GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

HABITAT PROTECTION AND RESTORATION COMMITTEE

Beau Rivage Resort & Casino   Biloxi, Mississippi

October 24, 2022

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Dave Donaldson...GSMFC
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1   The Habitat Protection and Restoration Committee of the Gulf of
2   Mexico Fishery Management Council convened at the Beau Rivage
3   Resort & Casino in Biloxi, Mississippi on Monday morning,
4   October 24, 2022, and was called to order by Chairman Bob Gill.
5
6   **ADOPTION OF AGENDA**
7   **APPROVAL OF MINUTES**
8   **ACTION GUIDE AND NEXT STEPS**
9
10 **CHAIRMAN BOB GILL:** I would like to call the Habitat Protection
11 and Restoration Committee to order. The current members are Dr.
12 Shipp is Vice Chair, Mr. Schieble, Ms. Boggs, Mr. Donaldson, Dr.
13 Frazer, Mr. McDermott, Joe Spraggins, Andy, and Troy Williamson.
14
15 The first item on the agenda is Tab P, Number 1. Are there any
16 changes or corrections made to the agenda? Seeing none, is
17 there any objection to adopting the agenda as written? Seeing
18 none, the agenda, as written, is adopted.
19
20 The next item is Tab P, Number 2, Approval of the June 2022
21 Minutes. Are there any corrections or additions made to the
22 minutes for the June 2022 meeting of this committee? Seeing
23 none, is there any objection to approval of the June 2022
24 minutes? Seeing none, the minutes stand approved. Dr.
25 Hollensead will provide the action guide, and, if you would, if
26 you would pause after you do that and then just slide right into
27 your presentation on the essential fish habitat.
28
29   **DRAFT GENERIC ESSENTIAL FISH HABITAT (EFH) AMENDMENT**
30
31 **DR. LISA HOLLENSEAD:** Yes, sir. Thank you, Mr. Chair. We've
32 got one item on the docket here for the Habitat Committee. As
33 many of you know, we are working on developing an amendment to
34 update the council's descriptions and identification of
35 essential fish habitat, or EFH, as I'm going to say throughout
36 the rest of the presentation.
37
38 This presentation is going to focus on the creation of some maps
39 that were made. Previously, we've been talking through this
40 document without that visualization, and that can make it
41 difficult. The best way to do this is really to develop a
42 webtool, which would allow, you know, anybody that's interested
43 to be able to pull up maps and do some comparison analyses and
44 things like that, and so that's what we've been working on.
45
46 In the process of doing that, that takes a lot of time to
47 develop all of those maps, because, for each of the amendment
48 considerations, you have to create a map, and so it comes out to

be about 270 or maps or so that we've got right now, and so it
takes a little time to build it out, but the interesting thing
is, as we began to build these things out, using sort of the
decision criteria for the descriptions that we've currently got
on the books, we realized there were some errors, or some
misleading visualizations, that came to our attention.

Upon realizing this, council staff thought it best to present
some of this information to the SSC, to get their thoughts and
recommendations on that, and so we have done that, at the last
SSC meeting, and so the presentation that I will be giving you
will be a very similar presentation as to what I gave to the
SSC, and certainly Dr. Powers is here, and he can fill in
anything that I may have missed, in terms of their
recommendations, but, long story short, there are a lot of
things going on with Alternative 2.

That's going to need to be addressed, probably through the
process of going through each one of those individual maps, and
the decision rationale that was used to develop those maps is
going to have to be looked at by a number of experts, and so
council staff would probably engage those folks, state agency
folks, federal agency folks, and get that well documented, not
only to have some rationale to allow the council to move forward
with this document, as it's been developed, for also for future
five-year reviews, to have solid documentation of why does this
look the way that it does, why was this changed, so that anybody
could pick up this ball and run with it.

That's the hope here, moving forward with this, and so, if
there's no other questions about that, I'll just get right into
the presentation, and that's going to be Tab P, Number 4(a).

Again, just a little quick update on the presentation outline,
and I'm going to review some of the EFH description methods that
are outlined in Alternative 2 and 3. I'm not going to go into
Alternative 4 for this presentation, just for the sake of time,
and this was also the main focus of the SSC meeting.

