers for differences between the different surveys,
39 but also identifying the impacts of those drivers as well, but
40 those will be discussed in terms of future research directions.
41
42 We won't get a lot of information from the workshop, just
43 because it's a single, one-day workshop, and so I just wanted to
44 point that out, but, like John had already mentioned, this is
45 probably going to take some time to look at, and so that's all I
46 had.
47
48 **CHAIRMAN POWERS:** Thank you. Also, because we're taking public

comment, I would mention that Carrie sent out a letter from Bob
Zales, and so I suppose that would become part of the public
comment as well, and, for those of you who haven't read it, it's
essentially questioning some of the estimations, largely due to
red grouper, but really focusing on how this affects the
allocation, which is sort of reiterating what we said before, is
that, when you talk about changing the scale of things, where
one sector has not been changed, in terms of scale, and another
sector has, then that becomes a big management issue, and it's
recreational versus commercial, and it's Texas and Louisiana
versus the rest of the Gulf, and that's what is formulating a
lot of these management debates that are going through there,
but, anyway, if you haven't read it, look at it, and, like I
said, this will become part of the record.

I think, at this point, this is ending this agenda item, but we
should think about recommendations that we want to make to the
council relative to the issues that we've talked about, and it
started with Luiz suggesting that we need some sort of process,
to begin with, and a lot of things have been suggested, but it
seems to me that one of the first steps would be to have a term
of reference for the data workshop to either provide -- Well, a
term of reference to provide CVs for the recreational catch
estimates, or all the estimates, and/or identify outliers.

That would be one way to take a first look at it and have an
initial discussion, and then, if it becomes an issue for the
assessment, then it gives a little bit of time to deal with
that, as you go into the assessment workshop and then subsequent
management advice. That's one way to start it off.

I mean, obviously, it's unlikely that a complete analysis of the
FES and the APAIS sort of situation would be done at that stage,
but at least it would identify it, and so, by having it in the
terms of reference, you would also focus on discussions, non-
statistical sorts of discussions, about why something might be
an outlier, and so that's something to think about. What kinds
of recommendations do we wish to have? We can do this in terms
of motions. Nobody is biting off yet? All right.

We can certainly come back to this. The next agenda is
approaches for what to do for estimates for unassessed species.
This would be the case where, basically, a lot of the stocks
that we deal with, where we don't do assessments, and there is,
in some cases, where we approach it with data-poor methods, but,
essentially, if there is a catch estimate available in the data-
poor methods, then that is used, in one form or another, and,
presumably, with the FES estimates, that would be used

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comparably, but that would require that each one of them has to
be revisited, in terms of the data-poor methods or a catch-only
estimate or so on and so forth. Any other comments on that?

**ESTABLISH APPROACHES FOR THE USE OF FES ESTIMATES FOR UNASSESSED
SPECIES**

DR. BARBIERI: Mr. Chairman, if I may?

CHAIRMAN POWERS: Yes. Sorry, but I missed Doug again. For
some reason, he's not showing up. Let me go to Doug.

MR. GREGORY: We're friends again. My only concern would be for
those instances where we took average of years of relatively
stable landings and estimated ABC for those tiers, but those
stable years of landings may no longer be stable, and that would
be my main concern. The other methods that was in the ORCS
paper and stuff, that wouldn't be of concern, I don't think.
Thank you.

CHAIRMAN POWERS: I mean, that's sort of my point, is that, when
you change the catches, you're going to have to revisit all of
these decisions that were made about what's stable and what's
not stable and so on. Luiz.

DR. BARBIERI: Well, I now don't have that much to add, Mr.
Chairman. I was going to make this very point, that, several
years back, working with council staff and staff from the
Science Center and SERO, we looked through all of those species
that were in our Tier 3a and 3b, and we evaluated when those
times series would have the stable landings that could be used
for application of our ABC recommendation for the data-poor
species, and I think, right now, having seen some of the new
FES-calibrated data series, we're going to have to sort of
revisit -- We're going to have to set up a process and put
something in place that we can actually go back and look at all
of those species again.

We had, back then, realized that this would be needed, and it
would be painful to go over everything again, but we realized,
at the time, that, at some point, we're going to have to look at
this again and kind of try to set a new time period, a window,
of reference years there for us to use, and so it looks to me
like you're correct, that this is the process that we're going
to have to revisit now.

CHAIRMAN POWERS: Thank you. Paul Sammarco.

DR. SAMMARCO: Just two quick ones. You had mentioned -- You had called for recommendations that we might be able to draft to pass on to the council, and may I recommend that the speakers that we've had over the past two days, who are very familiar with these data and have worked through them, in great depth, that perhaps they throw out strawmen recommendations for the SSC to kick around and fine-tune.

Secondly, I think one of the things that's been shown over and over again for the past two days is the efficacy and the strength of the FES and that this should continue to receive priority in data analyses, where possible. Thank you.

CHAIRMAN POWERS: Thank you. Sean.

DR. POWERS: A couple of things. I agree with Luiz that, for the unassessed species, I think there's no choice that we're going to have to go through those one-by-one again, and, as far as a recommendation, I would build on Shannon's, and it seems so obvious that I'm not sure we need to, but we might as well, that the units have to be same. If a stock assessment is conducted in CHTS units or FES units, it needs to be managed in those units until the next stock assessment is able to use those units.

CHAIRMAN POWERS: Thank you. Ultimately, what we're really saying is, whatever is scientifically determined as the best estimate of catches, that gets integrated into the assessment, and that management should be based on that, and that's essentially all we're saying.

We're at sort of the ultimate point of this whole workshop, in terms of overall recommendations. Now, I'm not hearing people jumping up, in terms of motions and that sort of thing, and so we have two choices.

One is we can go ahead and try to generate some motions as we go now, and then delay lunch and just finish the meeting before we break for lunch, or we can break for lunch, and, during that time, people can draft motions.

Now, I can go either way, but, before we give that some thought here, and then, before we do that, let's take some comments, some other comments, that people are coming up with. Dave Chagaris.

DR. CHAGARIS: Thank you. Mr. Chair, can you give us maybe some examples of the types of recommendations that we should be

looking at, because we've talked a lot about the things that could happen at the SEDAR data workshop phase, recommendations that might be targeted for S&T, recommendations on how we monitor and manage our ACLs, and so maybe compartmentalizing these recommendations into these three steps, I guess, along the way might help.

CHAIRMAN POWERS: I think my comment before, and Luiz originally brought it up, of what is the process for dealing with this, and, secondly, Sean brought up units have to be the same, and, third, we're going to have to revisit allocations. Those might be categories that we could think of. Shannon.

DR. CALAY: Thank you. I wanted to just tell you what we're doing today, which is that the guidance we've received to date, at least in the short term, is that FES is considered best available science, and that is what we're using in the stock assessments.

When we provide management advice in FES units, SERO can convert it to the other currencies, and they do, and so sometimes they're still monitoring in, for example, CHTS or MRIP APAIS units, but that conversion is applied, and my point in the slides is you can't take a slide that has two different currencies and say that FES is much larger without understanding that a calibration is required.

I am just pointing this out because, right now, we are able to provide stock assessments that were computed in FES currency, and the OFL and ABCs that would come out of the stock assessment report are in FES currency, but they can be converted to the other currencies, and SERO has done that, that might be used to monitor the fisheries, and so it's a confusing approach, but it is possible, and it is what we're doing right now.

CHAIRMAN POWERS: It also is very difficult for people to understand, and particularly the public, which is probably fraught with other sorts of problems. Julie Neer.

