False Killer Whale Take Reduction Team
Meeting #3, June 15-18, 2010
Kahuku, HI

KEY OUTCOMES MEMORANDUM

I. OVERVIEW

The National Marine Fisheries Service (NMFS) held the third meeting of the False Killer Whale Take Reduction Team on June 15-18, 2010, at the Turtle Bay Resort in Kahuku, Hawaii. (See **Attachment 1** for a copy of the agenda.) The meeting focused on the following objectives:

- Provide updates on recent activities
- Foster follow-on discussions to identify candidate Take Reduction Plan measures; begin developing packages of possible actions
- Engage full Team in discussions related to Take Reduction Plan research needs; begin prioritizing among candidate actions
- Initiate review of draft Take Reduction Plan language

This meeting summary is presented in five main sections: Overview, Participants, Meeting Materials, Key Outcomes, and Next Steps. The Key Outcomes section is further segmented into the following:

- ***Welcome, Introduction and Updates.*** This section provides a brief overview of meeting purpose, agenda overview and relevant updates.
- ***Background Briefings and Presentations.*** This section summarizes the various briefings presented at the meeting outset.
- ***Overarching Themes.*** This section summarizes the results of the team's brainstorming and deliberations over the four-day meeting. Any recommendations or actions agreed to by the Team are called out in this section.

Additionally, a number of meeting materials are included as attachments.

II. PARTICIPANTS

The meeting was attended by 16 of 19 Team members or their alternates. Participants included the following: Robin Baird, Hannah Bernard, Brendan Cummings, Paul Dalzell, Roger Dang, Clint Funderburg, John Hall, John LaGrange (for Jerry Ray), Kristy Long, Kris Lynch, David Nichols, Tory O'Connell, Andy Read, Ryan Steen, Lisa Van Atta (for Lance Smith) and Sharon Young. William Aila, Steve Beverly and Paul Nachtigall were unable to attend.

Nancy Young, with the NMFS Pacific Islands Regional Office (PIRO), and Erin Oleson and Karin Forney, with the NMFS Pacific Islands and Southwest Fisheries Science Centers, respectively, also joined in Team deliberations. Scott McCreary and Bennett Brooks from

CONCUR, an environmental dispute resolution firm specializing in marine resource and water issues, served as the neutral facilitators. As well, about 10 people, including staff from NMFS, NOAA Office of General Counsel, NOAA Office of Law Enforcement, the U.S. Coast Guard, and members of the public, attended all or part of the meeting.

III. MEETING MATERIALS

Meeting materials were provided to support the group's deliberations. As possible, meeting materials were sent out ahead of time. However, some documents and nearly all presentation materials were distributed as handouts. All materials are available on the web at http://www.nmfs.noaa.gov/pr/interactions/fkwtrt/).

IV. KEY OUTCOMES

Below is a summary of the main topics and issues discussed. 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 discussions, and areas of full or emerging consensus.

A. Welcome and Introductions

The meeting began with a welcome by Lisa Van Atta, PIRO Assistant Regional Administrator for Protected Resources. This was followed by a brief overview of the meeting purpose, self-introductions, and a review of the meeting agenda. It also included brief updates on the following topics:

- ***Take Reduction Plan (TRP) Goal.*** NMFS staff presented a summary of the TRP goals distributed one week prior to the meeting: reducing the level of mortality and serious injury (M&SI) of the Hawaii Pelagic stock of false killer whales within the U.S. Exclusive Economic Zone (EEZ) of the Hawaiian Islands to below the stock's potential biological removal (PBR) level of 2.5 false killer whales per year. This goal, it was noted, includes two caveats:

    - Reduction in M&SI within the EEZ cannot be achieved by displacing effort to areas outside of the EEZ if that displacement would be expected to result in an increase in M&SI of false killer whales in waters outside the EEZ.
    - Gear modifications or changes in fishing practices should be applied fleet-wide (wherever the fleet operates).

- ***HLA Outreach Effort.*** Ryan Steen provided a brief summary of the fishermen outreach meeting hosted by the Hawaii Longline Association in late April. The meeting was extremely well attended, with as many as 50 fishermen in attendance, and generated significantly increased awareness and interest in the effort and possible solutions. The Team discussed briefly the need for a follow-on survey of fishermen, but agreed that any survey should be driven by specific information needs.

- ***Draft 2010 SAR Status.*** Erin Oleson noted that the draft 2010 Stock Assessment Report (SAR) is still under review and is expected to be published in the next few weeks. N. Young

noted that much of the data from the 2010 SAR has been already been incorporated into draft TRP chapters distributed earlier for Team review.

