

1 GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

2  
3 ECOSYSTEM COMMITTEE

4  
5 The Lodge at Gulf State Park Gulf Shores, Alabama

6  
7 April 4, 2022

8  
9 **VOTING MEMBERS**

- 10 Kevin Anson (designee for Scott Bannon).....Alabama
- 11 Leann Bosarge.....Mississippi
- 12 Billy Broussard.....Louisiana
- 13 Tom Frazer.....Florida
- 14 Bob Gill.....Florida
- 15 Dakus Geeslin (designee for Robin Riechers).....Texas
- 16 Chris Schieble (designee for Patrick Banks).....Louisiana
- 17 Andy Strelcheck.....NMFS
- 18 Greg Stunz.....Texas
- 19 Troy Williamson.....Texas

20  
21 **NON-VOTING MEMBERS**

- 22 Susan Boggs.....Alabama
- 23 Dale Diaz.....Mississippi
- 24 Dave Donaldson.....GSMFC
- 25 Jonathan Dugas.....Louisiana
- 26 Phil Dyskow.....Florida
- 27 Jessica McCawley.....Florida
- 28 Lisa Motoi.....USCG
- 29 Bob Shipp.....Alabama
- 30 Joe Spraggins.....Mississippi

31  
32 **STAFF**

- 33 Assane Diagne.....Economist
- 34 Matt Freeman.....Economist
- 35 John Froeschke.....Deputy Director
- 36 Beth Hager.....Administrative Officer
- 37 Karen Hoak.....Administrative & Financial Assistant
- 38 Lisa Hollensead.....Fishery Biologist
- 39 Ava Lasseter.....Anthropologist
- 40 Mary Levy.....NOAA General Counsel
- 41 Ryan Rindone.....Lead Fishery Biologist/SEDAR Liaison
- 42 Bernadine Roy.....Office Manager
- 43 Carrie Simmons.....Executive Director
- 44 Carly Somerset.....Fisheries Outreach Specialist

45  
46 **OTHER PARTICIPANTS**

- 47 Peter Hood.....NMFS
- 48 Will Heyman.....LGL Ecological
- 49 Mandy Karnauskas.....SEFSC

1 Laurilee Thompson.....SAFMC  
2 John Walter.....SEFSC  
3  
4 - - -  
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1 The Ecosystem Committee of the Gulf of Mexico Fishery Management  
2 Council convened at The Lodge at Gulf State Park on Monday  
3 morning, April 4, 2022, and was called to order by Chairman  
4 Kevin Anson.

5  
6 **ADOPTION OF AGENDA**  
7 **APPROVAL OF MINUTES**  
8 **ACTION GUIDE AND NEXT STEPS**  
9

10 **CHAIRMAN KEVIN ANSON:** I will call the Ecosystem Committee to  
11 order. The first order of business on Tab Q, Number 1 is  
12 Adoption of the Agenda. Are there any changes that need to be  
13 made to the agenda? Seeing none, is there any opposition to  
14 accepting the agenda as written? Seeing none, and I forgot, and  
15 I skipped the membership. We have Mr. Gill, Mr. Banks or Mr.  
16 Schieble, Ms. Bosarge, Mr. Broussard, Dr. Frazer, Mr. Geeslin,  
17 Mr. Strelcheck, Dr. Stunz, and Mr. Williamson.

18  
19 Item Number II on the agenda is Approval of the December 2020  
20 Minutes, Tab Q, Number 2. Are there any changes to the minutes?  
21 Seeing none, is there any opposition to accepting the minutes as  
22 written? Seeing none, the minutes are accepted. Item Number  
23 III is Action Guide and Next Steps. Dr. Mendez-Ferrer, are you  
24 on?

25  
26 **DR. NATASHA MENDEZ-FERRER:** Yes. Thank you, Mr. Chair. Good  
27 morning, everyone. For this committee, we have two agenda  
28 items, and both of them will be discussing the fishery ecosystem  
29 plan for the Gulf of Mexico. For Agenda Item Number IV, if you  
30 remember, the Gulf Council began work in 2018 towards developing  
31 a fishery ecosystem plan, but, due to the limitations, in terms  
32 of meetings, as a result of the pandemic, we were able to use  
33 some carryover funds to hire a contractor to begin work on  
34 developing this FEP, and so, today, we will have LGL presenting  
35 the results from the work that they put together in the various  
36 compilation of efforts that are basically providing a draft FEP  
37 that we can continue to work on.

38  
39 At this point, while Dr. Heyman is presenting, the committee is  
40 really encouraged to ask questions about the various components  
41 of the work that they produced and begin thinking about how we  
42 can translate this into the council management process, and so,  
43 with the following agenda item, the work that LGL has put  
44 together has been reviewed by the Ecosystem Technical Committee,  
45 during their meetings in September and December. The summaries  
46 of those meetings are included in the briefing book, but what we  
47 plan to do on this agenda item is go over kind of the plan and  
48 the next steps on how we can operationalize the FEP for our

1 council.

2  
3 I also want to mention that I believe we have Dr. Karnauskas in  
4 the room, who is the chair of the Ecosystem Technical Committee,  
5 and so, if you have any questions, I'm sure she will be able to  
6 provide some more discussions on what was talked about and the  
7 recommendations by the ETC, and so we're really looking forward  
8 to getting some feedback on where to move this document, and a  
9 lot of work has been put into it, and so I'm looking forward to  
10 a fruitful morning. Thank you, Mr. Chair.

11  
12 **CHAIRMAN ANSON:** Thank you. That will take us to -- Any  
13 questions about the action guide? That will take us to our next  
14 item, would be a presentation by Dr. Heyman, Tab Q, Number 4(a).  
15 Dr. Heyman.

16  
17 **REVIEW AND DISCUSS CONTRACTED DRAFT GULF OF MEXICO FISHERY**  
18 **ECOSYSTEM PLAN**  
19

20 **DR. WILL HEYMAN:** Good morning. Thanks for the opportunity to  
21 be here with you, and I'm going to give you a presentation about  
22 what we've been working on, backing up the council on the  
23 fishery ecosystem plan, and we're going to present kind of a  
24 draft Version 1 of the Fishery Ecosystem Plan for the Gulf of  
25 Mexico.

26  
27 A word of introduction, before I start, and, again, I'm Will  
28 Heyman, and I work with LGL Ecological Research associates in  
29 Texas, and I'm relatively new to the Gulf. I've only been  
30 working here for about seventeen years, but, fortunately, it  
31 comes with some history at LGL, and Benny Gallaway, as you know,  
32 has been working here for close to fifty years, and he's been  
33 key.

34  
35 Anyway, the first slide I'm showing here is a picture of the  
36 Flower Garden Banks of Stetson, and, you know, I came out of the  
37 tropics, and I did a lot of my work in the tropics, and, when I  
38 first came to the Gulf of Mexico and looped at the bay and saw  
39 that water, I thought, wow, this is not as clear as I'm used to.

40  
41 Then I get to do a little bit more research and find out a  
42 little bit more and realize that the Flower Garden Banks has  
43 some of the healthiest coral reefs in the world, and I do a  
44 little bit more digging and realize it also has bluefin tuna and  
45 some of the most productive wetlands in the world and an  
46 enormous oil and gas industry and marlin and whale sharks, and  
47 just an incredible diversity and productivity that is second to  
48 none on the planet.

1  
2 This is just kind of to remind us that this system is so  
3 valuable, and I guess I want to start with a little bit of  
4 reverence, recognize the awe that I have, and probably share  
5 with everybody here, of this resource that we are allowed to  
6 managed, and so, from there, we'll go onto the next slide.

7  
8 Again, we're with LGL, and this work has been done on a contract  
9 with the Gulf Council, and we're appreciative of this  
10 opportunity and of the trust that you've given us, and so  
11 hopefully we'll come back with something valuable for you.

12  
13 From there, I just kind of want to move into the next slide and  
14 acknowledge a bunch of people. First of all, again,  
15 acknowledgement to the council itself for the funding, to the  
16 ETC that has kind of taken the charge on, and I see us in  
17 service to the ETC, and to the staff, to Carrie and Natasha and  
18 John particularly, who have been really helpful in keeping us on  
19 the rails and giving us good guidance throughout this process.

20  
21 Also, to Mandy, the chair of the ETC, and again kind of the  
22 Southeast Fisheries Science Center Environmental Branch, if you  
23 will, Mandy, and so lots of also recognition to a bunch of other  
24 people, and I'm not going to read the names, and there is far  
25 too many, but we've had to reach out and learn from the  
26 experiences of people not only all through the Gulf, but also  
27 all through the nation and internationally, and so trying to put  
28 the experiences to bear on this process, and so, again, thanks  
29 to many.

