

**Pelagic Longline Take Reduction Team  
August 21-23, 2012: St. Petersburg, Florida**

**KEY OUTCOMES MEMORANDUM**

**I. OVERVIEW**

NOAA's National Marine Fisheries Service (NMFS) convened the Pelagic Longline Take Reduction Team (PLTRT or Team) August 21-23, 2012, at NMFS's Southeast Regional Office in St. Petersburg, Florida. (See **Attachment 1** for a copy of the agenda.) The meeting focused on the following primary objectives:

- Update the PLTRT on *pilot whale/Risso's dolphin* abundance, distribution, and mortality data, as well as genetics; consider implications of trends
- Review PLTRT-related research activities
- Consider implications of trends in stock structure and abundance, as well as research activities, for Take Reduction Plan (TRP) implementation and fulfillment of MMPA TRP goals; brainstorm potential options for future management measures
- Provide feedback on a draft PLTRP monitoring plan
- Outline next steps.

This summary report, prepared by CONCUR Inc., provides an overview of the meeting's key outcomes. It is presented in four main sections: (1) Overview; (2) Participants; (3) Meeting Materials; (4) Key Outcomes; and (5) Next Steps.

**II. PARTICIPANTS**

The three-day meeting was attended by 16 of the 22 Team members (or their alternates). Participating Team members were: Terri Biedeman, Brendan Cummings, Glenn Delaney, Laura Engleby, Dewey Hemilwright, David Kerstetter, David Laist, Kristy Long, Beth Lowell, Bill McLellan, Red Munden, Jeff Oden, Andy Read, Sierra Weaver, Tim Werner and Sharon Young. The meeting included several new Team members and alternates.

L. Engleby and Erin Fougères with NMFS Southeast Region (Protected Resources Division) convened the meeting. Scott McCreary with CONCUR and Bennett Brooks from the Consensus Building Institute served as the neutral facilitators. Staff from NMFS (Southeast and Northeast Regions, as well as the Southeast Fisheries Science Center, the Highly Migratory Species Division and Protected Resources Division), NOAA Office of General Counsel and the U.S. Coast Guard supported the deliberations.

### III. MEETING MATERIALS

A meeting agenda, updated ground rules and several other meeting materials were provided in advance to support the group's deliberations. Other documents and much of the presentation material were made available during the meeting itself. Copies of meeting materials can be found on-line at: <http://www.concurinc.com/PLTRT/index.html>. Documents can also be obtained by contacting Erin Fougères at 727-824-5312 or via email at [erin.fougeres@noaa.gov](mailto:erin.fougeres@noaa.gov).

### IV. KEY OUTCOMES

Below is a brief summary of the main topics and issues discussed during the meeting. This summary is not intended to be a meeting transcript. Rather, it provides an overview of the main topics covered, the primary points and options raised in the discussion, and areas of full or emerging consensus.

#### *A. Welcome and Introduction*

L. Engleby opened the meeting with brief welcoming remarks and a review of the meeting purpose. She also noted that the meeting was being held in SERO's offices due to budgetary constraints. L. Engleby's opening remarks were followed by self-introductions, as well as a review of both the agenda (by S. McCreary) and meeting protocols (by B. Brooks).

#### *B. General Updates*

The meeting focused initially on a series of brief updates intended to provide context for PLTRP activities. These included the following:

- **PLTRT Overview.** TRP Coordinator Erin Fougères provided a brief overview of the PLTRT team history, emphasizing key milestones since the Team was first convened in 2005 and generated a consensus agreement around Plan elements (both regulatory and voluntary). Additionally, she introduced the following new Team members and alternates: T. Biedeman, J. Oden, S. Weaver, T. Werner, and A. Read.
- **Highly Migratory Species.** Karyl Brewster-Geisz with the Highly Migratory Species (HMS) Management Division provided a summary of HMS activities related to the PLTRP, including updates on: (1) safe handling/ release workshops; (2) weak hook requirement for the Gulf of Mexico (GOM); and (3) Amendment 7 (bluefin tuna) and Amendment 5 (sharks). Team members posed several clarifying questions, and one meeting participant asked that future data analysis and resulting HMS presentations achieve a higher level of geographic precision in indicating where takes occur so as to avoid making takes seem more extensive. K. Brewster-Giesz said confidentiality constraints limit the Agency's flexibility in how geographically precise information can be presented. She also noted that the methodological protocol used to generate the maps "smudges" data across a wider area.
- **Atlantic Trawl Gear TRT.** Kate Swails with the NMFS Northeast Regional Office provided a brief update on the Atlantic Trawl Gear TRT, noting that it has not met since

2006/07. She further noted that the Northeast Region is (1) developing a Monitoring Strategy for fisheries addressed by the TRT; and (2) tracking the current work on pilot whale stock structure and abundance to see whether one or both stocks become strategic. If either the long- or short-finned pilot whale stocks become strategic, K. Swails indicated, they would likely reconvene the Team to determine next steps.

- **False Killer Whale TRT.** Kristy Long provided an update on the draft False Killer Whale Take Reduction Plan, summarizing the Agency's proposed rule and noting both similarities and distinctions from elements included in the False Killer Whale TRT's consensus draft plan.
- **Coast Guard Activities.** Katie Moore provided an update on recent U.S. Coast Guard activities. The Coast Guard conducted 232 boardings in FY 2012 (up from 200 in FY2011) in three districts affected by the PLTRP. K. Moore reiterated comments from earlier meetings that the mainline length rule is not enforceable at-sea, as in-depth enforcement observations would require an unsustainable allocation of manpower (e.g., many hours would be needed to watch and measure a haul-back at sea). She also noted that providing oversight for PLTRP requirements such as placard compliance is not currently a top priority relative to other demands on the Coast Guard. K. Moore did suggest, however, that there are effective mechanisms (stamped hooks, gauges) to enforce weak hook measures. To that end, one member noted that an alternative means of enforcement could be a requirement that hooks be purchased from certified manufacturers, with verification confirmed through proof of purchase (e.g. a retained purchase receipt or hook boxes.)

### *C. PLTRP-Specific Updates*

Lance Garrison, Patricia Rosel and Melissa Soldevilla with the Southeast Fisheries Science Center provided updates on pilot whale stock structure, acoustics and bycatch/abundance, respectively. The updates provided an important foundation for subsequent Team deliberations. Presentation and Team comments are summarized below.