I'm going to introduce the EFH webtool, and this constructed
using the Shiny application, the R Shiny application, and I'm
going to go through it by component, and so the ecoregions, the
depth zones, the habitat spatial layers, and the EFH
descriptions for the two alternatives we're considering today.
I'm going to report some of these example observations and then
propose some next steps and get the committee's feedback on
that.

1   Just for anybody who is unaware, what is EFH, and it has a legal
2   definition that was developed through the Sustainable Fishery
3   Act of 1996, and it is those waters and substrates necessary to
4   fish for spawning, breeding, feeding, and growth maturity. Now,
5   the council does have a Generic EFH Amendment, and that was
6   completed in 2004, and so this is for all managed species by
7   life stage.
8
9   This current amendment being developed would be considering
10 finfish and shrimp species that are managed by the council, and
11 those life stages are broken into these life history
12 categorizations of eggs, larvae, post-larvae, early juvenile,
13 late juvenile, adult, and spawning adult, and, again, as I
14 mentioned, the council is also obligated to create these five-
15 year reviews that will update literature tables and those sorts
16 of things and then present those to the agency.
17
18 We are due for one. However, given that this is such a large
19 amendment to tackle, we've been in talks with the Southeast
20 Regional Office that they understand that this is going to take
21 a little bit more time, to not only develop, or update, the
22 current descriptions, but also incorporate what's required for
23 the five-year review, and so we'll be getting a little more time
24 to do that.
25
26 Currently, what we have on the books and what we do is we break
27 the Gulf up into these ecoregions, and here is the
28 characterizations for those outlined in the table, and there are
29 five of them, and here's a visualization of those ecoregions,
30 and so these are broken out into general regions across the
31 Gulf.
32
33 Additionally, it's taken into account -- These habitat layers
34 are taken into account for depth zone, and so you'll have an
35 offshore boundary, a nearshore boundary, and an estuarine
36 boundary, and I'll go into what those descriptions are in a
37 moment.
38
39 Again, we developed this webtool, the idea that it's fairly easy
40 for folks to sort of toggle through and move through these
41 layers, see how they interact, and see how they actually create
42 the EFH descriptions.
43
44 I'm going to focus first on these depth zones and ecoregions,
45 and these are sort of the easiest to conceptually understand,
46 and so the text there, at the top, indicates buttons which can
47 be pushed and then engage those spatial layers one-by-one, and
48 so you can turn them all off, or you can turn off one, and have

1 a better look at whatever detail you would like.
2
3 For example, here on the webtool, here is all of those depth
4 zones that have been selected, and so now they are visualized on
5 the map, and so we can look at the estuarine layer, which is
6 those inside barrier islands and estuaries, the nearshore area,
7 which is less than sixty feet deep, and then the offshore area,
8 which is categorized as more than sixty feet deep.
9
10 Then here's our ecoregions, and so we were able to get -- All of
11 these clicked right now, 1 through 5, and so this was sort of a
12 simple example, but it shows that, okay, our R Shiny app can
13 correctly draw the layers that we've uploaded from our ArcGIS
14 server, and we're able to get our ArcGIS server to talk to R,
15 and that was a little bit of a pain, but now we've got that
16 figured out, and that was a big step, and that these individual
17 layers can be toggled on and off for the comparison analysis.
18
19 The next step is to work on some of the aesthetics and the user
20 interface and functionality, to make sure that the tool is
21 appropriate for support and evaluation of the EFH document.
22
23 What the council currently does is the council takes those
24 ecoregions and depth zones that I have just talked about, but it
25 also takes into consideration some of these habitat
26 characterizations, and so all the ones that are listed on that
27 table is what they currently look like.
28
29 We also wanted to make sure that people could sort of look at
30 this, for lack of a better term, raw habitat data, and so we
31 also have this incorporated in the webtool, and you'll be able
32 to select on the button that says "habitat", and it would pull
33 up those available benthic habitat layers for which we have
34 spatial information, and you can toggle those on and off, to get
35 a better idea of how these descriptions are being constructed,
36 and so it sort of gives you some of that raw information as
37 well. We've got the depth zones, the ecoregions, and then the
38 habitat.
39
40 The next two tables show -- For example, this is gag grouper
41 here, and so one of the things the council also does is it
42 takes, okay, here is all of these, you know, depth ranges,
43 ecoregions, and habitat types, and now I have to insert some
44 information about the critter that I am interested in, and, in
45 this case, this is gag grouper, and so it looks through the
46 primary literature, and looks through some of the gray
47 literature, or technical memos, and so look through all of that,
48 do an extensive literature review for habitat uses and