NMFS staff confirmed that Meeting #4 is to be held at the Moana Surfrider in Honolulu.

B. Background Briefings and Presentations

The meeting included focused presentations on a number of topics. Below is a quick synopsis of the topics covered. (Broader discussion themes based on these presentations are captured in Section C below.) As noted earlier, copies of nearly all presentations are available on-line. (Only the presentations by Adam Bailey (NMFS PIRO) and Keith Bigelow (NMFS Pacific Islands Fisheries Science Center) are not available for posting.)

- ***Spatio-Temporal Patterns of Effort and False Killer Whales.*** Michael Marsik with the NMFS Pacific Islands Region Observer Program presented monthly maps of logbook data highlighting the spatio-temporal patterns of longline fishing effort, overlaid with spatio-temporal data on false killer whale sightings and takes, and marine mammal-caused damage to catch (depredation). One Team member recommended that the false killer whale sightings be expressed and illustrated in terms of sighting per observer hour to normalize for any increases in observer coverage.

- ***Bait Retention Gear Modification Results.*** K. Bigelow presented preliminary results of experimental bait retention gear modifications tested over the past two months. The preliminary results were not encouraging, with data collected and analyzed to-date suggesting the experimental gear provided no appreciable increase in bait retention and may have reduced target catch rates. Team members expressed interest in looking more closely at the change in catch rate by species to determine the effect of the gear modification on catch of target species (e.g., bigeye tuna).

- ***Weak Hooks.*** Two different presentations focused on weak hooks: (1) a presentation on recent hook strength testing by the Hawaii longline fleet; and (2) an overview of recent weak hook research worldwide. Below is a brief summary of both presentations.

    - J. Hall presented a brief summary of hook strength tests conducted on a digital line/hook tester at Pacific Ocean Producers between Meetings #2 and #3. The testing, a look at the pull strength required to bend and open a hook enough for a fish or whale to escape, suggests that certain "weak" hooks have the potential to serve as the weakest link in the gear – a result that appeared promising to many Team members as a strategy for releasing some hooked whales and reducing the severity of their injuries.

    - David Kerstetter (Nova Southeastern University Oceanographic Center) presented an overview of recent and future research in longline fisheries in the Gulf of Mexico and off the coast of North Carolina to study the impact of weak hooks on bycatch and target species rates, noting that the results to-date are inconclusive and require further study. D. Kerstetter also presented data on hook strength testing, and noted that the

New England Aquarium might have limited funding available to support further weak hook testing in the Hawaii longline fleet later this year.

Extensive Team deliberations related to weak and circle hooks are summarized in the *Overarching Themes* section below.

- ***Reducing the Severity of False Killer Whale Injuries.*** K. Forney presented information on potential methods for reducing the severity of hookings and/or entanglements, based on the NMFS Serious Injury Determination Guidelines. She also presented data from the Observer Program to assess the potential for various management actions under consideration to reduce injury severity. Her analysis suggested that at least 38% of past serious injuries could have been reduced to non-serious injuries if hooks and gear had been removed from the animals; the removal of hooks and gear may be facilitated in the future by gear changes (e.g., weak and/or circle hooks) and improved captain/crew training. Some Team members also saw the potential for the severity of the injuries occurring in other situations (e.g., line cut because animal was too active, or line parted) to be reduced by gear modifications and training changes.

- ***Update on Predictive Model***. K. Forney provided an update on the predictive model she developed to support Team deliberations. The model is intended to help Team members assess the impact on false killer whale takes of various gear and fisheries management actions being considered by the Team. Team members' comments and recommendations for improving the model are summarized in the Overarching Themes section below.

- ***Existing Working Training for Marine Mammal Interactions.*** A. Bailey presented an overview of current protected species workshops and suggested possible approaches for incorporating captain/crew training related to false killer whale handling into the existing training. The presentation served as the basis for later Team discussions related to captain/crew training needs.

- ***2010 Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS) II Focus.*** E. Oleson provided a brief overview of the approach to the planned 2010 HICEAS II survey, emphasizing the new methods being used to improve the accuracy and precision of abundance estimates. Among the most important changes: (1) relying on both visual and acoustic observations; (2) having more observers simultaneously on the bridge during a sighting to better assess group size; (3) including rear-facing spotter to assess vessel-attraction effects; (4) launching a small boat to take photographs when false killer whales are sighted or detected acoustically; and (5) more ship time. She also noted that the HICEAS II survey will have a false killer whale focus.