**Pilot Whale Species' Ranges and Stock Structure.** P. Rosel provided a summary of the Science Center's latest genetic studies to improve understanding of the geographic ranges of both pilot whale species in the western North Atlantic and examine stock structure for short-finned pilot whales. P. Rosel's most recent work (using additional samples collected since the last PLTRT meeting) reconfirmed the geographic range of the two pilot whale species (short-finned and long-finned) and the overlap zone between 38°N and 40°N in the western North Atlantic. Biopsy samples were also collected in the fall of 2011 during a NOAA cruise along the shelf break in the mid-Atlantic to help further define species' ranges in fall and winter when longline takes have historically been at their highest. 24 animals were sampled and all were genetically identified as short-finned pilot whales. In addition, all pilot whale samples provided by the observer program so far (n=6) have been genetically identified as short-finned pilot whales. The genetic data have also revealed movement of several individual pilot whales from Gulf of Mexico (GOM) into the mid-Atlantic. (Despite the evidence for movement of a few animals, P. Rosel said the GOM short-finned pilot whales are still considered to be a distinct stock from those in the Atlantic since, among other reasons, micro-satellite data indicate weak,

but significant genetic differentiation between the two stocks.) P. Rosel said further study is needed to understand the relationship between Caribbean and GOM pilot whales. She also noted that there are 39 duplicate biopsy samples in the dataset.

Team members posed a series of clarifying questions. Comments centered on the following:

- Several Team members sought to better understand implications of the duplicate biopsies – thought by some to be an unlikely scenario given the large population size. P. Rosel said that most duplicate biopsies were collected the same day, even in the same sighting. It was unclear if the duplicate biopsies collected across a longer time period suggest the population is smaller than estimated (as one Team member suggested), whether animals are more sedentary than thought or whether it is indicative of behavioral issues (e.g., some animals are less timid and, therefore, more likely to be resampled).
- One Team member sought to understand the potential for using mark-recapture studies in the future given the Science Center’s growing photographic catalog. P. Rosel said this could be investigated, but the survey design was not formulated with photo-ID mark-recapture studies in mind, limiting their usefulness for this purpose.
- One Team member asked whether the Center has detected any indication of temporal (not seasonal) shifts of short-finned pilot whales. P. Rosel said there was no evidence to date to suggest such a temporal shift.
- One Team member sought to understand whether the genetic identification of a long-finned pilot whale off Cape Hatteras suggested that hybridization could be occurring between the two species. P. Rosel said they looked into this for this sample and there was no evidence to date to support such a hypothesis.

**Pilot Whale Acoustics.** M. Soldevilla presented results of her initial research into the potential to identify pilot whale species and/or stocks using passive acoustics. Her presentation highlighted both the potential uses of acoustic data (refining both abundance and bycatch estimates), as well as explaining the different calls used by pilot whales (clicks, burst pulses and whistles) that can be identified and quantified to help improve the understanding of stock structure. Future work will focus on better understanding pilot whale whistles, comparing short-finned and long-finned pilot whale calls, and examining Gulf of Mexico recordings for evidence of stock structure distinctions. Team members posed several clarifying questions, but there was little discussion.

**Pilot Whale Abundance/Bycatch.** L. Garrison provided a detailed update on the latest research and analysis of pilot whale abundance and bycatch estimates, as well as mortality and cruise estimates. The presentation underscored the following main points:

- Though there has been no discernible trend in pilot whale abundance (20,396 animals based on the 2011 survey), there has been a recent increase in serious injuries and mortalities (up to 298 animals over the past year in all Atlantic areas). The increase may be a function of environmental variability or random factors, though L. Garrison did note that historic takes

have tended to fluctuate and peak every five years or so. The results of vessel surveys conducted during summer 2011 resulted in a small decrease in the best estimate of abundance, and, therefore, PBR is anticipated to decline from 172 animals to 136 in the next update of the annual stock assessment reports. This figure is preliminary, however, and subject to refinement.

- The seasonal distribution of takes is consistent with the finding that the pelagic longline fleet impacts primarily short-finned pilot whales. Biopsy and photo-identification surveys conducted during the fall of 2011 in mid-Atlantic waters where pelagic longline bycatch is observed found only short-finned pilot whales. However, it should be noted that this represents only one year of data, and there may be significant inter-annual variability in spatial distribution. In addition, the documentation of a long-finned pilot whale off of Cape Hatteras during spring lends uncertainty to this assessment.
- The “mainline length” effect has remained consistent with studies conducted through 2005, with mainline lengths less than 20 nautical miles expected to have lower interaction rates. However, there is little indication of changes in mainline length in observed sets despite the PLTRP requirement. Sixty percent of observed sets have reported mainline lengths greater than 20 nautical miles, with peaks in the 25 to 30 nautical mile range.
- There is a significant discrepancy in post-TRP implementation distribution of mainline lengths as reported by the Observer Program versus the self-reported Fisheries Logbook System (FLS). Per the FLS, 25% of sets are self-reported as 20 nautical miles versus just 5% from the Pelagic Observer Program. Similarly, just 40% of sets are reported in the FLS as greater than 20 nautical miles versus 60% from Pelagic Observer Program data.

Later in the meeting (and at the request of Team members), L. Garrison recalculated the expected mortalities and serious injuries if the fleet were fully implementing the 20-nautical mile mainline length. Based on his preliminary calculation, L. Garrison suggested that the number of takes in 2011 would have been nearly 80% lower (62 animals rather than 298) if one applied the observed bycatch rate (catch per unit effort) from sets with mainlines less than 20 nautical miles in length within the mid-Atlantic Bight area and assumed that the number of hooks fished per area/quarter were unchanged.

L. Garrison’s second look at the data also suggested several other tentative findings: (1) observer coverage in 2011 did not differ significantly from earlier years; (2) the percentage of takes in sets with mainline lengths longer than 20 nautical miles appears consistent with data from earlier years; (3) number of hooks does not appear to be meaningfully correlated to serious injuries and mortalities; and, (4) takes in the Cape Hatteras Special Research Area (CHSRA) appear to occur in a narrow band along the shelf break on the northern side of the Gulf Stream. Additionally, L. Garrison said that, based on his review of the data, line length is likely serving as a sort of surrogate for multiple factors (hook number, soak time, haul time, etc.) that individually don’t appear to be meaningful drivers for serious injury and mortality takes.<sup>1</sup>

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<sup>1</sup> Note: These findings should all be regarded as preliminary and have not been subject to internal NMFS review processes.

L. Garrison's presentation triggered extensive discussion. The primary themes are summarized in the discussion section following the research-related updates.