DR. JULIE NEER: Thank you, Mr. Chair. I just wanted to quickly clarify a few points before you start crafting your motions. I think the intent of the SSC is clear with regard to trying to have some way to review these FES/CHTS estimates, but I want to be clear that the only assessment category that still has a data workshop is the research tracks, and so don't hang your hat on a lot of research tracks, and you're getting one a year, roughly, moving forward for the next few years, and, additionally, within the operational assessments, as Shannon pointed out, they are

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1 moving to be much more like updates. That is the vision of the
2 Center to increase throughput.
3
4 That's not to say that you cannot list to review and evaluate
5 the MRIP estimation and review the calibration process within
6 your statements of work, the very first step in the process, but
7 will potentially -- It may happen, but it may not, and, if it
8 does happen, as Shannon said, it will most likely come as a
9 cost, and so I would recommend -- I think the intent is you want
10 a review. That's my understanding, from your discussions, and
11 so perhaps the SEDAR process may not be the best way to do that
12 review.
13
14 Certainly for the research track species, I think that's a great
15 way forward, but, for the other ones, Shannon and the Center's
16 approach of trying to find ways initially to flag them and then
17 look into it further might be more efficient, and I just don't
18 want you guys to -- Just be careful, when you're crafting your
19 motions, that you're taking the categories of assessments that
20 we have in play into account, and I don't want you to lose out
21 on what you want because the SEDAR process can't accommodate it,
22 is my point. Thanks.
23
24 **CHAIRMAN POWERS:** Good point, Julie. I forgot about that.
25 Shannon, did you have a comment?
26
27 **DR. CALAY:** Yes, and so I agree, and Julie points out,
28 correctly, that we will have few data workshops. There are
29 topical workshops that can be created, and more complex issues
30 that are in need of examination can be looked at through a
31 topical workshop. That being said, I still want to avoid the
32 expectation that each SEDAR will have a separate topical
33 workshop to look at these issues on a case-by-case basis,
34 because I think that probably isn't warranted yet, to be honest.
35
36 I think there are very pragmatic ways that we can deal with
37 these outliers, and John Walter suggested one, which is just to
38 identify them using essentially some measure of deviance from
39 the mean of the series and then just make sure we treat them
40 carefully in the stock assessment, if they are flagged as
41 outliers. I think that's a pragmatic initial approach, and we
42 can probably continue to evolve as we better understand the
43 issues.
44
45 **CHAIRMAN POWERS:** Thank you. All right. Back to my original
46 question. Do we want to continue on and make recommendations
47 now and finish the meeting, or do we want to take some time off
48 for lunch, and during which we draft some recommendations and

1 then come back in an hour? Do I get any feedback about which
2 way to go? Doug, you're on the list.
3
4 **MR. GREGORY:** I have no preference either way. **I have crafted a**
5 **motion, and I forgot what the standard email address was for**
6 **that, and so I sent it to Jessica, Bernie, and to Joe, and it's**
7 **a motion having to do with the red grouper 1989 landings**
8 **estimate, and, once we get it up, I would welcome Shannon's**
9 **editing of it, so that she's comfortable with it and it's**
10 **doable, and I certainly don't want to propose something that's**
11 **going to be problematic or an imposition. That's on the board,**
12 **and we can take this up after lunch or now, and I have no**
13 **preference, if I get a second.**
14
15 **MR. GILL:** I would second Doug's motion, but I would recommend
16 that we take a lunch break and allow that time to consider
17 motions from amongst the group, as opposed to charging right in.
18 Thank you, sir.
19
20 **CHAIRMAN POWERS:** Thank you, Bob. All right. We have a motion
21 and a second, and the suggestion is to take some time to give
22 some thought about this motion, and others, and to come back in
23 an hour, and then we can get our act together, in terms of
24 recommendations in general, and then move on efficiently after
25 lunch. Luiz, you had a comment, but hopefully it's not to
26 change my mind.
27
28 **DR. BARBIERI:** No, not at all, Joe, and it was really also to
29 ask for us to have a lunch break, because I think this will
30 require a little more thinking than what we can do now in ten or
31 fifteen minutes, and so I think you have already advised that.
32 Thanks.
33
34 **CHAIRMAN POWERS:** All right. Well, great then, and so let's
35 break for lunch now, and then we'll return with the first item,
36 which would be Doug's motion, and so one hour. Thank you.
37
38 (Whereupon, the meeting recessed for lunch on July 8, 2020.)
39
40   - - -
41
42   July 9, 2020
43
44   THURSDAY AFTERNOON SESSION
45
46   - - -
47
48 The Meeting of the Gulf of Mexico Fishery Management Council

Standing and Special Reef Fish, Mackerel, Ecosystem, and
Socioeconomic Scientific and Statistical Committees reconvened
via webinar on Thursday afternoon, July 9, 2020, and was called
to order by Chairman Joe Powers.

RECOMMENDATIONS TO THE COUNCIL

CHAIRMAN POWERS: Good afternoon again. There have been several
motions that were suggested, and I haven't seen all of them yet,
but we're going to begin with Doug's, because that was what was
on the table, and so this is the draft motion, or the motion,
and it's been seconded. Is there discussion? We'll start with
Shannon.

DR. CALAY: Well, as written at least, this one happened to be
quite easy, and Skyler did it over lunch, and so the results are
actually available, and I tell you this at the risk of appearing
like a miracle worker, but this one happened to be an easy
request, and it did not have to go through channels, so to
speak, and so, if this remains as it stands, the results are
already available.

MR. RINDONE: I just sent those to meetings and Jess and Bernie.

CHAIRMAN POWERS: Doug, it's pretty much up to you how you want
to proceed. Have you had a chance to look at the results?

MR. GREGORY: No, I have not, but that's fine. That's great.
Thank you. I appreciate it.

DR. CALAY: We try to please.

CHAIRMAN POWERS: So you actually have a PowerPoint associated
with it, correct?

DR. CALAY: Yes.

CHAIRMAN POWERS: You realize that you're establishing a --

DR. CALAY: It's really dangerous.

CHAIRMAN POWERS: All right. Then, very quickly, let's go
through the picture there.

DR. CALAY: Can you open up Skyler's microphone, so she can
speak?

DR. SKYLER SAGARESE: This is just showing the slide that Ryan

had shown yesterday and focused on the 1989 spike in recreational landings, and the plots on the right, or the plots at the bottom, are from the SEDAR 61 evaluation, and so clearly there's a huge spike in the private landings that were included in the assessment.

I just wanted to note here that, yes, it's not as apparent of a spike in 42, but there was still a relatively large value of recreational landings from 1989, as well as 1988, in that assessment, and so, yes, there is a big difference with the current assessment, but just that the landings were relatively large back then as well, and I think Vivian had sent along, from that public website, and, if you look at the differences across the different calibration approaches, that, actually, the APAIS calibration also shows sort of a little spike, and so it's not just due to the FES calibration, and the recreational data folks can chime in, if I have that incorrect.

What did I do for this request? It's just what Doug had requested. I went into the assessment data, and I replaced the 1989 recreational landings estimate with the average of 1988 and 1990, and so completely ignoring 1989, and I also did a run that averaged those three years, and so it averaged 1988, 1989, and 1990, because those are all three datapoints, and so you can see, in this figure, the original is the gray line with that spike, and then the blue line is that requested by the Doug and the SSC motions, and then the orange is just another way to look at it.

Just kind of looking at a sensitivity run, I compared the major derived outputs, and so this figure is comparing the spawning stock biomass. Just as a reminder for red grouper, it's in just the number of eggs, and it's relative, and it's not an absolute number of eggs.

What you see here on the left is the trend in the raw spawning output, that spawning stock biomass, and, on the right, it's just that spawning stock biomass relative to the unfished estimate, and so you can see, overall, the terminal years are nearly the same. There are some very slight differences in the trend in the first few years, but, in terms of stock status, it basically -- In the last year of the assessment, we're in the same place as we were, regardless of how we input that data.

