Atlantic States Marine Fisheries Commission

ISFMP Policy Board

February 1, 2017
12:15-2:00 p.m.
Alexandria, Virginia

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order *(D. Grout)* 12:40 p.m.

2. Board Consent *(D. Grout)* 12:40 p.m.
   - Approval of Agenda
   - Approval of Proceedings from October 2016

3. Public Comment 12:45 p.m.

4. Update from Executive Committee (*D. Grout*) 12:55 p.m.

5. Discuss Illegal Fishing Activities and Policies for How It Impacts Quotas (*J. McNamee*) 1:05 p.m.

6. Discuss Possible Policy Implications of Safe Harbor Landings Guidance Document (*J. Gilmore*) 1:20 p.m.

7. Update on the Climate Change Working Group *(D. Grout*) 1:35 p.m.

8. Coastal Sharks Update (*A. Harp*) 1:40 p.m.
   - Set Commercial Possession Limit for Blacknose Sharks South of 34˚00' **Final Action**
   - Discuss NOAA Fisheries Proposal to List the Oceanic Whitetip Shark as Threatened

9. Review non-Compliance Findings, if Necessary **Action** 1:50 p.m.

10. Other Business 1:55 p.m.

11. Adjourn 2:00 p.m.

The meeting will be held at the Westin, 400 Courthouse Square, Alexandria, Virginia; 703-253-8600

MEETING OVERVIEW

ISFMP Policy Board Meeting
Wednesday February 1, 2017
12:15-2:00 p.m.
Alexandria, Virginia

Chair: Doug Grout (NH) Assumed Chairmanship: 10/15	Vice Chair: Jim Gilmore (NY)	Previous Board Meeting: October 27, 2016
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 27, 2016

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Executive Committee Report (12:55-1:05 p.m.)

Background

- The Executive Committee will meet on February 1, 2017

Presentations

- D. Grout will provide an update of the committees work

Board action for consideration at this meeting

- none

5. Discuss Illegal Fishing Activities and Polices for How it Impacts Quotas (1:05-1:20 p.m.)

Background

- State have different policies for fish that are seized from illegal activities. Questions have come up regarding differences in how states address this issue for commercial and recreational harvest as well as how the harvest gets counted for quotas, stock assessments, and landings reports.

Presentations

- T. Kerns and J. McNamee will review white paper on illegal fishing activities and policies (**supplemental materials**)

Board discussion for consideration at this meeting

- Should the commission consider developing policy recommendations for fish that are seized from illegal activities

6. Discuss Possible Policy Implications of Safe harbor Landings Guidance Document (1:20-1:35 p.m.)

Background

- New York has developed a guidance document for vessels requesting safe harbor landings in New York. (**Briefing Materials**)

Presentations

- J. Gilmore will present the guidance document and lead a discussion of possible policy implications for other states

Board action for consideration at this meeting

- none

7. Update on Climate Change Working Group (1:35-1:40 p.m.)

Background

- The Climate Change Work Group was tasked with developing science, policy and management strategies to assist the Commission with adapting its management to changes in species abundance and distribution resulting from climate change impacts.
- In fall of 2016 the Work group met via conference call to brainstorm how to address the Policy Board task.
- On January 30, 2017 the working group met to make recommendations to include in the white papers to address the Policy Board task

Presentations

- D. Grout will review the Climate Change Workgroup Progress

Board action for consideration at this meeting

- none

8. Coastal Sharks Update: Set Blacknose Possession Limit and Discuss NOAA's Proposal to List Oceanic Whitetip Shark as Threatened (1:40-1:50 p.m.) Final Action

Background

- NOAA Fisheries published a final rule establishing a commercial retention limit of 8 blacknose sharks for all Atlantic shark limited access permit holders in the Atlantic region south of 34˚00' N. latitude effective January 13, 2017 (**Briefing Materials**).
- NOAA Fisheries has completed a comprehensive status review under the Endangered Species Act for the oceanic whitetip shark in response to a petition from Defenders of Wildlife to list the species. Based on the best scientific and commercial information available, and after taking into account efforts being made to protect the species, we have determined that the oceanic whitetip shark warrants listing as a threatened species. (**Briefing Materials**)

Presentations • A. Harp will review NOAA published Blacknose Possession Limit and Oceanic Whitetip Proposal
Board action for consideration at this meeting • Set 2017 Blacknose Possession Limit

9. Review Non-Compliance Findings, if Necessary Action

10. Other Business

11. Adjourn

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

ISFMP POLICY BOARD

The Harborside Hotel
Bar Harbor, Maine
October 27, 2016

These minutes are draft and subject to approval by the ISFMP Policy Board
The Board will review the minutes during its next meeting

TABLE OF CONTENTS

INDEX OF MOTIONS

ATTENDANCE

Board Members

Patrick Keliher, ME (AA)
Sen. Brian Langley, ME (LA)
Steve Train, ME (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Doug Grout, NH (AA)
Ritchie White, NH (GA)
Bill Adler, MA (GA)
Dan McKiernan, MA, proxy for D. Pierce (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Jason McNamee, RI, proxy for J. Coit (AA)
David Borden, RI (GA)
Rep. Melissa Ziobron, CT, proxy for Rep. Miner (LA)
David Simpson, CT (AA)
Lance Stewart, CT (GA)
James Gilmore, NY (AA)
Emerson Hasbrouck, NY (GA)
Brandon Muffley, NJ, proxy for D. Chanda (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Andrzejczak (LA)
Andy Shiels, PA, proxy for J. Arway (AA)
Loren Lustig, PA (GA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
David Blazer, MD (AA)
Rachel Dean, MD (GA)
Ed O'Brien, MD, proxy for Del. Stein (LA)
John Bull, VA (AA)
Michelle Duval, NC, proxy for B. Davis (AA)
David Bush, NC, proxy for Rep. Steinburg (LA)
Robert Boyles, SC (AA)
Malcolm Rhodes, SC (GA)
Pat Geer, GA, proxy for Rep. Nimmer (LA)
Spud Woodward, GA (AA)
Sen. Ronnie Cromer, SC (LA)
Jim Estes, FL, proxy for J. McCawley (AA)
Martin Gary, PRFC
Wilson Laney, USFWS
Kelly Denit, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Bob Beal
Toni Kerns
Mark Robson

Guests

The ISFMP Policy Board of the Atlantic States Marine Fisheries Commission convened in the Stotesbury Grand Ballroom of the Bar Harbor Club, Harborside Hotel, Bar Harbor, Maine, October 27, 2016, and was called to order at 8:09 o'clock a.m. by Chairman Douglas E. Grout.

CALL TO ORDER

CHAIRMAN DOUGLAS E. GROUT: Good morning everybody. Welcome to the Policy Board. The first thing I would like to do is turn to our Resolutions Committee Chair, and I do believe we have a resolution that the Policy Board needs to take up; Brandon Muffley.

75TH ANNUAL MEETING RESOLUTION

MR. BRANDON MUFFLEY: It is my pleasure to read in the 75th Annual Meeting Resolution. Whereas the Atlantic States Marine Fisheries Commission celebrated its historical 75th Annual Meeting in the beautiful coastal New England town of Bar Harbor, Maine; which provided an exceptional location for the commissioners, law enforcement, and commission staff to deliberate and discuss fisheries issues of mutual concern.

And whereas the chilly air and beautiful views of the changing leaves reminded us all that another year of successfully managing our fisheries resources is quickly coming to a close. And whereas Jim Long and Bonnie Bick received the Melissa Laser Award for the work in the Mattawoman Creek Watershed Conservation, and whereas the open plenary session brought commissioners together from the ASMFCs past and present; to provide a fantastic overview of the commission's accomplishments and its commitment to cooperative management.

It also brought out the competitive nature of the commissioners. The loosing Jeopardy team is still complaining that the judges were biased, and would not let them use their phone-a-friend lifeline to call on fellow commissioner from Delaware, to help them answer the biomedical product produced by horseshoe crabs.

And whereas the spouse and guest tour of Acadia National Park and downtown Bar Harbor, by all accounts was a successful gathering; and where the store owners were happy to report robust end-of-season sales shortly after the tour ended. And whereas the annual dinner provided a deliciously prepared, classic Maine feast; including a couple of v-notched lobsters that after some law enforcement investigative work, was determined to be lobsters harvested from the outer Cape.

Whereas the 26th annual David Hart Award recognized Bill Goldsborough for his lifelong commitment to protecting and enhancing fisheries habitat, and his unwavering support to pursue ecological-based reference points in fisheries management, and where Laura Leach was recognized for her 35 years of tireless work for the commission and her never ending love and support to all the commissioners. She truly is the diamond on this 75th Anniversary of the ASMFC. And whereas, due to the constant chill in the meeting room, commissioners were thankful for their new ASMFC vests and history was made when Dr. Duval made the first motion by a commissioner wearing winter gloves. And whereas the various management boards met, and the states came together as they always seem to do, to make the tough and challenging decisions facing our fisheries resources, for cobia and menhaden, southern New England lobster, and tautog; just to name a few.

And now, therefore be it resolved that the Atlantic States Marine Fisheries Commission expressed their deep appreciation to the Maine commissioners, Pat Keliher, Stephen Train, and Senator Brian Langley; as well as Maine DMR staff, Jeff Nichols and Terry Stockwell, and the commission staff for their outstanding support and assistance in making the 75th Annual Meeting a tremendous success. In closing, and

in an eight word sentence to summarize in a terrible Maine accent, a pissah of a good time was had by all.

CHAIRMAN GROUT: Is there any objection to approving this by unanimous consent? Seeing none; thank you very much, Brandon. It is so therefore resolved. This resolution will go into our resolutions.

APPROVAL OF AGENDA

CHAIRMAN GROUT: We have an agenda here. I have a few things already that have already been asked to add to the agenda, so it is going to make it busy.

Under other business we have three items to take up. I just want to make you aware of this. We have a letter from the Coastal Sharks Board that they would like approval for; regarding dusky sharks. There is also a letter from the Fluke, Black Sea Bass and Scup Board regarding black sea bass transit.

Then all of you received an e-mail from Bob Beal regarding the AFS document challenges we face in 2017 and beyond. I'll give you a quick report on what transpired with that. Is there anything else, any other changes to the agenda? Seeing none; is there any objection to approving the agenda as amended? It is approved by unanimous consent.

PUBLIC COMMENT

CHAIRMAN GROUT: This is now the time that we have on the agenda for public comment. I don't have anybody signed up. Is there anybody that wants to make public comment to the Policy Board right now?

EXECUTIVE COMMITTEE REPORT

CHAIRMAN GROUT: Seeing none; we'll go to the next agenda item, which is a report about the Executive Committee meeting we had earlier this week.

We made some final edits and approved the Conservation Equivalency Guidance Document. That is something that's going to be brought up to the Policy Board here under the next agenda item for your consideration and approval. We also reviewed a document that was put together by staff regarding ASMFC standard meeting practices.

This was an outgrowth of our meeting with Colette, where we were talking about Roberts Rules of Order and how we do business. She recommended that the commission do this. Then we went on and staff provided a review and a discussion of performance appraisals and merit increase protocol.

This came about because as the commission is now responsible for APAIS, we now have more employees that are part time, and are located in different state offices; as opposed to in the commission offices. They just want some clarification on how performance appraisals were going to be conducted, and merit increases would be determined. Essentially what the decision was by general consent was that the supervisors in the state offices would do the performance appraisals, and then consult with the commission about any merit increases for those employees. We were also asked to take up a new resolution regarding revisions to the retirement plan. This is again a result of us taking on part-time employees. This was not something that the commission used to have, and we needed to make some modifications to the retirement plan, so that we didn't have to pay retirement fees for people that were part time.

We also reviewed the change to the action plan where we added an ACCSP goal, and we addressed that at the Business Session. Finally, there was concern brought up about MRIP, in the fact that this was a year in which the economic survey is done in the intercept. There was concern brought up by several state commissioners that this being the first year that the states were taking over the process.

There was concern about them having the impression that would be given, where people were going to be asking questions about how much you were spending on trips. Bob Beal is going to be talking with Gordon Colvin about that and bringing that issue up with him, and we'll discuss it at a later date. That is all that I had from the Executive Committee. Are there any questions about any of those items? Bill.

MR WILLIAM A. ADLER: Just a little format. You approved the agenda, and I assume the minutes were in that?

CHAIRMAN GROUT: You're right. I'll do that immediately after this. Thank you for pointing out my missing that. Are there any other questions on the Executive Committee?

APPROVAL OF PROCEEDINGS

CHAIRMAN GROUT: Okay thank you, Bill, and we have proceedings from our August, 2016 meeting. Are there any changes or edits to those minutes? Seeing none; is there any objection to approving the minutes by unanimous consent? They are approved.

REVIEW REVISIONS TO THE CONSERVATION EQUIVALENCY GUIDANCE DOCUMENT

CHAIRMAN GROUT: Now we'll go to Agenda Item Number 5, Revisions to the Conservation Equivalency Guidance Document; Toni Kerns, and this is a final action.

MS. TONI KERNS: Over the past several months we've been working on making changes to the Conservation Equivalency Guidance Document, to reflect the current practices of the commission; and to put some better guidance on areas where we lacked some guidance for the states. Just to refresh everybody's memory, we started this with the ASC and MSC, brought it to the Executive Committee, made some changes, and are here today to make final changes to the document.

Conservation equivalency allows the states flexibility to develop management, to address state or regional differences, while still achieving the goals of the FMP. It allows us to tailor regulations, really when one-size management doesn't work for the states. For commission document we really use conservation equivalency in two areas.

One is an alternative management process outside of the FMP, and the other is within the fishery management plans. When conservation equivalency is used within the fishery management plan, it is the Plan Development Team that makes the conservation equivalency recommendations of what measures can be used and the guidelines and rules that follow it; and that is all then located within the plan amendment or addendum.

Conservation equivalency plans are not required if a state is making a change that is more restrictive, unless that is combined with a change that is less restrictive. When you're combining more and less restrictive, then we do ask that states submit a conservation equivalency program. For proposals the Plan Review Team is the clearing house, and we request that all states when submitting proposals send them to the Plan Review Team Chair. For the standards and protocols, each state needs to submit a conservation program that has a rationale, so why the alternative management program is needed.

It can be a number of reasons why a state is submitting conservation equivalency for social and economic reasons, fish distribution considerations, fish size in state waters; the number of possibilities is limitless. Then a description of how the alternative management program will meet all the relevant fishery management plan goals and objectives.

Then it also would include a description of the datasets that are used in the analysis, and the data collection method for the conservation equivalency program. The Technical Committee

is the ones that would determine the acceptable level of precision for all landings data, and other data that are used in the programs.

The states are allowed to ask the TC to provide that information ahead of submission of the proposals; but you are not required to. Also included in the program should be the length of time the state is requesting conservational equivalency for, and the review schedule for any measures that are implemented within the plan; as well as if the state does not intend to have an expiration data, then they should make that clear in the proposal.

There should be a justification for any deviations from the conservation equivalency procedures that are detailed in the FMP or in this document, and the plan should describe a monitoring of reporting requirements, as well as documentation of evaluating the impacts of the conservation equivalency measures.

Then further, review process and timing, the conservation equivalency should be approved by the management board and they should be, where possible, implemented at the beginning of the fishing year. A state that submits a proposal outside of the implementation plan process, meaning that it is not a part of a fishery management plan program should follow the following guidelines.

All conservation equivalency plans should be submitted within two months of the next board meeting to be reviewed at that meeting; and that is to ensure that we have enough time to bring that plan forward to the respective committees that need to review it and provide feedback to the board.

If the plan is turned in between two months and two weeks of the next board meeting, it is up to the Chair's discretion as whether or not that conservation equivalency program will be brought forward to the board at the next board meeting. If it is brought forward two weeks before the next board meeting, it will not be reviewed at the next meeting, but it will have to wait until the following board meeting.

The PRT notifies the state that the plan is complete. If there is anything missing then we would let the state know. The PRT will determine which committees it is necessary to distribute the program to, different conservation equivalency programs are different and sometimes they may not require review by all the committees; but the committees that we would most likely distribute to are the Technical Committee, the Law Enforcement Committee, and SESC. The review includes a description of the impacts on or from adjoining entities, enforcement, economics, as well as other issues. Then the PRT will take all the information that is compiled by the committees, and forward those on to the AP for them to consider and make recommendations to the board.

If there are times when we don't have sufficient time to get the committee recommendations to the AP before they're finalized, we may ask the AP to make a recommendation without those committee reports. Then the PRT will forward everything to the board for their consideration and approval.

For the review process, each state should describe and evaluate the programs as part of their state compliance report on an annual basis, and the PRT will evaluate each state's conservation equivalency program within the FMP review and report back to the board, unless a different timeframe had been established. Lastly, the document describes with joint management plans, it could be complimentary.

But any plans that we engage with NOAA Fisheries and Fish and Wildlife Service or the Fishery Management Councils, we would make sure we coordinate with them; whether that is asking to have complementary EEZ regulations or changes in federal regulations. We should

note that the federal agencies have different protocols in terms of process of putting forward regulations, and we should take those into consideration as we make those requests. That is all, I'll take any questions.

CHAIRMAN GROUT: Questions on this for Toni? Adam and then Wilson.

MR. ADAM NOWALSKY: The one question I had was in the memo; it outlined the concern that states may submit proposals that are deemed to be more restrictive. In the past we've just gone ahead and approved those, but the comments from the ASC/MSC were that there may be other implications such as discards, and that all follow-up CE proposals should go through review.

Is that language in the revised document now, as it is, and could you give us an idea how that would actually play out? I know through summer flounder when we've done conservation equivalency in the past we've approved methodologies; and not specific regulations. But I just wanted to get clarification on that all proposals should be reviewed.

MS. KERNS: From what my understanding of what the Executive Committee talked about, Adam, was that any regulation that is more restrictive, a single regulation that is more restrictive, is fine for a state to implement without a conservation equivalency program; but when you combine a more restrictive with a less restrictive.

You do a more restrictive size limit in order to open up your season longer, then that has to come forward to the commission. Even if those two things add up to be more restrictive, it still would need to come back to the board. But anything on its own would not require a conservation equivalency program.

CHAIRMAN GROUT: The Executive Committee, when we were putting this together, took MSC/ASCs suggestion into consideration and this is what we decided would be a better, more smooth way to deal with conservation equivalency; because things like going from say a 10 fish bag limit to a 5 fish bag limit, because a state decides they want to be more conservative, is pretty straightforward.

But if you're combining it with something that may change a season around, because effort is different through different times of the year, that is something that we were trying to get at that it could potentially be less conservative. If you combined a bag limit and season change, yes that would have to go through it. Wilson, you had a question?

DR. WILSON LANEY: Well, it is a question and a comment, Mr. Chairman. On Page 2 at the top of the page in the first full paragraph there, where it has a list of things that the PDT should consider when they are doing these reviews. The first one is stock status, which we typically think of in terms of whether a stock is overfished or not.

I was wondering if it wouldn't be advisable to add another term after that one, which would be stock structure; which could capture both the age structure of the stock, which I know has been of interest to at least some of the species management boards. Striped bass comes to mind, where Amendment 6 sought to broaden that stock structure.

But also in view of our cobia discussion, if you use the term stock structure, I think that would also capture the genetic component of stocks or perhaps growth differences; such as we see exhibited with black sea bass north and south of Cape Hatteras. To me those are important factors that would merit consideration as well.

When you're trying to decide on conservation equivalency, especially in a case like South Carolina where you have a cobia DPS inshore, which the state has elected to choose some more conservative management measures. If

that could be added, I think that would be a good addition.

CHAIRMAN GROUT: Is there any objection from the board to adding that wording? Seeing none; we'll add that in, any other questions about the document? Seeing none; this is a final action so we need a motion to approve this document for commission use. Michelle Duval.

DR. DUVAL: **I move that we approve the Conservation Equivalency Guidance Document as modified.**

CHAIRMAN GROUT: Seconded by Tom Fote; any further discussion on the document? This is a final action so this will be a roll call vote, but I am going to check first to see if there is any objection to approving this document as modified today. **Seeing none; the document is approved by consensus.**

UPDATE ON THE CLIMATE CHANGE WORKING GROUP

CHAIRMAN GROUT: The next will be an update on the Climate Change Working Group that we put together. We've had one conference call so far on this. Now that we've approved the action plan, we have a workshop planed too; excuse me, another face-to-face meeting.

MS. KERNS: In your supplemental materials you have the draft notes from the Climate Change Working Group call. I think we had a nice call, where we did some brainstorming on the following questions, where we discuss some science strategies and what are our priorities for the science strategies, and can we establish climate change impacts on terms of reference within ASMFC stock assessments. We talked a lot about the different tools that are out there and the different research and projects that are going on in climate change with different agencies and states; in places that we can work with our partners to get more information.

Then we also talked about how different ASMFC species have started to include climate change terms of reference already in the terms; like species such as lobster where we in the southern New England stock group, we've looked at how temperature is impacting that lobster stock, and that we can continue to add a climate change term of reference as we move forward with ASMFC stock assessments.

When we get together to have our in-person meeting this coming year that we'll do some further strategizing for each of these topics that we brainstormed on at the meeting. Then under policy and management strategies, we're looking for some policy guidance on climate change; including tools that the commission can utilize when resources have impacts that are clearly tied to ocean warming and/or ocean acidification.

How we would manage them differently than what we're doing now, and how will fisheries management adapts to current and future changes in climate and ocean? Some of the specifics that we touched on were species distribution and movement. How can we design and implement flexible allocation strategies?

How we can incorporate a periodic review of state allocations in our FMPs, and how can we change possibly permitting approaches or landings regulations along the coast, to help us be more adaptable and adjust for each of the states and their fishermen; as these species start to move around.

We also discussed recruitment and abundance impacts from climate change, and looking at the precautionary management decisions in anticipation of shifting distributions and productivity. Looking at the different reports that we can use, including Jon Hare's report on the species of vulnerability, there is a social and economic report out that looks at coastal communities and how they're being impacted by climate change.

Then lastly, are there different strategies that we would employ for species that are biologically sensitive; that are just more vulnerable to climate change than others. Do we need to collect more additional data to provide information on how these species are being impacted by climate change?

For example, species like northern shrimp, where management is responding to declining stocks, but the species are not responding to that management very well, and so how do we adjust? The group is, based on our brainstorming sessions, going to pull together some white papers on each of these topics for the Policy Board to look at and review after we meet at our working group meeting this spring.

CHAIRMAN GROUT: Questions about this, Jason.

MR. JASON McNAMEE: Yes, more of a comment than a question. I just think in particular with what you concluded with there, Toni, there is a nexus with this and the stuff we're going to talk about next; the risk and uncertainty stuff. I just wanted to kind of point that out so people are connecting the two, because they are related. Just as a very clear example, you could actually use the work by Jon Hare et al to kind of categorize the species you're dealing with, and adjust that risk you're willing to take with it accordingly. Then one other, I guess this is a question and I'm sorry if you said this. You talked about shifting in allocation and that sort of thing, but what about, I think another important aspect is productivity and productivity regimes.

That would be, I think an important thing to do first is look into; there has been some work on how to identify and quantify whether or not a regime change has occurred. That would be something to look at, and then again this idea of characterizing the stock that you're working with, and whether that has actually happened. I think that's another kind of common thread that comes up.

MR. NOWALSKY: Thank you for both the summary as well as the presentation on it today. Within the summary there are a number of underlined items, which I believe are potential action items. What would the strategy be moving forward for potentially taking action on them? Is it the charge of the working group moving forward to prioritize and select those items; and then come back to this board or another relevant board to task a group to get an answer on them? What would be the step forward with highlighting all of those potential working items?

CHAIRMAN GROUT: I think at our in-person meeting that is one of the things that we're going to try to craft together into the white paper that we would bring to the Policy Board for consideration, and it's some of these action items we would put forward for approval by the board. Now whether it would be an action item that the board would have to take on a general policy nature, or if there is something specific that the Policy Board might task a specific species management board with dealing with.

I think that is what our intent here is to come up with something that we can bring to the full commission here for consideration. Clear? Anything else? We'll be reporting back to you again at a future meeting on this. Hopefully we'll have some action items for you.

RISK AND UNCERTAINTY POLICY WORKING GROUP'S WHITE PAPER

CHAIRMAN GROUT: Next item on the agenda is the Risk and Uncertainty Policy Working Group's white paper. I'm going to turn it over to Jason McNamee.

MR. McNAMEE: Good morning everyone; my name is Jason McNamee from Rhode Island DEMs Marine Fisheries Program. I have a moderately-lengthed presentation here that I'll kind of tick through. I'll try to go through it relatively quickly, but it's an update. Then we

do have a couple of questions at the end for you all.

Back in August the Policy Board approved continuing on with the development of the commission's Risk and Uncertainty Policy, and one of the things we offered you at that last meeting, was our purpose statement that we had kind of built. When I'm saying we, I'm talking about the Risk and Uncertainty Working Group, which has commissioners, ASC and MSC members; it is a good group. I enjoyed the meeting that we had back in September.

But at the August meeting we showed you the purpose statement that we had come up with. I think in general, people were relatively comfortable with it, but wanted some more time to kind of look at it, think about the language. But at that time you all asked us to continue on, keep working on it; so we did that. The working group met in September, and one of the main tasks that we were looking to finish at that meeting was to work through some examples of how to actually apply a risk policy. I'm going to go through a couple of slides with things like goals. But in the meeting materials there was a white paper, and so there is a lot more detail in there. I encourage you to take a look at that if you haven't had the chance to yet.

Here is the first slide on the goals, like why are we doing this? One of the main top reason is a comprehensive risk and uncertainty policy would provide guidance on a range of issues, important issues like choosing biological reference points, where to set the risk levels for those reference points; because there is always going to be uncertainty in that estimated metric that you get.

You could use the policy and apply it when you're setting quotas for data-poor species or even data-rich species; all those kinds of things. If we were to take this and apply it now across the entirety of all of the commission's responsibilities that is a long term goal. That is going to require some significant time and a lot of work, a lot of resources devoted to it.

That would be more extreme if we were to do so in an omnibus kind of all-at-once fashion. What we're suggesting what we discussed was, we should do this in phases. We shouldn't do it all at once. What we're talking about is kind of stepping through this, going maybe even FMP by FMP. We might be able to hit one or two at a time, but not to try to do it all at once.

I guess what we suggested, a good start would be, and I'm going to talk about this in much more detail further on in the presentation, but we have this decision tree, this structured decision making kind of approach. We think a good kind of first step to take would be to apply this decision tree approach to some data-rich species, species that we have decent stock assessments for; before we try and challenge ourselves with less informed management decisions.

On the next slide here, a couple more goals. What we want to do with this risk policy is adequately account for uncertainty at all levels of the commission's management process. The idea is so that we're maximizing our informed decision making, and we can clearly articulate why we've made decisions on each of these topics.

Another really important goal that came up at our working group meeting, and some of the other discourse we've had on this is, this should be consistent amongst all of the commission species. We don't want to have some where it is being applied and others where it is not. We want this policy to be broad enough and comprehensive enough, to be able to apply to all species, even if they're very different; data rich, data poor, long lived, short lived.

It should be flexible enough to accommodate all of the species, so that we have this very transparent process across species. That's the next very important goal, transparency. What

we want to do is not leave people wondering how we got to that decision; we want to be able to articulate how we got to that decision very specifically.

Another really important one is the incorporation of flexibility. This is a dynamic system that we work in. Conditions change all the time, even without major perturbations like climate change. It was still dynamic before we were talking about that. We don't want to have a system that locks us in, and we're very cognizant of that at the working group. We don't want to be constrained and have our hands tied, we want to have the ability to maintain flexibility. How do we meet those goals? How do we get there from here? In this case I think we can get there from here. The goals of the policy will be achieved through this structured decision making process, so that is kind of how we're envisioning this to work. You could make sure this process is undertaken each time, by developing it as a term of reference that gets put into all ASMFC stock assessments; as one example.

You have this term of reference, and it basically has that technical group assessment committee, whatever it is, requires them to step through a decision tree with a predefined set of questions for that species. I'm going to show you a visualization of this as well, but just to kind of show you some of the questions that would be in this structured decision making process.

They are pretty straightforward. What do we know about stock status? Do we have a stock status determination? Sometimes we don't. That would be really a high level right off the top kind of question to ask. Then we get into more of the stock status type of questions. Is the stock overfished, depleted, is overfishing occurring? Where are we with regard to the reference points for SSB and/or fishing mortality?

What kind of job have we done with characterizing the sources of uncertainty in the assessment? Do we have all of them accounted for, probably not? Do we have a lot of them accounted for, or are we really left in a very uncertain situation? How about the diagnostics of the assessment? Is the assessment something we can really lean on?

Is it a solid assessment that we've been running for multiple years that kind of hangs together year to year, or is it one that seems like it's a little bit unstable? Then kind of a concluding questions here, what about the species? Is it a fast-growing, short-lived species? Is it something that takes 30 years, 40 years to reach maturity; these kinds of important questions all factor into the risk we're willing to apply to a species?

Once we step through these questions, we end up with a series of probabilities. The example that we're going to talk about, this would be with regard to being at or below the fishing mortality target. This is probably a good one to start with, it is something we're all familiar with, fishing mortality, and it's something we use a lot.

Right now we have a really broad range, and so this will be one of the questions. Do we want to constrain this range or do you like it? Right now we have probabilities going all the way from 30 percent being at or below the fishing mortality target, all the way up to 75 percent; and so less conservative to more conservative.

The next series of slides, I'm going to kind of step through the example that we worked through and I'll answer the questions. But you can see in each case you can go one direction or the other. The way to think of this as your trickling down the decision tree, you're kind of swinging to the right or to the left; depending on the answer yes or now of your question.

You're heading towards being more risky of being less risky. I've got a better picture. We'll

zoom in on this, so I'm not expecting you, but we wanted to give you a look at what the tree kind of looks like as you bounce down it. Again, this is answered for a specific species; that I'm not supposed to tell you is bluefish. The black line on there is just a page break. It's nothing important about that answer to that question. We're zoomed in, and as I mentioned, what do we know about stock status? Do we know anything about stock status? Our first answer to that question was yes. That drops us down to our next question. It is kind of like; remember the "choose your own adventure" books you read as a kid, so you don't know where you're going to end up at the end. It is all very exciting.

You answer yes, we know stock status and you end up, is the stock overfished or depleted, yes or no? For our example we say no, so that now gets us to our next question. Is overfishing occurring; yes, no? Again, there is always this we don't know aspect too, and so depending on which answer you go right, left or straight down.

Here we're going to say no again. Overfishing is not occurring. Is SSB above the target, yes or no? For this one you actually end up at the same question either way; but it will determine which leg of the decision tree you go down. Is SSB above the target, yes or no? You still end up at is F below the target; your other biological reference point.

In this example we're going to say no. The next question is about F, and for the F target here we said yes. The next question that you then ask yourself is, are major sources of uncertainty captured in the assessment. For our example we though, yes they did a pretty good job of characterizing uncertainty.

Now we get into these diagnostic questions. Is there a strong negative retrospective bias, yes or no? The answer there was no. You get the idea. You kind of bounce down answer questions, and it pushes you towards being more risky or less risky. At the end you end up in a box, a flexible box. Don't get worried.

You can see we have that range, 30 percent up to 75 percent for your levels of risk that you choose. Right underneath those there are some multicolored boxes there with some other things. We talked very, kind of mechanistically about stock assessment, but there is all this other stuff; management uncertainty, socioeconomic information, ecosystems, the importance of that species in the ecosystem.

Flexibility, this is where we kind of incorporate flexibility. That was a key element of the risk policy. We talked about that as one of the goals. There are those multicolored boxes. These are these metrics where right now we don't have a good quantification for them; they're qualitative more or less.

That is okay, I think some of these can be quantified, some of them maybe we want to leave them qualitative. We want to have that flexibility built into there, and that's where we incorporate that kind of flexibility. The thing to think about with all of those metrics is, some of them we will, we can assign numbers; as metrics are developed for them.