- ***MMPA Import Provisions and MSA Identification and Certification Procedures.*** Mike Simpkins with NMFS' Office of International Affairs provided an overview of U.S. efforts internationally to reduce marine mammal bycatch in fisheries worldwide. His presentation focused on provisions of both the Marine Mammal Protection Act Section 101(a)(2) and the Magnuson-Stevens Fishery Conservation and Management Act. He also presented information on the Joint Tuna RFMO Bycatch Workshop to be held in late June 2010.

Finally, he encouraged Team members to submit comments on an advance notice of proposed rulemaking (ANPR) that would define U.S. marine mammal bycatch standards and criteria for assessing foreign fisheries that import fish, and describe procedures for applying those standards.

As well, E. Oleson presented an overview of mark-recapture surveys as an alternative method for assessing pelagic stock abundance.

C. Overarching Themes

The Team's deliberations began to flesh out possible elements and chapters of a Take Reduction Plan, as well as crystallizing key issues requiring further discussion. Below is a synthesis of the Team's key discussion points, emphasizing (1) areas of emerging agreement; (2) areas requiring further deliberations; and (3) other topics discussed.

1. Areas of Emerging Agreement

Team deliberations over the four-day meeting demonstrated strong preliminary consensus on several possible aspects of a Take Reduction Plan. These areas, outlined below, still require additional discussion and need to be considered by Team members in the context of a complete Take Reduction Plan. Still, there was strong Team support for the concepts outlined below.

- ***Circle hooks.*** Team members put forward a consensus recommendation requiring the use of small circle hooks (14/0, 15/0, 16/0) in the deep-set longline fishery. The recommendation – provided as **Attachment 2** – stepped out a series of hook characteristics intended to minimize the chance of a false killer whale hooking, or to allow a false killer whale to be released or to release itself if hooked by straightening the hook. Key aspects are summarized below:

    - Wire diameter not to exceed 4.5mm (wire diameter enforced with a gauge)
    - Round wire
    - Pull strength not to exceed 350 pounds
    - 10 degree offset or less.

    Additionally, the Team put forward a recommendation requiring that longline gear for any other fishery that does not meet these standards (e.g., 18/0 circle hooks required in the Hawaii-based shallow-set fishery) must be stowed in a manner inaccessible to fishing during that trip. This language was intended to foster effective enforcement, yet enable boats that engage in both the deep-set and shallow-set fisheries to carry gear for both fisheries.

    Team members broadly endorsed the small circle hook requirement since it appears to result in about a 6% reduction in false killer whale bycatch, without negatively impacting big eye tuna catch rates. Although sample sizes of animals caught previously by small circle hooks were too small for a meaningful statistical analysis (3 false killer whales, two pilot whales, and one unidentified false killer whale or pilot whale), the proportion of animals that were seriously injured or killed was lower for small circle hooks (50-75%, depending on species

included) than for tuna hooks (89-93%). Thus, the use of small circle hooks might reduce the frequency of serious injuries, although this is not certain. Roughly 41% of the current fishing effort already uses circle hooks, and another 24% uses a mix of hooks types including small circle hooks, so there is expected to be less resistance and costs associated with implementing this requirement.

Team discussions highlighted several other points that, while not formally included in the attached consensus recommendation, merit mention:

- The importance of providing early notification to the fleet of any new requirement to ease the gear changeover.
- The use of financial incentives, if possible, to accelerate purchase and adoption of the new gear.
- The need for aggressive outreach with the fleet to underscore the message that circle hooks do not negatively impact target species catch rates.

- ***Terminal tackle.*** For the deep-set fishery only, the Team put forward a consensus recommendation requiring that the fleet use monofilament leaders not less than 2.0 mm diameter. The intent of this requirement is to ensure that the hook is the weakest component of the terminal tackle.

  During the Team deliberations, several participants raised concerns that the diameter of monofilament leaders may change after use – a condition that could impact both enforcement and line-breaking strength. To address this concern, Team members J. Hall and C. Funderburg agreed to test line stretching after the meeting to inform final TRP language. Possible strategies for amending the language include tying the line diameter language to "when new" requirements and incorporating an after-use minimum diameter requirement based on the results of the tests.

  N. Young is to draft and distribute to the Team updated language to reflect any new requirements regarding monofilament diameter.

- ***Weak hook experiment.*** Team members put forward a consensus recommendation calling for a near-term pilot study and large-scale weak hook trials to assess the impact of different hook strengths on target species catch rates. The recommendation – also included in **Attachment 2** – centers around the following aspects:

  - Near-term pilot study: compare both 4.0mm and 4.2mm "weak" hooks with 4.5mm hooks; limit the trial to 8 trips (4 trips per comparison); provide compensation to participating vessels; use trial results to select the smallest diameter hook that does not adversely affect target catch rates as the "weak" hook to test in large-scale trial.
  - Large-scale trial: hook strength comparison should be determined by the results of the pilot study; number of sets to be determined by power analysis; provide compensation to participating vessels.