As a reminder, in the assessment, we had a 0.3 error associated with recreational landings, and, if you look back at the report, the model is not fitting those estimates, the observed estimates, perfectly. It's actually estimating far fewer

1 landings of recreational fish than what was put into the model,
2 because of that error.
3
4 Comparing the recruitment trends, and so on the left-hand side
5 is the trends in the age-zero recruits, in millions of fish,
6 and, on the right, it's just showing the unfished recruitment,
7 and so on the log scale. Basically, recruitment deviations --
8 We estimate them starting in 1983, and so this early 1989 data
9 input does not play into the recruitment estimates at all, as
10 you can see in that figure on the left, and, on the right, there
11 are some very minor changes to the unfished recruitment, but we
12 had the very slight changes in that spawning stock biomass at
13 the beginning of the time series that we showed in the previous
14 slide, and so very minor changes on those estimates.
15
16 Then, finally, looking at the trend in fishing mortality,
17 essentially, we see the same thing. We saw the spawning stock
18 biomass and that there are some differences in the first few
19 years, but, in the terminal year, or the last three years, for
20 example, there is very little change in the estimated trend, and
21 I just want to note -- I should have mentioned this earlier, but
22 the shaded regions are the confidence intervals for the
23 assessment outputs, and, basically, as long as those intervals
24 include the line, there is overlap, and so they are not
25 necessarily significantly different, and so, overall -- There
26 does appear to be minor changes, but, overall, it's hard to
27 conclude there was any difference, and so this quick sensitivity
28 analysis just shows that this issue did not have an impact on
29 the model, but, as Shannon mentioned, this request was a fairly
30 simple request to do, and, granted, this is probably not
31 typical.
32
33 Other requests will have to go through the proper channels, but
34 this one just was fairly simple, and, rather than kind of think
35 about, worry about, this affecting the outcome, we just kind of
36 wanted to show that this has very little impact on the model.
37
38 Just, in summary, it does not appear to have a large impact on
39 the outcome of the red grouper assessment, and I just wanted to
40 note about the CV issue, that we do recommend, in that report,
41 moving forward, we can incorporate annual error estimates for
42 landings and discards, but that is contingent upon the CVs, or
43 error estimates, being available, and so MRIP currently does
44 provide CV estimates for landings and discards, but we do not
45 have CVs, or any errors associated, when we get data from
46 headboat or commercial landings sources, and so there is a lot
47 of work that needs to be done to kind of allow us to get those
48 estimates.

1
2 I know that everyone is hard at work looking at these issues for
3 the research track for the scamp assessment that's currently
4 ongoing, but, yes, it's simple to incorporate within Stock
5 Synthesis, but that means we would need those estimates to be
6 able to incorporate that in a model, and I think that's all.
7
8 **CHAIRMAN POWERS:** Thank you, Skyler.
9
10 **MR. GREGORY:** I want to thank you for doing it. I appreciate
11 it, and that's reassuring, but I also want to note that, yes,
12 the landings part of 1990 were quite a bit higher than those
13 afterwards, because we implemented a twenty-inch size limit for
14 the first time in 1990.
15
16 The State of Florida had an eighteen-inch size limit, but there
17 was no size limit in federal waters prior to 1990, and so the
18 landings went down quite a bit after implementation of that size
19 limit, but, again, thank you for doing all of this. This is
20 amazing, and I appreciate it. **I withdraw my motion.**
21
22 **CHAIRMAN POWERS:** Thank you. Skyler, you have appropriately
23 defended your boss and didn't overcommit. All right. The
24 motions that -- Harry had a draft motion, and was there another
25 draft motion? Yes, there was. Who had the other draft motion,
26 or was there another one? Well, let's start then with Harry.
27 Sean was the other one. **Let's begin with the motion from Harry
28 Blanchet.** Can we get that up on the screen? Let's read it for
29 a second, before I ask for seconds or anything. All right.
30 That's the motion on the board. Is there a second?
31
32 **MR. MARESKA:** Second.
33
34 **CHAIRMAN POWERS:** Thank you, John. Harry, can you kind of
35 present what you're getting at here?
36
37 **MR. BLANCHET:** This goes back to the discussion that John Foster
38 had yesterday and talking about the increased shore effort
39 estimates that are a part of the FES. Typically, shore has not
40 been a major fraction of the overall landings for a lot of the
41 council-managed species, but it does come in, especially in
42 discards, for things like gray snapper and red grouper and a few
43 others, and it's more important now, because there is more of it
44 in the current estimates.
45
46 What really flagged it for me was John's point regarding the
47 distribution of the private access points versus the public
48 access points in Florida. Now, Louisiana is a bit of a

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different cat, and so I will try not to get into that too much, but, in Florida, it seems that, if we're surveying public access points, a lot of those are things like beaches and piers and areas that have had some public funds put toward them to increase either the access availability or the habitat available at that site, putting up lights on a pier or just having the presence of a pier, in a location that's attractive to fish.

Those types of things, to me, I'm not sure if you can then multiply that by the effort of somebody who is walking into his backyard and flipping a jig against his seawall, and I don't think that the catch rates are going to be very similar, and, essentially, what we're doing right now is we're using the catch rates from those public access sites and multiplying it by the effort.

My concern is, because the added scale, the added amount of influence that these estimates are going to have going forward, that we need to take a look and make sure that we're doing the best job we can of characterizing what those actual harvest estimates and discard estimates are from that shore mode.

CHAIRMAN POWERS: All right. Thank you. One of the things we need to think about is what's the practicality of this, and you said, "pilot program, other method", implying that, basically, you just want somebody to look at the problem and how it gets resolved, and how that review occurs is up to whomever, correct?

MR. BLANCHET: Correct. I will say that that parenthetical phrase was more just in terms of giving us options, but the second one was actually more for -- I don't know how the SSC might want to characterize that alternative method. I don't know if it's possible.

CHAIRMAN POWERS: The reason I highlighted it is because who does it, and issues like that, and I think it might be left appropriately vague, and I think this is appropriately vague, in terms of actually how it gets done. All right. We're having discussions on this motion. Benny, is it to this motion?

DR. GALLAWAY: Thank you. One, the main reason is I had to leave and come back, and I had to be unmuted, and I appreciate that. I will speak in favor of this motion. I think that this aspect of the shore mode that's not really being sampled now is extremely important on a number of different issues, and we need some -- I think it would be important to have some feeling for the magnitude of this private effort and whether or not it's being censused appropriately with publicly-available sampling

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1 location schemes. Thank you.
2
3 **CHAIRMAN POWERS:** When the MRFSS, five or ten years ago or
4 whatever, when it was being reviewed, wasn't there a discussion
5 of this sort of issue, for somebody that was involved then?
6 Steven Scyphers.
7
8 **DR. SCYPHERS:** Thank you. I also really like this motion. It
9 gets at one of the questions that I asked yesterday, and I just
10 want to add one small comment to it. There is complementary,
11 but then the private and the shore-based are really two separate
12 issues, and so, on the shore-based part -- Sorry, but I'll take
13 the private part first.
14
15 On the private part, one of the comments mentioned, I believe
16 during Rob's presentation, was that a lot of those private
17 origin trips may also be boat trips that go offshore, and so, on
18 the private side, it's comparing the public access sites and
19 private, regardless of whether they're fishing from shore or
20 not, and so there might be some flexibility to kind of expand to
21 cover both of those issues, the shore issue on public and
22 private, but then also just how private is different,
23 potentially different, in and of itself. Thank you.
24
25 **CHAIRMAN POWERS:** Thank you. Luiz.
26
27 **DR. BARBIERI:** Thank you, Mr. Chairman. I was just going to say
28 that, if we still have the MRIP staff, the S&T staff, on the
29 line, it would be good to hear from them what they already have
30 in motion, going on, relative to this topic. This issue of
31 evaluating differences, potential differences, in catch rates
32 between private and public access sites is a recommendation that
33 came out of the 2016 review of the MRIP program.
34
35 That committee, the National Academy committee, made this
36 recommendation explicitly, and, during one of the CTP meetings,
37 I believe, I saw a presentation at the time that basically
38 pointed out that they had added this to their statistics
39 planning process and a method to have this addressed, and so
40 hearing from them on whether my perception is correct and
41 whether this actually is in motion I think would be helpful as
42 well.
43
44 **CHAIRMAN POWERS:** Thank you. To that point, Richard Cody?
45
46 **DR. CODY:** Just to try and address that, Luiz's concerns, yes,
47 there were explicit recommendations regarding private access
48 fishing, and one of the recommendations was to look at panel-