But at this time they're mainly qualitative, and so what we're asking you to think about with these is, these are areas where you can be flexible. You can kind of say, well our management system is pretty uncertain, ad so we want to be less risky for this species. That's how you can do that.

But we could also, management uncertainty can be quantified, and maybe we develop that into a specific metric and move forward with that one as more of a quantitative element; build it right into the decision tree or not. That's something to kind of think about as you're thinking about this is, management uncertainty is one for you. We want you to quantify that one. But the ecosystem information we want you to keep that one qualitative, so that we

have some flexibility in how we think about that. That was just an example.

All right, next steps, we've ticked a couple off the to-do list. We established our working group and we've met a couple times. We developed a policy statement. The board tentatively approved that. We met in September and we started to kind of work through some examples to kind of operationalize the risk policy. Now we're on the red line there presenting some examples to the board during the annual meeting.

Our big ask from this is, do you want us to keep moving forward on this? Do you like what you've seen so far, and if so what we think the best approach would be, is to have a standalone workshop; where we actually work together and kind of step through an example. We're suggesting, we thought about this a little bit, but at first we thought we could be a little bit ambiguous and you guys could tell us what species you want.

But we thought it might be more hopeful if we offered a species that we thought might be a good one, and so we're offering striped bass. That was actually early on in this. That was an example that we had kind of thought about. We moved away from that and now we're back to striped bass, which seems to be where we always end up.

We think it's a good one for a couple of reasons, Number 1, striped bass will be going into a benchmark in a couple years, so you could actually build this with that in mind and you could apply it. It's a data-rich species, so we've got a lot of information to work with. We've got a good solid assessment to work with, so we think it might be a good kind of first example to use.

But again, we've got another example in our back pocket if you hate that. All right, the last slide and I will stop talking; just a set of questions to kind of think about, if and when we sort of deliberate on this. What do you think about the decision tree process, do you think it's flexible enough? Do you like the idea?

Are there any of those qualitative metrics that you think we can and should quantify and build directly into the decision tree? What do you think about the range of risks? We just tried to be broad to have sort of that again maximum flexibility for you all to think about, but maybe someone offers. We don't ever want to be 70 percent uncertain that we're going to meet our targets.

Maybe that one drops out, but it is completely up to you. Then the most important one, the one that we hope you answer specifically for us today is, would the board be interested in a stand-alone workshop focused on striped bass? We'll sit here and work through the example just like we did at the working group meeting. Thanks for listening to me talk about risk and uncertainty again; and that's it for me, Mr. Chair.

CHAIRMAN GROUT: Are there any questions for Jason about this? Go to John Clark and then Dave Borden.

MR. JOHN CLARK: Thank you, Jason that is really interesting. I'm just curious. Two of the goals are to be consistent, another one is to be flexible; and they seem a little incongruous there. Obviously there is a lot of uncertainty in those extra variables there. Have you though through what approach that would be taken, so that you have some flexibility, yet we can say we used the uncertainty policy consistently from species to species?

MR. McNAMEE: Excellent question. They seem sort of counterintuitive. When we were talking about consistency, we're talking about it in a very broad context. To put it at the very highest level, you apply some sort of decision tree across species; and so that would be consistency. I think we can get a little more, you know not leave it at that really high level.

I think we can get more consistent in the categories of questions that we're asking as we work down the tree. That's another level of consistency. But in the end what we want to recognize is, a striped bass and northern shrimp are different. You know the questions, the specific questions that you end up going through, they are going to be different species-to-species; but that framework will be consistent. You know we can create different legs for the different types of species that we have to deal with.

CHAIRMAN GROUT: Follow up?

MR. CLARK: Just quickly. I just was concerned about if in different species we start weighting things differently, then certain groups might feel they're being disadvantaged by the way we're considering this aspect for this species as compared to another species.

MR. McNAMEE: I think it's a good point, but I think that exists now as well. What this does is makes us really specify why we're treating them differently.

MR. DAVID V. BORDEN: A couple comments and then a question for Jason, I guess. Comments, I like what I've seen so far, I think we should continue with this. I like the idea of a workshop; especially if it's conducted in conjunction with one of our main meetings; in other words, just take a portion of a day and do a workshop, rather than have separate travel arrangements.

But I guess my question for Jason is, and I realize there is some uncertainty with this, because it hasn't all been worked through. Each of the council's has brisk policies, as I understand it. On joint plans, what is the potential for us to end up with a different risk level than the council, and how do we ensure that that doesn't take place?

MR. McNAMEE: That is an awesome question, and one that we discussed at the meeting. I think what we basically said was, we would not be duplicating any existing risk policy that is out there. For instance, for summer flounder, Mid-Atlantic Council has a risk policy that they apply to it. We wouldn't duplicate that.

MR. ROY W. MILLER: It seems to me that in the past couple days we've heard about a few species where we had zero risk of exceeding SSB, or something of that nature. The range of 30 to 70, how did you decide on that and not go from say 0 risk to 70 percent, or something of that nature?

MR. McNAMEE: I appreciate your question, because this was probably one of, we were sort of at the bottom of the decision tree and got to this question. We were trying to be less than arbitrary. We ended up being arbitrary, so we just kind of tried to capture a range. I'm being a little facetious.

It wasn't completely without thought, and we just tried to think of examples of other species and the types of uncertainty that people have applied to them at the regional councils or whatever. That is where we kind of got. What we wanted to do was bound the issue. We thought that range was probably the extremes of where the board would probably be comfortable going.

But what we also discussed is, if you are interested, what we would do subsequent to this is begin to do a Meta-analysis. Look at other species that are out there, and that would give us a little better, less arbitrary mechanism for long-lived slow-growing species that are out there. They've never had anything above a 50 percent probability applied to them. That is information that we can use to better characterize the probabilities that we want to end up at.

MR. MUFFLEY: Thanks, Jason. I really like where the group's been going on this and I certainly support it. Maybe my question is a little bit further down the road I guess, in terms

of just thinking that this is going to continue to move forward. I was wondering what roles are being played, in terms of the decision tree itself?

Is this taking place at the Technical Committee level, because some of these are sort of technical questions; in terms of how biased or how uncertain the model is? It's not going to happen, I don't think, at the board. In terms of making those decisions or maybe it is. I'm just trying to think of where the decisions happen and get us to certain places, like the council structure, the SSC has obviously a lot of say in terms of some of the uncertainties. Is that going to happen at the TC level? Just kind of thinking through how the decision tree actually plays itself out.

MR. McNAMEE: Awesome question, Brandon. One of the nice things about the commission is we have a lot more flexibility with regard to this. The way that we've envisioned this is, there is going to be a set of codified questions that are for the TC. The TC is going to go through; we're going to look at those.

We're going to approve them at some point, and they're going to get to a spot. Then it is going to come back to the board, and that is where the flexibility comes in. It is not as if we're suggesting you need to be bound by wherever the TC ends up. What we're suggesting is, now there is going to be these other things.

Let's just use an example, economics. The TC ended up at 50 percent, but now a board member says yes, but there are severe economic consequences for whatever decision is going to be made. We can offer suggestions as to what that buffer, one way or another could or should be. But now the board can take those other pieces of information that are out there, that are qualitative or it could be quantitative as well; and you then apply them to what came from the Technical Committee to adjust.

That gives you flexibility, but the other nice thing it does is makes you say why you're adjusting, very explicitly. I think that is what we're talking about with the transparency of the process. There is flexibility to kind of account for indirect things, things we don't have good quantitative information on, or things we haven't considered in the decision tree. We can adjust, but we have to say why we're adjusting in a very explicit way.

MR. RITCHIE WHITE: Great presentation. Fully support a board workshop, and striped bass I think is the perfect species to pick. I would suggest that it be structured in the meeting week when the full commission is here; so between meetings that everyone would have the ability to be present, not at one end of the meeting week.

CHAIRMAN GROUT: I think that's a good idea.

MR. NOWALSKY: As we've labeled it presently as a policy. That would imply that when constructed for a given species, we shall follow it as opposed to potentially labeling it guidance; whereas that might give us more flexibility to deviate from it as a board? Can you talk a little bit about what the implication of labeling it a policy would be in constructing it, in terms of that constraint versus considering it as guidance instead, and giving us a starting point for discussions?

MR. McNAMEE: Yes. I kind of see it as both. You have this really structured part of it, so that you know what's going to happen as the information comes out. That's kind of the more rigorous part of the policy, where you follow as set of operating procedures that you've built a priori and agreed to. But then it also for the board, it is guidance.

The board has an opportunity to adjust from that. But at the very least, the benefit is, it gives you a solid and well informed starting point; and also forces us, the board, to really characterize why you want to move away from

that predefined guidance very explicitly. I am kind of having trouble answering your question, because I kind of see it living in both worlds.

It has kind of a formal, not a very constraining formal, but a formal process that gets undertaken and then there is more flexibility at the end to adjust. But you've ended up in that first part of the process at a good starting point. You shouldn't be way over on the other side of the decision tree, because of all of the things we talked about. But then there is room to buffer one way or the other.

MR. THOMAS P. FOTE: I feel a lot more comfortable after hearing your explanation how we use it, because we're usually risk averse with black sea bass, summer flounder. The councils have set up and trying to figure out, and spending the last two years trying to figure out how to change that; because the SSC blames the council and the council blames the SSC. I don't want to go through that headache, but I see where this could be very helpful, as long as we understand that it is flexible by the board, because I don't want something that's inflexible.

MR. DANIEL McKIERNAN: I understand that attraction of running striped bass through this as a test case, but given what we're facing in southern New England lobster, did you consider that?

MR. McNAMEE: Lobster did not come up. Well, I don't remember talking about lobster. We talked about a couple other species. The broad categories we were thinking about was like data-rich, data-poor, and so on the data-rich side we were talking about bluefish, striped bass. I think we were pretty finfish focused, more or less. I'm looking for some support from over there. The answer is, no. We certainly could. I don't know that we would be able to get through this process in time to make it relevant for what's going on with lobster. But there is no reason why. Obviously we think we can apply this at some point to all the commission species.

CHAIRMAN GROUT: Any other questions? David.

MR. DAVID BLAZER: Great work, Jay. Sounds like a pretty impressive and thorough job that you guys have done. You may have answered my question, just by your general comments a second ago about data-rich and data-poor. Thinking about menhaden and using a tool like this, and other species in the future. Is there any reference, or did you guys talk about ecological reference points and how to build that in? Just want to hear a little response on that.

MR. McNAMEE: Yes. We definitely did. As it stands now, one of our colored boxes there on that one slide that I had, ecosystem is one of them. In this period of time when we don't have ecological reference points, we can think about ecosystem considerations in a different way, and a kind of general risk types of frames.

But if we ended up with ecological reference points explicit, we can certainly build those in. That might be another leg of the decision tree that would be at least in part, you could branch off if those are like nontraditional reference points. It's certainly something we talked about and have thought about. I'm optimistic we could definitely accommodate that.

MR. ADLER: I want to return for a second to Tom Fote's thing, because I think it's very important. While this would be very helpful, I don't want to get stuck, as Tom said, with the SSC discussion where you can't change anything. As guidance, absolutely, as a policy that we have to trip over, no!

I just did want to reiterate what Tom was saying that we need the flexibility; that is what's actually helped the Atlantic states more so than the federal councils. I think we should maintain that. Use it; I don't know what you call policy,

but guidance absolutely! But I think it is very important that we keep the flexibility.

CHAIRMAN GROUT: I agree with you. I think a good way to use this is to inform our decision making. Any other questions, what are your thoughts on this having a workshop in one of the meeting weeks? Is everybody supportive of that? Is everybody good with striped bass just as a first shot? Okay that sounds good, anything else?

MR. McNAMEE: Just one more clarification, starting to think sort of operationally about this, and that is – and Roy asked the question, you know about those probabilities – that is something else we could potentially look into in a little more detail. We could drop some out right now, maybe it's too heavy a lift.

But maybe the idea could be what I'm looking for clarity on is; do you want us to do a little more research? In particular if we're going to focus on striped bass, we can think about that specific example and come up with the probabilities that work for that species in a more kind of informed way, or do you like this broad range and you want the ability to kind of have them all on the table? That's the clarification I wouldn't mind getting.

CHAIRMAN GROUT: Any comments on that? From my own personal perspective I would like – go ahead – I would appreciate – go ahead, Dave.

MR. SIMPSON: I think the range you're talking about is helpful. Maybe after the workshop we'll feel differently, but I think that's helpful. I would just underscore what Tom and Bill said; that I think at the top of this document we need to be really explicit that this is guidance and that we are free to take less or more risk as we see fit.

In terms of analysis, I don't know that it's available, but it would be great to look at a case study. Summer flounder I think for a long time, I could be wrong, but we picked that 50 percent probability of doing our job, so to speak; and how has that played out over history? If there's a stock out there, whether it's on this coast or another coast where a management body has stuck with a model-based expected success rate.

How did it actually play out over time? Because there are some stocks where you say, well the tendency is always going to be a problem with unaccounted for catch. That doesn't get incorporated into the risk probability assessment, but it comes home to roost on you after a few years.

Then I think there is other cases where we simply want to be more conservative of we just need flexibility based on the conditions, trends in recruitment or anything to that affect. One, a disclaimer at the top that this is guidance and doesn't lock us in to no less than 30 percent and no more than 70 percent, and if there is a case study out there I think it would be really instructive for how this plays out long term.

CHAIRMAN GROUT: Further input for Jason? I would concur with what Dave was saying, a broader at least a broader suite of things at this point.

HABITAT COMMITTEE REPORT

CHAIRMAN GROUT: We're on to the Habitat Committee report. Our habitat coordinator, Lisa Havel is off getting married, so Toni will be giving her report for her.

MS. KERNS: I'm going to pinch hit for Lisa, as Doug said. I was at the Habitat Committee meeting, but Wilson, I know you were there as well; so if there is anything, details I leave out, please feel free to help me out. For the Habitat Committee there are going to be two documents that we'll need to consider approval of today, just as I go through.

One of those is the Sciaenid Habitat Source Document, and then the other is Consideration of the Letter to BOEM. Both of those documents were in your meeting materials. The Habitat Committee met last week in Portland, at the Gulf of Maine Research Institute, and we're very appreciative of them hosting us.

We had presentations from our new Habitat Committee member, Oliver Cox, on the habitat of Maine; did a great job, as well as a presentation from Riley Young Morse of GMRI, who is doing a data portal of climate change in the Gulf of Maine/Mid-Atlantic area. In that portal, they're still testing it.

But once it's released I think it's going to be something that the states are going to be really interested in seeing and using. There are a lot of interactive uses for that. We also had a discussion with Katie Drew on the feasibility of incorporating habitat into stock assessments, which is a discussion I think the committee would like to have an ongoing process with, as well as an update on ACFHP and their meeting previously, which Pat Campfield will give information on later. The committee reviewed their action plan goals from last year, as well as west the action plan goals for this upcoming year.

REVIEW THE DRAFT LETTER TO BOEM REGARDING SEISMIC TESTING

MS. KERNS: For the letter that is drafted in your meeting materials for BOEM, this is based on the Habitat Committee's request to the Policy Board to consider a letter at the last meeting. They took the board's feedback from August, and drafted the current letter that we have. It is very similar in scope that the South Atlantic and the Mid-Atlantic Councils had drafted previously and sent to BOEM.

In the letter it highlights that fish and other marine resources depend on sound for their vital life functions. There is insufficient information on how these seismic surveys that is ongoing in ocean waters and their activities affect fisheries and their ecosystems, as well as the structure and function.

It also states that the commission believes it's important to fund the research in order to get a better understanding of how these activities are impacting the fishery resources that we manage, and the consequences of their activities. Then lastly, it offers a seat to BOEM on the Habitat Committee, to have better engagement with the group.

We would hope that this would also help to give us a better heads up of the different activities that are ongoing with BOEM.

REVIEW STATE REPORTS ON CLIMATE CHANGE INITIATIVES

MS. KERNS: In addition, in your meeting materials there was a document that looked at climate change from the committee. Habitat Committee members identified ongoing practices in each of their states for their coastal regulatory planning that addressed climate change impact.

There are still a couple of states that are making edits and changes to their particular sections, so it will be a living document. Then their plan is for next year to identify the gaps in the regulatory planning process, and make recommendations back to each of the states on how to make improvements. Their idea is to create a matrix, so it is a little bit more user friendly of what's available in the resources for each of the states.

REVIEW AND CONSIDER THE SCIAENID HABITAT SOURCE DOCUMENT

Then we also have the completed Sciaenid Habitat Source Document. Alison Dreary finalized this document and made all the edits and recommendations. We're very grateful for her help. The contributions were then

approved by the Habitat Committee, and if approved by the Policy Board, we'll format and make all the changes and publish it on to the commission website.

The Habitat Source Document covers the biology, the habitat needs, the habitat research needs, and habitat stresses for all of the ASMFC managed sciaenids, which include croaker, black drum, red drum, spot, spotted sea trout and weakfish. It also includes the same information for northern kingfish, southern kingfish, and Gulf kingfish.

The document identifies the major threats to sciaenids as beach renourishment, degradation of water quality, coastal development, navigation and dredging, fishing and climate change. The document makes the following recommendations to mitigate these threats. HAPCs should be accompanied by the requirements that limit habitat degradation. States should enhance and coordinate water quality monitoring. That states should minimize wetland loss and the windows of compatibility should be established, especially in regard to avoiding adverse activities during the spawning season for sciaenids. Fishing gear is known to negatively impact HAPCs, and they should be prohibited in those areas. Research on the role of submerged aquatic vegetation and sciaenid productivity should be conducted.

Restoration efforts should be enacted to restore critical habitat, and bio accumulating compounds should be limited to maintain sciaenid health. Dams that threaten freshwater flows to the nursery and spawning areas should be identified and targeted for recommendations during FERC relicensing, and we should continue with education and outreach activities that explain management measures.

Then 2017 is the 20th anniversary of the commission's SAV policy. For 2017 the Habitat Hotline major theme will be submerged aquatic vegetation, and the group is going to look at reviewing and updating their 1997 SAV Policy Document. Lisa is going to help cosponsor an artificial reef symposium at AFS this coming year, and she'll serve on that steering committee.

Then as I had said before, the committee would like to stay engaged with the Assessment Science Committee, and any other relevant committees or groups to better link habitat and stock productivity for commission managed species; and really just try to continue to advance ways to incorporate habitat information into our stock assessment process.

Then the Habitat Committee itself has two new members, one is Oliver Cox from Maine, and then the other is Denise Sanger, from South Carolina DMR. Then on the Artificial Reef Committee, Michael Malpezzi from Maryland DNR has joined the group. I will take any questions.

MR. FOTE: It seems like they're doing a lot of work. It's a shame that we can't sit in on the committee meetings like we used to. I was sitting here thinking about it. The first meeting of the Habitat Committee, before Bill Goldsborough was the Governor's appointee from Maryland, it was actually Al Goetz; and Al Goetz from Maryland and me started the Habitat Committee, basically pushed for it, with the pushing of Gordon and Phil Coates back then.

The first meeting of the Habitat Committee, we decided to make it big, when we basically reached out to the Mid-Atlantic Council. We were trying to mirror what the Mid-Atlantic Council was doing back then, and basically had a joint meeting with them where we invited all the federal agencies in. We had EPA, we had the Army Corps of Engineer, and we had the Bureau of Land Management.

Maybe it's about time to have a workshop that we do that to bring up a number of issues. I mean I'm just thinking about what we're talking

about. There are two issues there; the other issue is basically because of beach replenishment and sand mining. We are now basically destroying a lot of the lumps, old fishing grounds off the coast.

There are a whole bunch of issues, and maybe it wouldn't be, as I said, a bad idea. When we formed the Habitat Committee, it was actually all the Governors appointee, Legislative appointees and state directors. It was actually one of the most popular committees back then. We've kind of changed the direction of it, which is a good thing. But maybe it's the time, as I said, bring the Habitat Committee, maybe get a joint meeting with the Mid-Atlantic Council Habitat meeting, and try to get all three agencies or four agencies; whatever the federal agency we need to bring in, and talk about these numerous issues that are impacting fisheries like climate change. We've got a lot of problems, and it is not just climate change now. Because of climate change it's causing other problems like sand mining. Just a thought and I would like to ask that the Habitat Committee would think about that.

CHAIRMAN GROUT: Okay, we'll have Lisa bring that to the Habitat Committee again; any other questions for Toni? Loren.

MR. LOREN W. LUSTIG: I was very interested as we discussed habitat to consider the educational component. I believe that topic is of particular interest to that group of people who are our colleagues in the educational field. My question is, is there any evaluation instrument that we have in place to consider the effectiveness of these educational efforts? Perhaps that would lead us to enhancing what we're producing in that regard.

MS. KERNS: Loren, are you referencing in particular to the Sciaenid Source Document or just in general on our efforts to provide education resources on habitat issues?

MR. LUSTIG: It's more of a general question, just to assure ourselves that the efforts that we put into education are actually effective, and try to maximize that effectiveness.

MS. KERNS: I think the only evaluations that we do is that we track the number of people that we send the Habitat Hotline out to, which is a major source of educational material for the Habitat Committee. We may be able to track how many people download the habitat fact sheets off of the website, I'm not 100 percent sure if that is possible or not, at least the number of people that click to that link on the page. But beyond that I don't think that we do any additional evaluations.

DR. LANEY: It is an excellent question, Loren, and we have discussed it at length. As Toni noted, we have limited ability to track some of the educational materials that we put out there through the Habitat Hotline, and also downloads. I think, Toni, we can track downloads of the habitat management series of documents too; I'm not 100 percent sure about that.

But we have had several lengthy discussions about the fact that we are concerned about how the educational materials are used in trying to maximize the effectiveness of those materials, as well as maximizing the effective use of our time when we consider what to create. One of the things that we haven't done yet, but we did talk about at the last meeting was trying to increase our use of social media.

We discovered that Deke is the designated commission tweeter. We were thinking well, are there things the Habitat Committee might want to tweet out there that would resonate. We were advised that we could send Lisa perspective tweets and that she would work with Deke to maybe get those out there.

We've discussed it a lot, and it's been a concern I think of the committee that we were uncertain about the effectiveness of those materials. I

assure you, we'll continue to discuss that. If you have ideas about things that you think would increase the effectiveness of those materials, please share those with the Habitat Committee. We're very receptive.

CHAIRMAN GROUT: Further questions for Toni on the Habitat Committee report? Okay seeing none; we do have a couple action items here. **We need a motion to approve the Sciaenid Habitat Source Document.** Do we have a motion for that? Tom Fote, are you making that motion?

MR. FOTE: Since it's a committee report do we need a motion? Shouldn't the motion just come from the committee? That's what I'm asking.

MS. KERNS: In the past with the source documents we've approved the document or accepted the source document for use, and then we publish that on the website. It's just for the source document itself.

CHAIRMAN GROUT: I think he's talking about the Habitat Committee made a motion to approve it; do we need a motion and a second at this point? They don't make motions.

MR. FOTE: Then I'll make the motion.

CHAIRMAN GROUT: Thank you, Tom, is there a second to that motion; Wilson.

DR. LANEY: Second, Mr. Chair. Could I ask that the motion reflect the fact that we need to give editorial discretion to staff on that? Because we had a pretty extensive discussion during the meeting about the authorship, which we agreed I believe to change, Toni, if memory serves. We just need editorial discretion on the document.

CHAIRMAN GROUT: Can we have the motion reflect that? Got it, any further discussion on this motion? Is there any objection to approving the motion? **The motion is approved by unanimous consent. The other item that we are looking for action on is the draft letter to BOEM regarding seismic testing.** That is in your briefing materials. Tom.

MR. FOTE: I so move.

CHAIRMAN GROUT: Is there a second to that? David Blazer. Further discussion on the letter? Thank you, Eric Reid.

MR. ERIC REID: Exactly who is going to get this letter? That's my question. I'm sorry I didn't ask it earlier. How many people are going to get this?

MS. KERNS: Currently it is directed to the Regional Director in the Gulf of Mexico. I believe, and I would have to go back and double check with Lisa, and Wilson, you may know the answer to this. But he is the individual that is dealing with the seismic acoustic research or activities. We can confirm that there isn't a similar person in the Atlantic that gets this as well, or if it's just this one individual.

DR. LANEY: Yes, Toni, that is correct. The unit that deals with all the seismic testing off the east coast and the Gulf of Mexico is based in the Gulf of Mexico. That is to whom the letter is addressed, and I believe, Michelle can help me out here maybe. I think that both the Mid-Atlantic and South Atlantic Council have sent letters to the same entity, I believe.

DR. DUVAL: That's correct. The letter from the South Atlantic Council was sent to Mr. Goeke, I don't know if that's a correct pronunciation, but the same person.

MR. REID: I would strongly suggest that we send it to senators, governors, et cetera; because anybody that has had any experience with BOEM, let's talk about the New York Wind Farm that's my best example. They don't listen and they don't care. I think we need to send these letters out to people who might listen and might care, because it is my opinion BOEM doesn't care. That is my suggestion. We've got

to disseminate this information to people much higher up in the food chain.

MR. FOTE: As soon as we have the commission letter, I will be basically sending it to my senators and my congressmen from the state of New Jersey, and ask what is the government doing about this? They already sent letters already, so it just follows it too. Probably we'll send one to the President under my heading, with a copy of your letter to the President that says, I would like a reply on this as a commissioner.

CHAIRMAN GROUT: I guess my question is whether the commission should be sending it to all senators and governors, or whether the commissioners themselves should be taking this letter that is being sent out and providing it to their governors and senators themselves; just looking for something that might be more effective.

MR. FOTE: I think with letters like this over the years, we have not done that because some of the state agencies sitting around the table, and this is for other topics, didn't feel comfortable signing a letter to go to the senators but they felt sending them to the agencies. I don't know if the feelings have changed.

But I know that is historically why we didn't do it. Also, some of the states didn't want to – on the opposite side of the table on some of these issues – even the other agencies weren't in this state or the governor was. That's why I'm saying that it gets difficult when you do that.

CHAIRMAN GROUT: Any further thoughts? Eric, would that be a way of handling it, or do you think it's important that the commission send it directly to all governors and senators?

MR. REID: I don't have a problem with the individual delegation sending this to their own congressional delegation; so that's fine with me. But I do think it's interesting we're only talking about a process question. Nobody is disagreeing with me that BOEM is running amuck amongst us. I think it is critical that we put that in check.

If it means each one of us sending these letters to our senators that's fine, you guys have been doing this much longer than I have, and I'm a relatively new kid on the block. Whether or not it is a more powerful statement coming directly from the commission or it is more effective coming from each delegation to congressional delegations. I'll leave that up to the Chair.

CHAIRMAN GROUT: Roy and then Ritchie.

MR. MILLER: Just to follow up on Eric's suggestion. It seems to me that if we have such a letter that come February, or perhaps in the spring when we're in Alexandria for our commission meetings; and many of us avail ourselves of the opportunity of meeting with our congressional delegations while we're in D.C. at that time of year. Having such a letter in hand, and being able to personally place it in the staffers hands, would be an effective way to convey the message.

MR. WHITE: I would think both. I would think that the commission sends a letter out, as Eric has suggested, and then have the individual states follow up with that; and then even follow up as Roy has suggested. The more they hear the same type of consistent input, the more important it is to them.

DR. DUVAL: I am a little uncomfortable with sending a letter like this, I think directly to governors. I work for the governor of North Carolina, and I'm just concerned about how that might be received; given that our agency participates in the coastal zone consistency review for projects from BOEM.

I appreciate that letter, and I think it's consistent with what has been sent by the fishery management councils and sends a correct message, in terms of offering BOEM a seat at the table so that we can increase

communication and information exchange, and ensure that the commission's concerns are being considered. I definitely appreciate what Eric's trying to do. I think just from a state agency perspective, I'm a little bit uncomfortable with that; just being an executive branch agency.

CHAIRMAN GROUT: Further thoughts on this and whether the commission should send letters directly or let the commissioner's forward this to our congressional delegations and governors? David.

MR. SIMPSON: I agree with Michelle. Don't send it to our governor.

CHAIRMAN GROUT: I am getting the sense that there is enough concern my some delegates about the commission sending a letter directly; that it would be best to let the delegation, the commissioners decide when and how to deliver the letter. Does everybody agree with that sense here? Does anybody object to that? All right, I think we've got a good letter here. I think it will be the responsibility of our commissioners to forward this to our governors and speak with our senators about this; because it is an important issue.

MR. FOTE: I would like to have a copy of the South Atlantic letter, and also the Mid-Atlantic letter to basically include in the packet, when I send out from the commission; so I can say it is a whole bigger body than that. If Michelle would send it out to all the commissioners and basically have it, so we can have it in our hands.

CHAIRMAN GROUT: Toni will send that out to all the commissioners when we're sending out this letter. Okay anything else on this agenda item? **All right we need a motion to formally approve this letter. I think we had a motion and a second. Is there any objection to sending this letter? Seeing none; it is approved by unanimous consent**.

ATLANTIC COASTAL FISH HABITAT PARTNERSHIP REPORT

CHAIRMAN GROUT: The next agenda item is Atlantic Coastal Fish Habitat Partnership report by Pat.

MR. PATRICK CAMPFIELD: I'll be providing a quick report from the Atlantic Coastal Fish Habitat Partnership, which also met last week in Portland, Maine. The focus of the partnerships fall meeting was the further development of their new five-year conservation strategic plan. The committee reviewed drafts of several plan sections, including habitat conservation priorities, science and data to inform habitat restoration priorities, outreach and communications, and a section on finance. The overall plan section objectives and strategies were finalized, and the committee intends to finish the specific tasks within those strategies by December, to begin implementing the plan at the beginning of 2017.

This is important because the new plan will guide on-the-ground habitat restoration priorities for the next five years for the partnership. In addition to the strategic planning session, we received presentations from scientists at the Gulf of Maine Research Institute, covering a number of their coastal ecosystem monitoring projects.

Highlights included an inshore sea herring survey, an acoustic survey that they've conducted for the last five years, as well as projects on fish monitoring pre and post monitoring around dam removals in Maine. We also had a presentation covering work by the Great Bay Estuary Partnership, including the Exeter Dam Removal Project, which was endorsed by ACFHP.

The last major item that the partnership covered was to finalize FY 2017 funding recommendations to the Fish and Wildlife Service. We also after the meeting went on field site visits to a couple of fish passage

projects, including the Kennebec River, Edwards Dam Removal, and Coopers Mill Dam.

The next couple of slides are just pictures that we took. I think everyone has heard about the Edwards Dam Removal, but a very impressive project. You can see hopefully on the far side of the project the remnants of the old dam, but I think this was over an 800 foot large dam that was taken out in the Kennebec River. Since then of course fish passage has improved dramatically, and if I understood correctly this now hosts the largest alewife run on the east coast.

Conversely this Coopers Mill Site, there is still a dam at this site. Because of the very low flow this year, we anticipate problems for diadromous fish recruitment. Essentially the low flow has meant that there will be no downstream passage for young-of-year alewife and other stocks. These two site visits really show a juxtaposition of the value of fish passage; which leads into a quick summary of the FY17 funding recommendations from the partnership.

ACFHP received nine proposals for habitat restoration projects. They came from all of the four regions, the northeast, Mid-Atlantic, South Atlantic and south Florida. These are relatively small pots of funds, up to $50,000.00. The major proposal criteria are to meet ACFHPs conservation priorities that the projects leverage separate funding; that the projects are shovel-ready and that they have a relatively short time to completion.

The committee evaluated and scored these projects and I'll quickly overview the top three, which included one oyster reef and salt marsh restoration project and two dam removals. These are the projects that we're putting forth to the Fish and Wildlife Service. The top ranked project is to remove the Coopers Mill Dam that we just showed a picture of, as well as a partial removal of another dam on the Sheepscott System here in Maine.