Team members broadly supported the research recommendation as an essential next step to balance (1) the apparent potential for weak hooks to result in lower marine mammal mortality and serious injury rates, with (2) the need to demonstrate to industry that weak hooks will not negatively impact target species catch rates. There was also broad support for using experimentation to identify the weakest hook possible to be used in the fishery.

Next steps associated with this recommendation include determining logistics and confirming funding for initial weak hook trials, and working to secure funding for a large-scale trial. Team member A. Read is to assess the potential of securing near-term funding.

- ***Captain/Crew Training.*** Team members put forward a consensus recommendation intended to broaden captain and crew awareness of the benefits of and strategies for releasing false killer whales in a manner that does not result in a serious injury to the whale. Specific aspects of the recommendation center on the following:

    - Requiring via regulation a marine mammal component of the existing Protected Species Certification Program. Owners and captains would be required to complete the training annually. In the first year, training would need to be completed in-person; subsequent years could be done on-line. Training would be optional but recommended for crew.

    - Calling for NMFS to develop course content focused around the following topics: regulatory overview, species identification, marine mammal handling and release techniques, and best practices for reducing marine mammal bycatch and injury. Team members emphasized the importance of structuring course content in a manner that makes clear to fishermen the benefits of facilitating non-serious injuries (i.e., healthy populations and less bycatch may have fewer impacts on industry). They also called on NMFS to (1) use the Team as an ongoing sounding board for any course content developed; (2) translate materials into Vietnamese and Korean; and (3) incorporate the new components into existing trainings as quickly as possible (i.e., before a final TRP is formally implemented). There was also interest in using the training to garner owner/captain interest in participating in false killer whale photo-identification studies.

    - Modifying the existing Hawaii marine mammal placard to more closely mimic the look and feel of the Atlantic Pelagic Longline placard. Include language on the placard calling for the crew to notify the captain in the event a marine mammal is hooked or entangled. The intent of this recommendation is to ensure that a well-trained individual is overseeing efforts to safely release a marine mammal, since Team members broadly agree that the methods used to handle a hooked or entangled marine mammal are likely to have a significant impact on whether the interaction results in a serious or non-serious injury.

  The recommendation is to be drafted into proposed TRP language for review by a Work Group between Meetings #3 and #4 and then by the full Team at Meeting #4. Among the issues still to be resolved: (1) whether and where placards are to be posted on vessels; and (2) whether crew are to be encouraged or required to notify captains in the event of a marine mammal hooking or entanglement.

- ***Long-Term Research Priorities.*** Team members developed a consensus list of long-term research priorities. The list, developed through a ranking exercise conducted by all Team members, identified the overall research priorities across four broad categories: longline gear-related, false killer whale biology, false killer whale assessments, and kakaline/short line fisheries. Below are the top research priorities ranked by at least 80% of Team members as being of "high" priority (in descending order):

    - Evaluate impact of circle hook/weak hooks on FKW bycatch rates (*Longline Gear*)
    - Conduct regular Hawaiian EEZ surveys (*FKW Assessments*)
    - Understand impact of weak hooks on target species catch rates (*Longline Gear*)
    - Continue research into FKW abundance using towed and stationary acoustics (*FKW Assessments*)
    - Develop methods for fleet to use acoustic recorders to determine FKW presence prior to setting (*Longline Gear*)
    - Determine number of vessels that use shortline and kaka line gear; begin data collection on when and how fishing *(Shortline/kaka line)*
    - Distinguish FKW calls from other odontocete species *(FKW Biology)*

    Team members recommended that only the above research priorities be highlighted in the main body of the eventual TRP, so as to focus attention and interest on the top needs identified by the Team. At the same time, the Team recommended including the category-by-category research ideas in the TRP appendix ,as there may be funders interested in providing research monies at some future date to support valuable but lower-priority activities. As well, some entities may allocate funds for a specific research category, given their own programmatic priorities. Team members also recommended that final TRP language underscore the importance of ongoing support for those research activities already being undertaken by NMFS.

    Based on the discussion, R. Baird and CONCUR and NMFS staff are to prepare draft TRP language for Team review and comment. The results of the overall and category-by-category rankings conducted at the meeting are included as **Attachment 3**.