30  
31 I would also like to thank my co-authors and co-workers on this,  
32 and I mentioned Benny, but we've also got Pete Mudrak and Taylor  
33 Beyea and Nathan Putman here, as well as Steven Scyphers, who  
34 joined us as part of the key working group. Thanks.

35  
36 What is ecosystem-based fisheries management? Well, NMFS  
37 defined it in their policy of 2018 as a systematic approach to  
38 fisheries management in a geographically specified area that  
39 contributes to the resilience and sustainability of the  
40 ecosystem, recognizes the physical, biological, economic, and  
41 social interactions among the affected fishery-related  
42 components of the ecosystem, including humans, and seeks to  
43 optimize benefits among a diverse set of societal goals.

44  
45 Well, that sounds easy. So we checked that off in the first  
46 week. No, and it's a complex thing. It's really complex, and,  
47 as complex as it is to manage any given fishery resource,  
48 imagine thinking about this on a holistic basis, and so, that

1 said, if we can pull it off, it would be an incredible benefit  
2 to work at the ecosystem scale, and, again, I think we've come a  
3 long way in that, and we're going to have to go a long way to  
4 actually fully implement this, but it's -- I don't want to scare  
5 anybody, and it's an incremental approach, and we really have to  
6 think of this as getting there very slowly, incrementally, which  
7 we're well on that path already.

8  
9 Again, there's been a tremendous amount of work that's been done  
10 on this in the past, and I would like to point to just a few of  
11 these, and we've got, starting at the bottom of this, the  
12 National Marine Fisheries policy and roadmap guiding the  
13 efforts, from 2016 and 2018. Following that, some of the work  
14 of Essington and his team with the work that they did with Pew  
15 Oceans Commission and following up with Marshall and their work,  
16 really going through how you would go about fishery ecosystem  
17 planning. It's been started well before this, but this was a  
18 take on what's the next generation of doing fishery ecosystem  
19 plans, given that they were not terribly effective.

20  
21 The first set were not terribly effective, as they grappled with  
22 this enormous issue, and so some more recent work has given us  
23 more guidance and structure, and then, finally, Link and Marshak  
24 did a great job, first in this manuscript in *Reviews in Fish*  
25 *Biology and Fisheries*, giving a really systematic look at all  
26 the work that's been done in the nation, council-by-council, and  
27 looking at the resource and looking at the differences in  
28 socioeconomics, et cetera, a very kind of balanced and  
29 systematic look at it, and then, as part of the work that we've  
30 done here, we looked also at case studies and lessons learned  
31 from around the nation, but less systematic and more focused on  
32 what can we, as the Gulf of Mexico, harvest that's most relevant  
33 from the experiences around the nation.

34  
35 Giving you a little bit more history of where this came from,  
36 the Gulf development of the fishery ecosystem plan, and I'm  
37 going to get to this slide in a second, but I think it's  
38 worthwhile starting a little before that and going back to 1871,  
39 when the Fish Commission was started in the Northeast, with the  
40 idea of trying to determine if fish populations had been  
41 diminished and/or what the causes of those were and how to  
42 potentially address them, and that was, again, 1871, and it  
43 evolved into the Northeast Fisheries Science Center.

44  
45 Subsequent to that, there's been all kinds of things, but now  
46 I'm going to jump to 1996 and the Sustainable Fisheries Act,  
47 when optimal yield was redefined as the greatest overall benefit  
48 to the nation, including food productivity, recreational

1 opportunity, and ecosystem protection.  
2  
3 That really kind of put us on the track, and, indeed, it also  
4 recommended that fishery ecosystem plans ultimately replace what  
5 we have now as fishery management plans, and, again, that's  
6 still a work in progress.  
7  
8 Now we'll get to 2004, and the Gulf ecosystem establishes the  
9 SSC, and, again, I don't want to read too much of this, and  
10 we've got a lot to get through, but there's been a lot of  
11 specific work here in the Gulf.  
12  
13 Let's jump to Magnuson Stevens reauthorization in 2007, and, you  
14 know, essentially, the focus at that point, as we all know, has  
15 moved more to a single-stock management paradigm, and it's been  
16 great. I mean, we've made a lot of progress, in terms of  
17 managing stocks, and we've seen turnarounds, and we've seen some  
18 recovery, et cetera, and so that's been great, but then, again,  
19 in the background, there is still this desire to work at the  
20 ecosystem scale and to think about it holistically, and so, in  
21 2011, NOAA launched the, or I guess in 2010, the Integrated  
22 Ecosystem Assessment Program, where they tasked councils with  
23 kind of describing what it is the fishery ecosystems are and how  
24 to measure them using indicators.  
25  
26 That was an enormous task towards trying to get at this how do  
27 you manage the ecosystem holistically, and, in 2013, and then  
28 again in 2017, Mandy and her crew put together indeed an  
29 ecosystem report, ecosystem status report, for the Gulf of  
30 Mexico, following the guidance of these integrated ecosystem  
31 assessments, and they were tremendous pieces of work, but,  
32 again, how do you capture the status of the Gulf of Mexico in  
33 2013? There were 100 indicators, but that's too big to grasp,  
34 and how about seven bodies of indicators in 2017, and it's still  
35 really hard. The thing is big and complex, you know, and then,  
36 even then, even if you could capture it, does that really give  
37 you the guidance to do ecosystem management?  
38  
39 ETC gets the task, in approximately 2010, and does a great job  
40 of trying to take this down to something systematic, something  
41 that can move forward, and then, in March of 2010, everything  
42 kind of grinds to a halt, and one silver lining is, without as  
43 much travel, there was more money around, and we are grateful to  
44 have been able to support the ETC, through this consultancy, and  
45 have now offered what we have before you, the body of work that  
46 we put together, and a Draft Version 1 FEP.  
47  
48 At their March meeting in 2020, the Ecosystem Technical



1 Committee came up with a mission statement for the fishery  
2 ecosystem plan as follows: To provide a framework for  
3 integrating ecosystem science into the council's decision-making  
4 for long-term ecological and socioeconomic sustainability of  
5 Gulf of Mexico resources.

6  
7 That's good, but the council also said it's got to be  
8 actionable, okay, and, based on all the experiences we've seen  
9 in the past, that's the key. We've got to be able to not just  
10 talk about it, but do things, and so that was the challenge  
11 before us.

12  
13 To get to that, we produced the following deliverables to get to  
14 that fishery ecosystem plan at the end that we're presenting  
15 today, and the first piece that we worked on was this case  
16 studies and lessons learned from fishery ecosystem planning  
17 efforts around the nation, and, obviously, that's in your  
18 briefing book, and we also, since there's been a big push for  
19 indicators, we were asked to, and did produce, a document on  
20 indicators specifically and how to use them in fishery ecosystem  
21 planning, and, again, since this is such a complex process that  
22 involved so many people, we were asked to, and also produced,  
23 this process document, in terms of stakeholder assessment and  
24 concept mapping. How do you really bring stakeholders into this  
25 fishery ecosystem planning process?

26  
27 We developed those as part of the contract, and we also  
28 developed, and I haven't put it here, but a dashboard, an online  
29 visualization dashboard, to be able to look at some of these  
30 complex indicators in space and in time in a way that is very  
31 visually -- Potentially able to help a lot of stakeholders  
32 understand some of these complex interactions.

33  
34 A lot of process, and we're going to boil it down to five  
35 recommendations that we took largely from our work on the best  
36 practices and lessons learned, again first starting with a  
37 common vision. We've got to -- If we're going to try to do  
38 this, we need to, in spite of or embracing the diversity of  
39 environments and cultures and people and industries and points  
40 of view -- You know, if we're going to get to this holistic  
41 ecosystem-based management, we're going to need a common vision,  
42 and, to do so, we're going to need a tremendous amount of  
43 stakeholder engagement and effective stakeholder engagement, and  
44 it will be in addition to the existing stakeholder engagement  
45 processes that are working well here at the council, but  
46 directed towards something else.

47  
48 Another way to do so is we're talking about more cooperative

1 research, engaging people through cooperative research, and also  
2 addressing extra-jurisdictional issues, and I'm going to go into  
3 each of these in a little bit of detail later on, and so I'm not  
4 really going to go into detail here.