If that project moves forward, it would open 71 miles of river habitat to alewife, Atlantic salmon, and other species. Also notable, the Sheepscott is the southernmost river designated as critical Atlantic salmon habitat. The project team requested $50, 000.00 but also had a much larger, substantial amount of match to complete this project. The second ranked proposal is for Oyster Reef and the Estuarine Shoreline Restoration in Bogue Sound, North Carolina, where the project team if funded, would use recycled oyster shells and place them along the shoreline to promote salt marsh accretion. This would provide nursery habitat for sea bass and red drum; as well as feeding grounds for flounder. They requested a slightly smaller amount and about $38,000.00 and have a similar amount of matching funds.

The last proposal that we'll put forward to the service would be the removal of the upper and lower Sawyer Mill Dams. This would open over five miles of habitat for alewife, eel, and lamprey. They also requested $50,000.00 and had a much, much larger amount of matching funds from other partners. Again, those funding recommendations will go forward to the Fish and Wildlife Service, and they will make their decisions in the spring. That concludes the ACFHP report.

CHAIRMAN GROUT: Any questions for Pat? Okay thank you, Pat that was excellent. We are now down to Agenda Item Number 11, and this is something that Jim Gilmore brought up, the National Park Service Management Policies. Oops, sorry, I checked off Law Enforcement Committee before it was done. Go ahead, Mark.

LAW ENFORCEMENT COMMITTEE REPORT

MR. MARK ROBSON: The Law Enforcement Committee did meet this week on Monday and Tuesday. I would like to thank all of the staff and members of the commission that attended the meeting at different times, and really contributed to the deliberations; especially Pat

Keliher, Dennis Abbot, Ritchie White, Dan McKiernan, and Dave Borden for your help with the Law Enforcement Committee deliberations.

There is a written meeting summary that we made available. It has more details. I'm just going to try to cover some of the highlights. Dealing with species issues, and of course the first two that I mention here are species that we're going to be talking about later today, American lobster and Jonah crab.

But just to give you a quick summary of some of the issues, we were briefed on the upcoming addition for the southern New England stock and some of the possible management options that may be under consideration. The LEC will certainly keep a close eye on that and be prepared to contribute any recommendations as early as needed.

We also talked a lot about the current work of the enforcement subcommittee. As you know, we've been working now for a little while on developing recommendations for enhancing enforcement of the American lobster fishery offshore and inshore as well. You will recall that we had recommended a letter that was drafted for NOAA Law Enforcement to consider in reevaluating their prioritization process for American lobster.

The feeling of the subcommittee and supported by the LEC, of course, was that this letter would help to draw attention to the need for American lobster being a higher priority in the NOAA enforcement ranking system or process. There were some questions, I guess about that letter as to the timing, and what impact it might have.

We revisited that in our meeting this week, and the LEC reconfirmed with some input from NOAA Law Enforcement that the timing is good for going ahead and submitting that letter. NOAA Law Enforcement will be going through their reprioritization process for their next five-year cycle, which is going to be from 2018 to 2023. But we were advised that this is a good time to go ahead and start providing input to NOAA as to what we see as needs for priority issues for the Atlantic States Marine Fisheries Commission. The letter would be timely if we go ahead and submit it.

If there were also concerns about, you know when you make these changes in prioritizing species work, which has a bearing on NOAA Law Enforcement funding to the states through the joint enforcement agreements. Are you in danger of robbing Peter to pay Paul? To some extent that is covered through their process, because they have overarching national priorities, but there are also regional priorities that are established.

For example, there is a whole suite of northeastern district priorities that NOAA sets, and these help to inform the specific needs of a particular part of the coastline; and then even within that NOAA works on a state-by-state basis to make sure that priorities are met that also address state needs in dealing with federal supported species.

We also talked a little bit about the next steps for recommendations for enhancing enforcement work on American lobster, and there was a strong sense that one of the next best hanging fruit might be to endorse the development or the expansion of a VMS requirement or system for that lobster fishery.

There are lots of constraints on the ultimate ability of vessels through vessel size or trap-hauling capabilities to work in some of these more remote areas where the fishery is occurring now. But it was felt that this is the next best step in addition to trying to get increased funding and priorities from NOAA to improve and enhance our ability to enforce. We'll talk more about that I guess today during the lobster committee meeting.

The next species, I believe is Jonah crab, and again we'll talk about that later today. We've kind of reiterated support for a whole crab only

harvest; even though we do recognize that the commission is desiring to move towards a claw harvest as well. We supported a five-gallon volume allowance. We have a real concern about a bycatch definition that's based on percent catch composition, which appears to be part of the management options.

We'll skip over that for now and talk more about that with the Lobster Board. With regard to the previous discussions that were held on the North Carolina aquaculture permit for glass eels. I know there were some questions about the removal of the provision in the updated application for warrantless search.

The Law Enforcement Committee took another look at that, discussed it at length really with our colleagues from North Carolina, and we continue to support that revised proposal. It was felt that there are tight permit conditions overall; that because of reporting and the limited application of this permit to a single Permittee, that we feel that those overcome any concerns about not being able to conduct a warrantless search.

As it was pointed out, it's really in the best interest of the Permittee, when asked to be inspected, or if an officer asks to take a look at their gear or their facilities or their catch. It is in their best interest to accede to that request and to do that. There are still mechanisms in place for reasonable cause or probable cause to conduct searches. In this particular circumstance we felt that there was really no concern with the loss of that warrantless search provision. However, in discussing this in a general way, there was concern expressed by the members of the LEC about any possible trend that states or other jurisdictions might have in moving in the direction of prohibiting warrantless searches, particularly in cases where they apply to somebody who has been issued a permit or a special license.

It was pointed out that this is really a very fundamental part of the enforceability of permits and licenses, the ability to go ahead when you place a condition that that Permittee is agreeing to be searched or inspected at any time. That is really a very strong component of permit conditions, and in fact when we go back and look at the enforceability guidelines that we presented, permits in general are among the highest ranked of the management measures that you all can employ.

The primary reason for that is because of that typical condition that allows for warrantless search. Again, another species issue that we took up, we did have a pretty busy meeting this week. We also talked about summer flounder. The staff updated the LEC on upcoming amendment, the comprehensive amendment to address summer flounder; with the expectation that there will be some discussion of safe harbor or dual or multi state landings or landings flexibility in that amendment.

There have been a number of times when the LEC has discussed this issue, particularly for summer flounder in the last year or two, and the increasing use of safe harbor request by members of the summer flounder fleet. There is some concern about that increasing amount of safe harbor requests, particularly for that one individual fishery.

When we talked about this concern, we had to be clear that safe harbor requests are a very fundamental tool that you have to be able to employ. It is a safety-at-sea issue many times. You want to make sure that people in the fishing community are able to come to port when they need to, and you can't just turn them away obviously.

Some of the states have policies now addressing how to handle safe harbor requests, and there was a lot of discussion about the desirability of having a standardized policy in place among all the states; so that it takes away some of the confusion as to how you address a request for safe harbor, what conditions those can be accepted, and how those are managed.

We certainly endorse developing such a standardized safe harbor policy. The issue of using safe harbor request, and then perhaps using that as a mechanism for offloading or handling of a catch from another state, if you should take safe harbor landing in a state different from where you have a catch from.

That is a little different, and we have some concerns about how that may be being mixed up in terms of safe harbor requests and at the same time, particularly with the summer flounder fleet, coming to ports and either offloading or creating difficulties in quota transfers and coordination in that regard.

There is some concern among the LEC members that safe harbor can be abused, potentially abused for business or convenience purposes. We need to be vigilant about that and in general that as you consider landings flexibility, and as you increase landings flexibility, whether it is aggregate landings, multi or dual state landings flexibility or other provisions like that; you are inevitably increasing the cost or the difficulty of enforcement. I don't mean monetary cost, but there is an enforcement cost to having that increased flexibility; either on the water or particularly at the docks, in terms of monitoring and keeping track of all those landings. That is just something to be aware of from the enforcement perspective.

Just real quickly, I'm just going to cover a few other issues that we talked about. We went through our 2017 action plan review, particularly for Goal 3, which are all the enforcement standards that we want to take a look at. Just to reemphasize how important those action plan tasks are to the LEC, we try to make sure that we address those in the course of the year.

Even though we only meet twice a year, we do try to address those throughout the year, either through teleconference calls or other work. We also had a really healthy discussion about the interstate wildlife violator's compact; this is something that's been in place for many years. But there is a lot of variability in how it's applied, either to fish or particularly to marine fish and also whether or not it is applied to commercial versus recreational activity.

Essentially this is a compact that allows someone, if someone has a license suspension or other type of penalty imposed on them that the cooperating state or the member state of the compact would also recognize that license suspension in another state. There is a lot of variability in how that works. We're going to continue to develop the information on what's out there, in terms of individual states and a national policy; and look at that in more depth in the next year.

We also had a request from the state of Massachusetts, the Commonwealth of Massachusetts to take a look at regulations throughout the Atlantic states area regarding how we deal with the combination of recreational and commercial landings in a single trip or on a single vessel. As with other types of regulations, we found that there is a lot of variation also in how states deal with this.

We are in the process of pulling together the various statutory or regulatory-language from the states on how they address or even no allow at all, the mixing of recreational and commercial landings; and provide that to the Commonwealth. We also have an Aerial Subcommittee that had been formed, mainly a result of some questions that were raised about our enforceability guidelines and the seemingly low rankings for aerial enforcement.

We're taking another hard look at that; possibly recommending that we revisit the enforcement matrix that we provided, and we actually were recommending that we remove the aerial enforcement component as a stand-alone feature. The argument being that it is basically one of the tools in a suite of tools, like vessels, vehicles and other types of equipment that are

part of how enforcement does either at-sea or dockside enforcement.

It affects those rankings, but it doesn't really fit as a stand-alone rating. We are probably going to be reevaluating that matrix, and perhaps updating the summary survey that we did with the current LEC staff or LEC members, and provide that back to you for another review and look to see if you would approve that revised guideline. I think that's it.

CHAIRMAN GROUT: Any questions for Mark? Loren.

MR. LUSTIG: Mark, thank you for that report. I was especially interested in your dialogue regarding safe harbor. You alluded to cost thereof, perhaps some of those costs being actually monetary cost. Is it possible to pass those monetary costs, if they exist, to the vessels that indeed avail themselves of safe harbor?

MR. ROBSON: Well, that was a poor choice of a word. When I meant enforcement cost, I meant the actual loss of enforceability, as you increase flexibility of landings. That is the cost that I was referring to. As to monetary cost, I don't have enough information to be able to tell you what that cost is. Obviously if you have someone who comes to port with a large number of fish that are perhaps legal to land in one state, but not legal in the state they've come to safe harbor in, or if it's an amount that's over the quota of the state where they've sought safe harbor.

There is an amount of monitoring that has to go on to make sure that those fish either stay onboard, or if there is a process of quota transfer that all that gets tracked. In terms of monetary cost, it is part of the cost of the enforcement officers having to keep track and monitor those vessels while they're in safe harbor to continually keep tabs on that.

But I don't know that that is an excessive monetary amount. I can't answer that right now. I don't know how you would pass that along to the individual vessels. Again, in many cases they are making a request under a safety consideration. Obviously the enforcement branches are very sensitive to that. We're sensitive to safety-at-sea, and so you try to be as accommodating as possible.

MR. BORDEN: A couple of comments. I attended the session on Tuesday, as Mark indicated. I just wanted to go on the record and complement both Mark and the Committee for a lot of fine work. I thought the discussion at the LEC meeting was excellent. I liked the dynamic there, and how they're all working together to try to standardize things.

The other comment I would make, and these are all brief points, and we're going to get into this in the lobster discussion that is going to follow, is there is a discussion about having a line at the 70 degree line in the next addendum. I think we should try to integrate the recommendation about VMS, as far as an option in the public hearing document.

I would also make the observation that what I would envision for the Lobster Board meeting is that there is going to be a continuing discussion about adding other options to that document. I think it is important to get the LEC to review those options before we take it out to public hearing.

My final point is that both the LEC and the Lobster Board recommended formalized positions recommending that we raise the priority of lobster enforcement, in terms of the JEA agreement. The NOAA officials at the meeting the other day, basically provided very clear guidance to all of us that now is the time to finalize those recommendations.

I think that since we've had both the LEC and the Lobster Board make this recommendation, **I think the Policy Board should endorse that**

recommendation and send a letter to NOAA, asking that the priority of lobster trap enforcement be raised. I would defer to you, Mr. Chairman. Do you want a motion on that or could we resurrect the motion that the Lobster Board dealt with and discussed, or I'll give you another alternative, Mr. Chairman. If we need time to craft a motion then we could resurrect it a little bit later in the session.

CHAIRMAN GROUT: I would suggest you craft a motion, it could be very simple.

MR. BORDEN: Megan, do you have a motion?

CHAIRMAN GROUT: Go ahead, Dan, while you're at it.

MR. McKIERNAN: While we're waiting for the motion to come up. I just want to make a comment, and I appreciate Mark Robson's insights into the so called safe-harbor problem. I just want to point out to my Mid-Atlantic colleagues that this is really a manifestation of the fluke quota system being kind of outdated and awkward now.

We have summer flounder in the winter, which are predominantly more north and more east than they have been in the past. We have a migration of not just fluke, but of fluke permits. Permits for North Carolina landings, for Virginia landings are finding themselves in the possession of New Bedford vessels, for instance.

Guys are making business decisions to fish on the North Carolina quota six miles off Nantucket. On a windy, January day they can't get back to where the fish are supposed to go, and it puts all kinds of pressure on the enforcement folks, the permitting folks, and then we get these doctors notes about the injury and the Coast Guard reports. I think the solution is to readdress the winter fluke fishery in a more comprehensive way. It isn't necessarily to solve the down-in-the-weeds issue about safe-harbor.

CHAIRMAN GROUT: Is that a motion you would like to make, Mr. Borden?

MR. BORDEN: **That's the motion, Mr. Chairman.**

CHAIRMAN GROUT: Is there a second to this motion, Pat. We have a modification, hold on. Okay we have a motion and a second. Just to give the board sort of a process of this we'll go through, since we don't have a letter in front of us right now is, once staff crafts this letter they'll bring it to the LEC Chair and the Lobster Board Chair for them to review it. Then we will send it out to the Policy Board once it's been approved by those two Chairs for consideration, and we'll have probably an e-mail vote on it, on whether to actually send it out.

MS. KERNS: We need the motion on the record.

CHAIRMAN GROUT: I'll be glad to. I'm going to read the motion and I'm going to take comment on it. **Move to send a letter to NOAAs Office of Law Enforcement asking for lobster to become a high priority through their Joint Enforcement Agreements Program. Motion by Mr. Borden, seconded by Mr. Keliher**; do you want to have first shot at any further discussion on this?

MR. PATRICK C. KELIHER: I just want it to be clear for the record, when we're talking about increasing this as a priority that we're talking about offshore enforcement in offshore Area 1 and Area 3; just so that it is clear for the record.

CHAIRMAN GROUT: That is true. Is there other discussion on this motion? Dave.

MR. SIMPSON: Law enforcement is important for every species, and when we say making lobster a high priority that necessarily means it pushes something else down. Given the great deal of work and effort we've made on, for example quota managed species; summer flounder, black sea bass, striped bass.

Which of those are we suggesting become a lower priority so that lobsters can become a higher one? I can appreciate in the Gulf of Maine lobster is probably their Number 1 and their Number 2 and their Number 3 and their Number 4 concern. But in southern New England where we're taking really less – there isn't a lot of conservation going on with lobsters that require law enforcement.

We have a mandatory v-notch program that in some areas can't be enforced, it can't be checked, and it can't be verified. I am concerned that we're going to ask for something that is going to hurt us in another area. If the Striped Bass Board were meeting, how would they feel about that becoming a lower priority than lobster? I just think we have to look at a list and say, where does lobster fall in our priorities as a full commission? I don't support the motion.

MR. KELIHER: I appreciate David's concerns. When I think of this as a high priority issue, lobster is Number 4 in our state of Maine JEA agreement right now, Number 4. Groundfish and herring are still one of the highest priorities within that document. From the state of Maine's perspective, what we're looking for is a shift upward.

We should be offshore doing the lobster work, and while we're doing lobster work a byproduct of that enforcement work would be checking herring, checking groundfish boats. I really think it becomes, at the end of the day OLEs prerogative on how they're going to shift that priority within each states agreement; because it is not a single agreement across states. Each state has a little bit different agreement. For Maine, New Hampshire and Mass, lobster might rise up but something else may go down; but it may not impact Connecticut's agreement at all.

MR. BORDEN: I'll make this really fast. That is really an important point. In other words, my response to David would have been when Connecticut writes their JEA Agreement, they don't have to have lobster enforcement to be a high priority. They have the flexibility to tailor make that to put the emphasis on other species.

MR. SIMPSON: Then I guess it begs why the Full Commission is making this motion, if this is an individual state preference, then why is the Full Commission saying to OLE, make lobster a high priority? I'm even more confused now. I guess I would say from a commission perspective, if lobster is doing so well in the Gulf of Maine and groundfish are doing so poorly, why would we take law enforcement attention away from the most troubled stocks and put them on the healthiest stock?

Again, I think if it's an individual state thing then we shouldn't be talking about it. I shouldn't bring up Gulf of Maine and lobster sitting here in Maine. Again, for southern New England, we just have much higher priorities than lobster, clearly. We've worked much more diligently and suffer much more with things like black sea bass than lobster right now.

MR. ROBSON: I will try to shed a little light on it. I'm not fully aware of how the process works, but as it was described in the LEC meeting, the NOAA Office of Law Enforcement through this planning process, develops sort of an overarching national set of priorities that they want to address.

But the real meat of it is in; I think their district or their regional priorities that are established. For example, Tim Donovan, who is the NOAA representative on the LEC, provided us with a copy of the current enforcement priorities for the Northeast Division. It is broken down by a variety of very specific activities, high priority, medium priority, low priority.

The concern about, particularly in the northeast division, was that American lobster really wasn't in that picture for the region, hardly at all as a priority. They do also work beyond the regional enforcement priorities, or the district.

They do work with each individual state through the development of those specific joint enforcement agreements.

I don't know to what level they modify or tailor the priorities for the states. The states may have capabilities or limitations that dictate what they can do for meeting these NOAA priorities, but they still have to sort of fall back to those regional and those overarching national requirements to address key species.

In the case of one of the caveats in the NOAA document, is that high priority items include those items that have low rates of compliance or areas, where there could be significant impact to the resources for noncompliance. Part of the concern with American lobster is this growing potential for lack of compliance with trap tagging and so forth; that it seems to be warranting more of a high priority rating.

NOAA does say in their caveat here, NOAA will enforce any and all violations of the laws we are able to, and all of these items are a priority for us, even the low priority items. The other factor in this that was important to the LEC was that the NOAA Office of Law Enforcement through their new director, they are starting to reevaluate how they focus NOAA funding through joint enforcement agreements on these priorities.

They are going to be paying more attention to directing funds or directing reimbursement to activities that specifically target the higher priority or the mid priority items that is in their list. I don't know if that helps or not. I'm not completely privy to the NOAA process for their priority ratings.

MS. KELLY DENIT: I think between Pat and Mark you've hit it. Essentially there are three tiers, if you will. There is the national prioritization, then there are regional priorities that are identified based on conversations and inputs from the states and the councils; and then there is the mechanism through the JEAs by which priorities are even further refined.

The board may wish to think about how they want to frame that in the sense of, where are you really looking to provide your input as it relates to lobster specifically; into each of those three tiers or is it in one or only one or two?

CHAIRMAN GROUT: Dan.

MR. McKIERNAN: Yes, I would just like to comment that the draft addendum that we're going to review later this morning shows that in southern New England for the first time in 2012, the majority of lobsters were caught in federal waters. I think that trend is only become more exacerbated over the last four years. We all are feeling this void of rules that need to be enforced in some capacity, and it's increasingly in the federal domain. That's why we think it's appropriate to bring this up, since it's the Joint Enforcement Agreement between the states and NMFS.

MS. KERNS: If this motion was to pass and we could draft this letter more specific, what it sounds like to me is the regions that you would like us to put that higher priority on. But from my understanding of what Dan just said is that we're seeking higher priorities in the offshore areas in particular. We're going to be moving forward with regulations in southern New England, which would cover portions of Area 3, which we would want offshore enforcement in.

That would be the New England region as well as, I don't know what the middle region is called, if it's called the Mid-Atlantic or whatever that central region would be. That's where we would be looking to put a higher priority on lobster for in the offshore waters. Is that correct? Would we want Area 3 as well though, based on what Dan just suggested?

MR. BORDEN: With the indulgence of the Chair, can I ask Mark a question? My understanding from the discussion the other day was that the

LEC was going to review all of the priorities at some point. Is that going to take place? Then offer comments on those priorities, is that going to take place before the next commission meeting?

MR. ROBSON: In the past, we have had that opportunity to review the NOAA priorities documents. We actually provide recommendations on either adding or modifying those priorities back to the ASMFC Policy Board as official input from the ASMFC on what those NOAA priorities are. That's how it has been done in past efforts.

This upcoming iteration is going to be a five-year NOAA planning process. As we understood it, they are already in a mode of taking in input. But I don't know when through our official ASMFC commenting process we would be able to look at that whole thing. But certainly the LEC is the group that could offer the first set of recommendations on any priorities as a total list.

MR. BORDEN: I guess my suggestion, Mr. Chairman is to pass the motion and then check on the specific deadline that NOAA requires input. If in fact the period of time that we have available coincides with our next meeting, then the Policy Board could actually look at a recommendation from the LEC and then look at the actual priorities and try to do a more comprehensive recommendation on this. But in the event that they need this input prior to that time, we would at least have one recommendation into them.

MR. ROBSON: In thinking about this, and certainly we can check with the NOAA staff. They are at sort of the early stages of gathering up ideas and suggestions for priorities, and I don't know when. It may be a longer period before they actually have a draft document for that 2018-2022. Maybe towards the end of 2017 before there is an actual draft document that we would officially review and comment on.

MS. DENIT: As far as I know this process hasn't even officially started. I think we're at the very early stages. I think there is going to be plenty of opportunity to have the process that Mark outlined. As far as I understand it we're going to pursue a similar process as we have in the past, where we would produce somewhat of a draft, come and get input from the commission, the councils, state partners et cetera.

I think this would be an opportunity for the commission, if it wanted to, to get in on the earlier side of that of identifying what it considers to be at least one of its priorities to start. You could include as part of your letter, if you wanted to, acknowledging that the board might want to have more extensive conversations across all of its species; as Dave was alluding to, and provide further feedback to OLE in the future.

CHAIRMAN GROUT: That sounds like a process that I think we can move forward with. Is there further discussion on this motion? Dave.

MR. SIMPSON: Based on what Kelly said and the time that we have. I would move to postpone action on this motion until the Full Commission has an opportunity to look at the priorities and weigh in on the relative priorities for the whole commission by species. At this point I look at it and I don't know necessarily if lobster moves to high then something moves out of high. I think the commission wants to know what drops. **I think we need to take a step back and look at our commission species, and make a more holistic motion; in terms of the commission's view on priorities, so I move to postpone.**

CHAIRMAN GROUT: To what time? You need a time certain.

MR. SIMPSON: **Until a draft set of priorities is developed for each region in the commission's range.**

CHAIRMAN GROUT: Is there a second to this motion? Jim Gilmore.

MS. KERNS: Kelly, question. Then that would mean, because what I think you were just suggesting is that we could send some early comments to try to influence the process at the beginning, in the early stages, and then come back and recommend once the priorities have been published; I'm assuming in the Federal Register. This would preclude us from doing so, not preclude us, but we would have to wait until everything is published for official public comment, not going in on the early side.

MS. DENIT: I don't think historically we have done the process through the Federal Register. I think it has been a document that has been circulated and shared with the commissions and councils. I guess the one comment I would offer is I just don't know when that draft set of priorities would be available.

It's possible that it is up to a year from now. It could be shorter than that. I just have no idea, so I don't want to provide any wrong expectations, in terms of what postponing it would mean. But I'm trying to see if I can get a hold of Tim right now, to see if I can get a better sense of that.

CHAIRMAN GROUT: Pat and Ritchie.

MR. KELIHER: I just feel like we're tying the hands of the commission to not be able to comment on an issue with OLE. It is a recommendation to make it a higher priority. There will be a lot of time for input for other issues and other species, as Dave suggested. Why everything looks tranquil right here in Bar Harbor.

While everybody has been sitting around this table, I've been dealing with the biggest trap war in the history of the state of Maine. With more than a half a million dollars in gear loss; and we're getting ready to announce a $15,000.00 reward associated with this. As Dan McKiernan said, everything is shifting offshore.

The need for more dollars and more support for lobster enforcement, we're at a critical stage. If it helps to craft this to make it more specific towards the northeast, I'm fine with that. But I would hate to postpone this and wait for OLE to react. Then we're reacting to what they have. I think it's better to get in early and comment early. If it means we need to get ahead of the game with other species over the next few meetings, then we should do that.

MR. WHITE: I agree with Pat. When I attended the meeting there was a lot of discussion about the problems, both Area 3 and offshore Area 1. I have heard from a lot of lobstermen in southern Maine and New Hampshire and northern Mass that call the outside of Area 1 the Wild West. Maine law enforcement talked about hauling ghost gear with 40 trap trawls with no tags on it, and that that type of fishing is commonplace out there now.

The ability of the states right now to enforce that area is very difficult, almost nonexistent; due to the size of vessels needed. I think this is critical. I think that we can always adjust this going forward. But I think being in early to the service, showing how important this is for the northern states. I think it is worthwhile going ahead, so I am going to oppose the motion to postpone.

MR. STEPHEN TRAIN: I think for me this isn't about the lobster so much, even though I'm a lobsterman. This is about priorities. I think everyone is familiar with Suttons Law, even if they didn't know what it was. When they asked Willie Sutton why he robbed banks, he says because it is where the money is.

The cheating is going to go on in the fishery that has the money in it. We may have other priorities in a region, but right now this is a lucrative fishery, and this is the fishery that needs a priority on enforcement. I oppose

delaying anything on this, and I would say the same thing if it was sea bass that we were delaying, and that's where the money was. Right now we need to get on this and we need to get on it quickly.

MR. GILMORE: I completely support you guys, but that first motion is very generic. If you modify that to include the areas of maybe northern Mass, New Hampshire, you know whatever offshore areas, I could be more supportive of it. Right now in the world of law enforcement that I understand, you say something simple like that it means everywhere.

I agree 100 percent with Dave; lobster off of New York is not a big priority as other things. I was just trying to postpone it to perfect it more, so that we understand where the priority is. Again, if you wanted to go back and limit that to a specific area, I could support that and we could vote on that today.

MR. BORDEN: Just a quick point, Mr. Chairman that I'm opposed to the motion to postpone. One of the principal reasons is, I don't want to wait until the end of this process and then evaluate the priorities. The enforcement personnel at that meeting the other day have already been sent from the Office of Enforcement, documents outlining the existing priorities. There is no reason that we can't look at that same document and formalize a position.

CHAIRMAN GROUT: Obviously we're at a point where we can't amend that motion, because we have a motion to postpone on the board. Yes sir, Dave.

MR. SIMPSON: Just as a point of order, is a motion to postpone debatable?

CHAIRMAN GROUT: Just the time in which you postpone to, so at this point I would love to have more discussion on this, but called it. We're going to have to take a vote on this. Do you need time to caucus? Does anybody need time to caucus on this? I see some people caucusing so I'll give you 30 seconds to caucus.

Okay on the motion to postpone; move to postpone the motion until a draft set of priorities is developed for each region within the commission's range. Motion by Mr. Simpson and seconded by Mr. Gilmore. All states and jurisdictions in favor raise your hand. All opposed. Are there any abstentions, any null votes; one null vote. The motion fails 6 to 8 to 1. We're now back to the motion, the underlying motion here.

MR. BORDEN: With the agreement of the seconder, I would suggest it would be more appropriate if we added after make high, instead of high, higher. I think that is more consistent with the NOAA standards. In other words they don't have the, in fact I think the LEC looked at that language and recommended higher originally.

CHAIRMAN GROUT: Is the seconder okay with that?

MR. KELIHER: I would be okay with that; but based on comments from Mr. Gilmore, do you think we should also at the same time, since we're trying to perfect this, include within the northeast region? Does that get to what you were looking at, Jim?

CHAIRMAN GROUT: I see an agreement between the maker and seconder. Is there any objection to making this change from the board? Seeing none; we now have a motion. Is there further discussion on this motion? Do you need time to caucus on this? I am not seeing anybody saying yes so we'll go right into it**. All those in favor of this motion as written raise your hand. All those opposed same sign. Any abstentions, two abstentions. Any null votes? The motion carries 11 to 3 to 2 to 0.** Any other discussion on this item? Dave.

MR. BORDEN: I apologize for continuing to bring up points. Recognizing Jim and David's concerns, I think the staff should get whatever information is currently available on the priorities and circulate it to all parties.

CHAIRMAN GROUT: Sounds like a good suggestion.

CONSIDER COMMENT ON THE NATIONAL PARK SERVICE MANAGEMENT POLICIES

CHAIRMAN GROUT: All right, we are now onto Item Number 11, Consider Comment on the National Park Service Management Policies. Jim Gilmore.

MR. GILMORE: I'll try to compress this down so we can catch up a little bit. There is a Director's Order from the National Park Service on fishing, which includes marine surface waters. There are 88 of the 409 National Parks actually have marine waters. This order is derived from a 2006 Park Service Management Policy, so it's not entirely new.

But there seems to be a lot of interpretation as to what some of the information is, and actually there is a lot of discretion from the individual park superintendants. There was a call on October 12th, and I had one of my staff sit on it with the Association of Fish and Wildlife Agencies; which went into a little bit of details on the slide show that is at the end of the supplemental material goes into some of what was presented at this meeting.

The intent of the Director's Order is to make park policies on fishing more consistent. However, there are some things that raise some flags with me, and I think some other folks maybe with the agency. First off, recreational fishing is generally allowed. However, commercial fishing is generally prohibited.

The flag during the meeting that came up was they consider for-hire, party and charterboats are considered commercial fishing under the NPS regulations. But just a note, this morning I got an e-mail that was updating that a little bit, and they're saying that charterboats may not be considered commercial, but they may require a commercial youth authority permit from the National Park Service.

They are going to be fishing within the waters of the National Park System. Now I have two in my region, I have Fire Island and I have Gateway. The boundaries for those parks extend 4,000 feet into the Bay, the Great South Bay, and 1,000 feet into the ocean. If those recreational fisheries are excluded, then essentially those boats cannot go in there.

Some of the good news is the park superintendants are required to work with the state and local representatives when setting regulations, because they can set their own regulations. I'm not exactly sure how they would do that. John suggested during the call that they also engage both the commission and NOAA Fisheries, because some of their interpretations may be inconsistent with what we and the federal government have defined, particularly for recreational fisheries.

The parks can take action if they determine unacceptable impacts from fishing are occurring. But what impacts are not well defined, but in New York they actually shut the horseshoe crab harvest down within Fire Island National Seashore a couple years ago, or at least got it shut down; which really caused a great deal of consternation in New York.

The DO states that they must do monitoring, which they're not doing, so there is a whole lot of weird things with this thing that they can only do some of these requirements if they do due diligence on their part. But again, the superintendants can set their own limits. Right now this just simply boils down to; I guess we were contacted by AFWA.

I think maybe Bob Beal talked with them, and the suggestion is that right now the commission

provides feedback through AFWA, or at least commenting on what their policies are in this new Director's Order, just to get clarification that we're not at odds with some of the things they're suggesting. The crunch point on this though is that comments are due back by October 31st. I had talked to Ryan Roberts and see if there is an extension on that. I mean the other option is we can also respond back directly to the Park Service. They are representatives too, but I think if we get a communication back to AFWA would be the most efficient way to do it. Just additionally, each one of the states obviously can comment back, and if you've got a national park in your backyard, you may want to review this a little bit more in more detail.