2. Areas Requiring Further Discussion

As described above, the Team made significant progress identifying specific actions to include in an eventual TRP. Still, there were several critical areas where Team views diverged significantly. These topics, summarized below, necessitate further discussion both within and across caucuses.

- ***Near-Term Weak Hook Implementation.*** While the Team saw great potential for using weak hooks to reduce false killer whale bycatch and voiced strong, consensus support for conducting weak hook trials, Team members differed in their views of the approach to incorporating deep-set weak hook requirements (i.e., weaker than the hooks that are currently used in the fishery) in the Plan at this point.

The primary divergence centered on whether or not the TRP should include an upfront requirement related to weak hooks. Conservationists stepped out a proposal with the following aspects:

- Provide funding and conduct research in the very near-term (prior to TRP rule-making) to assess whether the use of weak hooks (4.2mm) negatively impacts bigeye tuna catch rates more than 5%.
- If the research is conducted and bigeye tuna catch rates are reduced by less than 5%, require 4.2mm weak hooks in the Hawaii-based deep-set longline fishery.
- If the research is conducted and bigeye tuna catch rates are shown to be reduced by more than 5%, the fleet would be required to fish with a maximum of 4.5mm weak hooks. However, as a fallback provision, the proposal would require the fleet to shift to 4.2mm hooks if a false killer whale is observed to be caught on a 4.5mm hook that did not straighten.

Those advocating this approach said it had several advantages. For one, it relies on the latest research to inform the Plan. Secondly, it acknowledges that the fishery needs additional information before it can fully convert to weaker (4.2mm) hooks. Lastly, proposal backers characterized the fallback provision as essential since they see the shift to weak hooks as a "leap of faith" given the promising but uncertain impact on marine mammal bycatch rates.

Industry members expressed several concerns with the content and sequencing of this proposal. Most importantly, they voiced reluctance to agree to any upfront weak hook requirements without knowing the results of the weak hook tests on target species catch rates. Moreover, they said it would be extremely difficult to convince the broader fishery to accept the requirement without better information. Additionally, several participants said industry would be effectively taking its own leap of faith regarding the potential impact of weak hooks on target catch rates.

As well, there were concerns voiced by some Team members (both researchers and industry representatives) regarding the pragmatic reality of tying implementation of future actions to research results. For one, several Team members suggested that the weak hook target should be informed by testing; why, as one person said, stipulate a 4.2mm weak hook when even weaker hooks may be viable (i.e., lower marine mammal bycatch rates without hurting target catch rates). Better, they said, to test first and devise a management strategy later. Others voiced concern about tying a future management decision to research results that, among other things, have no identified funding sources and are likely to prove difficult to interpret. There were also concerns that research would not be conducted in a timely enough fashion. And one Team member said it would be important to assess the reason for a take on a weak hook before simply implementing a contingency plan. "We need to know what happened," this Team member said.

All participants agreed that any use of weak hooks needs to be accompanied by training to ensure vessel owners, captains and crew are aware of practices that make it easier or harder for a marine mammal to free itself from a weak hook, and that reduce or increase the severity of injuries to the marine mammal. Training also needs to address safety-at-sea issues.

Finally, there was a recommendation from some Team members that future efforts to assess impact on target catch rates need to show value per hook and not just overall catch rates.

- ***Contingency Plan.*** Team members continued the discussion started during Meeting #2 regarding potential contingency plans if the combination of gear modifications, captain/crew training, and other potential initial management actions are insufficient to meet Plan goals. While all parties agreed on the need for a contingency plan, Team members had divergent views on the aspects of such a plan. Below is a summary of the two primary contingency plans put forward.

    - One approach, put forward by a conservation advocate, looks to use fishing effort reductions sufficient to bring M&SI of Hawaii pelagic false killer whales in line with the Team's goals: below 2.5 within the EEZ around the Hawaiian Islands and no increases from current levels on the high seas. In this approach, an effort cap within the EEZ and on the high seas (west of 135° W longitude; areas within the likely range of the Hawaii pelagic stock of false killer whales) would be put in place when an agreed-upon trigger (i.e., a certain number of M&SI takes) was surpassed. Deep-set longline effort would not be restricted in areas outside the range of the pelagic stock (preliminarily described as approximately east of 135° W longitude and north of 32° N latitude).