5  
6 In terms of joint visioning, I did this in two ways. One, and  
7 most importantly, in terms of this process, it's got to be  
8 systematic. We've got to be very systematic, in terms of coming  
9 to a joint vision, and be very explicit about it, and so I've  
10 got a process there that is relatively straightforward, but it  
11 entails a lot of stakeholder engagement, going out into  
12 communities all throughout the Gulf and trying to pull and put  
13 together a holistic vision that then comes together, presented  
14 in draft to this committee, gets batted around, and then, again,  
15 goes out for broad public comment and ultimately comes down to a  
16 joint vision of what ecosystem-based fisheries management might  
17 look like in the Gulf of Mexico.

18  
19 Based on learning from other councils, the South Atlantic  
20 particularly, it needs to be kind of timed out, and like what do  
21 we want to see the Gulf of Mexico look like and managed in about  
22 say ten years, and we could pick a timeframe, and I'm not going  
23 to prescribe that, but, if we're going to get there, first of  
24 all, we've got to envision it, okay, rather than kind of  
25 plodding forward day by day, and so that's the point of this  
26 exercise.

27  
28 I guess, as we think about a future vision, to me, it's really  
29 important to look backwards, and so this slide was taken in  
30 1937, off of the Galveston jetties, when this was not an  
31 uncommon thing to see, and all of us here in the room remember a  
32 Gulf of Mexico from ten or fifteen or fifty years ago that is a  
33 lot different from the Gulf of Mexico we know today.

34  
35 As we look forward, I think it's really important to bring the  
36 perspectives and bring the experiences that all of us together  
37 that we've had -- To look back and then think forward and look  
38 at the trends that we've been seeing.

39  
40 We've been seeing a -- Again, the ecosystem status report makes  
41 a lot of these real clear, the big increases in population,  
42 increasing temperatures, increasing frequency and intensity of  
43 hurricanes, increasing coastal development, increasing hypoxia  
44 and red tide events, increasing effort, and an increase in the  
45 technology that's available.

46  
47 In the 1920s and 1930s, maybe with a compass, or maybe with a  
48 small engine or a sailboat, and then evolving into LORAN-A and

1 then a huge jump with LORAN-C and people actually getting right  
2 back to spots that they've been able to mark, and then now GPS  
3 and four-stroke engines, which increases the range tremendously  
4 where people can go.

5  
6 Shaded bathymetric maps are available on Garmin, with all the  
7 best fishing holes right there, and it's just astonishing what  
8 has evolved, in terms of technology, and, again, it's nothing  
9 bad, and it's nothing good, but we just need to recognize these  
10 things, okay, as trends that we've seen in the past.

11  
12 Again, we've also seen some real developments, and I don't want  
13 to be doom and gloom here, but we've seen a council process that  
14 has developed that is really pretty functional. I mean, it's  
15 not always easy, but it works, and we address these issues, and  
16 we have a process that engages stakeholders and addresses issues  
17 and brings science to bear on these complex issues, and so, you  
18 know, and we have really been focused, again, since 2007,  
19 largely on this single-stock management approach, and, if we can  
20 do that fairly well, and there is kinks, and things can always  
21 be better, but it's functional, and let's move forward and try  
22 something else into the future, and can we, together,  
23 recognizing the magnificence of the Gulf and our dependence on  
24 the Gulf for so many different things, and the trends that we're  
25 seeing in the Gulf, and try to look forward and get to somewhere  
26 where we would like to see it go.

27  
28 In terms of this, one of the key aspects, and this is coming out  
29 of the lessons learned from around the nation, but everybody  
30 says stakeholder engagement, and you need to have a lot of  
31 stakeholder engagement, and, again, you know, this council is,  
32 right away -- There are a lot of stakeholders engaged in this  
33 formal process, and there are a variety of formal processes to  
34 get to the fisheries management plans and amendments that are  
35 guiding management now, and so public meetings and scoping and  
36 public hearings and final action, which, again, moves to  
37 rulemaking, but there is all this systematic involvement of  
38 various stakeholders.

39  
40 There are lots of different places and times where stakeholders  
41 can put their input into the process, but, for FEP, there is  
42 some differences, and we're trying to do something different.  
43 We're trying to do something that's more holistic, and I think,  
44 from the research that we've done, and looking at the  
45 experiences of other councils, there are some additions that may  
46 be required, and so these are some recommendations.

47  
48 Again, joint visioning, we've talked about, and one that we're

1 really going to focus on is this idea of fishery ecosystem  
2 issues, and so, rather than thinking about the Gulf  
3 holistically, how do we do ecosystem management in the Gulf and  
4 with using indicators and trying to -- It's too big. It's too  
5 unwieldy, and so we'll burrow down into fishery ecosystem  
6 issues, and we'll look more at that in a minute.

7  
8 The idea of more cooperative research, and, again, there's been  
9 a lot of people on the water for a long time, with a tremendous  
10 amount of experience, and we've also had a lot of scientists  
11 that have been here and thought about it and studied the Gulf in  
12 various ways, and other stakeholders, and, to the extent that we  
13 can take those diverse bodies of experiences and really direct  
14 them into the science that we need to address these complex  
15 issues, we recommend expanded cooperative research.

16  
17 Similarly, and there is some overlap here, but research and  
18 institutional partnerships, and we've got all kinds of  
19 institutions out there doing all kinds of things, and can we  
20 harness some of that, more specifically as the council, to  
21 support the process of ecosystem-based management.

22  
23 Finally, on this list, addressing extra jurisdictional issues,  
24 and there's all kinds of things that are outside the scope of  
25 this council, and yet affecting, in many cases negatively  
26 affecting, the resources that we're supposed to manage, and so  
27 how do we address some of those things?

28  
29 We have kind of simplified all of this, again with the idea of  
30 trying to get to the bottom of actionable ecosystem management  
31 guidance. We essentially suggest, in this Version 1, three  
32 primary ways to get there. One is fishery ecosystem issues, as  
33 I mentioned, expanded institutional partnerships, and expanded  
34 Cooperative Research Program, and we'll go into some more  
35 details on those.

36  
37 One of the primary, the primary, recommendation that came out of  
38 the guidance documents, having seen a first round of FEPs come  
39 out through the nation, and seeing them as actionable, the  
40 guidance documents came up with something they called the FEP  
41 loop, the fishery ecosystem planning loop, which, you know, is  
42 also mentioned as next-gen, or next-generation, fishery  
43 ecosystem planning, and it's a fairly systematized process for  
44 doing fishery ecosystem planning.

45  
46 The thing that we really -- We've kind of adopted this almost  
47 exactly for the Gulf of Mexico, with some tailoring, and so this  
48 is really looking at FEP at the scale of the nation and the

1 scale of the entire -- Sorry. The scale of the Gulf overall,  
2 and so it's a pretty broad process, but, again, assessing where  
3 are we now and trying to articulate a vision of where are we  
4 going, how are we going to get there, and we need real specific  
5 goals and objectives, again at the EBFM -- At the Gulf scale, to  
6 try to get there.

7  
8 We need some process, and we need to institutionalize it, and,  
9 again, these are suggestions, and you can take it or leave it,  
10 but we are suggesting to institutionalize the concept of these  
11 fishery ecosystem issues as a way to drill down into sub-  
12 regional issues of concern.

13  
14 Again, expanding cooperative research and defining performance  
15 measures, and how will we know if we've arrived at this vision  
16 ten years from now, and so getting real specific about what it  
17 looks like and then run it, okay, and do all these things and  
18 then look back and say, both along the way and looking back,  
19 using an updated ecosystem status report that -- Using a variety  
20 of pre-defined metrics, how did we do on our yardstick? Did we  
21 do this? Did we develop these programs, and have we approached,  
22 or gotten closer, to what our vision of EBFM has been?

23  
24 Then we do it again, and, in the Marshall paper, they talk about  
25 this is a process that might take about ten years, and, you  
26 know, it's looping around, and it's an incremental move forward,  
27 and so that's great, and we'll certainly help, and I strongly  
28 urge that we follow this next-gen FEP loop.

29  
30 That said, it's still too broad to drill down into some of the  
31 issues. If you want to be actionable, we've got to get to more  
32 spatial and temporal specificity to drill down in some of these  
33 issues, and so we came up with the concept following what two  
34 other councils have been really effective with, one in the North  
35 Pacific and the other in the Pacific, drilling down into these  
36 fishery ecosystem issues, which we define here as serving as the  
37 operational unit or focal scale for fishery ecosystem planning.