Regardless of what we do today, you should be talking directly to the park superintendants, and meeting with them; because they may be coming up with things that maybe are inconsistent with your state fishing practices. On that I'll take any questions if there is, Mr. Chairman.

MR. KELIHER: You are basically surrounded by a national park right here. There is one right across the Bay, as far to the lands is part of Acadia. The state of Maine has been embroiled in a pretty heated conversation that has been tempered as of late, regarding access to shellfish and marine worms; where Mr. Gilmore is correct, rules prohibit commercial take and commercial harvest.

We have agreed that they're not going to work on those rules. Representative Poliquin, the second district Congressman from this area has submitted a bill on that fact. Maine and Massachusetts are in a little different place; because of colonial law regarding fishing, fouling and navigation; which is I think a cornerstone of that particular piece of legislation.

In conversations with the superintendent here, these superintendants don't want to butt heads with the states. They don't want to see federal legislation on this to change these rules. I don't think we want to see it, frankly, because I'm not sure when Friends of Acadia and Friends of everyplace, Yellowstone and everyplace else comes up, I think commercial extraction loses.

However, I'm not really comfortable with commenting on this through AFWA. I think the commission, if this is a real issue, which it is a real issue. I think the commission should be contacted directly and we not use AFWA as a vehicle for our voice. While some people here may engage with AFWA, I think they are going to be much more focused on the need for protecting recreational access than commercial access. I think it is going to be a much different conversation going through them than commenting directly.

MR. ROBERT H. BOYLES, JR.: Jim, thank you for bringing this up. I was not able to participate in the AFWA call. Mr. Chairman, I would suggest this is an issue of great importance to the commission. Along with Pat Keliher's comment, I might phrase it in the sense of sovereignty and states authority and sovereignty to manage these resources.

I will suggest to you that we have issues in my state with another interior department bureau, with Fish and Wildlife Service over these very kinds of issues. It grieves me to suggest that the various properties approaches tend to vacillate over time, depending on who the superintendent is, who the manager is.

Mr. Chairman, I might suggest, rather than try to get into another letter writing exercise. You might consider appointing a small group of us to look at this issue, the various aspects of it with respect to sovereignty, access and insuring that we have a very transparent and inclusive process to deal with these issues.

CHAIRMAN GROUT: Obviously we're not going to be able to have any comment particularly on the rules, because of the timeframe. Do we

have people that would like to participate in this workgroup? Jim, all right keep your hands up; Dan McKiernan, Jim Gilmore, Jim Estes, Robert Boyles, David Blazer, and Patrick Keliher. We have a workgroup. I'm sure we'll have staff try and organize a conference call to start off with.

I think you have some basic information, Jim that you can provide to start it. I'll put you in charge, Jim. All right thank you very much for a good discussion on this.

OTHER BUSINESS

OVERVIEW OF EFFECT OF AFS DOCUMENT SUBMITTED FOR COMMENT

We have a few other items under Other Business. First what I would like to do is just give people a very brief overview of what transpired with the AFS document that the Executive Director submitted via e-mail for comment.

We did receive comment back from a few of the commissioners that had concern about the commission signing on. When we go those comments I asked the Executive Director to check with AFWA to see if we can have a delay in when we needed to sign on, because I felt given the issues that were brought up by a few of the commissioners that we needed to have a full discussion at the Policy Board.

They responded that no, they didn't have the time to wait another four days. At that point I said, I don't think without a full and thorough discussion that the commission should be signing on to this at this point. We are not going to be signing on, and that's my report on that. Yes, go ahead, Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: AFS did say you know if the commission would like to send a letter of support about that document on the elements that we could agree on, we can do that. But I am not sure if it lends a whole lot to that document. That option is still out there, but I'm not sure we necessarily need to go down that road.

CHAIRMAN GROUT: Does anybody have any thoughts on that whether we should take the time to put some comments in on that document? Again, probably at this point would have to take a little bit of a working group. Not seeing a lot of people raising their hands for this. I think we'll just move forward with no signing onto it. Okay the next one will be a letter from the Coastal Sharks Board regarding dusky sharks. Okay go ahead, Toni, and then John Clark.

RECOMMENDATION FROM THE COASTAL SHARKS BOARD

MS. KERNS: There is a recommendation from the Coastal Sharks Board to submit comments to NOAA Fisheries on Dusky Sharks Amendment 5B. Those comments would be based on information that the states send to Ashton by November 15th. If we don't get any comments then we would not send a letter. It's strictly based on the states sending in comments to us.

CHAIRMAN GROUT: We would still need a motion from this board to consider sending a letter. What Toni is suggesting is that as long as there is no opposition to the staff drafting this letter based on comments that would be provided by the states. She will go ahead and do that and then send that out to the Policy Board via e-mail for an e-mail vote.

Is there any objection to moving forward with that process for this letter? Okay seeing none; that is how we'll move forward with this.

LETTER FROM THE SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS BOARD REGARDING BLACK SEA BASS

CHAIRMAN GROUT: Finally we have a letter from the fluke, black sea bass and scup board

regarding black sea bass, and Jim Gilmore is going to handle that.

MR. GILMORE: If I can do this quickly, and just the map that is up on the board. Pay attention to the green area. The mustard on the right was actually a New York Congressman trying to redefine the EEZ that didn't go anywhere. Right now, essentially the green areas if you're fishing in Long Island Sound or Block Island Sound and you have striped bass.

You can't fish in that area, but you can transit the area between the water bodies. If you're going to Montauk to Block Island Sound or back to Connecticut, you essentially have free passage. However, we've gotten reports now that the same situation with black sea bass. Boats are being pulled over for having black sea bass illegally in our transit zone.

Since this is a NOAA rule or whatever in terms of that. The suggestion was that we would ask them to add black sea bass for a similar situation in the transit zone; that they would be able to go back and forth with their not fishing there, but have fish onboard so that they would not get ticketed or even pulled over.

CHAIRMAN GROUT: Okay so the Black Sea Bass Board is requesting that this letter be crafted. This would be again another situation where staff would craft the letter and then we would send it out to the Policy Board for approval via e-mail vote. Adam.

MR. NOWALSKY: I understand that it's particularly an issue with black sea bass right now, due to the federal waters closure. But should we be considering a more general policy that would also cover summer flounder, scup. Should we potentially have issues there? I mean with the significant cuts we're facing with summer flounder this year,

I don't know what the outcome is going to be there. But the issue in question is transiting closed state waters with recreational harvest taken from legally opened state waters, when federal waters are closed. Should we be considering this in a more general sense, would be my question.

MR. SIMPSON: Thanks for that comment, Adam, because I think that is looking down the road at what may be coming this year; if I get my wish that someday the federal government will actually engage in some conservation of summer flounder in federal waters. It could happen here and they could have a closed season.

Closing the waters that is perfectly fine, but allow transit, otherwise Rhode Island is in a fix for having waters that are only open to the couple hundred residents of Block Island. I think it really does make a lot of sense. They cannot fish in there, but they have to be able to transit.

CHAIRMAN GROUT: Is there any objection to moving forward with a broader letter that would reflect being able to transit that zone with fish that are legally caught in state waters, any species that are legally caught in state waters? Seeing no objection to that is there any objection to the process that I laid out here that a letter will be drafted and then forwarded to the Policy Board for approval via e-mail vote. Seeing no objection to that; we'll move forward with that process.

ADJOURNMENT

CHAIRMAN GROUT: I believe that brings us to the end of the Policy Board here. Any other items to come before the board, seeing none; this meeting is adjourned.

(Whereupon the meeting adjourned at 11:03 a.m. on October 27, 2016.)

Safe Harbor Guidance

This Safe Harbor Guidance is intended to guide commercial fishing vessels in need of safe harbor for reasons described herein.

August 10, 2016

Sea going commercial fishing vessels who cannot legally enter New York waters will be allowed to enter New York waters and/or dock in a New York port under the following declared circumstances:

- Mechanical Breakdown: A commercial fishing vessel having a mechanical problem that makes the continuation of the voyage unsafe and poses risk to life and property.
- Unsafe weather conditions: A commercial fishing vessel facing an extended period of high winds (35+knots), waves (10+ feet), ice or other adverse condition that makes the continuation of the voyage unsafe and poses risk to life and property.
- Loss of essential equipment: A commercial fishing vessel losing essential gear such as support system that renders the vessel unable to remain at sea or safely fish.
- Significant medical emergency: one which requires immediate medical attention necessary to protect the health of any person on board.

The New York State Department of Environmental Conservation (NYSDEC) may require the vessel captain to independently verify the reason for the unscheduled dockage with a mechanic deemed qualified by New York State, the National Weather Service or a medical professional, as appropriate.
Sea going commercial fishing vessels wishing to enter New York waters and/or dock in a New York port under one of the above declared circumstances must seek prior permission from New York State. A commercial fishing vessel seeking permission to enter New York waters and/or dock in a New York port:

- **SHALL** immediately notify the NYSDEC by calling the 24 hour dispatch at 1-844 DEC ECOS (1-844-332-3267), declare the need for safe harbor and:
  Identify the caller;
  - Identify the vessel captain's name;
  - Identify the home state in which they are licensed to commercially fish;
  - Describe the nature of the problem;
  - Identify the port they intend to enter and the approximate time of arrival;
  - Verbally declare the type and amount of fish on board; and
  - Provide a call back phone number or other method of contact.
- **SHALL NOT** offload cargo without the express authorization of and supervision by personnel of the NYSDEC Divisions of Marine Resources or Law Enforcement. Authorization to offload fish may be granted where the fish on board the vessel will become unmarketable due to the unscheduled dockage. Authorization will be limited

according to the willingness of the vessel's home state to accept the fish under that state's fish allocation.

Sea going commercial fishing vessels seeking refuge under this Safe Harbor Guidance are subject to inspection by the United States Coast Guard, other federal agents, and police or peace officers authorized by New York State law to ensure compliance with all laws and regulations.

Sea going commercial fishing vessels must be in compliance with Federal Marine Fisheries Law and the law of the vessel's home state. Fish possession limits will be evaluated subject to the possession limits of the state that the vessel is licensed to land in.

This guidance is not intended to disregard other circumstances that may prevent a vessel's entry to a New York port. For example, a sinking vessel, or a vessel leaking oil or fuel, or a port's capacity to accommodate a vessel, may prevent or delay entry to a port. Additionally, NYSDEC may consult with other Federal and State agencies before granting safe harbor to a sea going commercial fishing vessel.

This guidance does not create any rights enforceable by any party and does not restrict or alter the authority or enforcement discretion of the NYSDEC Commissioner or the Commissioner's designee.

Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfc.org

MEMORANDUM

December 20, 2016

TO: **Coastal Sharks Management Board, Advisory Panel, and Technical Committee**

FROM: **Ashton Harp, Fishery Management Plan Coordinator**

RE: **Blacknose Shark Commercial Retention Limit South of 34˚00' N. Latitude**

NOAA Fisheries published a final rule establishing a commercial retention limit of 8 blacknose sharks for all Atlantic shark limited access permit holders in the Atlantic region south of 34˚00' N. latitude **effective January 13, 2017**. As specified in Addendum II to the Coastal Sharks FMP, the Coastal Sharks Management Board (Board) can set possession limits for the harvest of blacknose sharks in state waters. **Should the Board choose to complement the federal management measures, action would need to be taken by the Interstate Fisheries Management Policy Board at the Winter Meeting since the Board is not scheduled to meet then.**

The blacknose and non-blacknose small coastal shark (SCS) fisheries south of 34˚00' N. latitude are quota-linked under current regulations, meaning if landings of either fishery are projected to exceed 80% of the available commercial quota then the both fisheries will close. In May 2016, both fisheries closed because blacknose shark landings exceeded the 80% threshold, however, less than 20% of the non-blacknose SCS quota had been harvested at that time. This action is expected to increase the utilization of available non-blacknose SCS quota and aid in rebuilding and ending overfishing of Atlantic blacknose sharks.

As long as the blacknose and non-blacknose shark fisheries are open, directed shark limited access permit holders can continue to land non-blacknose SCS without a retention limit, while incidental shark limited access permit holders continue to be limited to no more than 16 SCS or pelagic sharks per trip combined. Effective January 13, 2017, a person operating a vessel south of 34˚00' N. latitude cannot retain, possess or land more than 8 blacknose sharks. Keeping with current regulations, a person operating a vessel north of 34˚00' N. latitude may not possess, land or sell any blacknose sharks.

The Federal Register notification can be found at: https://www.federalregister.gov/d/2016-29984.

If you have any questions, please contact me at aharp@asmfc.org or 703.842.0740.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 151110999–6999–02]

RIN 0648–XE314

Endangered and Threatened Wildlife and Plants; Proposed Threatened Listing Determination for the Oceanic Whitetip Shark Under the Endangered Species Act (ESA)

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has completed a comprehensive status review under the Endangered Species Act (ESA) for the oceanic whitetip shark (*Carcharhinus longimanus*) in response to a petition from Defenders of Wildlife to list the species. Based on the best scientific and commercial information available, including the status review report (Young *et al.,* 2016), and after taking into account efforts being made to protect the species, we have determined that the oceanic whitetip shark warrants listing as a threatened species. We conclude that the oceanic whitetip shark is likely to become endangered throughout all or a significant portion of its range within the foreseeable future. Any protective regulations determined to be necessary and advisable for the conservation of the species under ESA section 4(d) would be proposed in a subsequent **Federal Register** announcement. Should the proposed listing be finalized, we would also designate critical habitat for the species, to the maximum extent prudent and determinable. We solicit information to assist in this listing determination, the development of proposed protective regulations, and the designation of critical habitat in the event this proposed listing determination is finalized.

DATES: Comments on this proposed rule must be received by March 29, 2017. Public hearing requests must be requested by February 13, 2017.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2015–0152, by either of the following methods:

- *Electronic Submissions:* Submit all electronic comments via the Federal eRulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2015-0152,* click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.
- *Mail:* Submit written comments to Chelsey Young, NMFS Office of Protected Resources (F/PR3), 1315 East West Highway, Silver Spring, MD 20910, USA. Attention: Oceanic whitetip proposed rule.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous).

You can find the petition, status review report, **Federal Register** notices, and the list of references electronically on our Web site at *http://www.nmfs.noaa.gov/pr/species/fish/oceanic-whitetip-shark.html.* You may also receive a copy by submitting a request to the Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910, Attention: Oceanic whitetip proposed rule.

FOR FURTHER INFORMATION CONTACT: Chelsey Young, NMFS, Office of Protected Resources, (301) 427–8403.

SUPPLEMENTARY INFORMATION:

Background

On September 21, 2015, we received a petition from Defenders of Wildlife to list the oceanic whitetip shark (*Carcharhinus longimanus*) as threatened or endangered under the ESA throughout its entire range, or, as an alternative, to list two distinct population segments (DPSs) of the oceanic whitetip shark, as described in the petition, as threatened or endangered, and to designate critical habitat. We found that the petitioned action may be warranted for the species; on January 12, 2016, we published a positive 90-day finding for the oceanic whitetip shark (81 FR 1376), announcing that the petition presented substantial scientific or commercial information indicating the petitioned action of listing the species may be warranted range wide, and explaining the basis for those findings. We also announced the initiation of a status review of the species, as required by section 4(b)(3)(a) of the ESA, and requested information to inform the agency's decision on whether the species warranted listing as endangered or threatened under the ESA.

Listing Species Under the Endangered Species Act

We are responsible for determining whether species are threatened or endangered under the ESA (16 U.S.C. 1531 *et seq.*). To make this determination, we first consider whether a group of organisms constitutes a ''species'' under section 3 of the ESA, then whether the status of the species qualifies it for listing as either threatened or endangered. Section 3 of the ESA defines species to include ''any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.'' On February 7, 1996, NMFS and the U.S. Fish and Wildlife Service (USFWS; together, the Services) adopted a policy describing what constitutes a DPS of a taxonomic species (61 FR 4722). The joint DPS policy identified two elements that must be considered when identifying a DPS: (1) The discreteness of the population segment in relation to the remainder of the species (or subspecies) to which it belongs; and (2) the significance of the population segment to the remainder of the species (or subspecies) to which it belongs.

Section 3 of the ESA defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range'' and a threatened species as one ''which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' Thus, in the context of the ESA, the Services interpret an ''endangered species'' to be one that is presently at risk of extinction. A ''threatened species,'' on the other hand, is not currently at risk of extinction, but is likely to become so in the foreseeable future. In other words, a key statutory difference between a threatened and endangered species is the timing of when a species may be in danger of extinction, either now (endangered) or in the foreseeable future (threatened). The statute also requires us to determine whether any species is endangered or threatened as a result of any of the following five factors: The present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or

predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence (ESA, section 4(a)(1)(A)–(E)). Section 4(b)(1)(A) of the ESA requires us to make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and after taking into account efforts being made by any State or foreign nation or political subdivision thereof to protect the species. In evaluating the efficacy of existing protective efforts, we rely on the Services' joint *Policy on Evaluation of Conservation Efforts When Making Listing Decisions* (''PECE''; 68 FR 15100; March 28, 2003) for any conservation efforts that have not been implemented, or have been implemented but have not yet demonstrated effectiveness.

Status Review

We convened a team of agency scientists to conduct the status review for the oceanic whitetip shark and prepare a report. The status review report of the oceanic whitetip shark (Young *et al.,* 2016) compiles the best available information on the status of the species as required by the ESA and assesses the current and future extinction risk for the species, focusing primarily on threats related to the five statutory factors set forth above. We appointed a biologist in the Office of Protected Resources Endangered Species Conservation Division to undertake a scientific review of the life history and ecology, distribution, abundance, and threats to the oceanic whitetip shark. Next, we convened a team of biologists and shark experts (hereinafter referred to as the Extinction Risk Analysis (ERA) team) to conduct an extinction risk analysis for the species, using the information in the scientific review. The ERA team was comprised of a natural resource management specialist from NMFS Office of Protected Resources, a fishery management specialist from NMFS' Highly Migratory Species (HMS) Management Division, and four research fishery biologists from NMFS' Southeast, Northeast, Southwest, and Pacific Island Fisheries Science Centers. The ERA team had group expertise in shark biology and ecology, population dynamics, highly migratory species management, and stock assessment science. The status review report presents the ERA team's professional judgment of the extinction risk facing the oceanic whitetip shark but makes no recommendation as to the listing status of the species. The status review report is available electronically at *http://www.nmfs.noaa.gov/pr/species/fish/oceanic-whitetip-shark.html.*

The status review report was subjected to independent peer review as required by the Office of Management and Budget Final Information Quality Bulletin for Peer Review (M–05–03; December 16, 2004). The status review report was peer reviewed by five independent specialists selected from the academic and scientific community, with expertise in shark biology, conservation and management, and specific knowledge of oceanic whitetip sharks. The peer reviewers were asked to evaluate the adequacy, appropriateness, and application of data used in the status review as well as the findings made in the ''Assessment of Extinction Risk'' section of the report. All peer reviewer comments were addressed prior to finalizing the status review report.

We subsequently reviewed the status review report, its cited references, and peer review comments, and believe the status review report, upon which this proposed rule is based, provides the best available scientific and commercial information on the oceanic whitetip shark. Much of the information discussed below on oceanic whitetip shark biology, distribution, abundance, threats, and extinction risk is attributable to the status review report. However, we have independently applied the statutory provisions of the ESA, including evaluation of the factors set forth in section 4(a)(1)(A)–(E), our regulations regarding listing determinations, and our DPS policy in making the 12-month finding determination.

Life History, Biology, and Status of the Petitioned Species

Taxonomy and Species Description

The oceanic whitetip shark belongs to the family Carcharhinidae and is classified as a requiem shark (Order Carcharhiniformes). The oceanic whitetip belongs to the genus *Carcharhinus,* which includes other pelagic species of sharks, such as the silky shark (*Carcharhinus falciformis*) and dusky shark (*C. obscuras*), and is the only truly oceanic (*i.e.,* pelagic) shark of its genus (Bonfil *et al.,* 2008). The oceanic whitetip shark has a stocky build with a large rounded first dorsal fin and very long and wide paddle-like pectoral fins. The first dorsal fin is very wide with a rounded tip, originating just in front of the rear tips of the pectoral fins. The second dorsal fin originates over or slightly in front of the base of the anal fin. The species also exhibits a distinct color pattern of mottled white tips on its front dorsal, caudal, and pectoral fins with black tips on its anal fin and on the ventral surfaces of its pelvic fins. The head has a short and bluntly rounded nose and small circular eyes with nictitating membranes. The upper jaw contains broad, triangular serrated teeth, while the teeth in the lower jaw are more pointed and are only serrated near the tip. The body is grayish bronze to brown in color, but varies depending upon geographic location. The underside is whitish with a yellow tinge on some individuals (Compagno 1984).

Current Distribution

The oceanic whitetip shark is distributed worldwide in epipelagic tropical and subtropical waters between 30° North latitude and 35° South latitude (Baum *et al.,* 2006). In the western Atlantic, oceanic whitetips occur from Maine to Argentina, including the Caribbean and Gulf of Mexico. In the central and eastern Atlantic, the species occurs from Madeira, Portugal south to the Gulf of Guinea, and possibly in the Mediterranean Sea. In the western Indian Ocean, the species occurs in waters of South Africa, Madagascar, Mozambique, Mauritius, Seychelles, India, and within the Red Sea. Oceanic whitetips also occur throughout the Western and Central Pacific Ocean, including China, Taiwan, the Philippines, New Caledonia, Australia (southern Australian coast), Hawaiian Islands south to Samoa Islands, Tahiti and Tuamotu Archipelago and west to the Galapagos Islands. Finally, in the eastern Pacific, the species occurs from southern California to Peru, including the Gulf of California and Clipperton Island (Compagno 1984).

Habitat Use and Movement

The oceanic whitetip shark is a highly migratory species of shark that is usually found offshore in the open ocean, on the outer continental shelf, or around oceanic islands in deep water, occurring from the surface to at least 152 meters (m) depth. Although the oceanic whitetip can be found in decreasing numbers out to latitudes of 30° N and 35° S, with abundance decreasing with greater proximity to continental shelves, it has a clear preference for open ocean waters between 10° S and 10° N (Backus *et al.,* 1956; Strasburg 1958; Compagno 1984; Bonfil *et al.,* 2008). The species can be found in waters between 15 °C and 28 °C, but it exhibits a strong preference for the surface mixed layer in water with temperatures above 20 °C, and is considered a surface-dwelling shark. It

is however, capable of tolerating colder waters down to 7.75 °C for short periods as exhibited by brief, deep dives into the mesopelagic zone below the thermocline (>200 m), presumably for foraging (Howey-Jordan *et al.,* 2013; Howey *et al.,* 2016). However, exposures to these cold temperatures are not sustained (Musyl *et al.,* 2011; Tolotti *et al.,* 2015a) and there is some evidence to suggest the species tends to withdraw from waters below 15 °C (*e.g.,* the Gulf of Mexico in winter; Compagno 1984).

Little is known about the movement or possible migration paths of the oceanic whitetip shark. Although the species is considered highly migratory and capable of making long distance movements, tagging data provides evidence that this species also exhibits a high degree of philopatry (*i.e.,* site fidelity) in some locations. To date, there have been three tagging studies conducted on oceanic whitetip sharks in the Atlantic. Mark recapture data (number tagged = 645 and recaptures = 8) from the NMFS Cooperative Shark Tagging Program between 1962 and 2015 provide supporting evidence that the range of movement of oceanic whitetip sharks is large, with potential for transatlantic movements (Kohler *et al.,* 1998; NMFS, unpublished data). Maximum time at liberty was 3.3 years and the maximum distance traveled was 1,225 nautical miles (nmi0 (2,270 kilometers (km0). These data indicate movements from the northeastern Gulf of Mexico to the Atlantic Coast of Florida, from the Mid-Atlantic Bight to southern Cuba, from the Lesser Antilles west into the central Caribbean Sea, from east to west along the equatorial Atlantic, and from off southern Brazil in a northeasterly direction. In the Bahamas, oceanic whitetips tagged at Cat Island stayed within 500 km of the tagging site for ~30 days before dispersing across 16,422 km² of the western North Atlantic. Maximum individual displacement from the tagging site ranged from 290–1,940 km after times at liberty from 30–245 days, with individuals moving to several different destinations (*e.g.,* the northern Lesser Antilles, the northern Bahamas, and north of the Windward Passage). Many sharks returned to the Bahamas after ~150 days and estimated residency times within the Bahamas Exclusive Economic Zone (EEZ), were generally high (mean=68.2 percent of time; Howey-Jordan *et al.,* 2013). Oceanic whitetip sharks showed similar movement patterns and site fidelity in a tagging study conducted in Brazil. Although individuals tended to travel long distances before returning to the tagging area, tagging and pop-up sites were relatively close to each other. In fact, five out of eight sharks ended their tracks relatively close to their starting points, even after traveling several thousand kilometers (Tolotti *et al.,* 2015a).

In the Indo-Pacific, two tagging studies of oceanic whitetip shark have been conducted: one in the central Pacific and one in the western Indian Ocean. In the central Pacific, oceanic whitetip sharks showed a complex movement pattern generally restricted to tropical waters north of the North Equatorial Countercurrent near the tagging location. Maximum time at liberty was 243 days, but the largest linear movement was 2,314 nmi (4,285 km) in 95 days (Musyl *et al.,* 2011). Similar to previously discussed studies, long distance movements were also observed in the Indian Ocean, with one tag that remained attached for 100 days. This individual displayed extensive horizontal movement covering a distance of approximately 6,500 km during the monitored period, moving from the Mozambique Channel up the African east coast of Somalia and then heading back down towards the Seychelles (Filmalter *et al.,* 2012). Overall, the available tagging data demonstrates that oceanic whitetip sharks are capable of traveling great distances in the pelagic environment, but also show a high degree of site fidelity in some locations.

Diet and Feeding

Oceanic whitetip sharks are high trophic-level predators in open ocean ecosystems feeding mainly on teleosts and cephalopods (Backus *et al.,* 1956; Bonfil *et al.,* 2008), but studies have also reported that they consume sea birds, marine mammals, other sharks and rays, molluscs, crustaceans, and even garbage (Compagno 1984; Cortés 1999). Backus *et al.,* (1956) recorded various fish species in the stomachs of oceanic whitetip sharks, including blackfin tuna, barracuda, and white marlin. Based on the species' diet, the oceanic whitetip has a high trophic level, with a score of 4.2 out of a maximum 5.0 (Cortés 1999). The available evidence also suggests that oceanic whitetip sharks are opportunistic feeders. In the Bahamas, large pelagic teleosts (*e.g.,* billfish, tunas, and dolphin fish) are abundant and oceanic whitetips are anecdotally reported to feed heavily on recreationally caught teleosts in this region. In a recent study of an oceanic whitetip shark aggregation at Cat Island, Bahamas, SIA-based Bayesian mixing model estimates of short-term (near Cat Island) diets showed more large pelagic teleosts (72 percent) than in long-term diets (47 percent), showing a spatiotemporal difference in oceanic whitetip feeding habits. Thus, the availability of large teleost prey and supplemental feeding from recreational sport fishermen may be possible mechanisms underpinning site-fidelity and aggregation of oceanic whitetips at this location (Madigan *et al.,* 2015).

Size and Growth

Historically, the maximum length effectively measured for the oceanic whitetip was 350 cm total length (TL; Bigelow and Schroder 1948 cited in Lessa *et al.,* 1999), with ''gigantic individuals'' perhaps reaching 395 cm TL (Compagno 1984), though Compagno's length seems to have never been measured (Lessa *et al.,* 1999). In contemporary times, Lessa *et al.* (1999) recorded a maximum size of 250 cm TL in the Southwest Atlantic, and estimated a theoretical maximum size of 325 cm TL (Lessa *et al.,* 1999), but the most common sizes are below 300 cm TL (Compagno 1984). The oceanic whitetip has an estimated maximum age of 17 years, with confirmed maximum ages of 12 and 13 years in the North Pacific and South Atlantic, respectively (Seki *et al.,* 1998; Lessa *et al.,* 1999). However, other information from the South Atlantic suggests the species likely lives up to ~20 years old based on observed vertebral ring counts (Rodrigues *et al.,* 2015). Growth rates (growth coefficient, K) have been estimated similarly for both sexes and range from 0.075—0.099 in the Southwest Atlantic to 0.0852–0.103 in the North Pacific (Seki *et al.,* 1998; Lessa *et al.,* 1999; Joung *et al.,* 2016). Using life history parameters from the Southwest Atlantic, Cortés *et al.* (2010; 2012) estimated productivity of the oceanic whitetip shark, determined as intrinsic rate of population increase (*r*), to be 0.094–0.121 per year (median). Overall, the best available data indicate that the oceanic whitetip shark is a long-lived species (at least 20 years) and can be characterized as having relatively low productivity (based on the Food and Agriculture Organization of the United Nations (FAO) productivity indices for exploited fish species, where $r < 0.14$ is considered low productivity), making them generally vulnerable to depletion and potentially slow to recover from overexploitation.

Reproduction

Similar to other Carcharhinid species, the oceanic whitetip shark is viviparous (*i.e.,* the species produces live young) with placental embryonic development. The reproductive cycle is thought to be

biennial, giving birth on alternate years, after a lengthy 10–12 month gestation period. The number of pups in a litter ranges from 1 to 14 (mean = 6), and a positive correlation between female size and number of pups per litter has been observed, with larger sharks producing more offspring (Compagno 1984; Seki *et al.,* 1998; Bonfil *et al.,* 2008; IOTC 2015a). Age and length of maturity estimates are slightly different depending on geographic location. For example, in the Southwest Atlantic, age and length of maturity in oceanic whitetips was estimated to be 6–7 years and 180–190 cm TL, respectively, for both sexes (Lessa *et al.,* 1999). In the North Pacific, there are two different estimates for age and length of maturity. Seki *et al.,* (1998) estimated that females reach sexual maturity at approximately 168–196 cm TL, and males at 175–189 cm TL, which corresponds to ages of 4 and 5 years, respectively (Seki *et al.,* 1998). However, more recently Joung *et al.* (2016) determined a later age of maturity in the North Pacific, with females reaching maturity at 190 cm TL (approximately 8.5–8.8 years) and males reaching maturity at 172 cm TL (approximately 6.8–8.9 years old). In the Indian Ocean, both males and females mature at around 190–200 cm TL (IOTC 2014). Size at birth also varies slightly between geographic locations, ranging from 55 to 75 cm TL in the North Pacific, around 65–75 cm TL in the northwestern Atlantic, and 60–65 cm TL off South Africa, with reproductive seasons thought to occur from late spring to summer (Bonfil *et al.,* 2008; Compagno 1984).

Tropical Pacific records of pregnant females and newborns are concentrated between 20° N and the equator, from 170° E to 140° W. In the Atlantic, young oceanic whitetip sharks have been found well offshore along the southeastern coast of the United States, suggesting that there may be a nursery in oceanic waters over this continental shelf (Compagno 1984; Bonfil *et al.,* 2008). In the southwestern Atlantic, the prevalence of immature sharks, both female and male, in fisheries catch data suggests that this area may serve as potential nursery habitat for the oceanic whitetip shark (Coelho *et al.,* 2009; Tambourgi *et al.,* 2013; Tolotti *et al.,* 2013; Frédou *et al.,* 2015). Juveniles seem to be concentrated in equatorial latitudes, while specimens in other maturational stages are more widespread (Tambourgi *et al.,* 2013). Pregnant females are often found close to shore, particularly around the Caribbean Islands. One pregnant female was found washed ashore near Auckland, New Zealand. These points suggest that females may come close to shore to pup (Clarke *et al.,* 2015b). In the southwestern Indian Ocean, oceanic whitetip sharks appear to mate and give birth in the early summer. The locations of the nursery grounds are not well known but they are thought to be in oceanic areas.