1   associations for that species by each of these life stages.
2
3   It will let you know, for example, eggs for gag grouper are in
4   Ecoregions 1 and 2, and, generally, those are offshore and
5   associated -- That's water-column associated, and so then you
6   would begin to then piece those bits of the information, and,
7   okay, this is what the literature tells me, and this is my
8   categorization for those larger categories, through my spatial
9   data, and so then I'm going to put these together and get my
10 description of EFH that way.
11
12 It's a qualitative way to do it, but it's fairly quick and easy
13 to do, to take some of these habitat layers and put them through
14 here, and so it works for the purposes, and that's what the
15 council currently uses. That's the method they currently use.
16
17 In order to visualize all of that, the webtool also has what we
18 call an EFH button, and so this will allow you to then select a
19 species that you're interested in, go through and look at all of
20 the life stages for that species, you know, what the EFH
21 description for that is, and, if you're also interested in
22 comparing, you two, species across each other, we want to allow
23 for that as well, and so it can pull up a lot of layers pretty
24 quickly, and get complicated quickly, but it certainly allows
25 the user to look at just about anything that they would like to
26 look at.
27
28 I will give an example of how this works, and so using red
29 grouper adult as an example, and so the EFH description for this
30 says Ecoregions 1, 2, 3, and 4, and that's going to be those
31 hardbottom and reef habitats that are found nearshore and
32 offshore, and you get something that looks like this, and that's
33 how this would go across.
34
35 Now, when I was presenting this to the SSC, several members
36 brought up that I don't know if I necessarily agree that this is
37 the best description for adult red grouper EFH, and there may be
38 some things missing on here, and that spurred a discussion of
39 where we can find some better, you know, habitat layers,
40 especially for something like hardbottom or reef, you know,
41 something that provides a visualization of the Florida Middle
42 Grounds better, these sorts of things, and so we're starting to
43 identify, as we put these things together and look, that there
44 are definitely some gaps in our spatial habitat data layers.
45
46 Also, we've continued to run into a little bit of a challenge,
47 in that not all habitat characteristics are available to map,
48 necessarily, and drifting algae, or sargassum, is a more dynamic

habitat feature, and so even a static image of that that's going
to be visualized is likely not going to be accurate, and so, you
know, what might be the best way to handle that.

Additionally, banks and shoals aren't included, and then water
column association would just be the larger Gulf, and there's
probably some way which we could indicate that through the map,
but we'll have to sit down and talk with some folks about the
best way to do that, but we can run into some problems.

For example, gray triggerfish early juvenile, its habitat
characteristics say Ecoregions 1 through 5, mangroves,
associated with mangroves, and so, across the Gulf, you know,
mangrove association, but then also drifting algae, but, with
the data layers that I have available, if I go to visualize
that, since I don't have the sargassum, or drifting algae,
layer, it's just going to look like that raw mangrove habitat
layer, and that's not totally accurate, and so there's got to be
some better way to come up with that, and so that's some of the
things that I think would be good to sit down with some habitat
experts and get an idea of how to hammer that out.

Additionally, we do have an IPT for this document, and we do
have some technical folks that sit on that IPT, and so we got
together with those technical folks, and we gave them the data
layers that we had, and they recommended combining sand, mud,
clay, and silt as all one soft-bottom layer, for example. When
you start to tease those things out, you start to miss some
things, and they also thought that it would cause some confusion
for folks, and so they recommended combining all of those things
for the webtool, which is what we did.

In doing that, there potentially might be some utility in
combining some of these other habitat layers. For example,
should this be done for hardbottom and reefs as well? Should
those data layers be combined, and perhaps that would give a
more appropriate description for gray triggerfish late juvenile,
for example.