38  
39 They are bounded in space and time, with a conceptual model of  
40 the fishery ecosystem. From my perspective of cooperative  
41 research and cooperative work with scientists and fishers and  
42 other people, my thinking is that a lot of these would come from  
43 the observations of people that are on the water all the time.  
44 Hey, we've observed this or that, and let's -- Then discuss that  
45 with various people and scientists and other people and develop  
46 a conceptual model that kind of grows into something that's a  
47 fishery ecosystem issue, but it could come from other places,  
48 and it doesn't necessarily need to come from a fisher, and I

1 just want to embrace the experience that all of us have.  
2  
3 Then, again, the issue is designed to address or mitigate or  
4 resolve very specific issues, by generating actionable  
5 management guidance that leads into addressing these issues.  
6  
7 How do we choose them? How should they be chosen? Do they  
8 address an ecosystem process? Is it an important fishery  
9 resource? Is it important to stakeholders? Can the council  
10 actually do anything about it? These are some of the criteria  
11 that can be used to select FEP focus and FEI focus.  
12  
13 How could it be operationalized? We envision that FEIs, as  
14 concepts, come bubbling up from various sources as issues. Wow,  
15 red tide is affecting coastal ecosystems that are affecting  
16 grouper stocks, and that could be one of them, and there could  
17 be many others, but, eventually, as I said, they get discussed,  
18 as things do, in hallways and at meetings, et cetera, and,  
19 ultimately, they could be formalized into what we're calling an  
20 FEI and that we're suggesting at a process level that a champion  
21 would take that FEI and write it up and submit it to the  
22 ecosystem technical committee for their consideration.  
23  
24 The ETC can look at it for scientific integrity and potentially  
25 bounce it back to the champion in their group and ultimately vet  
26 the thing and ultimately pass that up as an issue that might go  
27 into something like what we're describing as an FEI hopper,  
28 where various ideas can sit in a digital repository for  
29 consideration on a regular basis for selection by this council.  
30  
31 On a very regular basis, probably annually, or it could be more  
32 frequent, the council will take a look at that hopper and say,  
33 well, gee whiz, which of these are really most important, and  
34 which of these might we try to address, and pick one, and  
35 empanel a taskforce, and say, hey, go after it. Tell us what to  
36 do, in terms of this FEI, and that taskforce would define  
37 objectives and a workplan and a budget and be tracked by the  
38 ETC, and, again, through that ETC, be reporting back to this  
39 council, in terms of the progress of this FEI, on a very regular  
40 basis. Ultimately, we're suggesting that that would lead to  
41 pretty specific actionable management guidance.  
42  
43 If you haven't fallen asleep yet, this should help. Seriously,  
44 the thing about these FEIs is that we trying to, again,  
45 systematize how to go through this, and this is pretty complex,  
46 but I am going to go through it quickly, and we can talk about  
47 it, with the idea being that this is an FEI loop, rather than an  
48 FEP loop, and this is something that could be accomplished in

1 four to six months, or maybe a year or two, and it's not a ten-  
2 year process. It's not a whole-Gulf process. It's something  
3 specific.

4  
5 The same kind of thinking, and where are we now? We've got to  
6 come up with a status, and where are we going? We need a  
7 workplan. We need a very specific set of objectives and  
8 guidance and planning and budget.

9  
10 Sometimes these FEI taskforces are going to need some money.  
11 They may or they may not, okay, and then, when the taskforce has  
12 an idea of what's needed, it may be that they can just talk  
13 about it, think about it, talk with the appropriate people or  
14 whatever, and that's it. Make management recommendations, and  
15 that's it. It might take four months, and they think it through  
16 and like, oh, this might work, and they can recommend that  
17 directly for council consideration for action.

18  
19 It would go through some kind of MSE process, tradeoff analysis,  
20 and then it could go directly to this council for consideration,  
21 a fast track, and maybe that's possible, and maybe it's not, but  
22 I do hope that some things may be able to go this way. More  
23 likely, and more commonly, we're going to need more information,  
24 and we're suggesting that there are potentially various ways to  
25 get that information.

26  
27 One might be through the existing Cooperative Research Program.  
28 It becomes a priority, and it gets put into the RFP, and people  
29 apply to get that money, and they take a typically one-year-  
30 grant-funded study and come up with information, and it comes  
31 back to the taskforce, and it comes back to others, and they  
32 look at that, and they use that, and then they make  
33 recommendations for action that, again, goes through this  
34 process of vetting and MSE and tradeoff analysis for council  
35 consideration, in terms of options.

36  
37 That's one way, and the other way, and, again, there is some  
38 overlap in these things, potentially, but, just for clarity, the  
39 other might go through recommending extra-jurisdictional  
40 partnerships and advancing some extra-jurisdictional  
41 partnerships for addressing some of these specific issues.

42  
43 Let me come back to the middle, and they're recommending -- One  
44 of the ways that could be recommended would be going through the  
45 existing CRP process, but it might not cover everything. It  
46 might not be fast enough, and it might not address the kinds of  
47 issues or have the best fit for the kinds of information needs  
48 and the timeframe that the FEI taskforce feels they need for

1 information, and so we're talking about various other ways that  
2 could address that, one being cooperative research and one being  
3 something that SEFIS could do directly and one potentially that  
4 institutional partnerships could be developed, with an  
5 institution like a university or whatever, but we want to give  
6 everybody options for how to support these taskforces with  
7 specific information needs that they can use to make  
8 recommendations that are functional.

9  
10 The council can take management action, and it might be a  
11 single-stock management action, or it may be more of an  
12 ecosystem-based management action, but, ultimately, that action  
13 gets taken, and, again, let's watch it go forward and make  
14 evaluations. Did it work? If not, let's learn and adjust, and  
15 let's get more information, and let's loop back, and/or we solve  
16 the issue, and what a concept. Anyway, that's the green star at  
17 the top, and hopefully we'll get to it quickly on multiple FEIs.

18  
19 Just I talk a lot about cooperative research, and we mentioned  
20 citizen science briefly, and I think it's worth kind of going to  
21 -- Those words get bandied about, and I think they're not real  
22 clear as to what they mean, or many different people have  
23 different definitions or thoughts, and so I thought it was  
24 worthwhile to explain where I'm coming from, where we're coming  
25 from, in terms of what public participation in science really  
26 looks like and the various levels of that collaboration in  
27 public participation in science.

28  
29 The one -- Starting at the top, somebody could be contracted,  
30 and either a fisherman might be contracted by a scientist, or  
31 the council might contract a scientist, and sure that is  
32 cooperative research, but, as you raise up, in terms of this  
33 collaborative process, a fisher might be asked to collect data  
34 that supports a program, or a scientist may be asked to input  
35 information into somebody else's process, and that's an  
36 increase, a contributory role.

37  
38 As you move up, real, true collaboration starts when, for  
39 example, a fisher -- As an example, a fisher that has noticed  
40 some process, or some issue that has led to a fishery ecosystem  
41 issue, starts talking about it with scientists, for example, and  
42 they, together, might design -- Is this real? Let's design some  
43 questions, and it comes together from the experiences on the  
44 water as well as the experiences from scientists and the skills  
45 to develop peer-reviewed publications and studies that are  
46 robust and really take it from that all the way to asking the  
47 questions and designing the study.

48



1 Again, there's some -- This is a continuum, but, ultimately, you  
2 get to this co-creation of information that's really not  
3 possible by either a fisher or an individual research group or a  
4 scientist coming up with on their own, and I have spent my  
5 career doing this, and the co-creation of information and  
6 knowledge is, in my opinion, priceless, and so I'm hoping that  
7 can -- It does occur, and I'm hoping it will increase and be  
8 brought more into this process, particularly for ecosystem-based  
9 management, which is so complex.

10  
11 One of the examples of cooperative research that we found really  
12 valuable is in this Northeast Fisheries Science Center work, in  
13 their Cooperative Research Program, and, again, I'm not  
14 suggesting that we copy, and they've got a lot more -- They've  
15 got that scallop fishery just generating amounts of information  
16 and money that we're not likely to see in the near future, and  
17 so we can't just kind of emulate a program like this with twelve  
18 full-time staff for cooperative research or whatever, but,  
19 again, this is an incremental process.

20  
21 If we decide we want to go in this direction, it offers a really  
22 nice set of potential examples. One includes a study fleet, a  
23 bunch of boats that are already certified and ready to go out  
24 and collect certain bits of information. We already use this,  
25 kind of.

26  
27 For example, for the red tide studies, if we need water quality,  
28 if we need measurements of hypoxia in various places, the  
29 Science Center can say, hey, listen, fisher, if you're going to  
30 be here anyway, drop a bottle, and let's see, and take some  
31 water samples, and that's great, but imagine if there were, you  
32 know, twenty, forty, fifty boats ready to roll, already trained  
33 in research and data collection standards, already having data  
34 sheets or what have you, and then, for a specific study, getting  
35 a very specific set of data to be collected or whatever.