Population Structure and Genetics

To date, only two studies have been conducted on the genetics and population structure of the oceanic whitetip shark, which suggest there may be some genetic differentiation between various populations of the species. The first study (Camargo *et al.,* 2016) compared the mitochondrial control region (mtCR) in 215 individuals from the Indian Ocean and eastern and western Atlantic Ocean. While results showed significant genetic differentiation (based on haplotype frequencies) between the eastern and western Atlantic Ocean ($\Phi ST = 0.1039$, $P < 0.001$; Camargo *et al.,* 2016), pairwise comparisons among populations within the regions revealed a complex pattern. Though some eastern Atlantic populations were significantly differentiated from western Atlantic populations ($FST = 0.09 - 0.27$, $P < 0.01$), others were not ($FST = 0.02 - 0.03$, $P > 0.01$), even after excluding populations with sample sizes of less than 10 individuals (Camargo *et al.,* 2016). Additionally, the sample size from the Indian Ocean (N = 9) may be inadequate to detect statistically significant genetic structure between this and other regions (Camargo *et al.,* 2016). Furthermore, since this study only used mitochondrial markers, male mediated gene flow is not reflected.

In the second study, Ruck (2016) compared the mitochondrial control region, a protein-coding mitochondrial region, and nine nuclear microsatellite loci in 171 individuals sampled from the western Atlantic, Indian, and Pacific Oceans. Using three population-level pairwise metrics (PhiST, FST, and Jost's D), Ruck (2016) did not detect fine-scale matrilineal structure within ocean basins, but mitochondrial and nuclear analyses indicated weak but significant differentiation between western Atlantic and Indo-Pacific Ocean populations ($\Phi ST = 0.076$, $P = 0.0002$; $FST = 0.017$, $P < 0.05$ after correction for False Discovery Rate). Therefore, Ruck (2016) suggests that oceanic whitetip sharks consist of a minimum of two contemporary, distinct genetic populations comprising sharks from the western Atlantic and the Indo-Pacific (this study did not have any samples from the eastern Atlantic). However, although significant inter-basin population structure was evident, it was associated with deep phylogeographic mixing of mitochondrial haplotypes and evidence of contemporary migration between the western Atlantic and Indo-Pacific Oceans (Ruck 2016).

As noted previously, although Ruck (2016) did not initially detect fine-scale matrilineal structure within ocean basins, after comparing and analyzing the genetic samples of the two studies together (*i.e.,* samples from Camargo *et al.,* 2016 and samples from Ruck 2016), Ruck (Unpublished data) detected significant maternal population structure within the western Atlantic that provides evidence of three matrilineal lineages in the western Atlantic. However, the data showing population structure within the Atlantic relies solely on mitochondrial DNA and does not reflect male mediated gene flow. Thus, while the current (albeit unpublished) data supports three maternal populations within the Atlantic, this data is preliminary and information regarding male mediated gene flow would provide an improved understanding of the fine-scale genetic structuring of oceanic whitetip in the Atlantic.

The best available information indicates that the oceanic whitetip shark has relatively low genetic diversity. Compared to eight other circumtropical elasmobranch species, including the basking shark (*Cetorhinus maximus*), smooth hammerhead (*Sphyrna zygaena*), great hammerhead (*Sphyrna mokarran*), tiger shark (*Galeocerdo cuvier*), blacktip reef shark (*Carcharhinus limbatus*), sandbar shark (*Carcharhinus plumbeus*), silky shark (*Carcharhinus falciformis*), and the whale shark (*Rhincodon typus*), the oceanic whitetip shark ranks the fourth lowest in global mtCR genetic diversity (0.33 percent ± 0.19 percent; Ruck 2016), with diversity similar to the smooth hammerhead (0.32 percent ± 0.18 percent (Testerman 2014) and greater than basking sharks (Hoelzel *et al.,* 2006). The mtCR genetic diversity of the oceanic whitetip is about half that of the closely related silky shark (0.61 percent ±0.32 percent; (Clarke *et al.,* 2015a)) and about a third that of the whale shark (1.1 percent ± 0.6 percent; (Castro *et al.,* 2007). Ruck (2016) noted that the relatively low mtDNA genetic diversity (concatenated mtCR–ND4 nucleotide diversity $\pi = 0.32$ percent ±0.17 percent) compared to other circumtropical elasmobranch species raises potential concern for the future genetic health of this species. Camargo *et al.,* (2016) also observed low levels of

genetic variability for the species throughout the study area, and noted that these low genetic variability rates may represent a risk to the adaptive potential of the species leading to a weaker ability to respond to environmental changes (Camargo *et al.* 2016).

Current Status

Oceanic whitetip sharks can be found worldwide, with no present indication of a range contraction. Although generally not targeted, they are frequently caught as bycatch in many global fisheries, including pelagic longline (PLL) fisheries targeting tuna and swordfish, purse seine, gillnet, and artisanal fisheries. Oceanic whitetip sharks are also a preferred species for their large, morphologically distinct fins, as they obtain a high price in the Asian fin market, and thus they are valuable as incidental catch for the international shark fin trade.

In 2006, the International Union for Conservation of Nature (IUCN) classified the oceanic whitetip shark as Vulnerable globally based on an assessment by Baum *et al.,* (2006) and its own criteria (A2ad+3d+4ad), and placed the species on its ''Red List.'' Under criteria A2ad, 3d and 4ad, a species may be classified as Vulnerable when its ''observed, estimated, inferred or suspected'' population size is reduced by 30 percent or more over the last 10 years, the next 10 years, or any 10-year time period, or over a 3-generation period, whichever is the longer, where the reduction or its causes may not have ceased or may not be understood or may not be reversible, based on a direct observation and actual or potential levels of exploitation. The IUCN's justification for the categorization is based on the species' declining populations. The IUCN notes that the species' regional trends, slow life history characteristics (hence low capacity to recover from moderate levels of exploitation), and high levels of largely unmanaged and unreported mortality in target and bycatch fisheries, give cause to suspect that the population has decreased by over 30 percent and meets the criteria to be categorized as Vulnerable globally. As a note, the IUCN classification for the oceanic whitetip shark alone does not provide the rationale for a listing recommendation under the ESA, but the classification and the sources of information that the classification is based upon are evaluated in light of the standards on extinction risk and impacts or threats to the species.

Distinct Population Segments

As described above, the ESA's definition of ''species'' includes ''any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate fish or wildlife which interbreeds when mature.'' As stated in the joint DPS policy, Congress expressed its expectation that the Services would exercise authority with regard to DPSs sparingly and only when the biological evidence indicates such action is warranted. NMFS determined at the 90-day finding stage that the petition to list the global species of oceanic whitetip shark was warranted. As such, we conducted the extinction risk analysis on the global oceanic whitetip shark population.

Assessment of Extinction Risk

The ESA (section 3) defines an endangered species as ''any species which is in danger of extinction throughout all or a significant portion of its range.'' A threatened species is defined as ''any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' Neither we nor the USFWS have developed formal policy guidance about how to interpret the definitions of threatened and endangered with respect to what it means to be ''in danger of extinction.'' We consider the best available information and apply professional judgment in evaluating the level of risk faced by a species in deciding whether the species is threatened or endangered. We evaluate both demographic risks, such as low abundance and productivity, and threats to the species, including those related to the factors specified in ESA section 4(a)(1)(A)–(E).

Methods

As we described previously, we convened an ERA team to evaluate extinction risk to the species. This section discusses the methods used to evaluate threats and the overall extinction risk to the oceanic whitetip shark. For purposes of the risk assessment, an ERA team comprised of fishery biologists and shark experts was convened to review the best available information on the species and evaluate the overall risk of extinction facing the oceanic whitetip shark, now and in the foreseeable future. The term ''foreseeable future'' was defined as the timeframe over which threats could be reliably predicted to impact the biological status of the species. After considering the life history of the oceanic whitetip shark, availability of data, and types of threats, the ERA team decided that the foreseeable future should be defined as approximately 3 generation times for the oceanic whitetip shark, or approximately 30 years. A generation time is defined as the time it takes, on average, for a sexually mature female oceanic whitetip shark to be replaced by offspring with the same spawning capacity. This timeframe (3 generation times) takes into account the time necessary to provide for the conservation and recovery of the species. As a late-maturing species, with slow growth rate and relatively low productivity, it would likely take more than a generation time for any conservative management action to be realized and reflected in population abundance indices. In addition, the foreseeable future timeframe is also a function of the reliability of available data regarding the identified threats and extends only as far as the data allow for making reasonable predictions about the species' response to those threats. Since the main threats to the species were identified as fisheries and the inadequacy of existing regulatory measures that manage these fisheries, the ERA team felt that they had the background knowledge in fisheries management and expertise to confidently predict the impact of these threats on the biological status of the species within this timeframe.

The ability to measure or document risk factors to a marine species is often limited, where quantitative estimates of abundance and life history information are often lacking altogether. Therefore, in assessing extinction risk of a data limited species, it is important to include both qualitative and quantitative information. In assessing extinction risk to the oceanic whitetip shark, the ERA team considered the demographic viability factors developed by McElhany *et al.,* (2000) and the risk matrix approach developed by Wainwright and Kope (1999) to organize and summarize extinction risk considerations. The approach of considering demographic risk factors to help frame the consideration of extinction risk has been used in many of our status reviews (see *http://www.nmfs.noaa.gov/pr/species* for links to these reviews). In this approach, the collective condition of individual populations is considered at the species level according to four demographic viability factors: Abundance, growth rate/productivity, spatial structure/connectivity, and diversity. These viability factors reflect concepts that are

well-founded in conservation biology and that individually and collectively provide strong indicators of extinction risk.

Using these concepts, the ERA team evaluated demographic risks by assigning a risk score to each of the four demographic risk factors. The scoring for these demographic risk criteria correspond to the following values: 0—unknown risk, 1—low risk, 2—moderate risk, and 3—high risk. Detailed definitions of the risk scores can be found in the status review report.

The ERA team also performed a threats assessment for the oceanic whitetip shark by evaluating the effect that the threat was currently having on the extinction risk of the species. The levels included ''unknown,'' ''low,'' ''moderate,'' and ''high.'' The scores were then tallied and summarized for each threat. It should be emphasized that this exercise was simply a tool to help the ERA team members organize the information and assist in their thought processes for determining the overall risk of extinction for the oceanic whitetip shark.

Guided by the results from the demographic risk analysis and the threats assessment, the ERA team members were asked to use their informed professional judgment to make an overall extinction risk determination for the oceanic whitetip shark. For this analysis, the ERA team considered three levels of extinction risk: 1—low risk, 2—moderate risk, and 3—high risk, which are all temporally connected. Detailed definitions of these risk levels are as follows: 1 = Low risk: A species or DPS is at low risk of extinction if it is not at a moderate or high level of extinction risk (see ''Moderate risk'' and ''High risk'' below). A species or DPS may be at a low risk of extinction if it is not facing threats that result in declining trends in abundance, productivity, spatial structure, or diversity. A species or DPS at low risk of extinction is likely to show stable or increasing trends in abundance and productivity with connected, diverse populations; 2 = Moderate risk: A species or DPS is at moderate risk of extinction if it is on a trajectory that puts it at a high level of extinction risk in the foreseeable future (see description of ''High risk''). A species or DPS may be at moderate risk of extinction due to projected threats or declining trends in abundance, productivity, spatial structure, or diversity. The appropriate time horizon for evaluating whether a species or DPS is more likely than not to be at high risk in the foreseeable future depends on various case- and species-specific factors; 3 = High risk: A species or DPS with a high risk of extinction is at or near a level of abundance, productivity, spatial structure, and/or diversity that places its continued persistence in question. The demographics of a species or DPS at such a high level of risk may be highly uncertain and strongly influenced by stochastic or depensatory processes. Similarly, a species or DPS may be at high risk of extinction if it faces clear and present threats (*e.g.,* confinement to a small geographic area; imminent destruction, modification, or curtailment of its habitat; or disease epidemic) that are likely to create present and substantial demographic risks. The ERA team adopted the ''likelihood point'' (FEMAT) method for ranking the overall risk of extinction to allow individuals to express uncertainty. For this approach, each team member distributed 10 ''likelihood points'' among the extinction risk levels. This approach has been used in previous NMFS status reviews (*e.g.,* Pacific salmon, Southern Resident killer whale, Puget Sound rockfish, Pacific herring, and black abalone) to structure the team's thinking and express levels of uncertainty when assigning risk categories. Although this process helps to integrate and summarize a large amount of diverse information, there is no simple way to translate the risk matrix scores directly into a determination of overall extinction risk. Other descriptive statistics, such as mean, variance, and standard deviation, were not calculated, as the ERA team felt these metrics would add artificial precision to the results. The scores were then tallied and summarized.

Finally, the ERA team did not make recommendations as to whether the species should be listed as threatened or endangered. Rather, the ERA team drew scientific conclusions about the overall risk of extinction faced by the oceanic whitetip shark under present conditions and in the foreseeable future based on an evaluation of the species' demographic risks and assessment of threats.

Evaluation of Demographic Risks

Abundance

While a global population size estimate or trend for the oceanic whitetip shark is currently unavailable, numerous sources of information, including the results of a recent stock assessment and several other abundance indices (*e.g.,* trends in occurrence and composition in fisheries catch data, catch-per-unit-effort (CPUE), and biological indicators) were available to infer and assess current regional abundance trends of the species. Given the available data, and the fact that the available assessments were not conducted prior to the advent of industrial fishing (and thus not from virgin biomass), the exact magnitude of the declines and current abundance of the global population are unknown. However, based on the best available scientific and commercial data, the ERA team concluded, and we agree, that while the oceanic whitetip shark was historically one of the most abundant and ubiquitous shark species in tropical seas around the world, numerous lines of evidence suggest the species has not only undergone significant historical declines throughout its range, but likely continues to experience abundance declines of varying magnitude globally.

Across the Pacific Ocean, several lines of evidence indicate significant and ongoing population declines of the oceanic whitetip shark. In the eastern Pacific Ocean (EPO), the oceanic whitetip shark was historically the third most abundant shark species after blue sharks (*Prionace glauca*) and silky sharks (*C. falciformis*). The oceanic whitetip comprised approximately 20 percent of the total shark catch in the tropical tuna purse seine fishery from 2000–2001 (Roman-Verdesoto and Orozco-Zoller 2005) and averaged 9 percent of the total shark catch from 1993–2009 (with silky sharks comprising 84 percent, the hammerhead complex comprising 5 percent, and other sharks comprising 2 percent; Hall and Román 2013). However, if only the more recent period from 2005–2009 is considered, then the proportion of silky sharks is 93 percent, followed by the scalloped hammerhead shark (1.6 percent), and the smooth hammerhead shark (1.5 percent). The changes are the result of a rapid decline in oceanic whitetip sharks (Hall and Román 2013). Data for the oceanic whitetip shark in the EPO is available from the Inter-American Tropical Tuna Commission (IATTC), the Regional Fishery Management Organization (RFMO) responsible for the conservation and management of tuna and tuna-like species in the IATTC Convention Area. The IATTC Convention Area is defined as waters of the EPO within the area bounded by the west coast of the Americas and by 50° N. latitude, 150° W. longitude, and 50° S. latitude.

Nominal catch data from the IATTC shows that purse seine sets on floating objects, unassociated sets and dolphin sets all show decreasing trends of oceanic whitetip shark since 1994 (IATTC 2007). In particular, presence of oceanic whitetip sharks on sets with floating objects, which are responsible

for 90 percent of the shark catches in the EPO purse seine fishery, has declined significantly (Hall and Román 2013). Based on nominal catches per set as well as the frequency of occurrence of oceanic whitetip sharks in floating object sets, the species has practically disappeared from the fishing grounds, with a seemingly north to south progression. Similar trends are also seen in dolphin and school sets. These declines in nominal CPUE or the frequency of occurrence translates to a decline of 80–95 percent from the population levels in the late 1990s (Hall and Román 2013). Although there are various potential reasons for such reductions, including changes in fishing areas or methods, higher utilization rates, or some combination of factors, the increasing rarity of this species in EPO purse seine sets likely tracks closely with their relative abundance (Hall and Román 2016).

Similar levels of decline have also been observed across the Western and Central Pacific Ocean. Like the eastern Pacific, the oceanic whitetip shark was once one of the most abundant pelagic shark species throughout the tropical waters of the region. For example, tuna longline survey data from the 1950s indicate oceanic whitetip sharks comprised 28 percent of the total shark catch of fisheries south of 10° N. (Strasburg 1958). Likewise, Japanese research longline records during 1967–1968 indicate that oceanic whitetip sharks were among the most common shark species taken by tuna vessels in tropical seas of the Western and Central Pacific, and comprised 22.5 percent and 23.5 percent of the total shark catch west and east of the International Date Line, respectively (Taniuchi 1990). However, numerous sources of information indicate significant and ongoing abundance declines of oceanic whitetip sharks in this region. For example, a recent stock assessment conducted in the Western and Central Pacific, based on observer data from the Secretariat of the Pacific Community (SPC), estimated an 86 percent decline in spawning biomass from 1995 to 2009, with total biomass reduced to just 6.6 percent of the theoretical equilibrium virgin biomass (*i.e.,* a total decline of 93.4 percent; Rice and Harley 2012). Based on the results from the oceanic whitetip stock assessment, the median estimate of oceanic whitetip biomass in the Western Central Pacific as of 2010 was 7,295 tons (Rice and Harley 2012), which would be equivalent to a population of roughly 200,000 individuals (FAO 2012). An updated assessment analyzing various abundance indices, including standardized CPUE, concluded that the oceanic whitetip shark continues to decline throughout the tropical waters of the Western and Central Pacific (Rice *et al.,* 2015), indicating a severely depleted population of oceanic whitetip shark across the region with observations of the species becoming increasingly rare. Similar results were found in analyses of CPUE data from the Hawaii-based PLL fishery, where oceanic whitetip shark showed a decline in relative abundance on the order of ≥90 percent from 1995–2010 (Clarke *et al.,* 2012; Brodziak *et al.,* 2013). It must be recognized that the closeness of the agreement between the trends in observer data from Hawaii and the observer data from the SPC for the entire Western and Central Pacific Ocean may be partly due to the use of datasets that partially overlap for years prior to 2005. Still, even after 2005, the trends show similar results suggesting that the patterns are representative of regional trends in oceanic whitetip abundance. A preliminary update of the Brodziak *et al.* (2013) study with 4 additional years of data (2011–2014) indicates a potential relative stability in the population size at a post-decline depressed state (Young *et al.,* 2016). Nonetheless, the ERA team concluded, and we agree, that the levels of significant and ongoing population decline observed in these studies indicate that these declines are not just local or regional, but rather a Pacific-wide phenomenon, with no significant indication that these trends have reversed.

In the Northwest Atlantic, the oceanic whitetip shark was described historically as widespread, abundant, and the most common pelagic shark in the warm parts of the North Atlantic (Backus *et al.,* 1956). Several studies have been conducted to determine trends in abundance of various shark species, including the oceanic whitetip shark. Baum *et al.,* (2003) analyzed logbook data for the U.S. PLL fleets targeting swordfish and tunas, and reported a 70 percent decline in relative abundance for the oceanic whitetip shark from 1992 to 2000. Similarly, Baum and Myers (2004) compared longline CPUE from research surveys from 1954–1957 to observed commercial longline sets from 1995–1999, and determined that the oceanic whitetip had declined by more than 150-fold, or 99.3 percent (95 percent; Confidence Interval (CI): 98.3–99.8 percent) in the Gulf of Mexico during that time. However, the methods and results of Baum *et al.* (2003) and Baum and Myers (2004) were challenged on the basis of whether correct inferences were made regarding the magnitude of shark population declines in the Atlantic (see discussions in Burgess *et al.,* (2005b) and Burgess *et al.,* (2005a)). Of particular relevance to the oceanic whitetip, Burgess *et al.,* (2005b) noted that the change from steel to monofilament leaders between the 1950s and 1990s could have reduced the catchability of all large sharks, and the increase in the average depth of sets during the same period could have reduced the catchability of the surface-dwelling oceanic whitetip (FAO 2012). Later, Driggers *et al.,* (2011) conducted a study on the effects of different leader materials on the CPUE of oceanic sharks and determined that with equivalent methods but using a wire leader, the catch rates of Baum and Myers (2004) for the recent period would have been 0.55 rather than 0.02 (as estimated by Baum and Myers (2004) using nylon leaders). Comparing the recent 0.55 value with the Baum *et al.* (2003) value of 4.62 for the 1950s gave an estimated extent of decline of 88 percent (FAO 2012). In a re-analysis of the same logbook dataset analyzed by Baum *et al.* (2003) for the Northwest Atlantic using a similar methodology, Cortés *et al.,* (2007) reported a 57 percent decline from 1992–2005. The decline was largely driven by a 37 percent decline from 1992 to 1993 and a subsequent decline of 53 percent from 1997 to 2000, after which the time series remained stable (2000–2005). However, an analysis of the observer dataset from the same fishery resulted in a less pronounced decline than that of the logbook analysis, with a 9 percent decline in abundance from the same period of 1992–2005. Finally, the ERA team conducted an updated analysis (1992–2015) using the same observer data analyzed by Cortés *et al.* (2007). Similar to previous analyses, there was high variability in the initial years of the time series, but overall, the analysis conducted by the ERA team showed ~4 percent decline over the time series, with the overall trend indicative that the population may have stabilized (Young *et al.* 2016). Although observer data are generally regarded as more reliable than logbook data for non-target shark species (Walsh *et al.,* 2002), it should be noted that the sample size of oceanic whitetip shark in the observer data was substantially smaller than for other species, and thus the trends estimated should be regarded with caution. Additionally, although misreporting and species misidentification are likely to be much more prevalent in logbooks,

which can obscure abundance trends, misidentification is not considered an issue for the oceanic whitetip, whereas it is more problematic for other species such as night shark and other *Carcharhinus* species. It should also be noted that fishing pressure on the oceanic whitetip shark began decades prior to the time series covered in these studies (with the exception of the Baum and Myers (2004) study), thus the percentage declines discussed here do not represent percentage declines from historical virgin biomass. Therefore, given all of the caveats and limitations of the studies and analyses discussed above, it is likely that the oceanic whitetip shark population in the Northwest Atlantic and Gulf of Mexico experienced significant historical declines; however, relative abundance of oceanic whitetip shark may have stabilized in the Northwest Atlantic since 2000 and in the Gulf of Mexico/Caribbean since the late 1990s at a significantly diminished abundance (Cortés *et al.* 2007; Young *et al.* 2016).

In other areas of the oceanic whitetip shark range, robust and reliable quantitative abundance data are limited or lacking altogether. In the South Atlantic, the oceanic whitetip has been characterized as one of the most abundant species of pelagic shark in the southwestern and equatorial region. For example, the oceanic whitetip was the third most commonly caught shark out of 33 shark species caught year-round in the prominent Brazilian Santos longline fishery, and one of 7 species that comprised >5 percent of total shark catches from 1971–1995 (Amorim 1998). In Itajai, southern Brazil, oceanic whitetip sharks were considered ''abundant'' and ''frequent'' in the surface longline and gillnet fleets, respectively, from 1994–1999 (Mazzoleni and Schwingel 1999). Likewise, in equatorial waters off the northeastern coast of Brazil, the oceanic whitetip shark was historically reported as the second most abundant elasmobranch species, outnumbered only by the blue shark (*P. glauca*), in research surveys conducted within the EEZ of Brazil, and comprised 29 percent of the total elasmobranch catch in the 1990s (Lessa *et al.,* 1999). From 1992–2002, oceanic whitetip CPUE in this area averaged 2.18 individuals/1,000 hooks (Domingo *et al.,* 2007); more recently, however, the average CPUE recorded in this same area from 2004–2010 of 0.1–0.3 individuals/1,000 hooks (Frédou *et al.,* 2015) is much lower. Additionally, none of the other areas within this region exhibit CPUE rates comparable to the rates seen in the 1990s. Further, demographic analyses from the largest oceanic whitetip shark catching country in the South Atlantic (*i.e.,* Brazil) indicate abundance declines similar to the Northwest Atlantic of 50–79 percent in recent decades (Santana *et al.,* 2004; ICMBio 2014) and coincide with significant declines in catches of oceanic whitetip shark reported by Brazil to the International Commission for the Conservation of Atlantic Tunas (ICCAT). As a result of these declining trends, the oceanic whitetip shark was designated as a ''species threatened by overexploitation'' in 2004 by Brazil's Ministério do Meio Ambiente (Ministry of Environment), and listed under Annex II of Brazil's Normative Ruling No. 5 of May 21, 2004 that recognizes endangered species and species threatened by overexploitation, including aquatic invertebrates and fish. In 2014, Brazil finalized its national assessment regarding the extinction risk of Brazilian fauna, and listed the oceanic whitetip shark as Vulnerable under Brazil's ''Lista Nacional Oficial de Espécies da Fauna Ameaçadas de Extinção—Peixes e Invertebrados Aquáticos'' (National Official List of Endangered Species of Fauna—Fish and Aquatic Invertebrate; ICMBio 2014).

Elsewhere across the South Atlantic, the oceanic whitetip shark appears to be relatively rare, with low patchy abundance. For example, in 6 years of observer data from the Uruguayan longline fleet (1998–2003), catches of oceanic whitetip shark were described as ''occasional'' with CPUE rates of only 0.006 individuals/1,000 hooks (Domingo 2004). However, during this study, the Uruguayan longline fleet operated between latitudes 26° and 37° S. and within sea surface temperatures ranging between 16° and 23 °C, which are largely lower than the temperature preferences of the species. Domingo (2004) noted that it is unknown whether the species has always occurred in low numbers in this region of the South Atlantic, or whether the population has been affected significantly by fishing effort. More recently, Domingo *et al.* (2007) found similar results, with the highest CPUE recorded not exceeding 0.491 individuals/1,000 hooks. In total, only 63 oceanic whitetips were caught on 2,279,169 hooks and 63 percent were juveniles. All catches occurred in sets with sea surface temperatures ≥22.5 °C (Domingo *et al.,* 2007). Again, this data does not indicate whether a decline in the population has occurred, rather, it clearly reflects the low abundance of the species in this area (Domingo *et al.,* 2007). The low abundance of oceanic whitetip in this area may be the result of the species' tendency to remain in warmer, tropical waters farther north. Alternatively, it could be a result of historical fishing pressure in the region.

Finally, in a study that synthesized information on shark catch rates (based on 871,177 sharks caught on 86,492 longline sets) for the major species caught by multiple fleets in the South Atlantic between 1979 and 2011, catch rates of most species (with the exception of *P. glauca* and *A. superciliosus*), including oceanic whitetip, declined by more than 85 percent (Barreto *et al.,* 2015). However, it should be noted that there are some caveats and limitations to this study, including high and overlapping confidence intervals, raising the possibility that the trends may be noise rather than truly tracking abundance. Nonetheless, while robust abundance data is lacking in the South Atlantic, the best available information, including demographic analyses and fisheries data across the region from 1979–2011, indicate the oceanic whitetip shark has potentially experienced a significant population decline ranging from 50–85 percent (Santana *et al.* 2004; ICMBio 2014; Barreto *et al.* 2015). Overall, the ERA team concluded, and we agree, that the oceanic whitetip population in the South Atlantic has likely experienced historical declines similar to levels seen in the Northwest Atlantic, and this population decline is likely ongoing, although we acknowledge some uncertainty regarding the available data from this region.

Abundance information from the Indian Ocean is relatively deficient and unreliable. Nonetheless, historical research data shows overall declines in both CPUE and mean weight of oceanic whitetip sharks (Romanov *et al.,* 2008), and anecdotal reports suggest that oceanic whitetips have become rare throughout much of the Indian Ocean over the past 20 years (IOTC 2015a). The Indian Ocean Tuna Commission (IOTC) also reports that despite limited data, oceanic whitetip shark abundance has likely declined significantly over recent decades. Furthermore, a few quantitative studies provide some additional information indicative of declining trends of oceanic whitetip in the Indian Ocean. For example, data from an exploratory fishing survey for large pelagic species conducted off the eastern seaboard of the Maldives from 1987–1988 reported that oceanic whitetips represented 29 percent of the sharks caught by longline and 10 percent of the sharks caught by gillnet in all fishing zones (Anderson and Waheed 1990). During this survey, the

average CPUE for all sharks was 48.7 sharks/1,000 hooks. Applying the percentage of oceanic whitetips in the catch to the total CPUE, it is estimated that the CPUE of oceanic whitetip in this period was about 1.41 individuals/100 hooks (FAO 2012). More recently, Anderson *et al.* (2011) estimated that the average CPUE of oceanic whitetip in the shark longline fishery was only 0.20 individuals per fishing vessel (or approximately 0.14 sharks/100 hooks), and estimated the species contributed only 3.5 percent of the shark landings. This would represent a 90 percent decline in abundance between 1987–1988 and 2000–2004. Such a level of decline would be consistent with the decrease in the proportion of oceanic whitetip in the catch (from 29 percent of longline shark catch in 1987–1988 to just 3.5 percent of landings in 2000–2004) and also with anecdotal information reporting a marked decrease in sightings of oceanic whitetip sharks off northern and central Maldives (Anderson *et al.,* 2011; FAO 2012). The IOTC Working Party on Ecosystems and Bycatch (WPEB) noted the following on the aforementioned studies: ''Data collected on shark abundance represents a consistent time series for the periods 1987–1988 and 2000–2004, collected with similar longline gear, and that the data was showing a declining trend in oceanic whitetip shark abundance, which is a potential indicator of overall stock depletion.'' The WPEB further noted that it could be related to localized effects, although this was deemed unlikely as oceanic whitetip sharks are wide-ranging and abundance trends from long-term research conducted by the former Soviet Union between the 1960s and 1980s indicate a similar decline of oceanic whitetip sharks, and that ''sightings of this species in Maldives and Réunion islands is now quite uncommon'' (IOTC 2011).

Similarly, surveys of the tuna longline fishery in India indicate a likely decline of oceanic whitetip shark abundance. In Andaman and Nicobar waters, where catches of sharks are prominent and contribute 35.15 percent of the catch by number and 51.46 percent by weight, John and Varghese (2009) reported that the oceanic whitetip shark comprised 4.6 percent of the total shark catch from 1984–2006. However, in more recent surveys, Varghese *et al.,* (2015) report that oceanic whitetip shark comprised only 0.23 percent of the total shark catch from 2004–2010 in this area, which is significantly lower than what John and Varghese (2009) reported previously. Off the West Coast of India in the eastern Arabian Sea, the percentage of oceanic whitetip sharks in the overall shark catch also declined slightly from 0.6 percent to 0.45 percent. Overall, Varghese *et al.* (2015) shows that the index of relative abundance of sharks was considerably lower than that found in earlier studies, indicating a decline in abundance over the years. While the lack of standardized CPUE trend information for oceanic whitetip in these studies makes it difficult to evaluate the potential changes in abundance for this species in this region, based on the best available information, it is likely that the oceanic whitetip has experienced some level of population decline in this region. Additionally, it is important to note that India has objected to IOTC Resolution 13–06, which prohibits the retention of oceanic whitetip sharks (since 2013) in IOTC managed fisheries, and thus this Resolution is not binding on India. Therefore, oceanic whitetip sharks may still be retained in Indian fisheries.