1 based approaches to get at that information. We have had
2 limited success with some of the pilot studies that we have
3 undertaken.
4
5 There is the potential, with the FES, to at least identify
6 households that are fishing from private access, and then
7 perhaps developing a panel based on that, and that's something
8 that we, because of the timing of the release of the new survey
9 methods, we have kind of pushed to the back burner a little bit,
10 but we certainly could pursue that a bit more now at this point.
11
12 **CHAIRMAN POWERS:** Thank you.
13
14 **DR. CODY:** Sure.
15
16 **CHAIRMAN POWERS:** Any other discussion on this motion? Dave
17 Chagaris.
18
19 **DR. CHAGARIS:** Harry, I'm wondering if it was your intention for
20 this motion to be exclusive to just the catch rates, because I
21 believe we saw, in the earlier presentation, that there was also
22 a discrepancy in the effort estimates as well between the
23 calibrations, and I didn't know if maybe adding, after "catch
24 rates", just the words "catch rates and effort" would capture
25 that.
26
27 **MR. BLANCHET:** The reason that I went the way that I did, rather
28 than talking more about the effort, was I wanted to focus on
29 basically the expansion, and I think that I agree that looking
30 at the estimation of that effort is worthwhile, but I did not
31 want to minimize that multiplication that goes into coming up
32 with a catch estimate, and so that was my -- But I agree that
33 certainly -- I said I wasn't going to go there, but I'm going to
34 go there anyway.
35
36 In Louisiana, when we did a side-by-side with MRIP in 2015, what
37 we saw in our estimates of shore-based fishing from our survey
38 was quite a bit different than what the FES estimates for
39 Louisiana for 2015 shore-based estimates were.
40
41 Now, they are estimated differently, and our shore estimates
42 were derived from our effort survey, and so, in a sense, it's
43 more like the FES than what we were doing, and I guess it was
44 the same with the MRFSS. Never mind. But, at any rate, our
45 numbers came out quite a bit different, in terms of proportions
46 of the effort that was shore-based.
47
48 **CHAIRMAN POWERS:** Thank you. Then Harry effectively is saying

1 don't put that "and effort" clause in there. Thank you.
2
3 **MR. BLANCHET:** I think it's appropriate, but probably as a
4 separate motion.
5
6 **CHAIRMAN POWERS:** All right. Thank you. All right. With no
7 other comments, then we are prepared to vote on it. Now, to
8 make things more efficient, what I will ask for is if there is
9 any objections to the motion, and, if there's just one
10 objection, then we'll go through the whole list. **Is there any**
11 **objections to this motion?** I believe there is an objection, and
12 so let's go through and vote for the motion then.
13
14 **MS. MATOS:** I'm not sure, because Paul has been having trouble
15 with his hands up, and so I don't know if it was up or down.
16
17 **DR. SAMMARCO:** No, it's down. Thank you. Sorry.
18
19 **CHAIRMAN POWERS: Then there are no objections, and the motion**
20 **passes.** Thank you. The next motion, I believe that Sean had
21 sent one in earlier, and so let me go with his first, Sean
22 Powers. This is basically what he had suggested before. Is
23 there a second?
24
25 **MR. BLANCHET:** I will second it.
26
27 **CHAIRMAN POWERS:** Okay. Harry seconds it. Sean, anything
28 further to say about it?
29
30 **DR. POWERS:** No, and I think I explained the rationale for this.
31 I mean, it's the same rationale that Shannon used, and, to me,
32 it's fairly obvious that you want to stay in the same currency,
33 and it really impresses on the council that they should wait for
34 new stock assessments, because, obviously, the changes in
35 productivity and all of that need to be reflected in any new
36 management advice.
37
38 While I think it's an obvious one, I think it's important that
39 we state it, to make sure that we don't go through piecemeal and
40 change these without understanding what it does to the full
41 assessment, and also having the time to look at the time series
42 of landings, to see these outliers and these potential problems.
43 This only really refers to those that we assess, as opposed to
44 the other non-assessed stocks, but I would offer the same
45 advice, that they stay within the same currency.
46
47 **CHAIRMAN POWERS:** Thank you. It's open for discussion now.
48 Hearing none, then we'll go ahead and vote on it. **Is there any**

objections to this motion?   Hearing none, the motion passes
without objections.

John Mareska, I believe you had a motion, which I have not seen
yet. All right. Is there a second to this motion?

DR. POWERS: I will second.

CHAIRMAN POWERS: All right. Thank you. John, do you want to
give a short presentation of what you're getting at here?

MR. MARESKA: Sure. I must be sitting next to Doug, that I got
skipped over.

CHAIRMAN POWERS: In this case, I was following when the motions
were presented to me. Go ahead, John.

MR. MARESKA: We have seen the presentations where the
calibrations, the trends, over time seem to make sense to us,
but there seems to be a lot of questions still about the scale
of the adjustments and a need to verify how real these
calibrations are, and one of the issues that's still going to
come up is the timeliness of which we're going to monitor the
landings, and, when it comes back to the stock assessment, as
Sean's motion just pointed out, it needs to be done in the same
currency.

We've got a workshop coming up on August 5, which we're going to
look at the calibrations for the state landings to the FES, and
this motion is just asking for more time for us to consider that
and, pending the results of that workshop, maybe a way to move
forward.

CHAIRMAN POWERS: Thank you.

MR. RINDONE: Mr. Chair, you still need a second, and is that
correct?

CHAIRMAN POWERS: I believe so, or didn't Sean --

MR. MARESKA: Sean did.

MR. RINDONE: Okay. Thank you.

CHAIRMAN POWERS: Before we get into discussion, this brings up
another thought. Ryan, you have sent out the Google thing for
the August 5 meeting, and I haven't had a chance to look at it
yet, but --

1
2 **MR. RINDONE:** I noticed.
3
4 **CHAIRMAN POWERS:** Well, I've also been sitting here. Is that
5 meeting going to be an SSC meeting, and so, in essence --
6
7 **MR. RINDONE:** The August 5 meeting is being moderated by the
8 Gulf States Marine Fisheries Commission and hosted using the
9 council's website. The meeting that will follow will be an SSC
10 meeting of the tagged standing and special SSCs.
11
12 **CHAIRMAN POWERS:** Okay. That was a more personal question,
13 because I wanted to know if I had to chair it.
14
15 **MR. RINDONE:** Of course you do.
16
17 **CHAIRMAN POWERS:** All right. We do have a second. Will
18 Patterson, can you comment or discuss?
19
20 **DR. PATTERSON:** I just have two comments on this one. The first
21 is that the National Standard is that the best scientific
22 information available be utilized, and so partly I think this is
23 already covered under that, and the second comment is we're
24 going to be addressing this specifically in an upcoming
25 workshop, and so it seems to me that maybe we should just wait
26 on this type of motion until we actually have that workshop.
27
28 **CHAIRMAN POWERS:** Any other comment? Sean.
29
30 **DR. POWERS:** Well, in this motion, Shannon said NMFS had decided
31 that the FES series is the best available science. What was
32 that based on, Shannon? I mean, did they solicit input from
33 SSCs or anything, or was that an internal decision?
34
35 **DR. CALAY:** So I was looking at the white paper guidance, and it
36 outlines, essentially, steps that can be taken to evolve towards
37 the best available recreational catch estimates, and what's
38 possible right now is to use the FES estimates, and that is what
39 is recommended.
40
41 There are additional steps that, as other surveys may develop,
42 state calibration factors, the advice may change, but, right
43 now, we're at the step in the white paper document where FES is
44 the recommendation.
45
46 **DR. POWERS:** The recommendation from NMFS.
47
48 **DR. CALAY:** Yes, from the group of authors that participated in