36  
37 Then, all of a sudden, you've got this resource that is not  
38 really very expensive to put in play, but that could really  
39 expand the level of information after specific questions to  
40 support specific needs for information, and I could go into all  
41 kinds of details, but I think it's obvious what kinds of  
42 information could be brought to the table there, and, again,  
43 it's got to be done cooperatively, and it's got to meet the  
44 strict standards of peer review and robust data collection and  
45 analysis. It can't be, hey, just go and collect us some water,  
46 and that's anecdotal, and it doesn't help, okay, and so it's --  
47 Hopefully you're understanding what I'm getting at there.

48

1 Again, in talking to the staff, as we suggest cooperative  
2 research as a key tool to implementing ecosystem-based  
3 management, they were very helpful in telling us that, hey, we  
4 already have a Cooperative Research Program, and it's like, yes,  
5 that's true, and that discussion was really valuable to help us  
6 articulate, but this is different. This is, yes, we love the  
7 existing stuff, and it can help us do all kinds of things that  
8 we're suggesting here, but, in addition, if we expanded the CRP,  
9 it could do a couple other things that aren't being done that  
10 could meet some of the needs, for example, of these fishery  
11 ecosystem issues, or these FEIs, and I will give a couple of  
12 examples.

13  
14 I mentioned the study fleet, but there is others. What happens  
15 if there is a quick, emerging issue that there's a big hypoxia  
16 event off of Mississippi that we haven't seen before, or there  
17 is some kind of issue that's emerging, or there's an oil spill?  
18 No problem. We've got fifty boats, and this is what we sampled,  
19 and this is where we want them to sample it, and let's get out  
20 there before the thing dissipates, and boom.

21  
22 The Cooperative Research Program is excellent, but the  
23 competitive grant cycle is not going to allow us to do what a  
24 study fleet could, and so, similarly -- This could be really  
25 responsive. Similarly, if, for example, a stock assessment is  
26 coming along, and this is, again, a benefit of a cooperative  
27 research program, not only for fishery ecosystem planning, but  
28 also for single-stock management, and we need a real wide  
29 diversity of -- To get a good growth curve, we need tiny fish of  
30 the species, and we need the enormous fish of the species, to  
31 get a really accurate growth curve.

32  
33 Put that out. Put a bounty on some of these things, and you're  
34 going to get the kind of diversity of samples that you may not  
35 get other ways, and is it representative or whatever, and that's  
36 just another example that could be used, and I'm sure you can  
37 think of lots more that sampling could be done differently, more  
38 efficiently, more cost effectively, using this cooperative  
39 research approach.

40  
41 Another is the idea of long-term integrated ecosystem monitoring  
42 programs. Looking at the North Pacific, they've got this  
43 cooperation between state agencies and federal agencies and  
44 scientific groups, private industries, and I'm not saying we  
45 don't, but I'm just saying that, in talking with the people that  
46 run their cooperative research program and environmental --  
47 Sorry, but ecosystem planning programs, and those are really  
48 institutionalized and can address the kinds of monitoring that's

1 expensive. I mean, to keep track of a thousand temperature  
2 loggers, or some of these issues that are -- To send a NOAA ship  
3 to collect a thousand temperature loggers is expensive, but to  
4 send out a fleet of a bunch of people that are going to be  
5 anyway, and pull up the loggers and download it. These are  
6 expansions of, additions to, the potential that the existing CRP  
7 offers.

8  
9 Another one, and this is really simple, but I think of it kind  
10 of like a dating app, where a fisherman, or a scientist, might  
11 put their little profile on this place and say like, wow, I'm a  
12 scientist, and I really want to do cooperative research, but I  
13 don't know the right people and the right place, and then they  
14 look on this and say, oh, this person -- Vice versa with  
15 fishermen. I want to do cooperative research, but I'm not going  
16 to walk the halls of the university to try to find somebody, and  
17 so we put up a dating app, and it's silly, in a way, but, as  
18 simple and cheap as it is, I think it may really help us out.

19  
20 This is a sticky one, and not that the others are simple, but,  
21 anyway, again, lots of issues affecting Gulf resources that this  
22 council does not have jurisdiction over. Climate change might  
23 be one that you might consider, and upland sources of pollution,  
24 and what's coming down the Mississippi River and enormous dead  
25 zones, or hypoxic areas, in the Gulf and their effects on  
26 fisheries resources that this council is responsible for  
27 managing, and you can't tell everybody what to do, and you can't  
28 -- You don't have the jurisdiction to deal with that, like  
29 hypoxia, that we're seeing more and more of on the west coast of  
30 Florida.

31  
32 Do we throw up our hands? Do we say, oh, listen, red tide is --  
33 This is the kinds of effects that red tide might be having on  
34 these fisheries, and so that's affecting the stock, and that's  
35 part of mortality, and so we have to reduce what we catch, et  
36 cetera, and all of that makes perfect sense, and there's been  
37 some expansion and some tremendous work that's been done in that  
38 way, but, also, what I'm suggesting as a way to address some of  
39 these things is to build more partnerships and build more  
40 discussions and relationships that are specifically addressing  
41 these issues, through collaborations with NGOs, state and  
42 federal regulatory agencies that are responsible for water  
43 quality, industries that could change their practices,  
44 potentially, and make more money, because they're not putting  
45 the types of pollution out.

46  
47 Now, again, that steps into ecosystem-based management, as  
48 opposed to ecosystem fisheries management, ecosystem-based

1 fisheries management, and I don't want to go down that road,  
2 because they are different, and, really, we're being tasked with  
3 ecosystem-based fisheries management.

4  
5 By the same token, if the staff had a little bit more bandwidth,  
6 and if some of these issues were identified, or were part of a  
7 specific fishery ecosystem issue, this body, and our collective  
8 partnerships and industry and recreational and all the other --  
9 We've got a lot of relationships that I'm just saying that,  
10 gently, we could potentially move some of these things along.

11  
12 It's a big, complicated thing, and I'm just putting a seed here,  
13 and I'm not going to solve this, but I'm putting a seed here for  
14 you guys to think about.

15  
16 This is the summary, and this is Version 1.0. It's an  
17 incremental process, and we offer this for your consideration.  
18 Again, based on the guidance we've got, it's designed to be  
19 actionable. It provides a structured planning process and  
20 decision support tools to implement ecosystem-based fisheries  
21 management in the Gulf of Mexico.

22  
23 It includes the next-generation FEP loop, okay, with is state-  
24 of-the-art in the nation, but it adds this FEI loop as the  
25 operational scale to implement the FEP, focusing on specific  
26 issues and specific times and places, and it includes expanded  
27 mechanisms to increase stakeholder participation, including, as  
28 I said, the Cooperative Research, expanded Cooperative Research,  
29 Program, research institutional partners, and extra-  
30 jurisdictional partnerships to address some of these issues, and  
31 I didn't talk about it a lot today, but we also developed a  
32 fishery ecosystem planning visualization dashboard that has a  
33 variety of datasets in there, social and economic data,  
34 fisheries-dependent data, environmental data.

35  
36 It's very beta, but it's something that allows anybody to get  
37 online and visualize some of the relationships in space and  
38 time, not by just here's the landings in the Gulf, but this is  
39 the landings by stat zone, and by year, of each species and  
40 compare that recreational and commercial, and so it just gives  
41 you a lot more spatial granularity and temporal granularity that  
42 the public, stakeholders, can look at and go, oh, I see these  
43 trends, and I see they may be related, and so, anyway, we offer  
44 that up as a beta. If people have interest in seeing that move  
45 forward, or changing it, or doing anything to it, that's there  
46 as well, and so let me stop there. Again, thank you so much for  
47 this opportunity.

48

1 **CHAIRMAN ANSON:** Thank you, Dr. Heyman. That was a very  
2 thorough presentation. Do we have any questions from the  
3 committee? Mr. Broussard.

4  
5 **MR. BILLY BROUSSARD:** Thank you for your presentation. I was  
6 just -- At some point, you had said that the Gulf was too large  
7 to be under one ecosystem-based fishery program, and I wouldn't  
8 hold you to it, but what would you envision, or how many sub-  
9 divisions of the Gulf, or at least the council's range, would it  
10 take to effectively put each area under an efficient system?

11  
12 **DR. HEYMAN:** Thank you for the clarification. I am not  
13 recommending that the Gulf be sub-divided for management. What  
14 I am suggesting is we need both the FEP loop, to look at the  
15 Gulf holistically, and a series of specific issues that may be  
16 brought up to address specific issues in specific places at  
17 specific times, and so, for each of those issues, we're  
18 suggesting that the taskforce would look at that.