#### ***D. Research-Related Updates***

The meeting included a series of research-related updates. Below is a quick synopsis of the information presented. Copies of individual presentations are available on the Team website listed earlier.

**Weak Hook Research.** D. Kerstetter and Charlie Bergmann (NMFS Southeast Fisheries Science Center) each presented updates on recent weak hook research efforts. D. Kerstetter's presentation – a scan of recent weak hook studies – suggested the potential to exploit the size differential between smaller target catch and larger bycaught species. However, he emphasized that industry buy-in to both experimental studies and gear changes is paramount, and each fishery requires research to find the “sweet spot” that will minimize impact to target catch. Studies must be carefully scoped and designed, he said, to ensure industry concerns are incorporated as much as possible. C. Bergmann's presentation focused on the use of weak hooks in the Gulf of Mexico to reduce bluefin tuna bycatch in the yellow fin tuna fishery. Key points from C. Bergmann's presentation centered on the following: (1) weak hooks proved effective at reducing bluefin tuna bycatch while not statistically impacting yellowfin catch rates; and (2) industry skill with the weak hooks increased (and fishermen opposition to the new gear decreased) as the fishing season progressed.

Team member comments included the following: (1) recognize that no statistical difference in target catch can still mean lost income for fishermen if the catch rate falls just a few percentage points (in the False Killer Whale TRT, for example, this concern was expressed around the potential loss of large, valuable “marker” fish, which exert a disproportionate effect on the profitability of a given trip); (2) involvement of fishermen in the design, development and testing of weak hooks will greatly increase industry acceptance of weak hooks; and (3) weak hooks react differently depending on manufacturing specifications and process, vessel size and water conditions (slack water or not), so it is difficult to have full confidence in study results from elsewhere unless the studies account for varying conditions. Several industry representatives expressed growing interest in weak hooks as a potential solution, but they suggested more work and greater cooperation with fishermen across multiple regions and boat sizes is needed to confirm the effectiveness and minimize resistance. They also stressed that a “one-size-fits-all” approach will not be successful and hooks must be customized for each fishery. At least one Team member cautioned that any changes in hook design must also consider potential impacts to other protected species (e.g., sea turtles).

**Hook-Tissue Interactions Research.** B. McLellan updated Team members on research he's conducted to better understand the nature of the hook-tissue interaction when pilot whales get hooked in the mouth. Using heads from deceased stranded pilot whales, the research sought to understand both the force required to pull the hook through the animal's lip, as well as to assess the damage done to the marine mammal's mouth. One key finding: Certain stainless steel hooks (e.g., Mustad 16/0 and 18/0 circle hooks) sliced through and exited a pilot whale's lip (typically resulting in a wound that would be expected to be deemed a “non-serious” injury). Conversely, Korean carbon circle hooks bent but did not slice through the lip, meaning that the animal would

still have trailing gear and possible jaw fractures and the injury would likely be coded as serious. B. McLellan asked that Team members provide guidance on hook types to use in future tests. (D. Kerstetter recommended testing the GOM 39988 weak hook and the 9/0 Eagle Claw J-hook.) Team member comments and observations included the following: (1) a recognition that hook characteristics can vary from stated specifications due to manufacturing anomalies (sometimes even within batches sold by the same manufacturer); and, (2) acknowledgment that the industry, academics and fisheries managers do not yet have a standardized vocabulary for describing hook types and shapes (e.g., round v. forged v. stamped v. carbon) nor a standardized method for measuring them. Additionally, it is important to confirm that the hooks being tested are actually consistent with the stated hook specifications.

**Pilot Whale Research Update.** A. Read provided an update on his recent pilot whale research, which included updates on pilot whale diet and foraging behavior within the Cape Hatteras Special Research Area (CHSRA). Among the research findings: (1) a study of stable isotopes in pilot whale and bluefin tuna suggest that pilot whales are not relying on depredation of tuna as a significant source of their diet; and, (2) while it had been thought that pilot whales exploit the diurnal vertical migration of small prey species, in fact, pilot whale foraging behavior varies widely among individual animals. Based on A. Read's recent work, the research shows that pilot whales feed throughout both the day and night and in all prey layers, and that pilot whales forage on or near the sea floor along the shelf break. Future studies will focus on distribution, prey mapping and prey sampling, as well as look at the potential effectiveness (not yet tested) of high-energy pingers as a deterrent to pilot whale depredation. D. Kerstetter also provided a brief update on a research effort using small time-depth recorders to monitor pelagic longline gear behavior off of North Carolina. The effort is seeking to better understand where the gear is in the water column relative to pilot whales in the hopes of identifying depth and temperature "hot spots."

**Cape Hatteras Special Research Area (CHSRA).** Ken Keene with the NMFS Pelagic Observer Program provided a brief update on the CHSRA call-in requirements. His presentation highlighted the following points: (1) fleet-wide compliance with CHSRA call-in requirements appears to be high; (2) many vessels have shifted from giving 2 to 3 days notice to just 1 to 2 days notice; and, (3) to-date, the Observer Program has not placed an observer on any vessel through the CHSRA call-in requirement. Several participants questioned the merits of maintaining the call-in requirements. However, several said it is important to continue the practice of not granting waivers for vessels to avoid carrying observers, so as to maintain coverage in an area with historically high takes and provide coverage on smaller vessels that have been difficult to observe in the past.

### ***E. Discussion Themes***

Team consideration of the various presentations generated extensive deliberations over the course of the meetings. Key themes are summarized below, while Team consensus-recommended actions are captured in Section E.

- **Necessity of addressing lack of compliance with mainline length requirements.** Team members broadly agreed that failure among some members of the fleet to comply with the

20-nautical-mile mainline length requirement is a significant issue that needs to be addressed immediately. Most critically, participants said, the lack of compliance is a significant barrier to meeting MMPA goals. Non-compliance is also seen as unfair to those fishermen adhering to the PLTRP requirement. Team members pressed NMFS to work aggressively with U.S. Coast Guard and NOAA Office of Law Enforcement to step up enforcement and prosecution for non-compliance. Specific suggestions included: (1) taking advantage of existing data (e.g., logbook and observer data) to identify, send warning letters and, as needed, prosecute vessels out of compliance; and (2) exploring technological fixes (VMS, GPS beacons at the start and end of each set) or proxies for mainline length (number of hooks, baskets, etc.) to improve enforcement. There were also suggestions to mine the logbook and observer data to identify and prosecute those vessels reporting false information, as well as encourage industry to conduct more proactive, aggressive outreach to their members.