1 drafting that white paper, which was, essentially, OST and the
2 Southeast Fisheries Science Center representatives.
3
4 **DR. PATTERSON:** Shannon, isn't that recommendation just relative
5 to the straight MRIP data or the APAIS calibration?
6
7 **DR. CALAY:** Maybe Richard Cody would be a better person to ask
8 about the details, and I see he has his hand up.
9
10 **CHAIRMAN POWERS:** Richard, can you elicit some response here?
11
12 **DR. CODY:** I can at least point out some of the rationale for
13 the FES, and, basically, the FES is the only survey we have in
14 place right now, and it's the official estimates that NOAA
15 produces for effort. The CHTS is gone, and OMB has determined
16 that we don't continue it, and so it's not coming back anytime
17 soon, and so that leaves the FES as the only available estimates
18 until calibrations arise for the state surveys, and those would
19 apply, really, only at this point to red snapper estimates.
20
21 Those surveys have been reviewed, and they have been certified
22 by NOAA, but, in that certification, it specifically states that
23 it doesn't mean that they are the best available science, and
24 that's left up to the different -- If I'm correct here, to the
25 process for looking at data for stock assessments, at the stock
26 assessment level, and so that -- In the white paper, the options
27 that were laid out give you some of the statistical background
28 for the different options that are available.
29
30 For instance, Option 1 has a number of different scenarios, and
31 one is to use the FES, and that's in the absence of
32 calibrations. 1B, I think, is to use the FES, but manage using
33 the state-based survey estimates, and then you have the option,
34 at that point, to take it one step further, which is to manage
35 and conduct the assessment in the state-based estimates.
36
37 There are some statistical challenges to that, and those are
38 laid out in the white paper, but, as it stands right now, the
39 FES, until we have agreement on calibrations for at least red
40 snapper anyway, that's the -- They are fully calibrated going
41 back in the time series, and so it's the only one that's fully
42 calibrated at this point.
43
44 **CHAIRMAN POWERS:** Thank you. Luiz.
45
46 **DR. BARBIERI:** Thank you, Mr. Chairman. Richard already made
47 some of the points that I was going to make, and so I'm not
48 going to repeat those, but, John Mareska, since you are the one

1 who made this motion, I don't necessarily disagree with the
2 spirit of the motion that you have here, but I just wonder if we
3 want to have a more productive discussion of this issue, and
4 perhaps approval of this motion, or something similar, during
5 our meeting in August, because that will be after the Gulf-wide
6 calibration workshop, and that SSC meeting, I think, is August
7 10, somewhere around there that we are trying to plan for the
8 meeting to take place.
9
10 That meeting is going to be focused specifically on this issue,
11 and I wonder if approving this motion here would create a
12 problem for us to have that discussion there.
13
14 **CHAIRMAN POWERS:** Thank you. Let's let John Mareska respond,
15 before we go to Harry.
16
17 **MR. MARESKA:** Thank you, Mr. Chairman. Luiz, I think my intent
18 was, and I don't feel, reading the virtual room, that we're
19 ready to bless this as the best scientific information
20 available, but, yet, this would be a way forward for a lot of
21 the stock assessments to move forward, but, as Richard Cody
22 pointed out, red snapper may be an exception, and then, for the
23 State of Florida, or for any other state that is recording state
24 landings of other species, and they feel like those landings are
25 more credible, then maybe those species would be kind of held
26 back from being used in their stock assessments. That was the
27 intent of it, and that's why I felt like maybe it should take
28 place here, rather than once we review the proceedings of the
29 workshop.
30
31 **CHAIRMAN POWERS:** Thank you. Harry.
32
33 **MR. BLANCHET:** I had kind of a procedural question. A couple of
34 people have mentioned that white paper, and the most recent
35 version I saw of the white paper was about August of last year,
36 and I think I've been told that it was a living document, but,
37 if we're going to be using that as a reference material, either
38 in the upcoming Gulf States meeting or for this, if there is an
39 updated version of that, that might be very useful to have prior
40 to that meeting.
41
42 More to the motion here, I was reading this as a more generic
43 motion than specific to the red snapper, which was I agree, and
44 I think we will have a lot more specific recommendations
45 regarding red snapper once we've had that review in August, but
46 I don't know how universal outcomes of those workshops are going
47 to be toward addressing other MRIP-related issues.
48

1 **CHAIRMAN POWERS:** Thank you. Mike Travis, did you have a
2 comment?
3
4 **DR. TRAVIS:** I wanted to ask where does this motion leave us in
5 the case of stocks that occur off of Louisiana, where MRIP has
6 not been run for the past four years?
7
8 **CHAIRMAN POWERS:** John?
9
10 **MR. MARESKA:** Well, I believe what the Science Center is doing
11 now is they are taking the LA Creel and they're calibrating it
12 to FES to use in stock assessments, and so, if you've got a
13 particular stock of fish off of Louisiana that you have
14 independent state landings, and the stock primarily occurs off
15 of Louisiana, then that can be used as a replacement in that
16 stock assessment.
17
18 **DR. TRAVIS:** So could someone from the Center verify that they
19 have the necessary calibration ratios to do that?
20
21 **CHAIRMAN POWERS:** I take it that's a rhetorical question.
22
23 **DR. TRAVIS:** No, it isn't, actually.
24
25 **MR. MARESKA:** So what species would you be referring to?
26
27 **DR. TRAVIS:** Well, actually, you could go to the two case
28 studies that you went through already with king mackerel and
29 gray snapper, and I believe this issue comes up in vermilion as
30 well. There are all sorts of reef fish species that occur in
31 decent numbers off of Louisiana.
32
33 **MR. MARESKA:** But, in my example, those stocks actually occur
34 throughout the Gulf and not predominantly off of Louisiana, and
35 so I was thinking more along the lines of Gulf-wide. Red
36 snapper has state landings Gulf-wide, but another example would
37 be red grouper, where it occurs primarily off of Florida, and
38 so, if Florida feels like the GRFS landings are more appropriate
39 than the FES-adjusted MRIP, then possibly they could be used in
40 a stock assessment, and there are numerous stock assessments
41 that the State of Florida does on its own.
42
43 **DR. TRAVIS:** Right, and that's perfectly fine for the so-called
44 Florida species, but I'm more concerned about the suite of
45 snapper species that occur Gulf-wide, and it isn't just red
46 snapper.
47
48 **MR. MARESKA:** I believe those species would -- If they're still

190

1 distributed Gulf-wide, they would still fall to the FES-
2 calibrated MRIP landings.
3
4 **DR. TRAVIS:** So then you would leave Louisiana out completely?
5
6 **MR. MARESKA:** No, and their landings would be calibrated from LA
7 Creel to the FES. The landings would be included in the stock
8 assessment.
9
10 **DR. TRAVIS:** All right. It looks like Vivian and Shannon want
11 to speak to this, and so I'll be quiet.
12
13 **CHAIRMAN POWERS:** Vivian or Shannon, or both. Let's start with
14 Vivian.
15
16 **MS. MATTER:** I just wanted to verify that we have not used any
17 calibration of LA Creel to FES. We have used LA Creel estimates
18 as estimated by that survey.
19
20 **CHAIRMAN POWERS:** Thank you. Shannon.
21
22 **DR. CALAY:** I was going to say the same thing, only Vivian said
23 it better.
24
25 **CHAIRMAN POWERS:** Thank you. All right. I think, in this case,
26 if there is no other comments, no other discussion, then we'll
27 go ahead and vote, and I think, in this case, we should do a
28 regular poll for clearly what we're asking here. Can you go
29 through the list of people?
30
31 **MS. MATOS:** Yes. Lee Anderson.
32
33 **DR. ANDERSON:** Yes.
34
35 **MS. MATOS:** Luiz.
36
37 **DR. BARBIERI:** No.
38
39 **MS. MATOS:** Harry.
40
41 **MR. BLANCHET:** Yes.
42
43 **MS. MATOS:** Dave.
44
45 **DR. CHAGARIS:** No.
46
47 **MS. MATOS:** Benny.
48