Here's gray triggerfish late juvenile, and so this description
says that it's Ecoregions 1 through 5, and so throughout the
Gulf, nearshore and offshore, you know, drifting algae, and
mangrove and reef through here. You can see it encompasses most
of the Gulf. However, when you look at Ecoregions 1 through 5,
and we say, okay, well, I want those reefs that are nearshore
and offshore, you get this small description, and you can't
actually see that we do have some of the reefs off of Texas and
things like that, but, right now, all it's visualizing is off

1 there in the Keys, and that is likely not correct.
2
3 That just has to go with sort of the division, or the decision,
4 hierarchy, that's made through clicking the layers and what you
5 end up with, and so, for example here, for the gray triggerfish
6 late juvenile, we don't have drifting algae as a habitat layer,
7 and so we're left with the nearshore and offshore habitat, and
8 so it's like this large, encompassing description.
9
10 Then, when you do have a little information, like, okay, they
11 seem reef associated, you get these smaller descriptions of EFH,
12 which is likely not accurate, and it's almost like you're
13 working from behind. Like, if you didn't have a whole lot of
14 information, you wouldn't have an EFH description, and you would
15 build yourself out, and that's how you might think, but that's
16 not what the council wants to do, and they want to have
17 descriptions for everything, and so it's almost this odd case
18 where, when you have less information, you get a broader
19 description of EFH, and, when you have some information, you get
20 a smaller one, and that may not be appropriate.
21
22 Some of those decision points need to be discussed by some
23 habitat experts, or, certainly, if there is a deviation from the
24 way that -- You know, we may have a hierarchy for decision-
25 making that works well for most species, but, when we come
26 across an anomaly, that needs to be documented of why we may
27 have moved away from something like that, why we decided to do
28 something different, based on another bit of literature or
29 something like that, to provide some rationale, and so that's
30 what I mean when it starts to look like you're going to have to
31 go through each layer and figure out what you would like to do.
32
33 We have made some metadata available for these habitat layers.
34 After speaking with the SSC, they had some recommendations of
35 some folks that we can talk to, and so I imagine that metadata
36 will change, and, once we have that more solidified, I can bring
37 that before the council review.
38
39 Again, not all habitat layers have spatialization, and so that
40 makes things a little different, in terms of the visualization,
41 and perhaps we can combine some of those habitat layers, or
42 perhaps even combine some of the life stages.
43
44 I haven't found a good definition of, you know, where is an
45 early juvenile or late juvenile cutoff, by each species, for
46 example, and so perhaps things like that could be combined, and
47 that might help with these descriptions, and, again, we just
48 need to explore some of the logic flow, because it results fine

1 for some species and life stage combinations, but not all, and
2 so where those deviations occur need to be documented.
3
4 Again, we probably need to reconvene the IPT, maybe even the
5 broader level ones, to get them up-to-date, and, again, touch
6 base with some of the technical folks we have working on there,
7 and we'll rework the tool to be a little more user-friendly and
8 continue to identify those anomalies, and so these are just the
9 ones that, you know, were really glaring to me, as I was putting
10 them together, and there's likely more.
11
12 The good news is the increased utility for comparison analysis,
13 and the webtool can be updated quickly. Since, in our ArcGIS
14 server, I made a URL for each one of these maps, in the future,
15 should things need to be updated, the tool will be seamless, and
16 we'll be able to just upload that map through that URL, and the
17 tool should be able to run no problem, and so the user wouldn't
18 notice really that anything had been updated, and they will just
19 get the most accurate information.
20
21 That's everything for Alternative 2, and I might pause here,
22 and, if anybody has any questions about this, I would be happy
23 to take them. I know it's a lot of information.
24
25 **CHAIRMAN GILL:** Are there questions or comments from the
26 committee? Dave.
27
28 **MR. DAVE DONALDSON:** Thank you, Mr. Chair. Just a comment. I
29 was looking on Slide 13, when you had the hardbottom areas
30 identified, and, apparently, back in 2005, they identified an
31 area off of San Antonio Bay in Texas, and it's hard to see on
32 that slide, because it's Gulf-wide, but, if you could zoom-in,
33 you could see that there's an area that's identified as
34 hardbottom. Well, apparently that was misclassified, and they
35 identified that in a 2010 revision, and apparently the latest
36 tool is using an old data layer, and so if you could just check
37 that, to make sure that that is updated.
38
39 **DR. HOLLENSEAD:** Yes, and I think that's what we're intending
40 to, and, well, I guess I can put my plea out now. I think what
41 we would like to do is engage, down to the state level, those
42 folks, and there are habitat divisions that have the real boots
43 on the ground that understand some of this.
44
45 During the SSC meeting, we also got a comment about the
46 Louisiana marsh layer, that that was likely, you know, out-of-
47 date, and did not reflect what was current, and so we want to
48 make sure that we engage those partners, so that we can have a