While Team members identified improved compliance and enforcement as a key step moving forward, several participants noted that successful implementation of the mainline length requirement alone is unlikely to result in the fleet meeting the MMPA long-term goal of reducing mortalities and serious injuries to insignificant levels approaching a zero rate (commonly referred to as the zero mortality rate goal or ZMRG). Accordingly, these Team members said, the Team must look for additional measures (weak hooks, new research efforts, other gear fixes, etc.) that can help reduce takes. Additionally, several participants noted that the larger longline vessels based up north may be resistant to reducing mainline length as the economics of their fishery (more crew, fuel costs, etc.) necessitate the higher catch associated with longer lines. (This assessment has not yet been confirmed.)

- **Weak hooks promising, but a stepwise approach to more tailored research needed.**

Team members, including fishing industry representatives, voiced strong interest in continuing weak hook research initiatives as weak hooks are seen as a possible path to lowering serious injury and mortality takes. Participants cited encouraging research in the Gulf of Mexico and elsewhere that demonstrates the potential to lower bycatch by exploiting the size differential between the target catch and larger bycatch without significantly impacting commercial harvest rates. As well, the experience of fishermen in the GOM shows the potential for industry to adapt to weak hooks, and B. McLellan's recent research suggests that weak hooks, if designed properly, can minimize the serious injury rate associated with interactions. Still, industry participants and others cited several noteworthy barriers to weak hook implementation. For one, several Team members cautioned against a one-size-fits-all approach to weak hooks (in other words, for example, a hook that works well in the GOM may prove unworkable in the stronger Gulf Stream tides), and they underscored industry resistance to embracing gear changes. It was also noted that (1) any loss of target catch is a meaningful financial hit to fishermen; and (2) there is currently no common language or metric to describe potential hook modifications.

Several speakers strongly encouraged that future weak hook research efforts involve fishermen and gear manufacturers upfront – both to improve hook design and strengthen downstream buy-in. Specifically, Team members recommended that industry provide input into and informally test weak hook prototypes to identify promising designs to use subsequently in more formal (and costly) trials. Inclusion of hook manufacturers in the

design of trials is also seen as a way to improve effectiveness and perhaps lower the costs associated with testing experimental hooks.

- **Maximize use of observer data.** Several participants expressed interest in more aggressively mining the existing observer data to identify factors that may be driving takes. Areas identified for further review included: (1) a finer look at takes within the CHSRA; (2) parse 2011 (and earlier) data to better understand geography and timing associated with takes, with an aim of finding the “hot spots;” (3) compare takes per vessel with observed interactions per vessel; (4) assess the impact of hooks/CPUE v. mainline length; (5) assess the effects of soak time; and (6) assess the impact of hook position on the line on takes. More broadly, Team members were supportive of using the last five years of data to identify new trends/causality. There was also interest in gathering data that will help ascertain whether hooks are the weakest link in the gear.

Additionally, Team members voiced strong interest in having the Southeast Fisheries Science Center look more carefully at data associated with individual boats to discern vessel effect characteristics that could suggest higher take rates. Team members recognized the confidentiality rules that could limit NMFS’s ability to share data, but they encouraged Science Center staff to be aggressive in examining the data and identifying unique trends – even if there were limitations on what or how data could be shared with the full Team. Team members also suggested that the Pelagic Observer Program begin tracking several additional pieces of data not now collected, with individual suggestions including swivel type (leaded or not); drift speed; boat speed over bottom; hook type (including collection of examples of hook types used); and basket number in which marine mammal hooking and depredations occur.

- **Updated and prioritized research priorities are needed.** Recognizing the uncertainty that either mainline length compliance or weak hook research will translate into fewer takes, several Team members strongly encouraged NMFS and the Team to update the current research priorities list – eliminating research that has been conducted or is no longer relevant, identifying new promising opportunities and prioritizing among candidate activities. Several speakers underscored the likelihood of funding constraints, but others suggested a coordinated, cross-interest group press for research priorities (as happened with the False Killer Whale TRT in Hawaii) may have greater success in identifying and leveraging potential funding sources. Team members agreed to form a work team to review and put forward a proposed prioritization list for research activities. (See Next Steps below for additional detail on the Work Team.)

Additionally, the discussion generated a number of other themes and issues. These included the following:

- A number of Team members called on NMFS to revisit the coordinates of the Cape Hatteras Special Research Area (CHSRA) box, as several fishing industry representatives suggested the boundaries are much broader than necessary and not consistent with their experience of where takes occur. (NMFS staff, team members and CONCUR recalled that the boundaries of the box were delineated in a cross-interest work team, although that work was done seven

years ago based on data in hand at the time.) In particular, several fisheries representatives suggested that the CHSRA would be better reconfigured by eliminating sections of the southeastern portion of the box. Others suggested that reconfiguring the rectangular box as more of a diagonal or trapezoid shape might create greater flexibility for the fishing community. Several speakers also recommended that NMFS eliminate the CHSRA call-in requirement since it has not been used to place observers on vessels.

- Potential HMS-driven actions for both bluefin tuna and shark management could impact pilot whale takes in the Atlantic pelagic longline fleet. Accordingly, Team members strongly recommended that SERO track and take into account the impacts from any regulatory changes driven by the HMS Program. Team members asked that they be kept apprised of any potential impacts.
- Several participants called for NMFS to more fully consider the bycatch impacts of regulatory closures that displace fishing vessels into areas with correspondingly higher marine mammal interaction rates. Several Team members said that this is particularly true when closures are maintained long after the foundational rationale for the regulation (i.e., the Charleston Bump) is said by some to be no longer relevant.
- Several Team members noted the inconsistency of closing fishing grounds within U.S. waters, while failing to implement and uphold MMPA requirements to ban fish imports from foreign fleets that may have higher bycatch rates.
- The Team remains very interested in better understanding the long-term impact of species-specific serious injury and mortality estimates relative to PBR and any possible impacts on strategic stock designation (i.e., will a lower PBR expected in the 2013 SAR cause short-finned pilot whales to become strategic).
- Several participants suggested that NMFS revisit Team membership to ensure there is sufficient representation among fishermen from areas north of Cape Hatteras. (NMFS staff and CONCUR noted that there are several TRT members from other geographies, but for various reasons, they were not able to attend the August meeting in St. Petersburg.) There were also suggestions that future in-person Team meetings be scheduled during new moon phases in early winter to facilitate fishermen participation.