1 **DR. GALLAWAY:** A quick question, a clarification question. The
2 FES calibration, is that the FES plus APAIS calibration that was
3 the main topic of the presentation, or is it just FES alone, or
4 is it automatically included, the APAIS?
5
6 **CHAIRMAN POWERS:** John, what was your preference?
7
8 **MR. MARESKA:** That would include the FES calibration of the
9 APAIS.
10
11 **DR. GALLAWAY:** Yes.
12
13 **MS. MATOS:** Bob Gill.
14
15 **MR. GILL:** No.
16
17 **MS. MATOS:** Doug Gregory.
18
19 **MR. GREGORY:** Yes.
20
21 **MS. MATOS:** Walter Keithly.
22
23 **DR. KEITHLY:** No.
24
25 **MS. MATOS:** Robert Leaf.
26
27 **DR. LEAF:** No.
28
29 **MS. MATOS:** Kai Lorenzen.
30
31 **DR. LORENZEN:** No.
32
33 **MS. MATOS:** Camp Matens.
34
35 **MR. MATENS:** Yes.
36
37 **MS. MATOS:** Jim Nance.
38
39 **DR. NANCE:** No.
40
41 **MS. MATOS:** Will Patterson.
42
43 **DR. PATTERSON:** No.
44
45 **MS. MATOS:** Joe Powers.
46
47 **CHAIRMAN POWERS:** No.
48

1 **MS. MATOS:** Sean Powers.
 2
 3 **DR. POWERS:** Yes.
 4
 5 **MS. MATOS:** Ken Roberts.
 6
 7 **DR. ROBERTS:** Yes.
 8
 9 **MS. MATOS:** Steven Scyphers.
10
11 **DR. SCYPHERS:** Yes.
12
13 **MS. MATOS:** Jim Tolan.
14
15 **DR. TOLAN:** I abstain.
16
17 **MS. MATOS:** Do we need to do the special SSCs or just the
18 standing?
19
20 **MR. GREGORY:** The SOPPs say that everybody is one group.
21
22 **MS. MATOS:** Okay. Judd Curtis.
23
24 **DR. CURTIS:** No.
25
26 **MS. MATOS:** John Mareska.
27
28 **MR. MARESKA:** Yes.
29
30 **MS. MATOS:** Cameron Ainsworth.
31
32 **DR. AINSWORTH:** No.
33
34 **MS. MATOS:** Paul Sammarco.
35
36 **DR. SAMMARCO:** Yes.
37
38 **MS. MATOS:** Jack Isaacs.
39
40 **DR. ISAACS:** Yes.
41
42 **MS. MATOS:** Andrew Ropicki.
43
44 **DR. ROPICKI:** I abstain.
45
46 **MS. MATOS:** That should be everyone.
47
48 **MR. RINDONE: By my count, it would fail eleven to eleven.**

1
2 **CHAIRMAN POWERS:** Thank you. All right. Now, obviously, the
3 breadth of comments, and exemplified by the vote itself, there
4 is lots of differences of opinion on how to approach this sort
5 of thing. I forget who made the comment that keeping with the
6 spirit of this motion, but there's been difficulties, apparently
7 difficulties, with some of the details of it.
8
9 This goes back to our original -- Not our, but I think it was
10 Luiz's original comment about how we should set up a process to
11 review those sorts of things, and I had suggested a couple of
12 things, neither of which were practical, because of the way the
13 SEDAR system operates now, but is there a motion, or an idea, to
14 kind of get at this process of how do we go through a regular
15 review of the recreational catch estimates to identify potential
16 problems, hopefully before they're actually implemented in the
17 assessment? Dave Chagaris.
18
19 **DR. CHAGARIS:** Just some thoughts on this idea, and, I mean, I'm
20 thinking about a motion here, but maybe it's a little bit
21 piecemeal, but something to the effect of recommend that the
22 Office of Science and Technology prioritize their development of
23 these check programs, to flag the statistical outliers in the
24 catch estimates.
25
26 This would maybe be the first part of that process that we're
27 talking about, but, when the data come out of the Science and
28 Technology to the Center, they should have already flagged what
29 they believe are suspect datapoints, and then that could start
30 the process. What the Center then does with that information,
31 maybe we need to think more about that, and so I can provide
32 some language on that specific motion, unless we wanted to
33 figure out something that was more comprehensive.
34
35 **CHAIRMAN POWERS:** Practically, the only way S&T could approach
36 that is using some statistical criteria for if the fishers'
37 catch is two-times greater than last years or something like
38 that, something that they can integrate into a machine review,
39 because they're not going to be able to look at all the
40 individual species.
41
42 **DR. CHAGARIS:** That's exactly what I'm talking about, and it
43 sounds like they are working on that, and this would be more of
44 an emphasis that this should be a priority, to try to get to
45 that point as soon as possible, to where it can be automated.
46
47 **CHAIRMAN POWERS:** All right. Thank you. Do you want to couch
48 that in terms of a motion?

1
2 **DR. CHAGARIS:** I will email it, so we have it on the board, I
3 guess, and then we can expand on it.
4
5 **CHAIRMAN POWERS:** All right. Is there any other motions, or any
6 other issues, that people want to start bringing up and perhaps
7 draft a motion, so that, in this downtime, that we can perhaps
8 talk about something else? Shannon, you can't make motions, but
9 I will let you talk.
10
11 **DR. CALAY:** Thank you. Yes, you're correct that I cannot make
12 motions. I just wanted to be a little bit careful about motions
13 like the previous one, that specify how we look at catches,
14 given SSC recommendations.
15
16 I am not a lawyer, and I don't want to misstate guidance, but
17 there is a best available science guidance document that Rick
18 Methot presented to the SSC a few meetings ago that does
19 describe the process, and my understanding is that, in general,
20 NOAA is responsible for the best science information available,
21 and the SSC provides advice, and we hope that that cooperation
22 functions, but I just want to point out that we have to follow
23 the NOAA guidance document, because that's considered best
24 available science, the white paper. That white paper outlines
25 steps that we will follow as better information is available,
26 including state calibration factors.
27
28 **CHAIRMAN POWERS:** Thank you.
29
30 **DR. CALAY:** You're welcome.
31
32 **CHAIRMAN POWERS:** We have the motion that Dave was getting at,
33 and he very quickly came up with something. Thank you. It's as
34 you see there. I guess "statistical outliers" and how one might
35 define that could be in various ways.
36
37 As Shannon pointed out earlier, you can have an outlier which is
38 estimated precisely, but it may still be an outlier, in a
39 practical sense, just recognizing that I think -- The way I am
40 interpreting this motion anyway, "statistical outliers" doesn't
41 necessarily mean if it's greater than 95 percent confidence
42 interval or something like that. It's a little broader, in
43 terms of what you mean. Is that sort of your intent?
44
45 **DR. CHAGARIS:** Yes, and there is nothing implicit here about
46 what to do with those outliers. This is just a process for
47 flagging the data, and that should be done initially, I believe,
48 at the S&T level. Then, of course, the Center, or as part of

1 each assessment, would be -- Based on those criteria, it would
2 then need to investigate those further.
3
4 **CHAIRMAN POWERS:** Will Patterson. I forgot, but did we have a
5 second for this motion?
6
7 **DR. NANCE:** I will second it, Joe.
8
9 **CHAIRMAN POWERS:** Okay. Will Patterson.
10
11 **DR. PATTERSON:** I am wondering if Dave would be willing to --
12 Instead of "statistical outliers", just say "extreme or unusual
13 values", and then, in the last part of that sentence, instead of
14 having a list limited to those that are given, I would just say
15 "determine the source of those extreme values, such as", and
16 then list those three, because there could be other potential
17 sources that aren't listed there.
18
19 **CHAIRMAN POWERS:** I understand what you're trying to do, but can
20 you help the typing here?
21
22 **DR. PATTERSON:** Sure. So, after "determine", I would say "the
23 cause of those extreme values, such as", and then delete
24 everything until you get to "APAIS". Instead of "data for APAIS
25 and FES", I would say "recalibration". These are just
26 suggested, Dave.
27
28 **DR. CHAGARIS:** I mean, I like removing the "statistical
29 outlier", and that's fine. The reason I was actually careful to
30 include the data is because there could be issues in the
31 original intercept data, for example, that don't have anything
32 to do with the calibration part, and so that was why I had
33 worded it the way I did.
34
35 **DR. PATTERSON:** In that case, what if you said, "such as input
36 data or calibration procedures"?
37
38 **DR. CHAGARIS:** That would capture it.
39
40 **CHAIRMAN POWERS:** Whether it's in the motion or not, the
41 principle of what we're trying to capture here is that all of
42 this has to be automated, just a set of protocols, and it's
43 something that you run a program and it's dumped out, because
44 there is no other way that this is going to get done.
45
46 **DR. NANCE:** That looks good to me too, Joe.
47
48 **CHAIRMAN POWERS:** All right. Doug Gregory.