10

1 better understanding of their datasets.
2
3 These habitat layers were used for the five-year review. I
4 think, for that purpose, they worked well, and they were sort of
5 broad and encompassing, and it provided what it needed to for
6 the five-year review. However, if the council wants to update
7 its description, it's to going to need to take a deeper dive for
8 things like you have just mentioned and pointed out, and so I
9 appreciate you letting us know, so that we can make sure that we
10 have the most accurate information, or at least contemporary,
11 right?
12
13 The webtool is neat, and it's neat to go through, but, if the
14 maps don't have the accurate data, then it won't be helpful, and
15 so that's what we're working towards. Thank you.
16
17 **CHAIRMAN GILL:** Other questions or comments? Dr. Frazer.
18
19 **DR. TOM FRAZER:** Thank you, Mr. Chair, and thanks, Lisa, for
20 walking through this, and so just, in that same section that
21 Dave Donaldson was talking about, and so he had a question about
22 hardbottom and reef, right, and so, in my mind, I am envisioning
23 that reefs was always intended to be coral reefs, and is that --
24 Is hardbottom like just non-coral-reef structural habitat?
25
26 **DR. HOLLENSEAD:** Correct.
27
28 **DR. FRAZER:** I mean, for clarification, it seems like you would
29 just say coral reefs, right, and then the other one would just
30 be non-coral-reef structural habitat.
31
32 **DR. HOLLENSEAD:** Yes, and that's currently -- Or live rock, or
33 something like that, is what they would have. Unfortunately,
34 like I said, it was done in 2004, and so it was a while ago, and
35 there might be somebody from there that can tell me why that was
36 broken out, or why it was broken out the way it was, but I
37 haven't found any documentation as to why that decision was
38 made, but I think it's something worth revisiting, whether we
39 want to categorize it a certain way, whether we want it to be
40 combined, but certainly that's not something I unilaterally want
41 to do, and I think it would be good to get together with some
42 habitat folks and get their input on it.
43
44 **CHAIRMAN GILL:** Other questions? I have one. Relative to
45 updating, it seems, to me, as complex, and as thorough, as all
46 this is, that could be a continuous, all-the-time project,
47 which, obviously, resource limitations prevent, and so what is
48 your thinking, in terms of updating?

1
2 On ad hoc basis, when there's a need, for example, for a review,
3 or a specific item that is coming up on an assessment schedule,
4 or what are your thoughts, in terms of updating and making it
5 useful? If it's accessible on the web, folks are going to be
6 looking at it, and, if they're looking at the wrong thing, then
7 that's less than helpful.
8
9 **DR. HOLLENSEAD:** My initial thought would be whenever this is a
10 five-year review, or given staff time, but certainly I think it
11 would be -- For a five-year review, absolutely I would say that,
12 and Dr. Froeschke may have some information on when we could do
13 it quicker than that, but certainly, for the tool, it could
14 happen very quickly, but it would take staff time to go through
15 and look on that, and so I think that would be your limiting
16 factor.
17
18 **DR. JOHN FROESCHKE:** So just a bit of additional information,
19 and, the way that this EFH used, it's primarily in the
20 consultation process, and there are two parts of this. There is
21 the written description of what is EFH, and so, for a given
22 species or life stage, for example, a species was identified as
23 EFH in Ecoregions 1 through 3, and say the habitat is
24 hardbottom, and we may have a map of that, but, if there are
25 hardbottom that are known that are not included in that map,
26 they would still be subject to that, and so it's the textual
27 description that is the real thing, and so, if new hardbottom
28 were discovered or something, that would automatically be
29 identified as EFH, through the textual description, even if our
30 ability to update the maps was somewhat lagging.
31
32 **CHAIRMAN GILL:** Dr. Hollensead, if you would proceed on your
33 presentation.
34
35 **DR. HOLLENSEAD:** Okay. Now we're getting into Alternative 3,
36 and so, just very briefly, Alternative 3 is going to use a
37 kernel density estimation, and what that's going to do is it
38 says, okay, I recognize that I don't have a good understanding
39 between where my animal is and the habitat, and I don't
40 understand that linkage very well, but I do know where the
41 animal is, based on, you know, a fishery-independent survey, or
42 a fishery-dependent survey, these sorts of things, and I can at
43 least tell you the fish is there.
44
45 I don't necessarily know why, but I know the fish is there, and
46 so I would like to make some inference about that, and so what
47 it's basically going to do is it's going to look at core areas
48 of use and broader extent distribution of use.