19  
20 If you're going to look at red grouper, you don't look off of  
21 Corpus, and so it's a way to focus things. It's not we're going  
22 to sub-divide the Gulf and make this workgroup do eight times  
23 the work, and does that help answer your question? It's issue-  
24 by-issue.

25  
26 **CHAIRMAN ANSON:** Mr. Geeslin.

27  
28 **MR. DAKUS GEESLIN:** Thank you, Mr. Chair. Dr. Heyman, as you  
29 went through this, there was a lot of good information here.  
30 One thing that I'm kind of struggling with, and maybe it's  
31 because I'm the new kid on the block, but how do the constructs  
32 that come out of the FEI either crosswalk or inform all the  
33 other committees and really bridge the gap in informing some of  
34 the decisions that come out of the other committees that we  
35 have?

36  
37 **DR. HEYMAN:** Again, an excellent question, and, before I dive  
38 into some details there, let me step back and say that every  
39 fishery ecosystem plan that's been developed also has a fishery  
40 ecosystem implementation plan that comes with it, and those are  
41 the kinds of nuts-and-bolts details that are going to need to be  
42 hammered out, but there's clearly a broad amount of potential  
43 utility.

44  
45 I mean, so, to answer your question, in terms of how we've been  
46 thinking about it so far, depending on an FEI for example, if  
47 it's dealing with a specific issue and a series of reef fish  
48 issues, then the Reef Fish Committee would be well represented

1 on the taskforce, and they may be leading the taskforce, and  
2 they may be a role, along with the Ecosystem SSC, in monitoring  
3 the progress of the taskforce of that FEI. There is absolutely  
4 loads of ways to integrate the existing infrastructure and  
5 committees in this process.

6  
7 **CHAIRMAN ANSON:** Any other questions? I've got Mr. Gill.

8  
9 **MR. BOB GILL:** Thank you, Mr. Chairman, and thank you for the  
10 presentation, Will. As Dakus said, there's a lot here to  
11 explore and think about. You mentioned, at the beginning, that  
12 the report, or the FEP document, was a draft, and does that mean  
13 that input from this week will be potentially incorporated into  
14 it or that it's in the internal rewrite cycle before final  
15 submission?

16  
17 **DR. HEYMAN:** Can I ask Carrie to answer that? Our consultancy  
18 is done, and so this is all yours, and so I would ask Carrie to  
19 answer that question.

20  
21 **EXECUTIVE DIRECTOR CARRIE SIMMONS:** Thank you, Mr. Chair, and  
22 so, yes, these are the final deliverables by LGL Ecological  
23 Research Associates, and I just want to thank you guys, again.  
24 I enjoyed working with you, and I would thank the team.

25  
26 **CHAIRMAN ANSON:** Did that answer your question, Mr. Gill?

27  
28 **MR. GILL:** Yes, Mr. Chairman. Thank you.

29  
30 **CHAIRMAN ANSON:** Thank you. Ms. Bosarge.

31  
32 **MS. LEANN BOSARGE:** Thank you, Mr. Chairman. Excellent  
33 presentation, Dr. Heyman. I appreciate it. It was very  
34 thorough. I just wanted to point out, I guess, a couple of  
35 things, mainly for staff, that I picked up from your  
36 presentation that I keyed in on and I really liked, and one of  
37 those is -- Well, first off, I just love this dating app.

38  
39 I know you were being flippant, to a degree, but I really -- In  
40 my years with the council, I have seen, so many times, that  
41 there is just a disconnect between the two people that really  
42 need to be talking to each other, and maybe they don't even  
43 realize that the other one exists, and it could be fishermen and  
44 scientists, or it could be scientists and scientists, or it  
45 could be managers and scientists, and lots of different levels,  
46 and you were trying to find a way to incorporate that and put  
47 those people, I guess, at each other's fingertips, or at least  
48 let them know the other one exists, and that's great, and I

1 think that's definitely something that we have to key in on as  
2 we go down this path.

3  
4 The other thing that I really enjoyed, that I think you found a  
5 way to bring into the discussion in a more formal way, that  
6 we've kind of grappled with, are those extra-jurisdictional  
7 partnerships. I think that's key.

8  
9 We manage a certain portion of the ecosystem, right, that water-  
10 based side, but there are so many things, as you pointed out,  
11 upland, or upstream, that affect us, and I have always enjoyed,  
12 when I would go to the CCC meetings and I would listen to the  
13 Hawaiians speak, about some of the ecosystem-based management  
14 that they do, and one of the pros that they have is that they --  
15 Because it's somewhat of a smaller map that they're dealing  
16 with, right, versus us here on the Gulf coast, they can almost  
17 manage from the top of the mountain down, you know, and they can  
18 really get all of those people in the room together sometimes  
19 and make some great progress, and we have issues with that here,  
20 just because we are so broad.

21  
22 We need to go from the top of the river down, right, and it's a  
23 big one, the Mississippi River, and so that's hard. That's hard  
24 to get all those people in the room to maybe listen to what our  
25 portion of the ecosystem, our fishermen and stakeholders and  
26 scientists, really need to see happen for us to institute change  
27 here on the Gulf coast.

28  
29 You have found a way, I think, if we'll incorporate that in our  
30 plan, in our FEP, as we progress with it, if we can actually  
31 incorporate that as a section, those extra-jurisdictional  
32 partnerships, and that formalizes some of our issues, and, once  
33 it's in writing and it's formalized like that, I think that  
34 gives us the platform to maybe bump it up the chain to whatever  
35 arm of the government needs to start dealing with that, and we  
36 can say this is it, and these are our actionable items, and can  
37 we work on this together, and so I really like that. Thank you.

38  
39 **CHAIRMAN ANSON:** Thank you. Mr. Strelcheck.

40  
41 **MR. ANDY STRELCHECK:** Thanks, Mr. Chair, and thanks, Dr. Heyman,  
42 for your presentation. More of a comment, but I certainly  
43 welcome your reaction, or your response, and so I really liked,  
44 obviously, how you've laid out the FEP and, in particular, these  
45 FEIs, fishery ecosystem issues.

46  
47 One of the things that I think managers have struggled with,  
48 over time, is kind of dealing in the abstract with ecosystem-

1 based management, versus actually tangibly being able to  
2 implement ecosystem-based management actions, and we've kind of  
3 got stuck on limitations with data and single-species stock  
4 assessments.

5  
6 I think you've laid out an approach where it takes incremental  
7 steps and compartmentalizes the issues, and so, from my thought  
8 process, what you've laid out, in terms of stakeholder  
9 engagement, some of the cooperative research initiatives, really  
10 can be valuable in kind of setting the stage for using ecosystem  
11 indicators for management, but the FEIs, in particular, and I  
12 think, in order for the council to fully grasp and utilize  
13 those, they need to be kind of clearly identified and  
14 prioritized by the council and by researchers, so that they can  
15 then influence management and then have those kind of regular  
16 conversations being brought back to the council and the SSCs and  
17 others with regard to FEIs and what information, what data, they  
18 will provide, obviously, to inform management.

19  
20 I'm curious, with regard to knowing where we're at now with  
21 management at the Gulf Council and how you could see us standing  
22 this up and really effectively reacting to, or implementing,  
23 such an approach for management, going forward.

24  
25 **DR. HEYMAN:** Thanks, Andy. Those are comments much appreciated,  
26 and I will take a quick stab, but I think, again, it's  
27 incremental, and so taking some of the low-hanging fruit, the  
28 data app, institutionalizing it, if the council thinks this is a  
29 good idea, and kind of accepting the thoughts, in principle, and  
30 guiding council staff to begin to try to implement bits and  
31 pieces of this and put a little bit more meat on the bones of  
32 defining what an FEI is and trying and FEI or two, because we're  
33 going to learn a tremendous amount just by doing it.

34  
35 I think that the council is going to need some bandwidth, and  
36 the council staff will need some bandwidth, and it may be that  
37 the Science Center needs some bandwidth, because we are  
38 recommending some things that are kind of outside the existing  
39 scope, and so gently, and I will answer your question that way,  
40 in addition, and so I hope that gives you some seeds.

41  
42 **CHAIRMAN ANSON:** All right. We have -- Leann. Let me -- We had  
43 an hour budgeted for this committee meeting, and it was supposed  
44 to end at 10:15, and so we have other items on the agenda. I  
45 don't want to certainly stifle any conversation, while Dr.  
46 Heyman is here, but certainly just keep that in mind, and so I  
47 have two hands up, that I know of, and I will recognize Ms.  
48 Thompson first and then Leann.