    - Several fishery representatives said it was not tenable to accept effort reductions at this point, citing uncertainty in the current PBR, the likelihood of updated abundance estimates based on the upcoming 2010 survey[1] and the potential for painful economic impacts (lost income, lost market share). As one Team member put it: "For fishermen, it's tough to agree to a fishery closure based on old data." Another fishery representative noted that the plan to limit effort on the high seas would be counter-productive, suggesting that the foreign fleets operating in the same waters would simply increase their effort (and do so with less concern for marine mammal takes). This same person noted that shifting effort east of 135° W longitude (outside the area of effort restrictions) also triggers safety considerations for smaller vessels. Instead, fishery interests recommended that – in the event M&SI surpass some agreed-upon trigger – the Plan require the Team to reconvene and hammer out new management actions. This approach, they said, would ensure that the Team's deliberations are informed by the latest data collected in the 2010 survey. This approach was not seen as viable by a number of Team members who said any contingency plan needed to incorporate concrete mechanism for reducing takes and not just call for further discussions.

    The deliberations also surfaced other considerations related to the crafting of possible contingency plans. These included the following: (1) support for accelerating the Team's access to and use of the latest abundance data (i.e., after (expedited) SRG review but before it is formally incorporated into the latest SAR); (2) interest (if possible) in tying take reduction targets to a percentage of PBR, so the Plan remains current even as abundance numbers and PBR are updated; (3) concerns about the enforceability of various measures; and (4) the

[1] K. Forney and E. Oleson noted that the 2010 survey is unlikely to significantly change the new abundance estimate. Moreover, they said, there's no way to anticipate now whether the new abundance will be higher or lower.

benefit of increasing observer coverage within the EEZ to reduce uncertainty in take estimates (an important consideration given the rarity of false killer whale take events).

Finally, NMFS staff emphasized that, given the uncertainty associated with the gear and training actions discussed to-date, it expects to put forward some type of contingency plan in any proposed rule it develops.

Though participants were not yet able to reach agreement, participants indicated their willingness to consider new options. Fishery interests emphasized the need for additional internal caucuses before engaging in more detailed discussions on the topic.

- ***Insular Stock.*** Team members considered a proposal put forward by a conservationist member of the Team recommending that the current February-September longline exclusion boundary be maintained year-round – a move that would push the fleet farther out from the Hawaiian Islands in the fourth quarter but eliminate most of the overlap between the Hawaii longline fleet and the insular stock. This move was projected to displace the 3 to 6 percent of the fleet's effort. Another option was to craft an exclusion zone that mimicked the updated range of the insular stock proposed in the draft 2010 Stock Assessment Report delineated on a map presented by E. Oleson. (See **Attachment 4**.)

  The proposal was not seen as viable by fisheries representatives on the Team. Most problematically, they said, the bigeye tuna harvested closest to the island is of extremely high value; in other words, while the harvest may represent just a small percentage of the annual catch volume, its dollar value to the fleet is said by fishermen to be significantly higher. Moreover, several Team members questioned the underlying logic of the proposal, suggesting that there is little evidence to-date to suggest interactions between the deep-set longline fleet and the insular stock.[2] And at least one Team member questioned the accuracy of the Agency's delineation of the insular stock range.

  The Team did not identify any specific next steps, though further discussions are anticipated at Meeting #4.

- ***Triggers.*** Team members only briefly discussed triggers as part of its deliberations related to contingency plans. While no firm proposals were put forward, given the low PBR within the EEZ (2.5 animals per year), participants agreed that very few observed takes would be required to trigger contingency plans. One conservationist suggested that a single observed mortality or serious injury take might be too low as a trigger, given the randomness of the events, but that two mortalities or serious injuries in a year might be a better indicator. Several speakers emphasized the need to distinguish between triggers that indicate the goal isn't being met versus those that show the gear isn't working. More discussion on this topic is needed.

[2] R. Baird suggested it is difficult to assess the presence or absence of false killer whales on the windward side of the islands. For one thing, he said, it is not appropriate to fully extrapolate from the tagged data of individuals to the behavior of a much larger group. Additionally, he said there is much less sampling on the windward side of the islands, a fact that could make the distribution appear more asymmetrical than it really is.

3. Other

The meeting generated discussion on a range of additional topics. Below is a summary of these additional themes.

- ***Strategies for strengthening predictive model.*** As noted earlier, while both supportive and appreciative of the predictive model, Team members offered several suggestions for strengthening the model, including: (1) incorporating other existing management constraints (bigeye quota, turtle caps, etc.); (2) analyzing and reporting catch results by both hooks rather than (or in addition to) sets; (3) revising the summary table to show M&SI relative to both the TRT target and current take levels; (4) running the predictive model with the Palmyra data included to serve as a sensitivity test; and (5) allowing the vessels that were excluded following participation in 2003-2006 research trips (because they retained the experimental gear configurations) to be added back into the data base after a certain period of time. Some Team members also voiced cautions regarding the model, noting it assumes that whale behavior would not change if the fleet changed operations . Additionally, Team members asked NMFS staff to present data from the model in a manner that teases out important findings and implications, but leaves the interpretation of the data to Team members.