1
2 Currently, in the document, we have that broken out by, for
3 example, 50 percent occurrence, and so that's going to be that
4 small, tight circle, and so that's going to tell you that my
5 area is small, but I've got, you know, a high density of fish
6 here, and so that might be of interest for describing EFH as a
7 core area of use for my animal, and then, as you move out, you
8 may have fewer occurrence of the species there, but you
9 encapsulate 95 percent of that distribution, and so maybe, if
10 you would like a more conservative description of EFH, you might
11 use that 95 percent, or that solid blue line.
12
13 We have incorporated some of these into the webtool, and we're
14 having a little problem with the utilization and making sure
15 that layers overlap correctly, so that that 95 percent layer
16 doesn't encapsulate all of your 50 percent, and it just looks
17 like it's not there, and so we're going to have to make those
18 show up, and so we're still working through that.
19
20 Here's an example of what this would look like for adult gag
21 grouper, for example, and so, again, that pink area is going to
22 be your core area of use, and that's where your highest density
23 is going to be, and then, as you move out into that green --
24 We're also going to work on the aesthetics, so it doesn't look
25 like somebody ate too much cotton candy and got sick there in
26 the eastern Gulf, but so this is how this would work out. When
27 you do this modeling approach, this is the description of EFH
28 that you would get for adult gag grouper.
29
30 You can see how these two methods, and so that Alternative 2 is,
31 again, taking these ecoregions, these depth contours, and our
32 spatial identifications here for our benthic habitat, and that's
33 what you would get for adult gag grouper in Alternative 2, and,
34 in Alternative 3, you would get what's on the bottom right
35 there, which we just looked at, and so they're quite different
36 in what you would get.
37
38 This gets back to some of the issue that, if you've got the data
39 for it, you might be able to get, you know, where sort of the
40 end goal is more refined EFH, whereas you might get sort of
41 broader descriptions, because the Alternative 2 was just saying,
42 hey, I know that the habitat is here, and, whether the animal is
43 there or not, I don't know, but I know the habitat is there,
44 whereas Alternative 3 says I know the critter is there, and so
45 that's what I'm interested in having my description be informed
46 by.
47
48 It does take a little bit more data to do that kernel density

1 estimation, because you've got to know a little something about
2 where the animal is, and so these are the species and life
3 stages that we have the data available for in Alternative 3.
4 All of this work has been done, and not all of it has gone up on
5 the webtool just yet, and that's something that we're working
6 on, but this is what we would have for Alternative 3, and these
7 are the species and life stages that we would have available for
8 that alternative. Everything else would have to be Alternative
9 2, and so just take the methodology that we currently use, but
10 with updated habitat layers.
11
12 The next steps for the other alternatives, again, it would be
13 nice -- What we also want to do is add the presence/absence for
14 those species location data, and so one thing that I did not
15 show is we've got a series of locational points that will tell
16 you where the survey, you know, did a longline set, or something
17 like that, and whether or not they encountered an adult gag
18 grouper, so that you can see if that description of EFH, or that
19 kernel density output, was a function of just a very
20 constrained, you know, surveying effort or whether or not it was
21 a broader effort, and you see the concentration of the animal
22 there is a little more realized, and so just to give some
23 context on that, and so that's the next thing that we want to
24 do.
25
26 There is an Alternative 4, which I don't have time to get into
27 here just yet, but we are working on putting that together as
28 well, and that uses a boosted regression tree method, which,
29 again, I won't go through that, and hopefully all of that will
30 be completed and we'll be able to go through that, and then
31 we'll review these results with the IPT.
32
33 Again, we would also like to be able to have, in the tool, just,
34 like I said, toggling through those buttons, to have a whole
35 dedicated section to the metadata for the habitat layers, so
36 that people can get to discussions like, Dave, what you were
37 talking about, is your habitat layer from 2004 and 2010, and you
38 didn't make that correction, and so you would have some idea of
39 what that case is, and so that needs to go in there too, or at
40 least have a one-stop shop for anybody that is interested in
41 using the tool.
42
43 Then include the habitat association tables for Alternative 2 as
44 well, and so what were those descriptions, where in the
45 literature did that come from, and so, again, links to those
46 papers, as they're available, to try to build on that, and a lot
47 we have of that already, but we just don't have it uploaded in a
48 table.