1  
2 **MS. LAURILEE THOMPSON:** Thank you. That was a great  
3 presentation, Dr. Heyman, and I was about to pass over here, and  
4 let me see if I can pose my question without stepping on some  
5 toes, but, for many years, I was on the Deepwater Shrimp AP for  
6 the South Atlantic, and we offered, numerous times, to take  
7 scientists out on the shrimp boats, out to the rock shrimp  
8 grounds, so that they could see what was going on, and we were  
9 always told, well, no, no, no.

10  
11 We've offered to take them out on our longline boats, and,  
12 again, we were told no, no, no, because it would be like the  
13 captain knows where to go catch the most fish, and so the data  
14 would be skewed, because the captain knows where to go catch the  
15 most fish, and so am I detecting a shift in the acceptance?  
16

17 I mean, I love your Slide Number 18 and your dating concept, and  
18 so am I seeing that there's a relaxation and a welcoming of  
19 information coming from members of the public, including the  
20 commercial fishery industry, in assisting the scientists now? I  
21 mean, we were literally told to go find an academic institution  
22 to try to get a grant to do what we were offering to do for  
23 free, and so am I seeing what I thinking I'm seeing here?  
24

25 **DR. HEYMAN:** Do I get to answer that? I can't speak for the  
26 council, but what I can say is, from the time I was about this  
27 big, I have spent my life on fishing boats, and, for my  
28 scientific career, I did get on a NOAA vessel once, and I got on  
29 a research ship that wasn't NOAA once, but all the rest of the  
30 fieldwork that I have done in my thirty-five years has been out  
31 of commercial fishing vessels, and I have a respect that you  
32 can't imagine.  
33

34 I mean, if you can catch fish, it also means you know how to fix  
35 a diesel engine, and you know oceanography, and you know  
36 ecology, and so I am kind of tearing up a little bit, because  
37 I've been there my entire career, and anytime a fisherman says,  
38 would you like to go out with me, I'm like, sure, and, as part  
39 of this process, I spent four days on a longline vessel, and I  
40 spent bunches of time on longline vessels in the Gulf, and I've  
41 been on shrimp boats, and how can you, as a scientist -- In my  
42 opinion, how can you, as a scientist, trying to manage a  
43 resource, an offshore shrimp industry or anything else, and  
44 manage the people that -- Again, without stepping on toes, it  
45 would probably help the scientists quite a bit to spend that  
46 time on the water with those people and see what they see, and  
47 so is it being adopted? I sure hope so.  
48

1 **CHAIRMAN ANSON:** Leann.

2  
3 **MS. BOSARGE:** Thank you, Mr. Chairman. I will be brief. The  
4 other comment that I wanted to make was in regard to the FEIs.  
5 I really like that idea, the fishery ecosystem issues idea, and,  
6 although I think, if you start with something like red tide or  
7 something, that may be somewhat overwhelming, even though it's a  
8 specific issue, right, and not Gulf-wide, and I think it still  
9 might be too big for a starting point, and so, personally, I  
10 could see like an FEI, and I would like to see more data on  
11 rainfall, right, across the Gulf of Mexico over time.

12  
13 I watch things about climate change, right, and I'm not a  
14 scientist, and so I have to rely on TV and things like that, PBS  
15 mainly, right, and that's a step above Google, maybe, and, from  
16 what I understand, climate change -- We think of it as  
17 temperature, but it seems that the rainier places are going to  
18 get rainier, and the dryer places are going to get dryer, and,  
19 obviously, that's going to have impacts here for us. We are  
20 typically a more rainy environment, right, along the Gulf,  
21 relative to a dry environment.

22  
23 I want to see that kind of data. That helps me understand what  
24 might be changing in our fisheries, and so things like that, but  
25 you've got to pull that together. We don't have that here at  
26 the council level. There is a lot of state surveys that collect  
27 things like that, and there's a lot of NOAA surveys that collect  
28 things outside the fisheries side of NOAA that collect -- That  
29 might be a small, you know, thing that we could address and try  
30 and tackle, and I think that will help inform management as we  
31 go forward, for various different fishery management plans that  
32 we have, and so I think small things like that might be  
33 something we could tackle, as a starting point.

34  
35 **CHAIRMAN ANSON:** All right. Thank you. I don't see any other  
36 hands, nor any on the board. Dr. Walter.

37  
38 **DR. JOHN WALTER:** Thank you. I'm not a member of your  
39 committee, but thank you for the opportunity to weigh-in here,  
40 and thank you, Dr. Heyman, for the great presentation. I  
41 noticed that, a couple of times, you brought up the idea that  
42 this is something that is going to be maybe similar to the way  
43 that we think about and prioritize stock assessments, that we're  
44 probably going to need to compile a list of the different FEIs  
45 that might be desired by the council and prioritize them and  
46 then get them actually in action.

47  
48 Since there are so many different things that could happen, and

1 our resources could be put forward, that process I think needs  
2 to be developed, and some attention, as to do we address  
3 rainfall, do we address red tides, do we address predator-prey  
4 interactions, or depredation, things like that that are  
5 ecosystem issues, but we do have limited resources, and the  
6 Science Center is devoted to addressing the ones that they can,  
7 but we can't lose sight of our single-species stock assessment  
8 bread-and-butter that we also have to do.

9  
10 I guess is that going to be in the summary, in the next  
11 presentation on steps towards implementing these FEIs and  
12 getting them off the ground?

13  
14 **DR. HEYMAN:** Thanks, John. Great question, and there's a lot to  
15 absorb in the three huge documents that we put out, but one of  
16 the things that -- Again, trying to make this actionable, with  
17 guidance from the staff, we do have a series of decision support  
18 tools, as appendices and within the FEP document, that address  
19 those kinds of things, and so these are the criteria by which  
20 things should be selected, and these are the -- Again, it's --  
21 These are recommendations, but absolutely. I mean, it's really  
22 complicated, and so we have to have a systematic process for  
23 defining priorities and -- So yes.

24  
25 That's critically important, and we've offered some tools to do  
26 so in the draft FEP, in the appendix, and it's critical. I  
27 guess one other thing, on that, is that, depending on bandwidth,  
28 you don't have to do one at a time, and you could have several  
29 rolling operationally. It may be that additional resources --  
30 Yes, this is bigger than single-stock, and it is -- We are  
31 talking about more work, and yet what I am hoping, and what I'm  
32 seeing in other places, is, if you take this approach, it eases  
33 some of the burden on some of the single-stock work.

34  
35 For example, in the Pacific Council, we're seeing that kind of  
36 benefit, and so if that helps, and I want to go back to one  
37 comment, and, again, without going too far off the rails or  
38 stepping on toes, and I guess that the other side of that  
39 involvement is that scientists have a tremendous amount to  
40 offer.

41  
42 One of the things, the mistakes, that people have made is to  
43 say, oh, well, if a fisherman observed it, or is a fisherman  
44 even measured it, then, well -- I have fallen into this trap,  
45 you know, and it's cooperation, and it's collaboration. The  
46 study needs to be designed in a way that data that are collected  
47 are robust and will pass muster at the SSC, and so it's that  
48 collaboration and cooperation to have both the participation as

1 well as the robust science. Thanks.

2  
3 **CHAIRMAN ANSON:** All right. No other hands, and so, Dr. Heyman,  
4 thank you very much for coming and providing your information.  
5 We really appreciate it.

6  
7 **DR. HEYMAN:** It's a pleasure, and I'm here all week, and so look  
8 for me at the bar.

9  
10 **CHAIRMAN ANSON:** Okay. That will take us -- We have about  
11 eleven minutes, ten or eleven minutes, left in our allotted  
12 time, Dr. Mendez-Ferrer, if you want to maybe go to Item 4(b), I  
13 guess, and start some discussions there, and I think that's the  
14 meat of what we're having the committee for, if that would be  
15 okay, and that would be Q-4(b).

16  
17 **DR. MENDEZ-FERRER:** Mr. Chair, it will be my presentation on  
18 5(c) for the next steps.

19  
20 **CHAIRMAN ANSON:** All right. Then let's go to the next steps.

21  
22 **ECOSYSTEM TECHNICAL COMMITTEE RECOMMENDATIONS**

23  
24 **DR. MENDEZ-FERRER:** Thanks. Originally, I wasn't planning on  
25 going through each one of the Ecosystem Technical Committee  
26 Recommendations, as those have been focused on the individual  
27 projects that LGL delivered, and the recommendations have been  
28 incorporated, and so, kind of going off of what Dr. Heyman just  
29 presented, how do we go about operationalizing an FEP for our  
30 region?

31  
32 The way that I kind of envision this, the FEP is what lays out  
33 the framework, the step-by-step, on how to incorporate and  
34 address fishery ecosystem, EBFM, efforts, and then the FEI would  
35 be the individual modules that would then address the specific  
36 management issue, using the steps laid out in the FEP, and so I  
37 guess a way to oversimplify this is the FEP is the cookbook, and  
38 the FEIs are the recipes.