- ***Value of mark-recapture research.*** Team discussions highlighted several advantages of mark-recapture research (and more general photo identification) for the Hawaii pelagic stock, including: (1) offering an additional method to generate, confirm and/or revise abundance estimates; (2) providing a mechanism to refine serious injury determinations; and (3) generating data to sharpen knowledge of stock boundaries and population structure. Deliberations also noted some significant limitations, including: (1) the need for training to get usable photos; (2) the limited time captain and crew have to spot false killer whales; and (3) the number of photos needed to generate a meaningful catalogue. Based on both the potential and the constraints, Team members broadly recommended that NMFS recruit the voluntary participation of interested captains - this is best done, several Team members said, by making sure captains understand the benefits to the fishery – and provide them with appropriate training and equipment. The Team also suggested that observers be provided better equipment to support their efforts.

- ***Kaka line/Shortline.*** D. Nichols presented information on State of Hawaii kaka line and shortline data collection protocols to the Team. Team members expressed continued interest in getting better information on the kaka line and shortline fisheries, including vessel numbers, catch volume and value, bycatch, depredation and marine mammal interaction information. Interest in this data is particularly high given the disconnect between state data records and anecdotal information regarding marine mammal takes. Additionally, Team members noted that while much of the information about the kaka line and shortline fisheries is anecdotal, there does seem to be value (from a joint fact finding perspective) to keeping a focus on assembling available data and refining and ground-truthing this information. As one Team member observed "Each time we talk about this, we seem to realize that we have just a little bit more information." Finally,

Team members noted that the research agenda does include two items aimed at strengthening the information base on these fisheries.

- ***International bycatch provisions.*** Team members offered several observations regarding the merits and challenges inherent in weighing in on the international bycatch front. These included: (1) species characterized as "bycatch" in the U.S. are often not characterized as bycatch in other nations; (2) the rigor and effectiveness of other nation's marine mammal assessment and/or bycatch reduction programs vary widely; (3) stakeholders have low expectations that the U.S. will meaningfully implement existing provisions; and, (4) a recognition that there has been little systematic work done on transfer effects (though one participant noted a study of transfer effects when the Hawaii-based shallow-set swordfish-target fishery was closed due to sea turtle bycatch). One Team member suggested an alternate approach to working with other nations. In this proposed approach, the U.S. would project each foreign fleet's bycatch rate using U.S. bycatch rates. This approach would effectively shift the burden of proof onto other nations to refute the U.S. forecast. Finally, R. Steen and B. Cummings agreed – time permitting – to draft a proposed Team comment letter on the ANPR for draft MMPA international provisions. Team members also noted that they will be submitting individual comments.

- ***Other.*** Below is a listing of other comments and suggestions put forward during the meeting:

    - Further assess the results of C. Funderburg's gear modification experiment to assess the impact on species-specific catch rates.
    - Work with P. Nachtigall to design an experiment using Kina (a captive false killer whale) that assesses whether the recently tested bait retention gear modification acts as a deterrent or an attractant ("dinner bell effect).
    - Revise Observer Program forms to allow data collection on set-splitting (short sets), as this will enable NMFS to track the possible impact of set-splitting in future years.
    - As more fleet activity shifts east, NMFS will need to better understand the dividing line for classifying takes as part of the Pelagic rather than the Eastern Pacific stock. This is important to Team members, since the Team's goal, as defined by NMFS, doesn't allow for effort shifts if it results in increased takes in the Pelagic stock.
    - Assess Observer Program data from 2010, 2007 and 2005 to understand any trends that might have contributed to a lack of takes in the first six months of each year.

Finally, at several junctures during the meeting, NMFS staff emphasized the value and importance of Team consensus, noting that agreement on a draft TRP carries significant weight with the Agency and greatly increases the likelihood that plan elements will be adopted in a proposed rule. Without Team consensus, they noted, the Agency will be forced to develop its own proposed management measures.

V. NEXT STEPS

Team deliberations over the course of the four-day meeting identified a number of next steps. Below is a summary of these follow-on tasks.

A. Meeting Timeline

The Team's meeting schedule is as follows:

- Meeting #4: July 13-16 [four full days; Moana Surfrider, Honolulu]

Team members sought clarification from NMFS regarding the potential to push back the July 19th deadline for submitting a draft TRP. L. Van Atta clarified that NMFS does not have the authority to change the deadline and strongly advised the Team to conclude its deliberations in time to meet the July 19th deadline. To that end, Team members were encouraged to attend Meeting #4 in-person or identify Team members who could serve as their proxy.