Other studies on the abundance trends of oceanic whitetip shark in the Indian Ocean, including analyses of standardized CPUE indices from Japanese and Spanish longline fisheries, also indicate potential population declines, although trends are conflicting. Two studies estimate standardized CPUE for oceanic whitetip shark in the Japanese longline fleet operating in the Indian Ocean (Semba and Yokawa 2011; Yokawa and Semba 2012). In the first 2011 study, CPUE reached its peak in 2003 and then showed a gradually decreasing trend thereafter. Prior to 2003, large fluctuations in oceanic whitetip CPUE are attributed to changes in reporting requirements rather than the actual trend of the stock, as those years represent the introduction phase of a new recording system. The data showed low values in 2000 and 2001 (attributed to extremely low catches), and a gradual decreasing trend from 2003 to 2009. The authors interpreted a 40 percent decline in CPUE as an indication of a decrease in abundance of the population (FAO 2012; Semba and Yokawa 2011). Yokawa and Semba (2012) updated the data to 2011 using a modified data filtering method, which produced a rather similar and somewhat flattened trend.

Standardized CPUE of the Spanish longline fishery from 1998 to 2011 showed large historical fluctuations and a general decreasing trend of oceanic whitetip shark from 1998–2007, followed by an increase thereafter in the last 4 years of the time series. Overall, the magnitude of decline in this study was estimated to be about 25–30 percent (Ramos-Cartelle *et al.,* 2012); however, it should be noted that due to the high variability of the standardized catch rates between consecutive years and limited availability of specimens in some years, this index could be representative of a particular period rather than a plausible indicator of the stock abundance at large (Ramos-Cartelle *et al.,* 2012). Specifically, the data yielded support for the relatively low prevalence described for this species in the commercial fishery of surface longline fleets targeting swordfish in waters with temperatures generally lower than those selected by this species as its preferred habitat (García-Cortés *et al.,* 2012; Ramos-Cartelle *et al.,* 2012).

Finally, a study that incorporated data from the tropical French and Soviet Union purse seine fisheries analyzed the interaction between oceanic whitetip sharks and the tropical purse seine fisheries in terms of occurrence per set (not taking into account the number of individuals caught per set) from the mid-1980s to 2014. Results showed a marked change in the proportion of fish aggregating device (FAD) sets with oceanic whitetips present, fluctuating around 20 percent in the mid-1980s and 1990s, and then dropping to less than 10 percent from 2005 onwards. Taking into account that the number of FADs has greatly increased since the 1990s (Dagorn *et al.,* 2013; Maufroy *et al.,* 2015; Tolotti *et al.,* 2015b), the change in the proportion of FADs with oceanic whitetip sharks by more than 50 percent could indicate an important population decline (Tolotti *et al.,* 2015b). Alternatively, the decline of oceanic whitetip shark occurrence per FAD could be the result of a sharp increase of FAD densities combined with a small and stable population size. In this scenario, the proportion of oceanic whitetips/FAD would simply decrease because there aren't enough sharks to aggregate around that many FADs. However, although the analyzed data does not provide a straightforward interpretation (as both hypotheses seem plausible), given the declines indicated in other studies throughout the Indian Ocean, it seems more plausible that the marked decline observed in Tolotti *et al.* (2015b) is indicative of a declining abundance trend rather than a small, stable population.

Despite the varying magnitudes of reported declines of oceanic whitetip shark in the Indian Ocean, the ERA team agreed that given the significantly high fishing pressure and catches of oceanic whitetip shark in the Indian Ocean (which are likely severely underreported), combined with the

species' high at-vessel mortality rates in longlines in this area and the species' low-moderate productivity (see the *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes* section below for more details), it is likely that the species will continue to experience population declines in this region into the foreseeable future.

Overall, in areas where oceanic whitetip shark data are available, trends from throughout the species' global range show large historical declines in abundance (*e.g.,* Eastern Pacific, Western and Central Pacific, Atlantic and Indian Oceans). Recent evidence suggests that most populations are still experiencing various levels of decline due to continued fishing pressure and associated mortality. Further, the potential stabilization of the abundance trends at depleted levels seen in observer data from the Northwest Atlantic and Hawaiian PLL fisheries represents a small contingent of the global population. Thus, the best available scientific and commercial data available suggest that the global population of oceanic whitetip continues to experience various levels of decline throughout the majority of its range.

Growth Rate/Productivity

The ERA team expressed some concern regarding the effect of the oceanic whitetip shark's growth rate and productivity on its risk of extinction. Sharks, in general, have lower reproductive and growth rates compared to bony fishes. The ERA team noted that this species has some life history parameters that are typically advantageous, and some that are likely detrimental to the species' resilience to excessive levels of exploitation. For example, in comparison to other shark species, the oceanic whitetip is relatively productive, with an intrinsic rate of population increase (r) of 0.094–0.121 per year (Cortés 2010; 2012). The oceanic whitetip also ranked among the highest in productivity when compared with other pelagic shark species in terms of its pup production, rebound potential, potential for population increase, and for its stochastic growth rate (Chapple and Botsford 2013). Although the oceanic whitetip shark has a relatively high productivity rate compared to other sharks, it is still considered low for a fish species (r <0.14). Additionally, the species has a fairly late age of maturity (~6–9 years for females depending on the location), has a lengthy gestation period of 9–12 months, and only produces an average of 5–6 pups every two years. Thus, while this species may generally be able to withstand low to moderate levels of exploitation, given the high level of fishing mortality this species has experienced and continues to experience throughout the majority of its range, its life history characteristics may only provide the species with a limited ability to compensate. Therefore, based on the best available information, these life history characteristics likely pose a risk to this species in combination with threats that reduce its abundance, such as overutilization.

Spatial Structure/Connectivity

The oceanic whitetip shark is a relatively widespread species that may be comprised of distinct stocks in the Pacific, Indian, and Atlantic oceans. The population structure and exchange between these stocks is unknown; however, based on genetic information, telemetry data, and temperature preferences it is unlikely that there is much exchange between populations in the Atlantic and Indo-Pacific Oceans. However, recent genetic data suggests potentially significant population structure within the Atlantic, which may be underpinned by the fact that this species exhibits a high degree of philopatry in some locations (*i.e.,* the species returns to the same site for purposes of breeding or feeding, etc.). While the population structure observed in the Atlantic, despite no physical or oceanographic barrier, could result in localized depletions in areas where fishing pressure is high (*e.g.,* Brazil), habitat characteristics that are important to this species are unknown. The species is highly mobile, and there is little known about specific migration routes. It is also unknown if there are source-sink dynamics at work that may affect population growth or species' decline. There is no information on critical source populations to suggest spatial structure and/or loss of connectivity are presently posing demographic risks to the species. Thus, based on the best available information, there is insufficient information to support the conclusion that spatial structure and connectivity currently pose a significant demographic risk to this species.

Diversity

As noted previously in the *Population Structure and Genetics* section, recent research suggests the oceanic whitetip shark has low genetic diversity (0.33 percent ± 0.19 percent; Ruck 2016), which is about half that of the closely related silky shark (0.61 percent ± 0.32 percent; Clarke *et al.,* (2015a)). The ERA team noted that the relatively low mtDNA genetic diversity of the oceanic whitetip raises potential concern for the future genetic health of this species, particularly in concert with steep global declines in abundance. Based on the fact that exploitation of the oceanic whitetip shark began with the onset of industrial fishing in the 1950s, only 5–7 generations of oceanic whitetip have passed since the beginning of this exploitation. Thus, the low genetic diversity of oceanic whitetip shark likely reflects historic levels, and the significant global declines are not yet reflected genetically (Ruck 2016). The ERA team noted that this may be a cause for concern in the foreseeable future, since a species with already relatively low genetic diversity undergoing significant levels of exploitation may increase the species' risk in terms of reduced fitness and evolutionary adaptability to a rapidly changing oceanic environment as well as potential extirpations. The ERA team also noted that low genetic diversity does not necessarily equate to a risk of extinction in and of itself for all species; but, in combination with low levels of abundance and continued exploitation, low genetic diversity may pose a viable risk to the species in the foreseeable future.

Summary of Factors Affecting the Oceanic Whitetip Shark

As described above, section 4(a)(1) of the ESA and NMFS' implementing regulations (50 CFR 424.11(c)) state that we must determine whether a species is endangered or threatened because of any one or a combination of the following factors: The present or threatened destruction, modification, or curtailment of its habitat or range; overutilization for commercial, recreational, scientific, or educational purposes; disease or predation; the inadequacy of existing regulatory mechanisms; or other natural or manmade factors affecting its continued existence. The ERA team evaluated whether and the extent to which each of the foregoing factors contributed to the overall extinction risk of the global oceanic whitetip shark population. We summarize information regarding each of these threats below according to the factors specified in section 4(a)(1) of the ESA. Available information does not indicate that destruction, modification or curtailment of the species' habitat or range, disease or predation, or other natural or manmade factors are operative threats on this species; therefore, we do not discuss those further here. See Young *et al.* (2016) for

additional discussion of all ESA section 4(a)(1) threat categories.

Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Threats to the oceanic whitetip shark related to overutilization stem from mortality in commercial fisheries, largely driven by demand of the international shark fin trade, bycatch-related mortality, as well as illegal, unreported, and unregulated (IUU) fishing. The oceanic whitetip shark is generally not a targeted species, but because of its tendency to remain in the surface mixed layer of the water column (0–152 m depth) and in tropical latitudes where fishing pressure is often most concentrated for target species such as tuna, the species is frequently encountered and suffers high mortality rates in numerous fisheries throughout its global range. The oceanic whitetip shark is also considered a preferred species for the international fin trade because its large, morphologically distinct fins obtain a high value in the Asian fin market. The high value and demand for oceanic whitetip fins incentivizes the retention and subsequent finning of oceanic whitetip sharks when caught, and thus represents the main economic driver for retention and mortality of this species in commercial fisheries throughout its global range. In fact, growth in demand from the fin trade during the 1990s coincided with a pattern of soaring catches of oceanic whitetip sharks in numerous fisheries across the globe. Catches generally peaked from 1995 to 2000 and were followed by precipitous declines over the next 10 years due to severe overfishing (Hazin *et al.,* 2007; Lawson 2011; Clarke *et al.,* 2012; Hasarangi *et al.,* 2012; Brodziak *et al.,* 2013; Hall and Román 2013). The oceanic whitetip is regularly caught incidentally with PLLs, purse seines, handlines, troll and occasionally pelagic and even bottom trawls (Compagno 1984). In addition to mortality as a result of retention and finning in commercial fisheries, oceanic whitetip sharks experience varying levels of bycatch-related fishing mortality, including at-vessel and post-release mortality. Finally, recent reports of illegal trafficking of oceanic whitetip shark fins suggest the species may be heavily impacted by IUU fishing activities. Therefore, the ERA team assessed the following factors that may have contributed or continue to contribute to the historical and ongoing overutilization of the oceanic whitetip shark: Retention and finning in commercial fisheries for purposes of the international fin trade, incidental bycatch in commercial fisheries (including impacts of at-vessel and post-release mortality), and IUU fishing activities.

In the EPO, the oceanic whitetip shark is caught on a variety of gear, including longline and purse seine gear targeting tunas and swordfish. They are also believed to be taken in artisanal fisheries in many countries around the EPO (IATTC 2007). To date, the IATTC has not conducted a stock assessment for the oceanic whitetip shark. However, species-specific catch estimates based on observer data from the purse seine fishery are available from the IATTC observer database. As noted previously in the *Demographic Risk Assessment—Abundance section,* the oceanic whitetip was the second most abundant shark in the catches behind the silky shark, and comprised approximately 9 percent of the total shark catch from 1993–2009 (Hall and Román 2013). In floating object sets, which are responsible for 90 percent of oceanic whitetip shark catches, capture probability of the species has decreased over time from a high of 30 percent capture rate per set between 1994 and 1998, to less than 5 percent from 2004 to 2008 (Morgan 2014). Estimated catches of oceanic whitetip sharks in all purse seine sets peaked with approximately 9,709 individuals caught in 1999; however, within 10 years catches dropped dramatically to an estimated 379 oceanic whitetip sharks caught in 2005. Estimated catches of oceanic whitetip shark continue to decline in the EPO tropical tuna purse seine fishery, with only 120 individuals caught in 2015. This drastic decline in oceanic whitetip catches is in stark contrast to catches of the closely related silky shark, which have remained relatively constant over the same time period. Further, size trends in this fishery show that small oceanic whitetip sharks <90 cm, which comprised 21.4 percent of the oceanic whitetips captured in 1993, have been virtually eliminated (Hall and Román 2013), indicating the possibility of recruitment failure in the population. During this same time period, there was an increase in both the total catch of tunas by purse seiners that employ drifting FADs and the number of FADs deployed (Eddy *et al.,* 2016; Hall and Román 2016). Over the past decade, the total number of FADs deployed per year has continued to increase steadily, from about 4,000 in 2005 to almost 15,000 in 2015 (Hall and Román 2016). The total number of sets deployed has also continued increasing, with 2015 being the highest record observed. Thus, given the continued increase in fishing effort and expansion of the tropical tuna purse seine fleet in the Eastern Pacific, fishing pressure and associated mortality of oceanic whitetip sharks are expected to continue.

Oceanic whitetip sharks are also sometimes a significant component of the bycatch in EPO longline fisheries, and are thought to be taken by local artisanal fisheries as well. While observer data is not available from these fisheries, some limited information is available from the various countries that fish in these waters. For example, the oceanic whitetip shark was identified as one of several principal species taken by Mexican fisheries targeting pelagic sharks (Sosa-Nishizaki *et al.,* 2008). Farther south, the oceanic whitetip shark has also been recorded in the catches of the Ecuadorian artisanal fishery. In an analysis of landings from the five principal ports of the Ecuadorian artisanal fishery from 2008–2012, 37.2 mt of oceanic whitetip shark were recorded out of a total 43,492.6 mt of shark catches (Martinez-Ortiz *et al.,* 2015). Although limited, this information confirms that in addition to significant fishing pressure by the tropical tuna purse seine fishery, oceanic whitetip sharks are taken in longline and artisanal fisheries in unknown quantities. Based on the foregoing information, the ERA team concluded, and we agree, that overutilization of the oceanic whitetip shark is ongoing in this region, with no indication that these pressures will cease in the foreseeable future.

In the Western and Central Pacific Ocean (WCPO), the oceanic whitetip shark commonly interacts with both longline and purse seine fisheries throughout the region, with at least 20 member nations of the Western and Central Pacific Fisheries Commission (WCPFC; the RFMO responsible for the conservation and management of tuna and tuna-like species in the region) recording the species in their fisheries. As noted previously, the oceanic whitetip historically comprised between 20–28 percent of the total shark catch in some industrial longline fisheries during the 1950s and 1960s (Strasburg 1958; Taniuchi 1990). In this region, where sharks represent 25 percent of the longline fishery catch (Molony 2007), more recent observer data show that the oceanic whitetip shark represented only 6.3 percent of the total shark catch from 1991–2011(with blue shark comprising the large majority at ~80.5 percent; Lawson 2011). In the purse seine fishery, the oceanic whitetip was once the second most common species of shark caught as bycatch in the WCPO,

and comprised approximately 4.2 percent of the total shark catch from 1994–2011 (Lawson 2011). In addition to being caught indirectly as bycatch, observer records indicate that some targeting of oceanic whitetip shark has occurred historically in the waters near Papua New Guinea, and, given the high value of oceanic whitetip fins and low level of observer coverage in the region, it is likely that targeting has occurred in other areas as well (Rice and Harley 2012). Based on nominal and standardized catch rates for longline and purse seine fisheries, records of oceanic whitetip sharks in both fisheries have become increasingly rare over time, with catches of the species significantly declining since the late 1990s (Lawson 2011; Clarke *et al.,* 2011a). For example, estimated catches of oceanic whitetip shark in the WCPO longline fishery suggest that catches peaked in 1998 at ~249,000 individuals and declined to only ~53,000 individuals in 2009 (Lawson 2011). It should be noted that catches by the fleets of Indonesia and the Philippines were not included because neither observer nor effort data were available for these fleets. Over the same time period (from 1995 to 2009) rates of fishing mortality consistently increased, driven mainly by the increased effort in the longline fleet, and remained substantially above the maximum sustainable yield (MSY) (*i.e.,* the point at which there would be an equilibrium) for the species (Rice *et al.,* 2015). The previously discussed stock assessment report (Rice *et al.,* 2015) attributed the greatest impact on the species to bycatch from the longline fishery, and lesser impacts from target longline activities and purse-seining (Rice and Harley 2012). In fact, Rice *et al.* (2015) determined that fishing mortality on oceanic whitetip sharks in the WCPO has increased to levels 6.5 times what is sustainable, thus concluding that overfishing is still occurring.

As a result of continued and increasing fishing pressure in the WCPO, size trends for oceanic whitetip have also declined, which is indicative of overutilization of the species. For example, declining median size trends were observed in all regions and sexes in both longline and purse seine fisheries until samples became too scarce for analysis. These size trends were significant for females in the longline fishery (Regions 3 and 4; See Figure 1 in Clarke *et al.,* 2011a for the regional map), and for the purse seine fishery (Region 3). Regions 3 and 4 (*i.e.,* the equatorial region of the WCPO) represent the species' core habitat areas, and contain 98 percent of the operational-level reported purse seine sets and the majority of longline fishing effort (Clarke *et al.,* 2011a; Rice *et al.,* 2015). The decline in median size of female oceanic whitetip sharks is particularly concerning due to the potential correlation between maternal length and litter size, which has been documented in the Atlantic and Indian Oceans (Lessa *et al.* 1999, Bonfil *et al.* 2008). While Rice *et al.* (2015) more recently report that trends in oceanic whitetip median length are now stable, the majority of sharks observed are immature. In fact, 100 percent of oceanic whitetips sampled in the purse seine fishery have been immature since 2000 (Clarke *et al.,* 2012).

In the U.S. Pacific, the oceanic whitetip shark is a common bycatch species in the Hawaii-based PLL fishery. This fishery began around 1917, and underwent considerable expansion in the late 1980s to become the largest fishery in the state (Boggs and Ito 1993). This fishery currently targets tunas and billfish and is managed under the auspices of the Western Pacific Fishery Management Council (WPFMC). From 1995–2006, oceanic whitetip sharks comprised approximately 3 percent of the total shark catch (Brodziak *et al.,* 2013). Based on observer data from the Pacific Islands Regional Observer Program (PIROP), oceanic whitetip shark mean annual nominal CPUE decreased significantly from 0.428 sharks/1,000 hooks in 1995 to 0.036 sharks/1,000 hooks in 2010. This reflected a significant decrease in nominal CPUE on longline sets with positive catch from 1.690 sharks/1,000 hooks to 0.773 sharks/1,000 hooks, and a significant increase in longline sets with zero catches from 74.7 percent in 1995 to 95.3 percent in 2010. As discussed previously in the *Evaluation of Demographic Risks—Abundance* section, oceanic whitetip CPUE declined by more than 90 percent in the Hawaii-based PLL fishery since 1995 (Walsh and Clarke 2011; Brodziak *et al.,* 2013). Brodziak *et al.* (2013) concluded that relative abundance of oceanic whitetip declined within a few years of the expansion of the longline fishery, which suggests these fisheries are contributing to the commercial overutilization of oceanic whitetip within this portion of its range. It should be noted that while the Hawaii-based PLL fishery currently catches oceanic whitetip shark as bycatch, the majority of individuals are now released alive in this fishery and the number of individuals kept has been on a declining trend. For example, according to the U.S. National Bycatch Report First Edition Update 2 (see *www.st.nmfs.noaa.gov/observer-home/first-edition-update-2*) the shallow-set fishery released alive an estimated 91–96 percent of all oceanic whitetip sharks caught from 2011 to 2013. During the same time period, the deep-set fishery released alive an estimated 78–82 percent of all oceanic whitetip sharks caught. However, it is unknown how many of these sharks survived after being released. Nonetheless, this particular fishery may be less of a threat to the oceanic whitetip shark in the foreseeable future. However, across the WCPO as a whole, given the ongoing impacts to the species from significant fishing pressure (with the majority of effort concentrated in the species' core tropical habitat area), including significant declines in CPUE, biomass, and size indices, and combined with the species' relatively low-moderate productivity, it is likely that overutilization has been and continues to be an ongoing threat contributing to the extinction risk of the oceanic whitetip shark across the region.

The oceanic whitetip shark was also once described as the most common pelagic shark throughout the warm-temperate and tropical waters in the Atlantic and beyond the continental shelf in the Gulf of Mexico (Mather and Day 1954; Strasburg 1958). Oceanic whitetip sharks are taken in the Atlantic Ocean by longlines, purse seine nets, gillnets, trawls, and handlines; however, the large majority of the catch from 1990–2014 reported to ICCAT was caught by longline gear (Young *et al.,* 2016). Oceanic whitetip sharks have exhibited a range of at-vessel mortality rates in longline gear in the Atlantic Ocean between 11–34 percent (Beerkircher *et al.,* 2002; Coelho *et al.,* 2012; Fernandez-Carvalho *et al.,* 2015) and have been ranked as the 5th most vulnerable pelagic shark in an Ecological Risk Assessment that assessed 11 species of pelagic elasmobranchs (Cortes *et al.,* 2010). In total, approximately 2,430 mt of oceanic whitetip catches were reported to ICCAT from 1990–2014; however, this is likely a severe underestimation of the total amount of oceanic whitetip sharks taken from the Atlantic. For example, Clarke (2008) calculated trade-based estimates that indicate between 80,000–210,000 oceanic whitetip sharks were sourced from the Atlantic Ocean in 2003 alone to supply the Hong Kong fin market, which translates to approximately 3,000–8,000 mt.

In the Northwest Atlantic, the oceanic whitetip is caught incidentally as bycatch by a number of fisheries,

including (but not limited to) the U.S. Atlantic PLL fishery, the Cuban ''sport'' fishery (''sport'' = private artisanal and commercial), and the Colombian oceanic industrial longline fishery operating in the Caribbean (E-CoP16Prop.42, 2013). In the United States, oceanic whitetip sharks are caught as bycatch in PLL fisheries targeting tuna and swordfish in this region, with an estimated 8,526 individuals recorded as captured in U.S. fisheries logbooks from 1992 to 2000 (Baum *et al.,* 2003) and a total of 912 individuals recorded by observers in the NMFS Pelagic Observer Program from 1992–2015. Relative to target species, oceanic whitetip sharks are caught infrequently and only incidentally on PLL vessels fishing for tuna and tuna-like species. Landings and dead discards of sharks by U.S. PLL fishers in the Atlantic are monitored every year and reported to ICCAT. Overall, very few oceanic whitetip sharks were landed by the commercial fishery, except for two peaks of about 1,250 and 1,800 fish in 1983 and 1998, respectively, but otherwise total catches never exceeded 450 fish (NMFS 2009). Commercial landings of oceanic whitetip sharks in the U.S. Atlantic have been variable, but averaged approximately 1,077.4 lb (488.7 kg; 0.4887 mt) per year from 2003–2013. Although oceanic whitetip sharks have been prohibited on U.S. Atlantic commercial fishing vessels with pelagic longline gear onboard since 2011, they can still be caught as bycatch, caught with other gears, and are occasionally landed. However, since the ICCAT retention prohibition was implemented in 2011, estimated commercial landings of oceanic whitetip declined from 1.1 mt in 2011 to only 0.03 mt in 2013 (NMFS 2012; 2014). As discussed previously, the oceanic whitetip population size has likely declined significantly in this region due to historical exploitation of the species since the onset of industrial fishing (refer back to the *Demographic Risk Assessment—Abundance* section); however, results of the ERA team's analysis show that the oceanic whitetip shark population in this region has potentially stabilized since the 1990s/early 2000s (Young *et al.,* 2016). The potential stabilization of oceanic whitetip sharks occurred concomitantly with the first Federal Fishery Management Plan for Sharks in the Northwest Atlantic Ocean and Gulf of Mexico, which directly manages oceanic whitetip shark under the pelagic shark group, and includes regulations on trip limits and quotas. This indicates the potential efficacy of these management measures for reducing the threat of overutilization of the oceanic whitetip shark population in this region; therefore, under current management measures, including the implementation of ICCAT Recommendation 10–07 (see *Factor D—Inadequacy of Existing Regulatory Mechanisms* for more details), the threat of overutilization is not likely as significant in this area relative to other portions of the species' range.

In Cuba, some evidence suggests a historical decline of oceanic whitetip shark may have occurred, although this is uncertain. In the 1960s, the oceanic whitetip shark was characterized as the most abundant species off the northwestern coast of Cuba, but since 1985, a substantial decline was observed in some species, including the oceanic whitetip. Variations in fishing effort and changes in the fishery make it difficult to assess the present condition of the resource, but since 1981 there has been a tendency towards decline (Claro *et al.,* 2001). Recent monitoring studies of a prominent fishing base in Cojimar, Cuba recorded the oceanic whitetip shark comprising only 2–5 percent of the shark landings from 2008–2011 (Cuba Department of Fisheries 2016). In contrast, Valdés *et al.,* (2016) show a steady pattern of abundance for the oceanic whitetip shark in Cuban fishery landings along the northwestern coast from 2010 to 2016. However, sharks caught in Cuban fisheries are never discarded, but rather utilized for either human consumption or bait. Cuba is not a member of ICCAT, and thus ICCAT Recommendation 10–07 on the retention prohibition of oceanic whitetip sharks is not applicable in Cuban waters. Further, evidence suggests there is a prevalence of small, immature individuals in Cuban catches, which suggests the possibility of an important nursery area for this species in the region. However, because these animals are small and of less value to the fishermen, they are typically using the juvenile *C. longimanus* as bait while at sea, a practice which is likely in conflict with sustainable fisheries management and conservation objectives (Valedz *et al.,* 2016) and may be contributing to overutilization of the species.

Farther south, it is likely that overutilization is an ongoing threat in the South Atlantic. Although fishing effort has been high and began intensifying in the southern Atlantic Ocean after the 1990s (Camhi *et al.,* 2008), there is limited information on the catch rates or trends of oceanic whitetip sharks in this region. Oceanic whitetip sharks are taken as bycatch in numerous fisheries operating in the South Atlantic, including Brazilian, Uruguayan, Taiwanese, Japanese, Venezuelan, Spanish and Portuguese longline fisheries; however, the largest oceanic whitetip catching country in this region is Brazil. As noted in the *Evaluation of Demographic Risks—Abundance* section of this proposed rule, oceanic whitetips were historically reported as the second-most abundant shark in research surveys from northeastern Brazil between 1992 and 1997 (FAO 2012), with a high CPUE rate of 2.18 individuals per 1,000 hooks (Domingo *et al.,* 2007). More recently, however, average CPUE in this same area has seemingly declined. It also appears that the percentage of mature sharks has declined in recent years compared to surveys conducted in the 1990s. For example, the frequency of mature sharks ≥180 cm was higher in the 1990s than in years 2005–2009. It should be noted that the data from 2005–2009 represents a much larger area of the southwestern and equatorial Atlantic and has a much larger sample size (n = 1218; Tolotti *et al.,* 2013) than the results from the surveys conducted in the 1990s (n = 258; Lessa *et al.,* 1999). However, the two study areas do overlap and provide some indication that the size composition of oceanic whitetip sharks in the southwestern Atlantic may be shifting downwards. Catches of oceanic whitetip in the Brazilian tuna longline fishery have also shown a substantial decline, decreasing from ~640t in 2000 to only 80t in 2005 (Hazin *et al.,* 2007). According to the ICCAT nominal catch database, catches of oceanic whitetip shark by Brazilian vessels continued to decline, with 0 mt reported from 2009–2012 and only 12 mt from 2013–2014. Although robust standardized CPUE data are not available for the species, making it difficult to evaluate whether the decline in catches resulted from decreased abundance or from changes in catchability, related, for instance, to targeting strategies (Hazin *et al.,* 2007), a recent tagging study indicates that the preferred horizontal and vertical habitat of oceanic whitetip shark, including potential nursery areas, is heavily impacted by the industrial longline fishery. Telemetry data provides evidence that the equatorial region off Northeast Brazil is an area where the oceanic whitetip shark shows a high degree of philopatry (*i.e.,* site fidelity). This same area also happens to be where the highest level of fishing effort is concentrated. For example, from 1999–2011, despite a wide distribution

of fishing sets, the area with the highest effort concentration by the Brazilian longline fleet was bound by the 5° N. and the 15° S. parallels and by the 040° W. and 035° W. meridians (*i.e.,* the equatorial region of Northeast Brazil). Thus, the majority of fishing effort by the Brazilian fleet directly overlaps the preferred habitat area of oceanic whitetip sharks (Tolotti *et al.,* 2015a). Further, many studies show a substantially high percentage of juveniles in the catches from this region (Coelho *et al.,* 2009; Tambourgi *et al.,* 2013; Tolotti *et al.,* 2013; Frédou *et al.,* 2015), which suggests the presence of nursery habitat. For example, Tambourgi *et al.* (2013) found that 80.5 percent of females were immature and 72.4 percent of males were immature in the Brazilian pelagic longline fishery between December 2003 and December 2010. Thus, it is likely that the intensive fishing pressure of oceanic whitetip across its preferred vertical and horizontal habitat, including nursery areas in Brazilian waters, is negatively impacting oceanic whitetip sharks at all life stages, and contributing to the overutilization of the species. In addition to information from Brazil, a recent study that synthesized information on shark catch rates for the major shark species caught by multiple fleets in the South Atlantic from 1979 and 2011 (*e.g.,* Belize, Bolivia, Brazil, Canada, Spain, Guyana, Honduras, Iceland, Japan, Saint Kitts and Nevis, Korea, Morocco, Panama, Portugal, Taiwan, United Kingdom, Uruguay, United States, Saint Vincent and the Grenadines, and Vanuatu) concluded that declines of many shark species, including the oceanic whitetip, coincided with significant fishing effort expansion, a lack of regulatory measures to deal with shark bycatch, finning and directed fishing for sharks by some fleets (Barreto *et al.,* 2015). Based on the foregoing information, the ERA team concluded, and we agree, that overutilization in the South Atlantic Ocean is likely a threat contributing to the oceanic whitetip's risk of extinction in the foreseeable future.

Overutilization is also likely a threat to oceanic whitetip sharks in the Indian Ocean. The oceanic whitetip is reported as bycatch in all three major fisheries operating in the Indian Ocean; the species is considered ''frequent'' in both longline and purse seine fisheries, and ''very frequent'' in the gillnet fishery (Murua *et al.,* 2013b), with gillnet fisheries reporting the highest nominal catches of sharks in 2014, and making up nearly 40 percent of total catches (Ardill *et al.,* 2011; IOTC 2015a). Although information from this region is limited and catch data are severely underreported, the IOTC (the RFMO that manages tuna and tuna-like species in the Indian Ocean and adjacent waters) reports that catches of oceanic whitetip shark are ranked as ''High,'' meaning the accumulated catches from 1950–2010 make up 5 percent or more of the total catches of sharks recorded (Herrera and Pierre 2011). In fact, a recent study estimated that the oceanic whitetip shark comprises 11 percent of the total estimated shark catch in the Indian Ocean (Murua *et al.,* 2013a). It is also ranked as the 5th most vulnerable shark species caught in longline fisheries in the region (out of 16 species assessed) and the most vulnerable shark species caught in purse seine gear due to its high susceptibility (Murua *et al.,* 2012; IOTC 2015a). Oceanic whitetip sharks also exhibit relatively higher at-vessel mortality rates in longlines in this region compared to other regions (*i.e.,* 58 percent; IOTC 2015a) and likely have high mortality rates in purse seine and gillnet fisheries as well.