39  
40 I am stealing this figure from LGL, and it seems like the  
41 recommendation from -- One of the main recommendations from the  
42 Ecosystem Technical Committee was to operationalize the fishery  
43 ecosystem issue loop or include developing the fishery ecosystem  
44 issue modules, and so I'm going to, on my next few slides, kind  
45 of walk through some of these steps and what can these look  
46 like, if we were to take the approach of using FEIs as part of  
47 our FEP.

48

1 Like I mentioned, the Ecosystem Technical Committee provided  
2 recommendations to LGL during their September and December 2021  
3 meetings, and their overall recommendation was to operationalize  
4 these FEIs.

5  
6 Before we move forward with continuing work on this document, we  
7 would like some feedback and some direction from the committee,  
8 in terms of do you agree with this approach of basing our FEP  
9 around these fishery ecosystem issue modules, and, from the  
10 discussion that we just had, it seems like there is some  
11 positive -- Like you seem to be liking this approach, and, if  
12 so, if FEIs are something that we want to use, moving forward,  
13 what would you like to see, or how would you like them to inform  
14 making these management decisions?

15  
16 I can stop here for some discussion, or I can leave you thinking  
17 about these questions as I go and present sort of an example of  
18 what an FEI might look like, using some of the resources that we  
19 currently have.

20  
21 **CHAIRMAN ANSON:** I would say try to go through the example.

22  
23 **DR. MENDEZ-FERRER:** Okay. I'm sorry, Leann, but the example for  
24 today is going to be red tide, and so one of the FEI loops is  
25 identifying the issue, and, at this point, this can be  
26 identified via the council process, and we already have the --  
27 We have the fishery feedback tool, and we have advisory panels,  
28 and one of the things that we also need to figure out is how to  
29 prioritize these FEIs, and we can incorporate -- We can use the  
30 IPT and the Ecosystem Technical Committee and other council  
31 advisory bodies to be able to come up with a way to prioritize  
32 these FEIs.

33  
34 The example for today is red tide, and, as we know -- Well,  
35 we're selecting red tide because there seems to be a lot of data  
36 and efforts that are actually put out there that we have not  
37 been able to necessarily translate into management actions, but  
38 there seems to be a lot of movement going on right now, and so  
39 it might be an example FEI that we could kind of tinker with and  
40 see if this something that we want to pursue.

41  
42 Step 2 is to kind of come up with that workplan with the  
43 Ecosystem Technical Committee and the SSC. What do we want to  
44 know, and so why do we care about red tide? What do we want to  
45 understand? Come up with those questions. What effects do red  
46 tide events have on a particular fish stock, or what kind of  
47 impacts does it also have on our fishing communities, for  
48 example, and so this would be at the stage where we could come

1 up with those questions, and it would drive kind of like the  
2 rest of the legs in which we can continue developing the module.

3  
4 We would need to assess the data available. Right now, for red  
5 tide, there are several data collection and modeling efforts  
6 that are currently taking place at the state and federal level.  
7 As we have seen in previous council actions, red tide mortality  
8 has been incorporated into the interim analysis for red grouper,  
9 and there are more red tide studies right now that are modeling  
10 the severity and the extent, the spatial extent, of red tide  
11 events and how this translates to mortality, and so we're kind  
12 of already doing that here, and, again, we can incorporate the  
13 IPT and the SSC to figure out how all of these data can be then  
14 operationalized to inform management decisions.

15  
16 In the implementation portion, and, of course, throughout this  
17 whole process, we would be bringing it to the council to gather  
18 some feedback, but data gaps would be identified. There are  
19 studies out there for red tide that specify, or point out, the  
20 need to understand the relationship between red tides and  
21 hypoxia events, for example.

22  
23 There are also ongoing monitoring efforts that inform yearly red  
24 tide and the conditions out there in the ocean, as well as we  
25 have indices, and we have models, that can be incorporated into  
26 stock assessments, and so I know that red tide is not -- We  
27 don't manage red tide, and we don't manage water quality, but we  
28 do -- Our resources are influenced by these kinds of events, and  
29 so, right now, there are also some partnerships, at the state  
30 and federal level, that are working together towards this  
31 effort. Some of them, for example, is, in the State of Florida,  
32 the Harmful Algal Bloom Taskforce, as well as state and federal  
33 long-term monitoring efforts that are going on.

34  
35 One of the things that would be helpful, and maybe this is not a  
36 question that we would need to answer right now, but really  
37 think about, in terms of if these issues arise that would  
38 require more partnership with state or agencies outside of our  
39 region, it would be, I guess, fruitful to think about how to go  
40 about this and how do we -- If the council would like to  
41 participate or let know these additional agencies that, hey,  
42 these issues are affecting our stocks, and I think we should  
43 work together for relaying some data, and this is something that  
44 you should consider when also making your management decisions.

45  
46 Then Step 4 would be the management actions, and so, at the IPT  
47 level, it could be determined if the FEI should be a stand-alone  
48 document or if relevant portions should be included into

1 amendments, and sometimes they might not necessarily be a  
2 management action, per se, but it could provide additional  
3 information that could strengthen the rationale when the council  
4 is making decisions on catch advice, for example, based on what  
5 we know about status and trends of red tide and why an  
6 alternative was selected over another one.

7  
8 As usual, throughout this whole process, we would be considering  
9 feedback from the council and the stakeholders before these  
10 modules would be put out for -- Would be finalized.

11  
12 Where are we right now? If the committee agrees with FEIs and  
13 kind of as a path forward, we do have an IPT that we have not  
14 been able to convene yet, due to some of the limitations that we  
15 have in terms of time and the pandemic, but we can bring this  
16 work, the work that LGL has put together, to the IPT level and  
17 to the Ecosystem Technical Committee to continue developing, and  
18 so, if you have any questions, or any specific things that you  
19 would like to see, or steps that you would like to see outlined  
20 in the FEP, please bring those up.

21  
22 The more information that we get from you, the more useful this  
23 document is going to be, because, in the end, we want to make a  
24 document that is useful and not just something that we reference  
25 every once in a while.

26  
27 Another thing to keep in mind, as we're selecting these FEIs, is  
28 we don't want to have a really large list of issues that then  
29 may give some false hope to our stakeholders if they don't have  
30 enough data available for us to be able to address it, and so,  
31 when selecting the list of potential FEIs that we want to look  
32 at, and the way to prioritize it, it's something that we need to  
33 consider, as well as staff time and council priorities, when  
34 moving forward.

35  
36 The next slide kind of summarizes what I just said, and so I can  
37 open the floor for some discussions and directions to staff on  
38 what you would like to see outlined in the FEP, as well as the  
39 FEI modules.

40  
41 **CHAIRMAN ANSON:** Thank you, Natasha. Mr. Chair, just to be  
42 clear, maybe take a few question related to Dr. Mendez-Ferrer's  
43 presentation, but she laid out some, I guess, asks, of the  
44 committee at least, and maybe we can bring that up at Full  
45 Council, for further clarification or discussion, relative to  
46 whether or not this FEP/FEI concept is agreeable to the council  
47 and that type of thing, and bring it up at Full Council, with a  
48 little bit of time possibly there, but at least maybe to address

1 immediate questions right now, and is that okay, because we're  
2 at the end of our committee time.

3  
4 **MR. DIAZ:** Yes, I think that's a good plan, Kevin, and some  
5 folks might want to stew on this a little bit and have some idea  
6 at Full Council. Thank you.

7  
8 **CHAIRMAN ANSON:** Thank you, and so we'll just answer just a  
9 couple of questions, if they're out there. Mr. Gill, I saw your  
10 hand up.

11  
12 **MR. GILL:** Thank you, Mr. Chairman. Not a question, but I would  
13 hope, relative to your comment and the Chairman's comment, that  
14 we allow sufficient time at council to have a more robust  
15 discussion on this complex subject. Some of the questions are  
16 fairly easy with yes or no, do we like it or whatever, but  
17 there's more to it than that, and it will take some time, I  
18 think, to have that discussion, assuming there is interest  
19 around the table, and I hope we allow the time and availability  
20 to do that.

21  
22 **CHAIRMAN ANSON:** Any other committee member that has a specific  
23 question related to the presentation? All right, and so, with  
24 that, we're at the end of the time, and there was no other  
25 business, and we'll go ahead and conclude the Ecosystem  
26 Committee.

27  
28 (Whereupon, the meeting adjourned on April 4, 2022.)

29  
30 - - -