MR. GREGORY: I will pass and let Richard Cody go first.

CHAIRMAN POWERS: Okay. Richard.

DR. CODY: I just wanted to make a comment. I just hesitate when I see the term "cause" in there for extreme values, because we can make a determination that an extreme value is associated with a shore mode intercept, or an extreme level of catch for a particular interview, but the cause of it is another story altogether.

CHAIRMAN POWERS: Perhaps a better word might be "source", because that's vague enough.

DR. CODY: I agree. Thank you.

CHAIRMAN POWERS: Doug.

MR. GREGORY: I'm a little confused. I thought -- I mean, this is what I was trying to get at earlier today, and I thought I heard John, in his presentation, say that they didn't have time to do this sort of thing, more than what they're already doing, and I thought Shannon kind of assured us that the Center would be doing this as they look at the data for upcoming stock assessments, and I do agree that I would like to have that done before the final assessment is presented to the SSC, and I don't know what role the SSC could really play in this, but I thought this was covered already, but I do support this effort.

CHAIRMAN POWERS: The discussions earlier by John I sort of interpreted as more going into looking at the individual samples and that sort of thing, and it was much more looking at specific individual data points when you have to -- It was similar to what he went through in the cases for gray snapper and king mackerel, and I was thinking, in terms of this motion, that it's much more broad about, again, just a set of reasonable criteria, statistical and otherwise, that will spit out a candidate list for approaching these things. Shannon.

DR. CALAY: We are already provided annual standard errors, and that exists. I was really talking about a quick-and-dirty approach to identify outliers that could be done easily, but what's written here is, I think, the ideal approach, and I am sensitive to workload at the Office of Science and Technology.

CHAIRMAN POWERS: John Foster.

1 **MR. FOSTER:** Thanks very much. Certainly the idea that Shannon
2 presented I think is -- That's relatively straightforward to
3 implement. In fact, one -- Not to get too far into the weeds on
4 any one approach, but Z scores, which are essentially normal
5 zero-one transforms of the data series, is a fairly standard way
6 to do this that is very quick and easy to program.
7
8 It could be done at various stages, and, in fact, I did it over
9 lunch for the gray snapper series that we looked at, and it has
10 some sort of standard rules of thumb about thresholds for
11 flagging things as outliers and that sort of thing, and so
12 that's not necessarily a heavy lift. Again, it could be done at
13 different stages in the process.
14
15 The harder part, which can be difficult to automate, is
16 determining the inputs with any sort of detail that might be
17 helpful, and so, again, as everyone, we have staff resource
18 limitations too, and so we could give, I think, sort of high-
19 level source information, along with the flagging, but I don't
20 know how useful that's going to be, and it might just turn
21 around into the need to do a more detailed data investigation,
22 such as the ones that I had put together for the earlier
23 presentation.
24
25 That's a heavier lift, and it's dependent on if we have sort of
26 our existing schedule, in terms of the ongoing estimate
27 production process, and so that's just for consideration.
28 Again, the automated flagging, again with a standard method, is
29 not that heavy of a lift, but the sort of investigation part of
30 this would be more difficult. Thank you.
31
32 **CHAIRMAN POWERS:** Thank you. I was looking at it in terms of
33 the, quote, unquote, unusual values, something very basic that
34 might be an indicator that might have significance to an
35 assessment or something, and, again, I don't have any
36 preconceived notions about how to do that, but some sort of a
37 moving average that goes up by X amount or something like that,
38 but it's something that is easily programmable, but not
39 necessarily a statistics decision, but certainly that would be
40 left to the people that are developing this protocol to decide.
41 Any other comments?
42
43 **DR. SAMMARCO:** Dr. Powers, just one real quick one. When this
44 issue was raised before, I made a comment then, and, really, I
45 didn't mention it specifically, but one of the things that could
46 be important in reviewing this type of data, if one trips over
47 it, is that you may be looking at a biological phenomenon that
48 you were unaware of before, whether it's migration or spawning

1 aggregations or whatever, and it might be indicative of that,
2 and that is the data are always telling you something, and, in a
3 case like this, they may be doing that, and that's all.
4
5 **CHAIRMAN POWERS:** Thank you. Dave.
6
7 **DR. CHAGARIS:** Paul, I actually had that in mind, and I think
8 that something like this would be the first step, to first
9 determine is it a data issue, and, if not, then we can look at
10 other drivers of population or availability that could have
11 driven this spike.
12
13 Also, to John Foster's earlier comment, there was no intention
14 that this motion would require the Office of Science and
15 Technology to go through that level of detail, where you drill
16 down into those species, but it's simply flagging and then
17 pointing -- I think it would be easy enough to determine whether
18 or not it's a calibration issue or a data issue. If you just
19 plot the calibrated versus the original data against each other,
20 it should stand out pretty quickly.
21
22 This would just be the first step to then, I guess, queue up
23 another analysis to drill down further into any of those extreme
24 values that were flagged, but I think that something should come
25 with the data that identifies those outliers, or extreme values.
26
27 **CHAIRMAN POWERS:** All right. Thank you. Are we ready to vote
28 on this? All right. **Is there any objections to this motion?**
29 **If none, then the motion carries without objection.**
30
31 Implicit in this is there would be some sort of review process
32 afterwards, and also implicit in this is that it would fall to
33 the assessment process, just to make people aware of it. All
34 right. Are there any other suggestions or motions or
35 discussions?
36
37 Do we want to say anything specific about those things we don't
38 do an assessment for? In a sense, we have already, in our
39 motion about everything has to be done in the currency of the
40 assessment, because, even if you're using a, quote, unquote,
41 assessment of like data-poor or using average catch, you have to
42 do it in the same currency, and so I would interpret that as
43 covering the issue of things that we don't do a bonified
44 assessment for. Harry.
45
46 **MR. BLANCHET:** I realize it's getting late, but, several years
47 ago, we went through the exercise of selecting base years for a
48 lot of poorly-sampled and poorly-known species and coming up

1 with some benchmarks based on the old MRIP data that we had in
2 hand at that point, and I think John Froeschke was a major
3 player in that exercise.
4
5 Given that we're going to be dealing with a whole fresh set of
6 recreational harvest values, should we take it as an SSC
7 function to reevaluate that set of species and see if those are
8 still valid time periods and appropriate benchmarks for moving
9 forward?
10
11 **CHAIRMAN POWERS:** Thank you, Harry. I mean, that's sort of what
12 I was getting at, and, like I said, one could interpret it as,
13 when you say everything has to be in the same currency, that you
14 have to do it for these too, but we might want to be explicit
15 about it, and, when we talked earlier, to me anyway, it was a
16 foregone conclusion that you were going to have to revisit all
17 of these things, but do you want to put that in the form of a
18 motion, Harry?
19
20 **MR. BLANCHET:** That's where my memory was struggling a bit,
21 because I don't have the specifics in front of me to allude more
22 accurately to what we were trying to get, and I was hoping that
23 I could call up someone who can be more specific regarding those
24 poorly -- Just to get the motion more accurate than I could.
25
26 **CHAIRMAN POWERS:** Does anybody want to give Harry some help, or
27 me some help? Luiz.
28
29 **DR. BARBIERI:** Harry, are you referring to the time series, the
30 reference time series, that we used for data-poor species?
31
32 **MR. BLANCHET:** Yes.
33
34 **DR. BARBIERI:** Perhaps this is all we have to say in some kind
35 of a motion, is a recommendation that we review those
36 previously-established time series of data that are used as
37 reference times for estimating what the average landings would
38 be for using Tier 3B of our ABC control rule.
39
40 **MS. MATOS:** Did you want that as a motion?
41
42 **DR. BARBIERI:** I would if Harry would actually craft it, because
43 he's better at doing this stuff than I am.
44
45 **MR. BLANCHET:** I thought he just did that beautifully, yes.
46
47 **CHAIRMAN POWERS:** Okay. I will give both of you some time to
48 think about how to craft it, and so, Kai, do you have a comment,