The main fleets catching oceanic whitetip in the Indian Ocean in recent years (2011–2014) include: Indonesia, Sri Lanka, I.R. Iran, EU (Spain), China, Madagascar, and Seychelles. The reporting of catches of oceanic whitetip sharks shows an unusual trend in 2013 and 2014, with 5,000+ mt reported to the IOTC. These trends are dominated by the Sri Lankan combination longline-gillnet fisheries, and an addition of proportionately very large catches by India (IOTC 2015b). Prior to the unusual trend in 2013 and 2014, the trend in oceanic whitetip catch shows a substantial increase throughout the 1990s, which likely corresponds with the rise in the shark fin trade (Clarke *et al.,* 2007), a peak at 3,050 mt in 1999, followed by a sharp and continued decline in the 2000s. Although the IOTC database is constrained by a number of limitations, information from some fleets catching oceanic whitetip shark indicate declines in catches as well. For example, from 1996–2004, landings of oceanic whitetip in Sri Lanka peaked at approximately 3,000 mt in 1999 and show a declining trend thereafter (Hasarangi *et al.,* 2012) to less than 300 mt in 2014. It is only in the last two years (2013 and 2014) that annual shark production has seen a significant decline in Sri Lanka due to regulatory measures (Jayathilaka and Maldeniya 2015). Most recently, Sri Lanka reported only 88 mt of oceanic whitetip shark catches to IOTC in 2015. Thus, the decline in oceanic whitetip catches in Sri Lanka occurred prior to the implementation of any regulatory measures, and may therefore be indicative of a population decline in Sri Lankan waters as a result of overutilization. Similarly, the substantial decline of oceanic whitetip sharks in the Maldives, from comprising 29 percent of the longline shark catch in the 1980s to only 3.5 percent of landings from 2000–2004 (refer back to the *Demographic Assessment—Abundance* section of this proposed rule), is likely the result of overutilization of the species. In fact, Anderson *et al.* (2011) determined that the shark stocks that supported the shark fishery were sequentially overfished, with the decline in pelagic shark catches the result of high (and likely unsustainable) levels of fishing by overseas fisheries.

The IOTC's Working Group on Ecosystems and Bycatch stated that at current catch levels (*i.e.,* average of 347 mt prior to 2013), the Indian Ocean stock of oceanic whitetip was at considerable risk. Given the previous discussion regarding likely abundance declines in this region, combined with the high level of fishing pressure on oceanic whitetip sharks in the Indian Ocean and the species' low-moderate productivity, it is therefore likely that the substantially high catches of oceanic whitetip sharks in the Indian Ocean (5,000+ mt estimated for 2013 and 2014) are in excess of what is sustainable and are likely contributing to overutilization of the species in the Indian Ocean.

Finally, the ERA team determined that demand from the international shark fin trade is the main economic force driving the retention and subsequent finning of oceanic whitetip sharks taken as bycatch in commercial fisheries worldwide, as they are considered a preferred species for their fins, command high prices in the international market (U.S. $45–85/kg; E-CoP16Prop.42 (2013)) and make up part of the ''first choice'' category in the China, Hong Kong Special Administrative Region (SAR) fin market (Vannuccini 1999). From 2000 to 2011, China, Hong Kong SAR maintained its position as the world's largest trader of shark fins, controlling the majority of global trade. In order to determine the species composition of the shark fin trade, Clarke *et al.,* (2006a) analyzed 1999–2001 Hong Kong trade auction data in conjunction with species-specific fin weights and genetic information to estimate the annual number of globally traded shark fins. Using this approach, the authors discovered that oceanic whitetip sharks are sold under their own category ''*Liu Qiu*'' and represent approximately 1.8 percent of the Hong Kong shark fin

market (Clarke *et al.,* 2006a). This level of oceanic whitetip shark fins in the trade translates to an estimated median of 700,000 oceanic whitetip sharks (range: 200,000–1,200,000 individuals), with an equivalent median biomass of around 21,000 mt (range 9,000–48,000 mt), traded annually (Clarke *et al.,* 2006b). The lack of estimates of the global population makes it difficult to put these trade-based estimates into perspective. However, given the minimum estimate of ~9,000 mt traded annually is in excess of the total biomass estimated for oceanic whitetip for the entire Western and Central Pacific Ocean in 2010 (*i.e.,* 7,295 mt), the effect of the removals (for the shark fin trade) on the ability of the overall population to sustain this level of exploitation is likely substantial.

In more recent years, genetic testing conducted in various fish markets provides additional confirmation of the ongoing utilization of oceanic whitetip shark in the shark fin trade. For example, a genetic sampling study conducted on shark fins collected from several fish markets throughout Indonesia determined that oceanic whitetip shark fins were present and comprised approximately 1.72 percent of the fins tested (Sembiring *et al.,* 2015). In a genetic barcoding study of shark fins from markets in Taiwan, the oceanic whitetip was 1 of 20 species identified and comprised 0.38 percent of average landings from 2001–2010 (Liu *et al.,* 2013). In another genetic barcoding study of fins at the Deira fish market in Dubai, United Arab Emirates (with sharks originating from Oman), oceanic whitetip shark comprised 0.45 percent of fins tested (Jabado *et al.,* 2015). Although it is uncertain whether these studies are representative of the entire market within each respective country, results of these genetic tests confirm the continued presence of oceanic whitetip shark fins in various markets throughout its range.

Recent studies indicate that due to a waning interest in fins as well as increased regulations to curb shark finning, the shark fin market is declining. In fact, the trade in shark fins through China, Hong Kong SAR, which has served as an indicator of the global trade for many years, fell by 22 percent in 2012. Additionally, current indications are that the shark fin trade through Hong Kong SAR and China will continue to contract (Dent and Clarke 2015). The pattern of trade decline closely matches the pattern in chondrichthyan capture production and thus suggests a strong link between the quantity harvested and the quantity traded. However, a government-led backlash against conspicuous consumption in China, combined with global conservation momentum, appears to have had some impact on traded volumes as well (Eriksson and Clarke 2015). Despite the potential improvements in the trade, it is clear that the shark fin trade has asserted and continues to assert significant pressure on oceanic whitetip sharks. Given that oceanic whitetip fins are among the most prized in the international shark fin trade and obtain a high value per kg, combined with recent evidence of oceanic whitetip fins in several prominent markets, the incentive to take oceanic whitetip sharks for their fins remains high and is an ongoing threat contributing to the overutilization of the species. This is further evidenced by recent incidents of illegal trafficking of oceanic whitetip fins, which indicate that oceanic whitetip sharks are still sought after for their fins and continue to experience pressure from demands of the fin trade (see *Inadequacy of Existing Regulatory Mechanisms* section below for more details). In addition, a surge in the trade of shark meat has occurred in recent years. This could be the result of a number of factors, but taking the shark fin and shark meat aggregate trends together indicate that shark fin supplies are limited by the existing levels of chondrichthyan capture production, but shark meat is underutilized by international markets (Dent and Clarke 2015). This suggests that historically underutilized chondrichthyan species will be increasingly utilized for their meat. The ERA team considered whether the recent shift in demand away from shark fins to shark meat would have any considerable impact on the oceanic whitetip shark. Although there are markets for low-value shark meat such as oceanic whitetip, the retention bans for the species in all relevant RFMOs will likely dampen this threat. Thus, the ERA team did not think this increase in demand for shark meat would create a significant new threat to the species.

Overall, based on the best available information, the ERA team concluded, and we agree, that overutilization is the single most important threat contributing to the extinction risk of the oceanic whitetip shark. Due to the paucity of available data from some regions, the ERA team acknowledged that there are some uncertainties in assessing the contribution of the threat of overutilization to the extinction risk of the oceanic whitetip shark throughout its range. As results from the Cortés *et al.* (2012) and Murua *et al.* (2012) Ecological Risk Assessments demonstrated, the threat of overutilization of oceanic whitetip sharks may be exacerbated by the species' low-moderate productivity combined with the species' tendency to remain in the surface mixed layer of the water column (*i.e.,* 0–152 m) and within warm, tropical waters where the majority of fishing effort is often most concentrated. The severity of the threat of overutilization is dependent upon other risks and threats to the species, such as its abundance (as a demographic risk) as well as its level of protection from fishing mortality throughout its range. Given the above analysis and best available information, as well as evidence that the species' current trends in abundance place its future persistence in question due to overutilization, we find that overutilization for commercial purposes is a threat that places the species on a trajectory towards being in danger of extinction in the foreseeable future throughout all or a significant portion of its range.

Inadequacy of Existing Regulatory Mechanisms

The ERA team evaluated existing regulatory mechanisms to determine whether they may be inadequate to address threats to the oceanic whitetip shark. Existing regulatory mechanisms assessed include federal, state, and international regulations for commercial fisheries, as well as the international trade in shark products. Below is a description and evaluation of current and relevant domestic and international management measures that may affect the oceanic whitetip shark. More information on these management measures can be found in the status review report (Young *et al.,* 2016) and other recent status reviews of other shark species (Miller *et al.,* 2013; 2014). The following section will first discuss U.S. domestic regulatory measures applicable to the oceanic whitetip shark, followed by international regulations that may affect sharks in general, as well as the oceanic whitetip shark in particular.

U.S. Domestic Regulatory Mechanisms

In the U.S. Pacific, highly migratory species (HMS) fishery management is the responsibility of adjacent states and three regional management councils that were established by the Magnuson-Stevens Fishery Conservation and Management Act: The Pacific Fishery Management Council (PFMC), the North Pacific Fishery Management Council, and the Western Pacific Fishery Management Council (WPFMC). The PFMC manages highly migratory species

off the coasts of Washington, Oregon, and California; however, the oceanic whitetip shark is not one of the species they actively manage, as its distribution favors more tropical waters. The PFMC is, however, actively engaged in international fishery management organizations that manage fish stocks that migrate through the PFMC's area of jurisdiction. In 2011, NMFS published a final rule (76 FR 68332) issuing regulations to implement decisions of the IATTC, including the Resolution Prohibiting the Retention of Oceanic Whitetip Sharks (C–11–10), which is described in more detail below in the International Regulatory Mechanisms section of this proposed rule. According to the final rule mentioned previously, U.S. fisheries that target highly migratory species rarely retain, transship, land, or sell this species in the IATTC Convention Area.

The WPFMC has jurisdiction over the EEZs of Hawaii, Territories of American Samoa and Guam, Commonwealth of the Northern Mariana Islands, and the Pacific Remote Island Areas, as well as the domestic fisheries that occur on the adjacent high seas. The WPFMC developed the Pelagics Fishery Ecosystem Plan (FEP; formerly the Fishery Management Plan for the Pelagic Fisheries of the Western Pacific Region) in 1986 and NMFS, on behalf of the U.S. Secretary of Commerce, approved the Plan in 1987. Under the FEP, the oceanic whitetip shark is designated as a Pelagic Management Unit Species and is subject to regulations. These regulations are intended to minimize impacts to targeted stocks as well as protected species. Fishery data are also analyzed in annual reports and used to amend the FEP as necessary. In Hawaii and American Samoa, oceanic whitetip sharks are predominantly caught in longline fisheries that operate under extensive regulatory measures, including gear, permit, logbook, vessel monitoring system, and protected species workshop requirements. In 2015, NMFS published a final rule to implement decisions of the WCPFC to prohibit the retention of oceanic whitetip sharks in fisheries operating within the WCPFC's area of competence (or Convention Area), which comprises the majority of the Western and Central Pacific Ocean. The regulations were published in the **Federal Register** on February 19, 2015 (80 FR 8807) and include prohibitions on the retention of the oceanic whitetip shark, as well as requirements to release any oceanic whitetip caught. These regulations are applicable to all U.S. fishing vessels used for commercial fishing for HMS in the Convention Area (PIRO 2015). As noted previously in the *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes* section of this proposed rule, oceanic whitetip sharks are still caught as bycatch in this fishery, but the majority of individuals are now released alive. Though post-release survival rates are unknown, it is likely these regulations are helping to reduce overall mortality of the species to some degree.

In the Northwest Atlantic, the U.S. Atlantic HMS Management Division within NMFS develops regulations for Atlantic HMS fisheries, and primarily coordinates the management of Atlantic HMS fisheries in Federal waters (domestic) and the high seas (international), while individual states establish regulations for HMS in state waters. The NMFS Atlantic HMS Management Division currently manages 42 species of sharks (excluding spiny dogfish) under the Consolidated Atlantic HMS FMP (NMFS 2006). The management of these sharks is divided into five species groups: Large coastal sharks, small coastal sharks, pelagic sharks, smoothhound sharks, and prohibited sharks. Oceanic whitetip sharks are managed under the pelagic sharks group. One way that the HMS Management Division controls and monitors commercial harvest is by requiring U.S. commercial Atlantic HMS fishermen who fish for or sell sharks to have a Federal Atlantic Directed or Incidental shark limited access permit. These permits are administered under a limited access program, and NMFS is no longer issuing new shark permits. As of October 2015, 224 U.S. fishermen are permitted to target sharks managed by the HMS Management Division in the Atlantic Ocean and Gulf of Mexico, and an additional 275 fishermen are permitted to land sharks incidentally (NMFS 2015). Under a directed shark permit, there is no directed numeric retention limit for pelagic sharks, subject to quota limitations. An incidental permit allows fishers to keep up to a total of 16 pelagic or small coastal sharks (all species combined) per vessel per trip. Current authorized gear types for oceanic whitetip sharks include: Bottom longline, gillnet, rod and reel, handline, or bandit gear. There are no restrictions on the types of hooks that may be used to catch oceanic whitetip sharks, and there is no commercial minimum size limit. The annual quota for pelagic sharks (other than blue sharks or porbeagle sharks) is currently 488 mt dressed weight. NMFS monitors the different shark quota complexes annually and will close the fishing season for each fishery after 80 percent of the respective quota has been landed or is projected to be landed. Atlantic sharks and shark fins from federally permitted vessels may be sold only to federally permitted dealers. Logbook reporting is required for selected fishers with a federal commercial shark permit. In addition, fishers may be selected to carry an observer onboard, and some fishers are subject to vessel and electronic monitoring systems depending on the gear used and where they fish. In terms of processing sharks landed, the head may be removed and the shark may be gutted and bled, but the shark cannot be filleted or cut into pieces while onboard the vessel and all fins, including the tail, must remain naturally attached to the carcass through offloading.

In 2011, NMFS published final regulations to implement decisions of ICCAT (*i.e.,* Recommendation 10–07 for the conservation of oceanic whitetip sharks), which prohibits retention of oceanic whitetip sharks in the PLL fishery and on recreational (HMS Angling and Charter headboat permit holders) vessels that possess tuna, swordfish, or billfish (76 FR 53652). The implementation of regulations to comply with ICCAT Recommendation 10–07 for the conservation of oceanic whitetip sharks is likely the most influential regulatory mechanism in terms of reducing mortality of oceanic whitetip sharks in the U.S. Atlantic. It should be noted that oceanic whitetip sharks are still occasionally caught as bycatch and landed in this region despite its prohibited status in ICCAT associated fisheries (NMFS 2012; 2014), as retention is permitted in other authorized gears other than pelagic longlines (*e.g.,* gillnets, bottom longlines); however, these numbers have decreased. Prior to the implementation of the retention prohibition on oceanic whitetip, an analysis of the 2005–2009 HMS logbook data indicated that, on average, a total of 50 oceanic whitetip sharks were kept per year, with an additional 147 oceanic whitetip sharks caught per year and subsequently discarded (133 released alive and 14 discarded dead). Thus, without the prohibition, approximately 197 oceanic whitetip sharks could be caught and 64 oceanic whitetip sharks (32 percent) could die from being discarded dead or retained each year (NMFS 2011). Since the prohibition was implemented in 2011, estimated commercial landings of oceanic whitetip declined from only 1.1 mt in

2011 to only 0.03 mt (dressed weight) in 2013 (NMFS 2012; 2014). In fact, from 2013–2014, NMFS reported a total of 81 oceanic whitetip interactions, with 83 percent (67 individuals) released alive and 17 percent (14 individuals) discarded dead (NMFS 2014; 2015). While the retention ban for oceanic whitetip does not prevent incidental catch or subsequent at-vessel and post-release mortality, it likely provides minor ecological benefits to oceanic whitetip sharks via a reduction in overall fishing mortality in the Atlantic PLL fishery (NMFS 2011).

In addition to general commercial fishing regulations for management of highly migratory species, the United States has implemented a couple of significant laws for the conservation and management of sharks: the Shark Finning Prohibition Act and the Shark Conservation Act. The Shark Finning Prohibition Act was enacted in December 2000 and implemented by final rule on February 11, 2002 (67 FR 6194), and prohibited any person under U.S. jurisdiction from: (i) Engaging in the finning of sharks; (ii) possessing shark fins aboard a fishing vessel without the corresponding carcass; and (iii) landing shark fins without the corresponding carcass. It also implemented a five percent fin to carcass ratio, creating a rebuttable presumption that fins landed from a fishing vessel or found on board a fishing vessel were taken, held, or landed in violation of the Act if the total weight of fins landed or found on board the vessel exceeded five percent of the total weight of carcasses landed or found on board the vessel. The Shark Conservation Act was signed into law on January 4, 2011, and implemented by final rule on June 29, 2016 (81 FR 42285), and, with a limited exception for smooth dogfish (*Mustelus canis*), prohibits any person from removing shark fins at sea, or possessing, transferring, or landing shark fins unless they are naturally attached to the corresponding carcass.

As expected, U.S. exports of dried shark fins dropped significantly after the passage of the Shark Finning Prohibition Act. In 2011, with the passage of the U.S. Shark Conservation Act, exports of dried shark fins dropped again, by 58 percent, to 15 mt, the second lowest export amount since 2001. This is in contrast to the price per kg of shark fin, which was at its highest price of ~$100/kg, and suggests that existing regulations have likely been effective at discouraging fishing for sharks solely for the purpose of the fin trade. Thus, although the international shark fin trade is likely a driving force behind the overutilization of many global shark species, including the oceanic whitetip, the U.S. participation in this trade appears to be diminishing. In 2012, the value of fins also decreased, suggesting that the worldwide demand for fins may be on a decline. For example, a decrease in U.S. fin prices coincided with the implementation of fin bans in various U.S. states in 2012 and 2013, and U.S. shark fin exports have continued on a declining trend (Miller *et al.,* 2013). However, it should be noted that the continued decline is also likely a result of the waning global demand for shark fins altogether. Similarly, many U.S. states, especially on the West Coast, and U.S. Flag Pacific Island Territories have also passed fin bans and trade regulations, subsequently decreasing the United States' contribution to the fin trade. For example, after the State of Hawaii prohibited finning in its waters and required shark fins to be landed with their corresponding carcasses in the state in 2000, the shark fin exports from the United States into Hong Kong declined significantly in 2001 (54 percent decrease, from 374 to 171 t) as Hawaii could therefore no longer be used as a fin trading center for the international fisheries operating and finning in the Central Pacific (Clarke *et al.,* 2007). With regard to oceanic whitetip sharks, the finning regulations introduced in 2001 in the U.S. Hawaii-based longline fishery have acted to reduce mortality on oceanic whitetip and other large shark species (Walsh *et al.,* 2009). Prior to the ban, from 1995–2000, the fins were taken from a large proportion of captured oceanic whitetip with the remaining carcass being discarded (72.3 percent in deep sets and 52.7 percent from shallow sets), as was the case with other large sharks (Walsh *et al.,* 2009). From 2004–2006, following the implementation of the new regulations, almost all sharks were released, although some were dead on release. Overall, minimum mortality estimates declined substantially as a result of the finning regulations, from 81.9 percent to 25.6 percent in deep sets and from 61.3 percent to 9.1 percent in shallow sets (Walsh *et al.,* 2009). However, aside from this example, there is little information on the level of compliance with the various fisheries management measures for sharks, including oceanic whitetip, with compliance likely variable among other countries and regions.

Overall, regulations to control for overutilization of oceanic whitetip sharks in U.S. waters, including fisheries management plans with quotas and trip limits, species-specific retention prohibitions in PLL gear, and finning regulations are not in and of themselves inadequate such that they are contributing to the global extinction risk of the species. In fact, it is likely that the stable CPUE trend observed for the oceanic whitetip shark in the Northwest Atlantic is largely a result of the implementation of management measures for pelagic sharks under the U.S. HMS FMP. However, because oceanic whitetip sharks are highly migratory and frequently move beyond U.S. jurisdiction, these regulatory mechanisms are limited on the global stage in that they only provide protections to oceanic whitetip sharks while in U.S. waters. While this does not make them inadequate in terms of their purpose of protecting oceanic whitetip sharks while in U.S. waters, finning and retention bans are likely inadequate in other parts of the world to prevent further population declines of oceanic whitetip as a result of overutilization (as discussed in detail below). Therefore, given the significant abundance declines observed for the species as a result of overutilization, and the fact that regulatory mechanisms are largely inadequate elsewhere across the species' range, it is unlikely that U.S. regulatory mechanisms alone are enough to mitigate for threats contributing to the species' global extinction risk.

International Regulatory Mechanisms

Regarding international regulatory mechanisms, the ERA team expressed significant concern regarding existing regulations to control bycatch-related mortality, finning of oceanic whitetip sharks for the international shark fin trade, and illegal fishing and trafficking activities. The ERA team recognized that the number of international regulatory mechanisms for sharks in general, and the oceanic whitetip shark in particular, have been on the rise in recent years. For example, the oceanic whitetip shark was listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) in 2014. CITES is an international agreement between governments, with the aim of ensuring that international trade in specimens of wild animals and plants does not threaten their survival. International trade in specimens of Appendix-II species may be authorized by the granting of an export permit or re-export certificate. No import permit is necessary for these species under CITES (although a permit is needed in some countries that have taken stricter measures than CITES requires).

However, recent data from Hong Kong's Agriculture Fisheries Conservation Department (AFCD) suggests that these measures are not adequately implemented or enforced by all CITES Parties with respect to the oceanic whitetip shark. Specifically, since the oceanic whitetip shark was listed under CITES Appendix II in 2014, approximately 1,263 kg (2,784 lbs) of oceanic whitetip fins have been confiscated upon entry into Hong Kong because the country of origin did not include the required CITES permits and paperwork. Since 2014, confiscated oceanic whitetip fin shipments included 940.46 kg from Colombia, 10.96 kg from the Seychelles, and 272.49 kg from the United Arab Emirates (AFCD, Unpublished data).

In addition to trade regulations, finning bans have been implemented by a number of countries, including the European Union (EU), as well as by nine RFMOs. These finning bans range from requiring fins remain attached to the body, to allowing fishers to remove shark fins provided that the weight of the fins does not exceed 5 percent of the total weight of shark carcasses landed or found onboard. In fact, all of the relevant RFMOS prohibit fins onboard that weigh more than 5 percent of the weight of sharks to curb the practice of shark finning (*i.e.,* the fins-to-carcass ratio). Although the fins-to-carcass weight ratios have the potential to reduce the practice of finning, these regulations do not prohibit the fishing of sharks and a number of issues associated with reliance on the 5 percent fins-to-carcass weight ratio requirement have been identified, including: the percentage of fins-to-carcass weight varies widely among species, fin types used in calculation, the type of carcass weight used (whole or dressed) and fin cutting techniques; under the fins-to-carcass weight ratio measure, sharks that are not landed with fins attached to the body make it difficult to match fins to a carcass (Lack and Sant 2009). There are also issues with using the ratios for dried vs. fresh fins, which can change the ratio substantially. Further, despite their existence, laws and regulations are rapidly changing and are not always effectively enforced by countries and RFMOs (Biery and Pauly 2012).

Numerous RFMOs and countries have also implemented various regulations regarding shark fishing in general, which are described in detail in the Status Review Report (Young *et al.,* 2016). A number of countries have enacted complete shark fishing bans (*i.e.,* bans on retention and possession of sharks and shark products), with the Bahamas, Marshall Islands, Honduras, Sabah (Malaysia), and Tokelau (an island territory of New Zealand) adding to the list in 2011, the Cook Islands in 2012, and the Federated States of Micronesia in 2015. These ''shark sanctuaries'' (*i.e.,* locations where harvesting sharks is prohibited) can also be found in the Eastern Tropical Pacific Seascape (which encompasses around two million km^2 and includes the Galapagos, Cocos, and Malpelo Islands), in waters off the Maldives, Mauritania, Palau, French Polynesia, New Caledonia and Raja Ampat, Indonesia. However, it should be noted that sharks can still be caught as bycatch in these areas and enforcement is likely difficult; thus, their efficacy for reducing bycatch-related mortality of sharks is uncertain.

In addition to international regulatory mechanisms for the conservation of sharks in general via shark finning and fishing bans, a number of species-specific measures have been implemented for the conservation of oceanic whitetip sharks in particular. Specifically, the oceanic whitetip is the only shark species that has a no-retention measure in every tuna RFMO, which underscores the species' conservation status. However, the ERA team noted that international regulations specific to oceanic whitetip sharks are likely inadequate to mitigate threats that will result in further population declines throughout the species' global range. Notably, these measures likely have varying rates of implementation and enforcement and they do not prevent oceanic whitetip sharks from being caught in the first place, nor the subsequent at-vessel and post-release mortality that may result from being captured. Additionally, evidence suggests illegal trafficking and exportation activities of oceanic whitetip sharks are ongoing.

In 2011, the IATTC adopted Resolution C–11–10 for the conservation of oceanic whitetip sharks, which provides that IATTC Members and Cooperating non-Members shall prohibit retaining onboard, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks in the IATTC Convention Area. However, this measure is not likely adequate to prevent capture and a substantial amount of mortality in the main fishery that catches oceanic whitetip sharks in this region (*i.e.,* the tropical tuna purse seine fishery). Though published mortality rates of the oceanic whitetip shark in purse seine fisheries are not available, it is likely the species experiences high mortality rates similar to congener *C. falciformis* during and after interactions with purse seine fisheries (*i.e.,* ~85 percent in Western and Central Pacific and Indian Ocean tropical purse seine fisheries; Poisson *et al.,* (2014); Hutchinson *et al.,* (2015)). Given that oceanic whitetip sharks are captured in a net where they are unable to swim, and they are also subjected to the weight of whatever tonnage is on top of them, the sharks likely experience high levels of stress that can lead to mortality even if they are released alive. In addition, rough handling techniques utilized after sharks are brought onboard can also increase mortality. Thus, the ERA team concluded, and we agree, that the retention prohibition enacted for oceanic whitetip sharks in the eastern Pacific, particularly for the tropical tuna purse seine fishery, is not likely effective in reducing the threat of overutilization in this region.

In the Western and Central Pacific, the WCPFC also has regulatory measures for the conservation of sharks in general, as well as specific measures for the conservation of oceanic whitetip sharks. Likely the most influential management measure for the conservation of oceanic whitetip sharks in the Western and Central Pacific is Conservation Management Measure (CMM) 2011–04, which prohibits WCPFC vessels from retaining onboard, transshipping, storing on a fishing vessel, or landing any oceanic whitetip shark, in whole or in part, in the fisheries covered by the Convention. However, observations from the longline fishery have shown that CMM 2011–04 for the retention prohibition of oceanic whitetip is not being strictly followed (or not yet fully implemented), with non-negligible proportions of oceanic whitetips still being retained or finned. In fact, both in number and proportionally more oceanic whitetip sharks were retained in 2013 (the first year of the CMM) than 2012 in the longline fishery (Rice *et al.,* 2015). In addition, observations from the Western and Central tropical tuna purse seine fishery suggest similar issues discussed previously for the eastern Pacific purse seine fishery: Even if live release is strictly practiced in purse seine fisheries, the number of sharks surviving is expected to be low.

In addition to finning controls and species-specific retention bans, the WCPFC has also adopted some conservation measures related to fisheries gear to reduce bycatch of oceanic whitetip sharks in the first place. For example, CMM 2014–05, which became effective in July 2015, requires each national fleet to either ban wire leaders or ban shark lines, both of which have potential to reduce shark

bycatch. However, while it is predicted that oceanic whitetip shark mortality may be reduced by up to 40 percent if both measures are used, this CMM allows flag-states to choose which fishing technique they exclude. Using Monte Carlo simulations, Harley and Pilling (2016) determined the following: if flag-states choose to exclude the technique least used by their vessels, the median predicted reduction in fishing-related mortality is only 10 percent for the oceanic whitetip shark. If flag-states exclude the technique most used by their vessels, this would reduce the fishing mortality rate by 30 percent. This compares to a reduction of 40 percent if choice was removed and both techniques are prohibited. Therefore, given the high levels of fishing mortality experienced by this species, it is unlikely that the options under CMM (2014–05) of either banning shark lines or wire traces will result in sufficient reductions in fishing mortality (Harley *et al.,* 2015). Thus, based on the foregoing information, the ERA team concluded, and we agree, that despite the increasing species-specific management measures in this region, given the severely depleted state of the oceanic whitetip population and the significant levels of fishing mortality the species experiences in this region, less-than-full implementation will erode the benefits of any mitigation measures.

In the Atlantic Ocean, ICCAT is the main regulatory body for the conservation and management of tuna and tuna-like species. In 2010, ICCAT developed Recommendation 10–07, which specifically prohibits the retention, transshipping, landing, storing, selling, or offering for sale any part or whole carcass of oceanic whitetip sharks in any fishery; however, like other previously described retention bans, the retention ban implemented by ICCAT does not necessarily prevent all fisheries-associated mortality. Although oceanic whitetip sharks have a relatively higher at-vessel survivorship rate than other pelagic sharks in the Atlantic, some will still likely die as a result of being caught. As previously discussed in the *Overutilization for Commercial, Recreational, Scientific, or Educational Purposes* section of this proposed rule, Brazil is one of the top 26 shark-catching countries in the world and the largest oceanic whitetip catching country in the Atlantic Ocean, comprising 89 percent of the total oceanic whitetip catch reported to ICCAT from 1992–2014. Thus, the following text focuses on existing regulatory mechanisms and their efficacy for reducing fishing pressure on oceanic whitetip sharks in Brazil. Since the implementation of ICCAT Recommendation 10–07, Brazil reported 12 mt of oceanic whitetip from 2013–2014, which indicates the species is still being caught and continues to experience fisheries-related mortality in this portion of its range. In addition to ICCAT regulations, sharks in Brazil must be landed with corresponding fins and a 5 percent fin to carcass weight ratio is required. In addition, all carcasses and fins must be unloaded and weighed and the weights reported to authorities. Pelagic gillnets and trawls are prohibited in waters less than 3 nm (5.6 km) from the coast; however, given that the oceanic whitetip is a pelagic species, a gillnet ban within 3 nm of the coast is not likely going to be beneficial to the species. Further, it is generally recognized that these regulations are poorly enforced (Chiaramonte and Vooren 2007). In December 2014, the Brazilian Government's Chico Mendes Institute for Biodiversity Conservation approved the National Plan of Action for the Conservation of Elasmobranchs of Brazil (No 125). However, this plan will not be fully implemented until 2019, and it focuses on a list of 12 priority species that does not include the oceanic whitetip shark. As noted previously, the oceanic whitetip shark was designated as a ''species threatened by overexploitation'' in 2004 by Brazil's Ministry of Environment, and listed under Annex II of Brazil's Normative Ruling No. 5 of May 21, 2004. In 2014, Brazil finalized its national assessment regarding the extinction risk of Brazilian fauna, and listed the oceanic whitetip shark as ''Vulnerable'' under Brazil's National Official List of Endangered Species of Fauna—Fish and Aquatic Invertebrate (ICMBio 2014). Species listed as ''Vulnerable'' enjoy full protection, including, among other measures, the prohibition of capture, transport, storage, custody, handling, processing and marketing. The capture, transport, storage, and handling of specimens of the species shall only be allowed for research purposes or for the conservation of the species, with the permission of the Instituto Chico Mendes. However, whether these regulations are adequately implemented and enforced is unclear. In fact, there is strong opposition from the fishing industry and some ordinances guaranteeing protection to endangered species in the country have recently been canceled (Di Dario *et al.,* 2014). Additionally, systematic data collection from fleets fishing over Brazilian jurisdiction ended in 2012, and onboard observer programs have been cancelled, which renders any further monitoring of South Atlantic shark populations difficult or impossible (Barreto *et al.,* 2015). Given the foregoing information, it appears that existing regulatory mechanisms in Brazil may not be adequate to effectively manage the significant threat of fishing pressure and associated mortality on oceanic whitetip sharks in this region.