1
2 Then, also, add a tab that product overview and links to the
3 council EFH documents, and, as you can see, it was done
4 previously, and the five-year reviews as well, and then we would
5 present those finalized tools, with all those alternatives, to
6 the SSC and the council for review, and so that's the next
7 steps. I think that's it. I would be happy to take any
8 questions, and Dr. Powers is here, if anybody would like to also
9 ask, you know, the SSC's thoughts on things as well, but I guess
10 I would just end with we might be reaching out.
11
12 If any of the state agencies have a good contact for their
13 habitat division folks, or their GIS analysts, we would be happy
14 to go to you all's offices and meet with you and sit down and
15 talk about what data you have available, make sure we can link
16 it up appropriately with what other states might have, so that
17 we get the most contemporary and updated data possible. Thank
18 you.
19
20 **CHAIRMAN GILL:** Thank you, Dr. Hollensead. That is, to me,
21 rather amazing, and it's a couple of orders of magnitude above
22 where we were in 2004, and it represents a huge amount of work,
23 and so thank you. Excellent job, and I am trying to absorb all
24 of that and understand that, oh, wow, how are we going to
25 utilize this in the future, whereas, before, we had those broad
26 -- The entire Gulf of Mexico is essential fish habitat, and now
27 we're getting down to specificity, and I think that's amazing.
28
29 Any questions of Dr. Hollensead at this point in this
30 presentation? Seeing none, I would like to ask Dr. Powers if he
31 would like to add anything from the SSC discussion that would be
32 of interest.
33
34 **DR. SEAN POWERS:** Thank you. I'm not sure that it will be of
35 interest, but I can definitely add from my colleagues and I. We
36 had the same reaction that you did, Bob, that this is leaps and
37 bounds, compared, and so we're really supportive of this line of
38 inquiry and the mapping aspects, and hopefully how user-friendly
39 that will be.
40
41 We reviewed those two alternatives that you just heard, and we
42 were supportive. We didn't -- For Alternative 2, the real
43 question, and Lisa alluded to it, is we didn't understand the
44 decision hierarchy that was going in to some of those, and so,
45 when we have that first -- When the maps are produced, and this
46 one was talked about, because the Florida Middle Grounds wasn't
47 showing up as potential habitat there, and so, when we looked at
48 it, we couldn't figure out what the decision hierarchy was in

the app that was going through there, and so Lisa got that message, and they're going to look into that more and see how we can refine that decision hierarchy.

This is the one that we talked about for red grouper, and the other point that came up, that Lisa mentioned, was we wanted to see more involvement from the states and regional agencies, and we thought that a lot of the issues of base maps and the issues of the most up-to-date information, and just looking at the maps and just seeing if it's realistic.

Really, that got us to whether -- We liked the idea of narrowing the definition, and, obviously, "EFH" is such a broad term right now, and getting it more narrow, but then it seemed like we either have a very broad definition, that was probably too broad to be of significant use, or, when it got too narrow, it wasn't realistic to us, based on our limited experience on species distribution and those things, and so trying to get into the different tools and understanding how they are making those decisions, how they're defining those habitat associations, are important.

The next slide is we did get a peek at a different way of doing this, and I think the idea behind this, and John Froeschke can tell us more, was to take the habitat maps, and then the fisheries data, or fisheries-independent data, and use those to construct associations using those data plus the physical and chemical data.

This is much more of a quantitative approach than the other two, but, when we looked at some of the early versions of this, for adult for gag for example, it showed you a lot of habitat that we did not feel was gag, that would likely have gag in it, and so, I mean, the overall message is the same one that Lisa communicated, that we really like this approach, and we need to see what's under the hood on some of these models, and then we need to engage, or the staff needs to engage, the state resource agencies and the regional resource agencies, to look at what is realistic, once we start producing these more refined maps, and so that's it.

CHAIRMAN GILL: Thank you, Dr. Powers. Any questions for Dr. Powers? Seeing none, thank you, sir. That leads us into the last item on the agenda, Other Business, and does any member of the committee have other business to bring before the committee? Seeing none, that concludes the actions of this committee.

(Whereupon, the meeting adjourned on October 24, 2022.)