1   while they're working diligently away?
2
3   **DR. LORENZEN:** It's on the same thing, and I thought that Harry
4   was referring to those -- Which was really a prelude to the
5   data-poor assessments that we did, and I was thinking that
6   should really be part of the assessment process, and I don't see
7   that we have to do that separately from the next time that we do
8   a data-poor assessment. That's different from, obviously, the
9   assessments where we simply have an average catch level, so that
10 those would have to be updated to the new time series.
11
12 **CHAIRMAN POWERS:** As Harry had said though, it's updating the
13 time series, but also deciding what range of values you might
14 consider to be, quote, unquote, current and, quote, unquote,
15 historical and so on. I don't know. Like I said, I had
16 interpreted that original motion about everything done in the
17 same currency -- To me, that implies that you're going to have
18 to -- For things you don't do bonified assessments for, you're
19 still going to have to do it, to do that reevaluation, but I
20 could be overruled easily. John Froeschke.
21
22 **DR. FROESCHKE:** So the way I would characterize this is we would
23 want to review the annual landings of stocks that the ACLs were
24 established using Tier 3A or Tier 3B of the ACL control rule,
25 and we would use FES landings from 1986 onward to evaluate the
26 original assumptions, or reevaluate the original assumptions, of
27 a reference period of stable landings without trend over a
28 period of likely, or optimally, ten or more years and see if the
29 selected reference periods still approximate those assumptions
30 or not.
31
32 **CHAIRMAN POWERS:** That would be a lot of detail for a motion,
33 and particularly -- I mean, yes, you're going to have to
34 evaluate all of those things, but I guess I hate to codify too
35 much about how a problem is going to be approached, and I would
36 rather leave it to the judgment of the people involved about
37 what the time period is that you're going to use and things like
38 that. You kind of have to look at the data and see, but, again,
39 I can be overruled. If anybody wants to put that in the form of
40 a motion, please do.
41
42 **MR. BLANCHET:** What I have is stolen directly from Dr.
43 Froeschke. **We will review the annual stock landings for Tier 3A**
44 **and Tier 3B of the control rule to reevaluate the original**
45 **assumptions regarding reference periods and the appropriateness**
46 **of those reference periods.**
47
48 **CHAIRMAN POWERS:** Thank you.

1
2 **MS. MATOS:** Can you repeat it, please?
3
4 **MR. BLANCHET:** Yes. Review the annual stock landings for Tier
5 3A and 3B of the ABC control rule to reevaluate the original
6 assumptions regarding the reference periods and the
7 appropriateness of those reference periods.
8
9 **CHAIRMAN POWERS:** Thank you. Is there a second?
10
11 **DR. BARBIERI:** I will second that motion, Mr. Chairman.
12
13 **CHAIRMAN POWERS:** Thank you. Luiz seconded. Any discussion?
14 Ken Roberts.
15
16 **DR. ROBERTS:** Thank you, Mr. Chairman. The only question I have
17 is -- I can understand where this is directed, but who is going
18 to actually do the review and do the monitoring for this, and
19 the motion might be improved a little bit by paying attention to
20 that.
21
22 **CHAIRMAN POWERS:** Thank you. Harry, to that point?
23
24 **MR. BLANCHET:** Well, I agree, and the original process was done
25 by a sub-committee of the SSC.
26
27 **DR. BARBIERI:** Harry, if I may add to that.
28
29 **MR. BLANCHET:** Feel free.
30
31 **DR. BARBIERI:** It was a sub-committee of the SSC plus council
32 staff, and I think John Froeschke at the time, and SERO and
33 Science Center staff, to help us navigate through all of the
34 data challenges that had to be navigated to get to that point.
35
36 **CHAIRMAN POWERS:** Harry, can you address that first?
37
38 **MR. BLANCHET:** Yes, I agree with that.
39
40 **CHAIRMAN POWERS:**   Was there wording changes that you're
41 suggesting?
42
43 **DR. BARBIERI: That a workgroup composed of SSC members, council**
44 **staff, SERO, and Southeast Fisheries Science Center staff, and**
45 **then it should go from there.** Is that right, Harry?
46
47 **MR. BLANCHET:** Correct.
48

1 **CHAIRMAN POWERS:** All right. Thank you. I believe Paul
2 Sammarco had a comment.
3
4 **DR. SAMMARCO:** Just a quick comment. I think it's a good
5 motion, and it's essentially an internal control, or, actually,
6 it's an external control that goes to the SSC to just sort of
7 keep things in alignment, and it doesn't seem to me that it's a
8 heavy amount of work, but it's something that would be valuable,
9 and you can correct me if I'm wrong. Thank you.
10
11 **MR. BLANCHET:** It sounds like Paul just volunteered for that.
12
13 **DR. SAMMARCO:** I think I'm doing my hair that night.
14
15 **CHAIRMAN POWERS:** Thank you. All right. Any other discussion?
16 **Any objections to this motion? If none, then the motion carries**
17 **without objection.**
18
19 Is there anything that we wish to make recommendations about,
20 motions or otherwise? If not, then we move to Other Business.
21 Doug.
22
23 <div align="center">**OTHER BUSINESS**</div>
24
25 **MR. GREGORY:** I wanted to address Other Business, and my
26 question is will the July, currently scheduled, July 21 to 23
27 meeting be cut back to just a two-day meeting, since we're not
28 going to be looking at the state MRIP calibrations? That's one
29 question, and the second question is, is the September meeting
30 for three days, the 14th to the 16th? That would be questions for
31 Ryan, I guess.
32
33 **CHAIRMAN POWERS:** Thank you. Ryan.
34
35 **MR. RINDONE:** The July meeting will still be -- We'll still have
36 those three days blocked off, and, essentially, it will just
37 give you guys extra time to delve into the yellowtail and cobia
38 stock assessments and a couple other things that are on the
39 agenda, and, if we end up finishing early, on day-two, or on
40 day-three, then we finish early, but, for the time being, we
41 still have all three days for July blocked off. Then September
42 is also for three days, and that one is just about full.
43
44 **MR. GREGORY:** Thank you.
45
46 **CHAIRMAN POWERS:** Thank you. Any other business? Jim Nance.
47
48 **DR. NANCE:** Joe, before we leave, I just wanted to say that I

1 really appreciate the council putting this meeting together for
2 us. I have learned a lot, and I really appreciate all the input
3 that everybody had, and so thanks for doing it.
4
5 **CHAIRMAN POWERS:** Yes, and I think it was really helpful. I
6 sort of harken back to MRFSS days, where I knew a whole lot more
7 about the process, and it has certainly evolved there, and some
8 of the issues, and it's gratifying, in essence, to know that
9 some of those issues at the time are trying to be addressed, and
10 have been addressed, and so particularly the Office of Science
11 and Technology people, as well as the Center, have been very
12 helpful in providing this information, so that we all have a
13 better understanding when we get into debates about some of the
14 details of assessments and so on. All right. Any other
15 business? If not, then a motion to adjourn.
16
17 **DR. SAMMARCO:** So moved.
18
19 **CHAIRMAN POWERS:** And we have a second. Without objection, then
20 we are adjourned, and thank you all very much, and it has been
21 very useful. Thank you.
22
23 **MR. RINDONE:** Thank you, especially to NOAA S&T and the Science
24 Center and the SERO staff for all their help.
25
26 (Whereupon, the meeting adjourned on July 9, 2020.)
27
28   - - -
29