#### ***F. Consensus Recommendations***

Based on the group's deliberations and the themes summarized above, the Team prepared and unanimously endorsed a series of recommendations to the Agency. (An early draft of the recommendations was developed by a small, cross-interest work group and then closely reviewed, revised and confirmed by the full Team in plenary session.) A copy of the Team's recommendations are attached (see **Attachment 2**), but the main points centered on the following:

- Recommending that the NMFS make "every reasonable effort" to ensure compliance with the 20-nautical mile mainline length requirement included in the Pelagic Longline Take

Reduction Plan. This included making use of logbook and observer data to identify non-compliers, as well as identifying improved technologies (e.g., VMS, GPS) to improve Plan monitoring and enforcement.

- Recommending that research on potential gear modifications (e.g., weak hooks) move forward as expeditiously as possible to enable on-the-water experiments in the late summer or early fall of 2013. Additionally, the Team recommended that the weak hook effort involve early on input from fishermen and hook manufacturers. It was further suggested that it be conducted in a high bycatch area (e.g., the Mid-Atlantic Bight).<sup>2</sup>
- Recommending that NMFS implement Section 101 of the MMPA requiring the banning of fish product imports from nations engaged in longline fishing unless they can demonstrate that they are using marine mammal bycatch-reducing methods comparable to U.S. requirements.
- Recommending that NMFS closely track a range of activities with the potential to impact pelagic longline-pilot whales interactions, bycatch rates and management measures, including possible HMS fishery regulations (e.g., bluefin and shark measures) and compliance and enforcement efforts. The Team also called for (1) a work team to review and update PLTRP research recommendations, (2) continued “regular” updates on Plan implementation, (3) review and revision, as needed, to ensure the northern portion of the Mid-Atlantic Bight fishery is adequately represented on the Team; (4) and evaluation to and, as needed, revision to observer data collection fields/protocols; and (5) reconvening of the Team in mid- to late-2013 to reassess additional measures needed, if any, to achieve Plan goals

The group also considered providing consensus support for a weak hook research proposal put together by D. Kerstetter in response to Team deliberations. While there was broad support for the research effort, given the limited time for the Team to review and propose revisions to the proposal, the Team was hesitant to formally endorse the exact text of the proposal as drafted. (This effort was further complicated by D. Kerstetter’s inability to attend the final day of Team deliberations due to extenuating circumstances.) Instead, the Team asked that the Agency provide the Team’s consensus recommendations to D. Kerstetter so that he could use that document to demonstrate the Team’s strong support for further weak hook studies. (See **Attachment 3** for NMFS transmittal letter.) A. Read also agreed to forward to D. Kerstetter a handful of recommended changes to the research proposal put forward by Team members. These included, among other suggestions: (1) emphasizing the importance of bringing fishermen and hook manufacturers into the process early to identify promising hook designs prior to a formal hook experiment; (2) including a northern boat in any weak hook experiment to test the effectiveness of the hooks in areas less affected by the Gulf Stream; and (3) arranging for B. McLellan to use the same experimental hooks to test mouth-hook interactions.<sup>3</sup>

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<sup>2</sup> Though not included in the formal recommendation, meeting participants did discuss the importance of conducting the trials during the times of year when the largest fish are likely to be caught.

<sup>3</sup> Due to insufficient time to obtain the full NOAA clearances necessary for participation, D. Kerstetter was unable to submit the proposal outlined at the workshop. However, a version incorporating the Team's suggestions has been prepared for submission whenever a suitable funding mechanism becomes apparent.

### ***G. PLTRP Monitoring Strategy***

E. Fougères provided the Team with a snapshot of SERO's preliminary thinking regarding a monitoring strategy to track and assess PLTRP implementation. The strategy is part of a NMFS-wide effort to assess effectiveness for all Take Reduction Plans. The draft strategy presented by NMFS included the following components: (1) PLTRP compliance monitoring, which includes enforcement activities, research, Observer Program data collection, evaluation of self-reported incidental takes, and education/outreach efforts; and (2) PLTRP effectiveness monitoring, which focuses on assessing progress in meeting the MMPA goals of reducing mortality and serious injury levels of pilot whales and Risso's dolphins to ZMRG.

The proposed strategy was generally well received by Team members. The discussion generated the following comments and several recommended new elements of a monitoring approach:

- Team members broadly endorsed the strategy's approach to track and distinguish between both compliance and effectiveness. Both are seen as essential to evaluating the plan. There was also a suggestion to track compliance regardless of whether the Plan is proving effective.
- Consider revising the flow diagram to reflect that (1) a "lack of compliance" could lead to proposals for other management measures and not just education and outreach; and (2) Plan effectiveness could be hampered by shortfalls in both compliance and effectiveness.
- A status review by NMFS should be triggered immediately if serious injuries and mortalities exceed PBR. If serious injury and mortality trends are unchanged, increasing or above PBR, conduct a status review annually if there is sufficient new information. If serious injury and mortality trends are below PBR and trending towards ZMRG, conduct a status review every three years.
- Consider additional performance metrics – in addition to MMPA goal metrics – to assess plan effectiveness. For example, consider metrics that assess whether new measures (e.g., regulations from other management regimes) make existing PLTRP actions moot.
- Other comments included:
  - Attempt to identify criteria to judge the effectiveness of the non-biological goals (e.g., education/outreach, enforcement, etc.).
  - Replace language in the *PLTRP Effectiveness Monitoring* section that refers to bycatch with mortality and serious injuries.
  - Use bycatch per unit effort, as possible, to assess population trends.

E. Fougères is to revise the Monitoring Strategy based on Team feedback. An updated version is to be circulated to the Team in late September/early October for their review.

## V. NEXT STEPS

Based on the discussion, the meeting yielded a handful of next steps:

- A. Read is to forward to D. Kerstetter Team recommendations related to key discussion points to incorporate into his proposed weak hook research funding request<sup>4</sup>. D. Kerstetter is encouraged to wrap these revisions into the proposal before the submittal deadline.
- Southeast Region Office (SERO) staff will forward to Dave Kerstetter a copy of the Team's consensus recommendation for him to submit along with his weak hook research funding request. A copy of SERO's communication will be forwarded to Team members.
- SERO staff is to convene a work group in late August or early September 2012 to review and, as appropriate, propose revisions to the Team's list of research priorities. Work Group members are: Terri Biedeman, Bill McLellan, David Laist, Tim Werner, Sharon Young, Andy Read, David Kerstetter and Lance Garrison. Any work products developed by the Team are to be distributed to the full Team for its review and concurrence.
- The Team is expected to hold its next meeting in late 2013/early 2014 to consider the latest SAR, compliance report, 2013 cruise results, weak hook research updates and any other relevant updates (e.g., changes to HMS tuna or shark regulations). Meeting format will be dependent on whether it is primarily briefings (in which case the meeting will likely be a webinar/teleconference) or discussion-focused (in which case the meeting will likely be held in-person). Meeting format will also be impacted by available budget. Fishing industry representatives requested that the meetings be held during the new moon cycle and in the January-March timeframe to facilitate fishermen participation. Baltimore was seen as a convenient location for an in-person meeting.
- NMFS SERO staff are to pursue the various recommendations included in the Team's consensus recommendation document. SERO staff will keep the Team apprised – either via its regular quarterly updates or other direct communication, as needed.
- NMFS SERO staff will consider Team feedback as it revises its draft Atlantic Pelagic Take Reduction Monitoring Strategy. SERO anticipates sending an updated version to Team members in late September or early October.
- NMFS SERO staff will work with CONCUR to post all meeting materials and presentations on the Team website.
- The facilitation team will prepare a Key Outcomes Memorandum summarizing key discussion points, information needs, consensus recommendations and next steps. A near-final summary will be distributed to Team members for a “red-flag” review to any identify substantive errors or omissions.

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<sup>4</sup> See Footnote #2

Questions or comments regarding this meeting summary should be directed to Scott McCreary and Bennett Brooks or Laura Engleby and Erin Fougères with NMFS Southeast Region office. Scott and Bennett can be reached at 510-649-8008 and 212-678-0078, respectively; Laura can be contacted at 727-824-5312, while Erin can be reached at 727-824-5312.

**ATTACHMENT 1**

**Pelagic Longline Take Reduction Team Meeting  
August 21-23, 2012  
NMFS Southeast Region Office, St. Petersburg, Florida**

**PROPOSED AGENDA**

**Meeting Purposes:**

The primary purpose of this meeting is to provide a forum for the Pelagic Longline Take Reduction Team (TRT) to take stock of rule implementation to-date. Specific objectives are:

- Update the PLTRT on *pilot whale/Risso's dolphin* abundance, distribution, and mortality data, as well as genetics; consider implications of trends
- Review PLTRT-related research activities
- Consider implications of trends in stock structure and abundance, as well as research activities, for Take Reduction Plan (TRP) implementation and fulfillment of MMPA TRP goals; brainstorm potential options for future management measures
- Provide feedback on a draft PLTRP monitoring plan
- Determine next steps

**DAY 1 (Tuesday, August 21):**

**1:00 -1:30 PM WELCOME, INTRODUCTIONS AND GETTING ORGANIZED**

- Opening comments (*NMFS*)
- Review meeting purpose and round robin greeting (*CONCUR*)
- Review and confirm agenda and ground rules (*CONCUR*)

**1:30 - 2:15 PM GENERAL UPDATES**

*Objective: Provide TRT members with relevant updates related to the Team and associated NMFS efforts*

- PLTRT Overview – Putting today's meeting in context (*E. Fougères*)
- PLTRT membership updates (*E. Fougères*)
- Highly Migratory Species Program Updates (*K. Brewster-Geisz*)
- Atlantic Trawl Gear TRT updates (*K. Swails*)
- False Killer Whale TRP proposed rule update (*K. Long*)
- Coast Guard/Enforcement update (*K. Moore*)

**2:15 - 5:00 PM PLTRP-SPECIFIC UPDATES (NMFS/OTHERS)**

**(WITH BREAK)** *Objective: Ensure Team members are up-to-date on activities related to PLTRT actions and goals*

- Update on pilot whale stock structure (*P. Rosel – 60 minutes*)
  - Includes opportunity for Team member Q&A
- Characterization of short-fin pilot whale vocalizations (*M. Soldevilla – 15 minutes*)
  - Includes opportunity for Team member Q&A

- Update on abundance, bycatch, mortality estimates/cruise results, model update (*L. Garrison – 60 minutes*)
  - Includes opportunity for Team member Q&A
- Initial Team member comments and discussion based on update

**5:00 -5:15 PM      OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**

**5:15 -5:30 PM      DISCUSSION SUMMARY AND PREVIEW OF DAY TWO**

**5:30 P.M.          ADJOURN**

*6 p.m. – 7:30 p.m.  
Team Happy Hour (no-host)  
Red Mesa Cantina, 128 3rd St South*

**DAY 2 (Wednesday, August 22):**

**8:30-8:45 AM WELCOME AND AGENDA REVIEW (CONCUR)**

- Review Day 2 agenda
- Recap highlights of Day 1 discussion

**8:45-10:00 AM PLTRP RESEARCH-RELATED UPDATES**

*Objective: Provide Team members with updates regarding PLTRP-related research actions and findings*

- Weak hook research updates and consideration of implications
  - Research updates (*D. Kerstetter, 35 minutes, with Q&A*)
  - Experiments in the Gulf of Mexico to Evaluate Bluefin Tuna Bycatch Mitigation Measures in the Yellowfin Tuna Fishery (*C. Bergmann, 35 minutes, with Q&A*)

**10:00 -10:15 AM BREAK**

**10:15-NOON PLTRP RESEARCH-RELATED UPDATES (continued)**

*Objective: Provide Team members with updates regarding PLTRP-related research actions and findings*

- Pilot whale research update (*A. Read, 45 minutes, with Q&A*)
- Pilot whale interaction models (*D. Kerstetter, 45 minutes with Q&A*)
- Testing hook-tissue interactions in toothed whale mouths (*B. McLellan, 1 minutes with Q&A*)

**Noon-1:15 PM LUNCH**

**1:15-1:45 PM BRIEFING: POP AND CHSRA UPDATE**

- Update on POP and CHSRA call-in compliance rates (*K. Keene, NMFS*)
  - Opportunity for Team Q&A

**1:45-2:45 PM INITIAL DISCUSSION: TAKING STOCK OF PLTRP IMPLEMENTATION**

*Objective: Consider implications of various updates on PLTRP implementation and fulfillment of MMPA TRP goals*

- What strategies/actions are needed, if any, to improve compliance with and effectiveness of existing measures?
- Are new management measures – regulatory or voluntary – needed to improve TRP implementation? If so, what are some options?
- Is additional research needed to inform Team deliberations and TRP implementation?
- What other actions are needed (e.g., enforcement, monitoring, etc.)