The ERA team also identified several issues with regulations in the Indian Ocean. The IOTC, the main regulatory body for managing tuna and tuna-like species, has management measures in place for sharks in general, and also specifically for the oceanic whitetip shark. In 2013, the IOTC passed Resolution 13–06 that prohibits the retention, transshipment, landing, or storing of any part or whole carcass of oceanic whitetip sharks. However, unlike similar regulations implemented by other RFMOs, the IOTC retention prohibition of oceanic whitetip shark exempts ''artisanal fisheries operating exclusively in their respective EEZ for the purpose of local consumption.'' However, the definition of artisanal vessels in the IOTC encompasses a wide array of boats with vastly different characteristics. They range from the pirogue that fishes close to shore for subsistence with no motor, no deck and no holding facilities, to a longliner, gillnetter or purse seiner of less than 24 m with an inboard motor, deck, communications, fish holding facilities, and in some cases chilling or freezing capabilities. This latter vessel could potentially conduct fishing operations offshore, including outside its EEZ (Moreno and Herrera 2013). For example, in 2014 and 2015 the Islamic Republic of Iran and Sri Lanka reported 239 mt of oceanic whitetip sharks caught by gillnets that fall under the definition of ''artisanal fisheries.'' Additionally, while some no-retention measures ban the ''selling or offering for sale'' of any products from the specified shark species, the IOTC oceanic whitetip shark measure does not (Clarke 2013). Further, this measure is not binding on India, which is one of the main oceanic whitetip shark catching countries identified by the IOTC in the Indian Ocean. Finally, IOTC Resolution 13–06 was passed as an interim pilot measure; therefore, it is highly uncertain as to whether this measure will be ongoing into the foreseeable future. As a result, it appears that the retention ban of oceanic whitetip in the Indian Ocean is limited in scope relative to other RFMO no-retention measures, and only

partially protective depending on whether the measure is adequately implemented and enforced. For example, in Indonesia, which is the largest shark fishing nation in the world, oceanic whitetip sharks are protected in order to comply with IOTC Resolution 13–06. However, evidence suggests that this Resolution may not be strictly adhered to. For instance, in a genetic barcoding study of shark fin samples throughout traditional fish markets in Indonesia from mid-2012 to mid-2014, oceanic whitetip shark was identified as present (Sembiring *et al.,* 2015) despite being prohibited in 2013. In addition, authorities confiscated around 3,000 oceanic whitetip shark fins from sharks caught in waters near Java Island as recent as October 2015 (South China Morning Post 2015). Thus, while it generally appears that the IOTC has increased its number of management measures for sharks, including the oceanic whitetip, these regulations are likely inadequate to prevent further population declines of the oceanic whitetip shark in this region as a result of overutilization.

It is clear that many countries and RFMOs have implemented shark finning bans or have prohibited the sale or trade of shark fins or products, and have even prohibited the retention of oceanic whitetip sharks in their respective fisheries, with declining trends in finning and catches of oceanic whitetip sharks evident in some locations as a result of these regulations (*e.g.,* Fiji, Australia and the United States; see Young *et al.,* 2016 for more details). It also evident that the international trade in shark fins may be gradually slowing. In fact, as described previously, the trade in shark fins through China, Hong Kong SAR, which has served as an indicator of the global trade for many years, fell by 22 percent in 2012. Additionally, current indications are that the shark fin trade through Hong Kong SAR and China will continue to contract (Dent & Clarke 2015). However, although the overall situation regarding the shark fin trade appears to be improving due to current regulations (*e.g.,* increasing number of finning bans) and trends (*e.g.,* waning demand for shark fins), and it may not be as severe a threat to some species of sharks compared to others, evidence suggests that oceanic whitetip fins are considered to be preferred or ''first choice'' in the Hong Kong market (Vannuccini 1999; E-CoP16Prop.42 2013) and the high demand for oceanic whitetip fins is ongoing. This is evidenced by recent genetic studies that confirm the presence of oceanic whitetip shark fins in several markets throughout its range, as well as several recent incidents of illegal finning and trafficking of oceanic whitetip fins despite national and international regulations. For example, in February 2013, oceanic whitetip fins were found in a large seizure of fins from a Taiwanese vessel illegally fishing in the Marshall Islands. In 2014, illegal oceanic whitetip shark fins were discovered in a random sample inspection of three 40 kg sacks slated for export from Costa Rica to Hong Kong (Tico Times 2014). Additionally, and as previously noted, Indonesian authorities seized 3,000 shark fins belonging to oceanic whitetip sharks that were reportedly caught in waters around Java Island in October 2015. The fins, which were about to be flown to Hong Kong, were seized at the international airport that serves the capital Jakarta. This haul was worth an estimated U.S. $72,000 in Indonesia, but would reportedly fetch several times that amount in Hong Kong (South China Morning Post 2015). Therefore, it is clear that the oceanic whitetip shark is subject to illegal fishing and trafficking, particularly for its valuable fins. Given the recent downturn in the shark fin trade (Dent & Clarke, 2015; Eriksson & Clarke 2015), the threat of this IUU fishing for the sole purpose of shark fins may not be as significant into the future. However, based on the best available information on the species' declining population trends throughout its range, as well as current utilization levels, the present mortality rates associated with illegal fishing and its impacts on oceanic whitetip shark populations may be contributing to the overutilization of the species. Therefore, based on the foregoing information, the ERA team concluded that despite national and international regulations to protect the oceanic whitetip, illegal finning and exportation activities are ongoing. As such, and based on the best available information, existing regulatory mechanisms to control for overutilization by the shark fin trade are likely inadequate to significantly reduce this threat to the oceanic whitetip shark at this time.

Overall, and based on the above review of regulatory measures (in addition to the regulations described in Young *et al.,* 2016), the ERA team concluded, and we agree, that existing regulatory mechanisms to control for overutilization are largely inadequate to significantly reduce this global threat to the oceanic whitetip shark at this time. The ERA team acknowledged that in some locations, regulatory measures may be effective for reducing the threat of overutilization to some degree. For example, as noted in the U.S. Domestic Regulatory Mechanisms section, in the U.S. Northwest Atlantic and Pacific Island States and Territories oceanic whitetip sharks are managed under comprehensive management plans and regulations with trip limits, quotas, logbook and protected species requirements, and other various fishing restrictions. In the Northwest Atlantic, oceanic whitetip sharks are managed under the pelagic species complex of the Atlantic HMS FMP, with commercial quotas imposed that restrict the overall level of oceanic whitetip sharks taken in this part of its range. Pelagic longline gear is heavily managed and strictly monitored. The use of pelagic longline gear (targeting swordfish, tuna and/or shark) also requires specific permits, with all required permits administered under a limited access program. Presently, no new permits are being issued; thus, persons wishing to enter the fishery may only obtain these permits by transferring the permit from a permit holder who is leaving the fishery, and transferees are currently subject to vessel upgrading restrictions. These national regulations, as detailed in the 2006 Consolidated HMS FMP and described in this Status Review Report, combined with ICCAT's Recommendation 10–07 on the retention prohibition of oceanic whitetip shark, have likely led to the recent stabilization of the Northwest Atlantic population. In Hawaii, finning and no-retention regulations have resulted in a significant decline in the number of oceanic whitetip sharks finned and an increase in the number of sharks released alive. Thus, these U.S. conservation and management measures in and of themselves are not inadequate such that they contribute to the extinction risk of the oceanic whitetip shark by increasing demographic risks (*e.g.,* further abundance declines) or the threat of overutilization (*e.g.,* unsustainable catch rates) currently and in the foreseeable future. However, the oceanic whitetip shark is highly migratory and often moves beyond U.S. jurisdiction. For example, in just one tagging study conducted in the Northwest Atlantic, five tagged oceanic whitetip sharks made transboundary movements, spending time in waters managed by different countries (United States, Cuba, and several of the windward Caribbean islands) or the high seas that are managed by international bodies (Howey-Jordan et al. 2013). Additionally, the ERA team emphasized that regulatory mechanisms

to control for overutilization of the species are largely inadequate throughout the rest of the species' global range. Therefore, based on the best available information, and given the significant global abundance declines of the oceanic whitetip shark as a result of overutilization, the inadequacy of existing regulatory mechanisms is likely a threat contributing to the species' risk of extinction throughout its range.

Overall Risk Summary

Guided by the results and discussions from the demographic risk analysis and threats assessment, the ERA team members used their informed professional judgment to make an overall extinction risk determination for the oceanic whitetip shark now and in the foreseeable future. The ERA team concluded, and we agree, that the oceanic whitetip shark currently has a ''moderate'' risk of extinction globally. The ERA team was fairly confident in determining the overall level of extinction risk of the oceanic whitetip shark, placing more than half of their likelihood points in the ''moderate risk'' category. To express some uncertainty, particularly regarding the lack of robust abundance trends and catch data for populations in certain areas (*e.g.,* South Atlantic and Indian Ocean), as well as potential stabilizing trends observed in two areas (*e.g.,* Northwest Atlantic and Hawaii), the team placed some of their likelihood points in the ''low risk'' and ''high risk'' categories as well. Likelihood points attributed to the overall level of extinction risk categories were as follows: Low Risk (20/60), Moderate Risk (34/60), High Risk (6/60). The ERA team reiterated that the once abundant and ubiquitous oceanic whitetip shark has likely experienced significant historical population declines throughout its global range, with multiple data sources and analyses, including a stock assessment and trends in relative abundance, suggesting declines greater than 70–80 percent in most areas. The ERA team concluded that declining abundance trends of varying magnitudes are likely ongoing in all three ocean basins.

In terms of threats to the species, the ERA team noted that the most significant threat to the continued existence of the oceanic whitetip shark in the foreseeable future is ongoing and significantly high rates of fishing mortality driven by demands of the international trade in shark fins and meat, as well as impacts related to incidental bycatch and IUU fishing. The ERA team emphasized that the oceanic whitetip shark's vertical and horizontal distribution significantly increases its exposure to industrial fisheries, including pelagic longline and purse seine fisheries operating within the species' core tropical habitat throughout its global range. In addition to declines in oceanic whitetip catches throughout its range, there is also evidence of declining average size over time in some areas, which is particularly concerning given evidence that litter size is potentially correlated with maternal length. With such extensive declines in the species' global abundance and the ongoing threat of overutilization, the species' slow growth and relatively low fecundity may limit its ability for compensation. Related to this, the low genetic diversity of oceanic whitetip is also cause for concern and a viable risk over the foreseeable future for this species. This is particularly concerning since it is possible (though uncertain) that a reduction in genetic diversity following the large reduction in population size due to overutilization has not yet manifested in the species. Loss of genetic diversity can lead to reduced fitness and a limited ability to adapt to a rapidly changing environment, thus increasing the species' overall risk of extinction.

Finally, the species' extensive distribution, ranging across entire oceans and across multiple international boundaries complicates management of the species. The ERA team agreed that implementation and enforcement of management measures that could reduce the threat of overutilization to the species are likely highly variable and/or lacking altogether across the species' range. The ERA team acknowledged a significant increase in species-specific management measures to control for overutilization of oceanic whitetip shark across its range; however, the ERA team also noted that most of these regulations, particularly the retention prohibitions enacted by all relevant RFMOs throughout the range of the species, are too new to truly determine their efficacy in reducing mortality of oceanic whitetip shark. Despite this limitation, and with the exception of the Northwest Atlantic and Pacific Island States and Territories, the ERA team was not confident in the adequacy of these regulations to reduce the threat of overutilization and prevent further abundance declines in the foreseeable future. First, the ERA team discussed the fact that retention prohibitions do not prevent at-vessel and post-release mortality, which is likely high in some fisheries. In addition, the biggest concern to the ERA team with regard to these regulatory mechanisms going forward is the lack of full implementation and enforcement. The ERA team noted that proper implementation and enforcement of these regulations would likely result in a reduction in overall mortality of the species over time. However, the best available information suggests that this may not currently be the case. Given the species' depleted state throughout its range, the ERA team agreed that less than full implementation and enforcement of current regulations is likely undermining any conservation benefit to the species.

Based on all of the foregoing information, which represents the best scientific and commercial data available regarding current demographic risks and threats to the species, the ERA team concluded that the oceanic whitetip shark currently has a moderate risk of extinction throughout its range. We concluded that the species does not currently have a high risk of extinction because of the following: The species has a significantly broad distribution and does not seem to have been extirpated in any region, even in areas where there is heavy harvest bycatch and utilization of the species' high-value fins; there appears to be a potential for relative stability in population sizes on the order of 5–10 years at the post-decline depressed state, as evidenced by the potential stabilization of two populations (*e.g.,* NW Atlantic and Hawaii) at a diminished abundance, which suggests that this species is potentially capable of persisting at a low population size; and the overall reduction of the fin trade as well as increasing management regulations will likely reduce the threat of overutilization to some extent, and thus reduce the species' overall risk of extinction. However, given the species' significant historical and ongoing abundance declines of varying magnitudes in all three ocean basins, slow growth, low fecundity, and low genetic diversity, combined with ongoing threats of overutilization and largely inadequate regulatory mechanisms, the ERA team concluded that the oceanic whitetip shark currently has a moderate risk of extinction throughout its global range. In other words, due to significant and ongoing threats of overutilization and largely inadequate regulatory mechanisms, current trends in the species' abundance, productivity and genetic diversity place the species on a trajectory towards a high risk of extinction in the foreseeable future of ~30 years.

Conservation Efforts

Section 4(b)(1)(A) of the ESA requires the Secretary, when making a listing determination for a species, to take into account those efforts, if any, being made by any State or foreign nation to protect the species. In judging the efficacy of protective efforts, we rely on the Services' joint ''Policy for Evaluation of Conservation Efforts When Making Listing Decisions'' (''PECE;'' 68 FR 15100; March 28, 2003). The PECE is designed to guide determinations on whether any conservation efforts that have been recently adopted or implemented, but not yet proven to be successful, will result in recovering the species to the point at which listing is not warranted or contribute to forming a basis for listing a species as threatened rather than endangered. The purpose of the PECE is to ensure consistent and adequate evaluation of future or recently implemented conservation efforts identified in conservation agreements, conservation plans, management plans, and similar documents developed by Federal agencies, State and local governments, Tribal governments, businesses, organizations, and individuals when making listing decisions. The PECE provides direction for the consideration of such conservation efforts that have not yet been implemented, or have been implemented but have not yet demonstrated effectiveness. The policy is expected to facilitate the development by states and other entities of conservation efforts that sufficiently improve a species' status so as to make listing the species as threatened or endangered unnecessary. The PECE established two basic criteria: (1) The certainty that the conservation efforts will be implemented, and (2) the certainty that the efforts will be effective. Satisfaction of the criteria for implementation and effectiveness establishes a given protective effort as a candidate for consideration, but does not mean that an effort will ultimately change the risk assessment for the species. Overall, the PECE analysis ascertains whether the formalized conservation effort improves the status of the species at the time a listing determination is made.

The concern regarding the practice of finning and its effect on global shark populations has been growing both domestically and internationally. Notably, the push to stop shark finning and curb the trade of shark fins is evident overseas and even in Asian countries, where the demand for shark fin soup is highest. For example, in a recent report from WildAid, Whitcraft *et al.* (2014) reported the following regarding the declining demand for shark fins: An 82 percent decline in sales reported by shark fin vendors in Guangzhou, China and a decrease in prices (47 percent retail and 57 percent wholesale) over the past 2 years; 85 percent of Chinese consumers surveyed online said they gave up shark fin soup within the past 3 years, and two-thirds of these respondents cited awareness campaigns as a reason for ending their shark fin consumption; 43 percent of consumers responded that much of the shark fin in the market is fake; 24 airlines, 3 shipping lines, and 5 hotel groups have banned shark fins from their operations; there has been an 80 percent decline from 2007 levels in prices paid to fishermen in Tanjung Luar and Lombok in Indonesia and a decline of 19 percent since 2002–2003 in Central Maluku, Southeastern Maluku and East Nusa Tenggara; and of 20 Beijing restaurant representatives interviewed, 19 reported a significant decline in shark fin consumption. While there seems to be a growing trend to prohibit and discourage shark finning domestically and internationally, it is difficult to predict at this time whether the trend will be effective in reducing the threat of overutilization to the oceanic whitetip shark. Nonetheless, we conclude that these conservation measures are not likely to be effective in reducing current threats to oceanic whitetip shark to the point that listing would no longer be warranted.

There are also many other smaller national and international organizations with shark-focused goals that include advocating the conservation of sharks through education and campaign programs and conducting shark research to fill data gaps regarding the status of shark species. Some of these organizations include: The Pew Environment Group, Oceana, Ocean Conservancy, Shark Trust, Bite-Back, Shark Project, Pelagic Shark Research Foundation, Shark Research Institute, and Shark Savers. More information on the specifics of these programs and groups can be found on their Web sites. Important research on oceanic whitetip sharks is also being conducted in a joint partnership by Nova Southeastern University and the Guy Harvey Research Institute. To facilitate conservation and management efforts for oceanic whitetip sharks, the Guy Harvey Research Institute/Guy Harvey Ocean Foundation and their project partners are using integrative approaches to investigate the population connectivity of this species, including ongoing studies of the global stock structure of oceanic whitetip sharks by using genetic techniques, as well as migration patterns of this species in the western Atlantic with the aid of satellite tracking technologies. All of these conservation efforts and non-regulatory mechanisms are beneficial to the persistence of the oceanic whitetip shark. The implementation of many of these efforts, especially the shark research programs, will help to fill current data gaps in oceanic whitetip abundance, genetics, and movement patterns, which can ultimately help inform other conservation and management measures. However, it is too soon to tell whether the collective conservation efforts of both non-governmental and academic organizations will be effective in reducing threats to the species, particularly those related to overutilization of the oceanic whitetip shark.

Proposed Determination

Section 4(b)(1) of the ESA requires that NMFS make listing determinations based solely on the best scientific and commercial data available after conducting a review of the status of the species and taking into account those efforts, if any, being made by any state or foreign nation, or political subdivisions thereof, to protect and conserve the species. We have independently reviewed the best available scientific and commercial information, including the petition, public comments submitted on the 90-day finding (81 FR 1376; January 12, 2016), the status review report (Young *et al.,* 2016), and other published and unpublished information, and we have consulted with species experts and individuals familiar with the oceanic whitetip shark. We considered each of the section 4(a)(1) factors to determine whether it contributed significantly to the extinction risk of the species on its own. We also considered the combination of those factors to determine whether they collectively contributed significantly to the extinction risk of the species. Therefore, our determination set forth below is based on a synthesis and integration of the foregoing information, factors and considerations, and their effects on the status of the species throughout its range. With respect to the term ''foreseeable future,'' we accept the ERA team's definition and rationale of approximately 30 years as reasonable for the reliable prediction of threats on the biological status of the species. That rationale for a foreseeable future of approximately 30 years was provided in detail previously (refer back to the

Assessment of Extinction Risk—Methods section of this proposed rule).

We conclude that the oceanic whitetip shark is not presently in danger of extinction, but is likely to become so in the foreseeable future throughout all of its range. We summarize the factors supporting this conclusion as follows: (1) The best available information indicates that the species has experienced significant and ongoing abundance declines in all three ocean basins (*i.e.,* globally); (2) oceanic whitetip sharks possess life history characteristics that increase their vulnerability to harvest, including slow growth, relatively late age of maturity, and low fecundity; (3) the species' low genetic diversity in concert with steep global abundance declines and ongoing threats of overutilization may pose a viable risk to the species in the foreseeable future; (4) due to the species' preferred vertical and horizontal habitat, the oceanic whitetip shark is extremely susceptible to incidental capture in both longline and purse seine fisheries throughout its range, and thus experiences substantial levels of fishing mortality from these fisheries; (5) the oceanic whitetip shark is a preferred species in the international fin market for its large, morphologically distinct fins, which incentivizes the retention and/or finning of the species; and (6) despite the increasing number of regulations for the conservation of the species, existing regulatory mechanisms are largely inadequate for addressing the most important threat of overutilization throughout a large portion of the species' range. We conclude that the species is not presently in danger of extinction as a result of the following supporting factors: (1) The species is broadly distributed over a large geographic range, and does not seem to have been extirpated in any region, even in areas where there is heavy harvest bycatch and utilization of the species' high-value fins; (2) there appears to be a potential for relative stability in population sizes on the order of 5–10 years at the post-decline depressed state, as evidenced by the potential stabilization of two populations (*e.g.,* NW Atlantic and Hawaii) at a diminished abundance, which suggests that this species is potentially capable of persisting at a low population size; (3) there is no evidence of a range contraction and there is no evidence of habitat loss or destruction; (4) the overall reduction of the fin trade as well as increasing management regulations will likely reduce the threat of overutilization to some extent in the foreseeable future, and thus reduce the species' current overall risk of extinction; (5) there is no evidence that disease or predation are contributing to an increased risk of extinction of the species; and (6) there is no evidence that other natural or manmade factors are contributing to an increased risk of extinction of the species.

As a result of the foregoing findings, which are based on the best scientific and commercial data available, we conclude that while the oceanic whitetip shark is not presently in danger of extinction throughout all or a significant portion of its range, it is likely to become so within the foreseeable future. Accordingly, the oceanic whitetip shark meets the definition of a threatened species, and thus, the oceanic whitetip shark warrants listing as a threatened species at this time.

Effects of Listing

Conservation measures provided for species listed as endangered or threatened under the ESA include the development and implementation of recovery plans (16 U.S.C. 1533(f)); designation of critical habitat, if prudent and determinable (16 U.S.C. 1533(a)(3)(A)); a requirement that Federal agencies consult with NMFS under section 7 of the ESA to ensure their actions do not jeopardize the species or result in adverse modification or destruction of designated critical habitat (16 U.S.C. 1536); and prohibitions on ''taking'' (16 U.S.C. 1538). Recognition of the species' plight through listing may also promote conservation actions by Federal and state agencies, foreign entities, private groups, and individuals.

Identifying Section 7 Consultation Requirements

Section 7(a)(2) (16 U.S.C. 1536(a)(2)) of the ESA and NMFS/FWS regulations require Federal agencies to confer with us on actions likely to jeopardize the continued existence of species proposed for listing, or that result in the destruction or adverse modification of proposed critical habitat. If a proposed species is ultimately listed, Federal agencies must consult on any action they authorize, fund, or carry out if those actions may affect the listed species or its critical habitat and ensure that such actions do not jeopardize the species or result in adverse modification or destruction of critical habitat should it be designated. Examples of Federal actions that may affect the oceanic whitetip shark include, but are not limited to: Alternative energy projects, discharge of pollution from point sources, non-point source pollution, contaminated waste and plastic disposal, dredging, pile-driving, development of water quality standards, vessel traffic, military activities, and fisheries management practices.

Critical Habitat

Critical habitat is defined in section 3 of the ESA (16 U.S.C. 1532(3)) as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures needed to bring the species to the point at which listing under the ESA is no longer necessary. Section 4(a)(3)(a) of the ESA (16 U.S.C. 1533(a)(3)(A)) requires that, to the extent prudent and determinable, critical habitat be designated concurrently with the listing of a species. Designations of critical habitat must be based on the best scientific data available and must take into consideration the economic, national security, and other relevant impacts of specifying any particular area as critical habitat. If we determine that it is prudent and determinable, we will publish a proposed designation of critical habitat for the oceanic whitetip shark in a separate rule. Public input on features and areas in U.S. waters that may meet the definition of critical habitat for the oceanic whitetip shark is invited.

Protective Regulations Under Section 4(d) of the ESA

We are proposing to list the oceanic whitetip shark, *Carcharhinus longimanus,* as a threatened species under the ESA. In the case of threatened species, ESA section 4(d) leaves it to the Secretary's discretion whether, and to what extent, to extend the section 9(a) ''take'' prohibitions to the species, and authorizes us to issue regulations necessary and advisable for the conservation of the species. Thus, we have flexibility under section 4(d) to tailor protective regulations based on the needs of and threats to the species. The section 4(d) protective regulations may prohibit, with respect to threatened species, some or all of the acts which section 9(a) of the ESA prohibits with respect to endangered species. We are

not proposing such regulations at this time, but may consider potential protective regulations pursuant to section 4(d) for the oceanic whitetip in a future rulemaking. In order to inform our consideration of appropriate protective regulations for the species, we seek information from the public on the threats to oceanic whitetip shark and possible measures for their conservation.

Role of Peer Review

The intent of the peer review policy is to ensure that listings are based on the best scientific and commercial data available. In December 2004, the Office of Management and Budget (OMB) issued a Final Information Quality Bulletin for Peer Review establishing minimum peer review standards, a transparent process for public disclosure of peer review planning, and opportunities for public participation. The OMB Bulletin, implemented under the Information Quality Act (Pub. L. 106–554), is intended to enhance the quality and credibility of the Federal government's scientific information, and applies to influential or highly influential scientific information disseminated on or after June 16, 2005. To satisfy our requirements under the OMB Bulletin, we obtained independent peer review of the status review report. Independent specialists were selected from the academic and scientific community for this review. All peer reviewer comments were addressed prior to dissemination of the final status review report and publication of this proposed rule.

Public Comments Solicited on Listing

To ensure that the final action resulting from this proposal will be as accurate and effective as possible, we solicit comments and suggestions from the public, other governmental agencies, the scientific community, industry, environmental groups, and any other interested parties. Comments are encouraged on this proposal (See **DATES** and **ADDRESSES**). Specifically, we are interested in information regarding: (1) New or updated information regarding the range, distribution, and abundance of the oceanic whitetip shark; (2) new or updated information regarding the genetics and population structure of the oceanic whitetip shark; (3) habitat within the range of the oceanic whitetip shark that was present in the past, but may have been lost over time; (4) new or updated biological or other relevant data concerning any threats to the oceanic whitetip shark (*e.g.,* post-release mortality rates, finning rates in commercial fisheries, etc.); (5) current or planned activities within the range of the oceanic whitetip shark and their possible impact on the species; (6) recent observations or sampling of the oceanic whitetip shark; and (7) efforts being made to protect the oceanic whitetip shark.

Public Comments Solicited on Critical Habitat

We request quantitative evaluations describing the quality and extent of habitats for the oceanic whitetip shark, as well as information on areas that may qualify as critical habitat for the species in U.S. waters. Specific areas that include the physical and biological features essential to the conservation of the species, where such features may require special management considerations or protection, should be identified. Areas outside the occupied geographical area should also be identified, if such areas themselves are essential to the conservation of the species. ESA implementing regulations at 50 CFR 424.12(g) specify that critical habitat shall not be designated within foreign countries or in other areas outside of U.S. jurisdiction. Therefore, we request information only on potential areas of critical habitat within waters under U.S. jurisdiction.

Section 4(b)(2) of the ESA requires the Secretary to consider the ''economic impact, impact on national security, and any other relevant impact'' of designating a particular area as critical habitat. Section 4(b)(2) also authorizes the Secretary to exclude from a critical habitat designation those particular areas where the Secretary finds that the benefits of exclusion outweigh the benefits of designation, unless excluding that area will result in extinction of the species. For features and areas potentially qualifying as critical habitat, we also request information describing: (1) Activities or other threats to the essential features or activities that could be affected by designating them as critical habitat; and (2) the positive and negative economic, national security and other relevant impacts, including benefits to the recovery of the species, likely to result if these areas are designated as critical habitat. We seek information regarding the conservation benefits of designating areas within waters under U.S. jurisdiction as critical habitat. In keeping with the guidance provided by OMB (2000; 2003), we seek information that would allow the monetization of these effects to the extent possible, as well as information on qualitative impacts to economic values.

Data reviewed may include, but are not limited to: (1) Scientific or commercial publications; (2) administrative reports, maps or other graphic materials; (3) information received from experts; and (4) comments from interested parties. Comments and data particularly are sought concerning: (1) Maps and specific information describing the amount, distribution, and use type (*e.g.,* foraging or migration) by the oceanic whitetip shark, as well as any additional information on occupied and unoccupied habitat areas; (2) the reasons why any habitat should or should not be determined to be critical habitat as provided by sections 3(5)(A) and 4(b)(2) of the ESA; (3) information regarding the benefits of designating particular areas as critical habitat; (4) current or planned activities in the areas that might be proposed for designation and their possible impacts; (5) any foreseeable economic or other potential impacts resulting from designation, and in particular, any impacts on small entities; (6) whether specific unoccupied areas may be essential to provide additional habitat areas for the conservation of the species; and (7) potential peer reviewers for a proposed critical habitat designation, including persons with biological and economic expertise relevant to the species, region, and designation of critical habitat. We seek information regarding critical habitat for the oceanic whitetip shark as soon as possible, but no later than March 29, 2017.

Public Hearings

If requested by the public by February 13, 2017, hearings will be held regarding the proposal to list the oceanic whitetip shark as a threatened species under the ESA. If hearings are requested, details regarding location(s), date(s), and time(s) will be published in a subsequent **Federal Register** notice.

References

A complete list of all references cited herein is available upon request (see **FOR FURTHER INFORMATION CONTACT**).

Classification

National Environmental Policy Act

Section 4(b)(1)(A) of the ESA restricts the information that may be considered when assessing species for listing and sets the basis upon which listing determinations must be made. Based on the requirements in section 4(b)(1)(A) of the ESA and the opinion in *Pacific Legal Foundation* v. *Andrus,* 675 F. 2d 825 (6th Cir. 1981), we have concluded that ESA listing actions are not subject to the environmental assessment requirements

of the National Environmental Policy Act (NEPA).

Executive Order 12866, Regulatory Flexibility Act, and Paperwork Reduction Act

As noted in the Conference Report on the 1982 amendments to the ESA, economic impacts cannot be considered when assessing the status of a species. Therefore, the economic analysis requirements of the Regulatory Flexibility Act are not applicable to the listing process.

In addition, this proposed rule is exempt from review under Executive Order 12866. This proposed rule does not contain a collection-of-information requirement for the purposes of the Paperwork Reduction Act.

Executive Order 13132, Federalism

In accordance with E.O. 13132, we determined that this proposed rule does not have significant Federalism effects and that a Federalism assessment is not required. In keeping with the intent of the Administration and Congress to provide continuing and meaningful dialogue on issues of mutual state and Federal interest, this proposed rule will be given to the relevant state agencies in each state in which the species is believed to occur, and those states will be invited to comment on this proposal. We have considered, among other things, Federal, state, and local conservation measures. As we proceed, we intend to continue engaging in informal and formal contacts with the state, and other affected local or regional entities, giving careful consideration to all written and oral comments received.

List of Subjects in 50 CFR Part 223

Endangered and threatened species, Exports, Imports, Transportation.

Dated: December 22, 2016.

Samuel D Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 223 is proposed to be amended as follows:

PART 223—THREATENED MARINE AND ANADROMOUS SPECIES

■ 1. The authority citation for part 223 continues to read as follows:

Authority: 16 U.S.C. 1531–1543; subpart B, § 223.201–202 also issued under 16 U.S.C. 1361 *et seq.;* 16 U.S.C. 5503(d) for § 223.206(d)(9).

■ 2. In § 223.102, in paragraph (e), add a new entry for ''Shark, oceanic whitetip'' under Fishes in alphabetical order by Common Name to read as follows:

§ 223.102 Enumeration of threatened marine and anadromous species.

* * * * *

(e) * * *

Species [1]			Citation(s) for listing determination(s)	Critical habitat	ESA rules
Common name	Scientific name	Description of listed entity			
*	*	*	*	*	*
FISHES					
*	*	*	*	*	*
Shark, oceanic whitetip ...	*Carcharhinus longimanus*	Entire species	*[Insert **Federal Register** page where the document begins], [Insert date of publication when published as a final rule].*	NA	NA
*	*	*	*	*	*

[1] Species includes taxonomic species, subspecies, distinct population segments (DPSs) (for a policy statement, see 61 FR 4722; February 7, 1996), and evolutionarily significant units (ESUs) (for a policy statement, see 56 FR 58612; November 20, 1991).

[FR Doc. 2016–31460 Filed 12–28–16; 8:45 am]

BILLING CODE 3510–22–P