B. Draft Take Reduction Plan Language

Team members agreed on several next steps to translate the areas of emerging agreement into draft TRP language for further Team review and discussion. Specific steps agreed to are as follows:

- **Circle and weak hooks.** PIRO staff are to update the draft language developed by the Team to incorporate new language that addresses concerns related to (1) the potential for line-stretching; (2) the importance of maintaining the hook as "the weakest link;" and (3) the need to fold in language addressing deep-set vessels carrying shallow-set hooks. Additionally, C. Funderburg and J. Hall are to test monofilament line stretching to assess the potential impact on line-diameter effectiveness and enforcement. As well, A. Read is to explore funding potential for near-term weak-hook experiments, and PIRO staff are to garner input from the NOAA Office of Law Enforcement regarding circle and weak hook enforcement considerations.

- **Captain/crew training.** K. Long is to develop, based on the Team's discussions, draft language related to captain/crew training addressing false killer whale-related issues. Specifically, she is to prepare the following draft materials: (1) draft TRP language on captain/crew training and on-board handling placard; (2) an outline to guide captain/crew training to be incorporated into NMFS' existing Protected Species Workshops; and (3) information to be included in a false killer whale-related on-board placard (modeled on the Atlantic pelagic longline placard).

- **Research Priorities.** R. Baird is to develop draft TRP language based on the Team's discussions and prioritization of research-related priorities. The draft is to include both the Team's overall priorities, as well as a listing of the top priorities within each of the four categories discussed: false killer whale assessments, false killer whale biology, longline gear modifications, and kaka line and shortline fisheries.

- **MMPA International Provisions.** As time permits, R. Steen and B. Cummings are to draft a letter from the Team providing comment on the ANPR for draft MMPA International Provisions. Team members are also expected to submit comments on the ANPR individually.

Additionally, Team members are to provide feedback on draft TRP chapters 1-5 prepared by N. Young. Comments are to be forwarded, via email, to N. Young by Friday, June 25. She will then compile them into an integrated set of comments for distribution back to the Team. Additionally, NMFS and CONCUR are to prepare drafts, as possible, for chapters 6-9 for preliminary review by the Team prior to Meeting #4.

C. Captain/Crew Training Work Group

A Work Group is to review and comment on the draft captain/crew training language to be developed by K. Long. If there are no or few substantive comments, the Work Group will confirm and revise the draft solely via email. If discussion is needed, the Work Group is to meet, via teleconference, on Wednesday, June 30, at 2:30 p.m. (EST), 11:30 a.m. (PST) and 8:30 a.m. (HST) to develop new language for consideration by the full Team at Meeting #4. Work Group members are: R. Baird, K. Lynch, K. Long, J. LaGrange, R. Steen, D. Nichols, H. Bernard, and S. Young.

D. Potential TRP Actions/Contingency Plans

Fisheries representatives are to meet within-caucus to assess the contingency plans and other potential TRP actions discussed during the meeting to assess the viability of the alternatives and develop strategies for follow-on Team discussions. Team members may also engage in cross-caucus talks on these issues prior to Meeting #4, but no firm plans were agreed to (pending the outcome of the fishery caucus deliberations).

E. Other Next Steps

The meeting generated a handful of other next steps. These actions are listed below:

- **Predictive Model.** K. Forney is to distribute the updated predictive model input specification sheet to all Team members and let them know that she is available to run additional model scenarios during the weeks prior to Meeting #4. She is also available to provide assistance to Team members (within and across caucus), as needed.

- **Additional Analyses.** Based on Team discussions, M. Marsik will continue efforts to obtain plots of the distribution of takes, depredation, and fishing effort relative to monthly sea surface temperatures, to allow an examination of any patterns that might have contributed to a lack of takes in the first six months of 2005, 2007 an 2010 or the increase in takes during 2009; and, as possible, (2) further analyze observer data to identify any additional hook-type effects (i.e., assess where there were straightened hooks). Additionally, K. Bigelow is to continue analyzing the results of C. Funderburg's gear modification experiment to assess the impact on species-specific catch rates.

- **Meeting Materials.** N. Young is to post on the Team website presentations not provided prior to the meeting.

Questions or comments regarding this summary should be directed to Bennett Brooks (212-678-0078 or *bennett@concurinc.net*) or Scott McCreary (510-649-8008 or *scott@concurinc.net*).