**2:45-3:00 PM BREAK**

**3:00-4:30 PM DISCUSSION: TAKING STOCK OF PLTRP IMPLEMENTATION (CONTINUED)**

- Continue discussing implications for PLTRT implementation and goals

**4:30 -4:45 PM      OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**

**4:45 -5:00 PM      DISCUSSION SUMMARY AND PREVIEW OF DAY TWO**

**5:30 P.M.          ADJOURN; OPTIONAL EVENING CAUCUS**

**DAY 3 (Thursday, August 23):**

- 8:30-8:45 AM**      **WELCOME AND AGENDA REVIEW (*CONCUR*)**
- Review Day 3 agenda
  - Recap highlights of Day 3 discussion
- 8:45 -10:30 AM**      **DISCUSSION: TAKING STOCK OF PLTRP IMPLEMENTATION (CONTINUED)**  
**(WITH BREAK)**
- Opportunity for final discussion regarding implications for PLTRT implementation and goals
  - Consider consensus recommendations
  - Identify next steps going forward
- 10:30-11:00 AM**      **DISCUSSION: PLTRP MONITORING**
- Overview of proposed approach to and timing for development and implementation of PLTRP Monitoring Plan (E. Fougères)
  - Team discussion and feedback
- 11:00 -11:15 AM**      **OPPORTUNITY FOR NON-TRT MEMBERS TO COMMENT**
- 11:15-11:45 AM**      **NEXT STEPS (*NMFS and CONCUR*)**
- What will be done with the product from this meeting?
  - Recap of meeting and review next steps
    - Consider need for follow-on work teams, updates
  - Discuss next PLTRT meeting
    - Recommended dates and locations?
    - Other issues?
- 11:45 AM**              **ADJOURN**

**ATTACHMENT 2**

The Atlantic Pelagic Longline Take Reduction Team reconvened in St. Petersburg, Florida from August 21 to August 23, 2012 to assess the status of the Atlantic Pelagic Longline Take Reduction Plan, its implementation, and any progress made towards Plan goals since the Plan regulations became effective in July, 2009. Among other items, the Team was presented with information on pilot whale stock structure, abundance and bycatch, as well as information on fishery compliance with Plan measures. In light of the goals of the Plan, information presented at the meeting, and following Team deliberations, the Team makes the following recommendations.

### **Compliance**

Lack of compliance with Plan regulations regarding mainline length was identified as the primary obstacle to achieving progress towards Plan goals. Based on data available at the time of Plan drafting, the Team identified sets with longline lengths greater than twenty nautical miles as disproportionately contributing to serious injury and mortality of pilot whales. Consequently the Team recommended, and NMFS adopted via regulation, a measure requiring all longline sets in the Mid-Atlantic Bight to use a mainline of no longer than twenty nautical miles. More recent data presented to the Team also appears to indicate that this regulatory measure would, if fully implemented, substantially reduce serious injury and mortality of pilot whales. However, the Team was presented with information, including logbook reports, indicating that there was less than 50% compliance with this regulatory measure since it became legally effective. While the Team recognizes that compliance with the mainline length restriction may have important economic consequences for certain vessels, the Team still believes that, unless and until further or alternate measures are identified that substantially reduce pilot whale bycatch, full compliance with this measure is necessary to meet Plan goals. ***Consequently, the Team recommends that NMFS make every reasonable effort to ensure compliance with the regulatory measure contained in 50 C.F.R. 229.36 requiring sets using pelagic longline gear in the EEZ portion of the Mid-Atlantic Bight not exceed twenty nautical miles in mainline length.***

To better identify non-compliant vessels, and to improve compliance among such vessels, the Team recommends that, *inter alia*, NMFS do the following:

1. Query logbooks for self-reported mainline lengths in the Mid-Atlantic Bight in excess of twenty nautical miles.
2. Query NMFS Southeast Fisheries Science Center Pelagic Observer Program data to identify similar non-compliance with Plan regulations.
3. Determine situations in which observer and logbook data report different mainline lengths with the observer data showing a violation of Plan regulations.
4. Have NOAA Office of Law Enforcement send an outreach letter to any vessels identified via methods above as likely not in compliance, warning that data show likely violations of Plan regulations.
5. If, following issuance of outreach letters, non-compliance with Plan regulations remains a problem, that enforcement measures be prioritized by NOAA Office of Law Enforcement and the U.S. Coast Guard.
6. Develop and deploy, in consultation with the Team, further measures such as use of VMS to better monitor and enforce Plan regulations.

### **Additional Measures To Achieve Plan Goals**

There is a strong consensus among the Team that full compliance with the Plan requirements that mainline lengths be limited to less than twenty nautical miles in the Mid-Atlantic Bight will likely lead to substantial progress towards the immediate Plan goal of reducing serious injury and mortality of pilot whales to below PBR. The team also agrees the development and deployment of gear modifications, most likely in the form of a modified or weaker hook, hold potential to further reduce serious injury and mortality of pilot whales consistent with the overriding Plan goal of reducing such take to insignificant levels. While some research on weak hooks has been carried out to date, the team acknowledges that there is currently insufficient information to confidently determine what, if any, such gear modification can be deployed that would be effective in reducing pilot whale serious injury and mortality while not also reducing catch of targeted species. ***Consequently, the Team recommends that research on potential gear modifications be expeditiously designed and funded such that an on-the-water experiment of sufficient scope to give statistically significant results be carried out in the late summer or early fall of 2013.*** More specific elements of the research are described below.

### **Research on Gear Modifications**

Changes in terminal gear for pelagic longline fisheries – i.e., the fish hooks themselves – have long been considered one of the less invasive options for changes in fisher behavior. Hooks are fabricated by bending a particular gauge of wire into shape, with some manufacturing methods then rolling the hooks through a machine to flatten them into a rectangular cross sectional shape instead of circular. Weaker hooks can be achieved by reducing the wire diameter, as well as retaining the circular cross sectional shape. So-called “weak hook” technology can utilize the size disparity between target and other species to promote the release of larger non-target species, and this technology has been investigated in several U.S. pelagic longline fisheries. Because longline interactions with marine mammals are exceedingly rare, an unrealistically large number of longline sets (sample size) would be required to statistically demonstrate the efficacy of hook change to actually reduce rare marine mammal interactions. Consequently, field trials testing weak hooks are generally evaluated with regard to maintaining target species catch rates.

In the Gulf of Mexico, a major spawning area for the western Atlantic bluefin tuna, weak hooks have been trialed in the longline fishery to determine whether they reduce unwanted mortality of the much larger bluefin without significantly reducing catch of the targeted yellowfin. From 2008 to 2010, relatively strong and weak 16/0 circle hooks were trialed on 311 longline sets (198,606 hooks). There were no significant CPUE differences for 20 of the 23 species analyzed, including target yellowfin tuna. Bluefin tuna catches were significantly reduced by 56.5% on weak hooks (n = 10) compared to stronger hooks (n = 23). Subsequent to this research, NMFS required the adoption of the weak 16/0 for this portion of the fishery.

Weak hook experiments were also carried out in the Hawaii-based deep-set longline fishery, which targets bigeye tuna but also takes false killer whales. Four vessels tested the catch efficacy and size selectivity of 15/0 “strong” circle hooks that straighten at 138 kg of pull in comparison with 15/0 “weak” that straighten at 93 kg of pull. Observers monitored a total of 127 sets of 302,738 hooks, and randomization tests were applied to test for significant differences in catch for 22 species. There were no significant catch differences for bigeye tuna, nor were there any significant differences in mean length of 15 species. Observers collected 76 straightened hooks, of which 6 were control and 70 were weak hooks. There was one observation of an FKW

released from a stronger circle hook. A weak hook requirement was recommended by the False Killer Whale Take Reduction Team but has yet to be implemented.

Weak hooks were also recently tested in the yellowfin tuna and swordfish longline fisheries in the Mid-Atlantic and South Atlantic Bight, respectively, to evaluate their potential to reduce bycatch rates of marine pilot whales. This study found no significant reduction in total retained catch between strong (4.04mm) and weak (3.65) 16/0 circle hooks in 21 sets targeting yellowfin tuna. Nine longline sets targeting swordfish with strong and weak 18/0 circle hooks had similar catches for all species except swordfish, which had statistically higher catch rates (CPUE or catch-per-unit effort, as the number of caught individuals per 1000 hooks) and landed catches with strong hooks.

Additional research on weak hooks in the Atlantic Pelagic Longline Fishery would likely help clarify whether a hook can be deployed that would be expected to reduce pilot whale serious injury and mortality without reducing target catch of yellowfin tuna and swordfish. The Team therefore recommends that further evaluation of weak hooks as a bycatch reduction technology be carried out in areas of the Mid-Atlantic Bight where pilot whale bycatch is most likely to occur. Such an evaluation should include the elements outlined below:

1. Facilitate dialogue between hook manufacturers and PLL fishermen to consider optimal hook designs, particularly for the MAB, that best fits the needs of both pilot whale bycatch reduction and the fishers' economic imperative to retain as much of the target catch as possible.
2. Provide potential modified hooks to fisheries participants for informal tests
3. Test the most promising modified hooks in experimental fisheries trials.
4. Test the most promising modified hooks in trials on dead stranded pilot whales to determine how they interact with and affect tissues.
5. Examine variation in terminal tackle (hooks, leaders, etc.) in Atlantic PLL observer database.

Funding should be made available for this work, through a direct contract by NOAA, if necessary.

### **Other Fisheries**

There is a consensus among the Team that management standards required by the Plan, the MMPA and other provisions of U.S. law are more protective of marine mammals than those of many other countries operating longline fleets. ***Consequently, the Team recommends that NMFS should promptly implement the requirements of Section 101 of the MMPA requiring the banning of imports of fish products from nations engaged in longline fishing until and unless such nations can demonstrate they are utilizing measures comparable to those of the U.S. longline fleet so as to protect pilot whales and other marine mammals from bycatch.*** At present, we have reason to believe that no nation has demonstrated such compliance and therefore importation of tuna, swordfish and other longline caught fish products from these nations should be banned. NMFS should work to ensure that measures adopted by the U.S. fleet are made known to other countries operating longline fleets so as to increase the likelihood of such measures being adopted by those nations.

**Future Team Meetings and Updates**

The Team recognizes that compliance with existing Plan regulations, along with research and development of potential additional or alternative measures such as gear modifications are likely necessary to reach Plan goals. The Team also recognizes that new regulatory measures affecting the fishery, such as measures imposed to reduce bluefin bycatch or dusky shark overfishing, are likely to be imposed in the coming months, and such measures may also have an impact on the nature or extent of fishery interactions pilot whale interactions. Additionally, new information relating to stock structure, abundance and bycatch of pilot whales will likely become available in the coming months. Finally, the Team noted that efforts to meet plan goals would benefit from further input from additional fishers operating in areas of Mid-Atlantic Bight with relatively high bycatch rates. ***Consequently, the Team recommends that NMFS act to ensure that any management decisions it takes related to HMS fisheries (e.g., bluefin and shark measures) that may have impacts on pilot whale bycatch and/or the meeting of Plan goals fully take into account impacts on pilot whale bycatch and cumulative effects on the fishery. The Team also recommends that NMFS provide regular updates to the Team about the status of compliance and enforcement efforts, any relevant regulatory changes to the fishery, and any new information related to pilot whale bycatch. The Team recommends NMFS convene a work team to update the research recommendations in the Draft PLTRP. The Team recommends that NMFS evaluate observer data collection (e.g., hook number of interaction, depredation) and revise observer data collection fields/protocols, as appropriate. The Team recommends that northern MAB fishing industry membership on the TRT be updated/revised, as appropriate. Lastly, the Team further recommends that NMFS reconvene the Team in late 2013 to assess what additional measures, if any, should be taken to achieve Plan goals.***

**ATTACHMENT 3**



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, FL 33701-5505  
(727) 824-5312, FAX 824-5309  
<http://sero.nmfs.noaa.gov>

David Kerstetter  
NOVA Southeastern University  
Oceanographic Center  
8000 North Ocean Drive  
Dania Beach, FL 33004

Dear Dr. Kerstetter:

The Atlantic Pelagic Longline Take Reduction Team (PLTRT) recently met to review Take Reduction Plan implementation and monitoring, receive updates on pilot whale stock structure, abundance, and mortality, discuss potential options for future management measures, and review PLTRT-related research activities. During that meeting, among other consensus recommendations (enclosed), the PLTRT recommended that research on weak hooks in the Atlantic Pelagic Longline Fishery be conducted to help clarify whether a hook can be deployed that would be expected to reduce pilot whale serious injury and mortality without reducing target catch of yellowfin tuna and swordfish. The PLTRT recommended that further evaluation of weak hooks as a bycatch reduction technology be carried out in areas of the Mid-Atlantic Bight where pilot whale bycatch is most likely to occur. The PLTRT supports research aimed at addressing these priorities.

Sincerely,

Erin Fougères, Ph.D.  
Pelagic Longline  
Take Reduction Team Coordinator

Enclosure

