



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
7600 Sand Point Way N.E.
Seattle, Washington 98115

Agenda Item I.4.b
Supplemental NMFS Report
November 2014

November 5, 2014

Dorothy M. Lowman
Chairwoman
Pacific Fishery Management Council
7700 NE Ambassador Place; Suite 101
Portland, Oregon 97220-1384

Dear Ms. Lowman:

The purpose of this letter is to provide information pertinent to the Pacific Fishery Management Council's (Council) recent motion to consider adopting a range of alternatives and a preliminary proposed alternative (PPA) for managing the California large mesh drift gillnet (DGN) fishery to reduce bycatch through the imposition of annual hard "caps" on serious injury/mortality of protected marine mammals and sea turtles. NOAA's National Marine Fisheries Service (NMFS) appreciates the Council's efforts in seeking measures to further minimize and mitigate bycatch and recognizes the challenges the Council is facing to meet the mandates of the various statutes that affect the management of our West Coast fisheries. As the Council moves forward on this matter, we offer some insights for consideration during discussions at the November Council meeting.

As you recall, NMFS staff from the West Coast Region (WCR) and the Southwest Fisheries Science Center (SWFSC) gave presentations to the Council at your September 2014, meeting in Spokane, Washington. These presentations contained detailed information regarding the management of fishery impacts on marine mammals and sea turtles under the Endangered Species Act (ESA) and outlined the rigorous and conservative scientific process that NMFS uses to manage anthropogenic impacts, including commercial fishing, to marine mammals under the Marine Mammal Protection Act (MMPA). As underscored by the NMFS representatives, the DGN fishery is currently not jeopardizing any of the ESA-listed species incidentally taken in the fishery. In addition, NMFS has determined that the DGN fishery, in the context of all the human-caused serious injury and mortality of the California/Oregon/Washington stocks of humpback whales and sperm whales, has a negligible impact on those stocks. Teams of NMFS WCR and SWFSC staff continue to engage non-NMFS scientists and interested stakeholders to ensure that federally managed fisheries are not jeopardizing listed species or having more than a negligible impact on listed marine mammals. In summary, the fishery currently complies with both the ESA and the MMPA, and hard caps have not been determined necessary by NMFS to achieve that compliance over time.

We understand the Council is, nevertheless, interested in exploring this option. If that is the case, there are some aspects of the current draft PPA that NMFS would like to bring to the forefront for this discussion. One concern we have is the use of annual hard caps as an in-season management tool for the DGN fishery given the existing and aforementioned statutory processes



currently being utilized. In addition, the existing mechanism and logistics used for determining serious injury for marine mammals established under the MMPA may not well fit the Council's intended purpose. The Council should also be aware that no such deterministic mechanism exists for sea turtles. Lastly, NMFS is concerned about the financial and operational practicality of transitioning to 100 percent observer coverage over the next few years.

MMPA Protections. Under the MMPA, the DGN fishery has been managed in part through implementation of the Pacific Offshore Cetacean Take Reduction Plan (Plan), which has been in place since 1997. Members of the Take Reduction Team (Team) include representatives from the fishing industry, conservation groups, marine mammal scientists, and state and federal agencies. This Team has been successful at reducing marine mammal bycatch (see References), and members have worked diligently to continue to recommend effective measures when needed to reduce bycatch for strategic stocks, including sperm whales. A working group, composed of several members of the Team, has been meeting regularly to consider a permanent amendment to the Plan to reduce serious injury/mortality of sperm whales, and taking into consideration other strategic marine mammal stocks (see current summaries of their meetings, provided as Attachments).

Team deliberations are supported by NMFS marine mammal stock assessment reports, which include the best available abundance and bycatch estimates. These most recent reports, which will be included in the draft 2014 stock assessment report and subsequently available for public comment, show that the serious injury/mortality estimates of all marine mammal stocks that interact with this fishery are below their potential biological removal levels (PBR). This is one of the requirements under the MMPA that Dr. Lisa Ballance, Director of the Turtle and Marine Mammal Division at the SWFSC, explained at the September Council meeting. The Team has and will continue to consider recommending marine mammal hard caps that are scientifically calculated relative to their stock status. To date, based on the best available science, the Team has not made such a recommendation. Regardless of the outcome of the Council's current consideration of hard caps, NMFS encourages the Council to recommend a member to serve on the Team, as stipulated under MMPA Take Reduction Team guidance, to ensure that the Council's interests and concerns are sufficiently represented in the Team's deliberations.

Applicability of ESA Take Levels as Caps. The Council's PPA includes a list of protected species hard caps, defined as annual mortality/serious injury limits, which would be aligned with the majority of the effort that takes place annually in the DGN fishing season (August 15-January 31) and which, if exceeded for any identified species/stock, would close the fishery for the rest of the season. Most of these caps appear to reflect levels in the incidental take statement (ITS) contained in NMFS' 2013 biological opinion on the continued management of the DGN fishery. It is important to recognize that the levels in the ITS are derived from an analysis of the effects of a proposed fishery, not from an analysis of a level of mortality that a population can or cannot tolerate while sustaining recovery of the population. Exceeding an ITS level triggers re-initiation of ESA consultation to reanalyze impacts that may not have been anticipated, but does not conclude that the unanticipated impacts are unacceptable. This underscores a point made by NMFS during the presentations at the September Council meeting – exceedance of anticipated incidental take levels does not indicate that the action is *de facto* having a jeopardizing or significant impact on the listed species. Rather, it signals that interactions projected were

incorrect and need to be re-evaluated. In summary, NMFS knows of no analysis that would support the closure of the fishery under the ESA when the proposed hard caps are exceeded.

Applicability of Annual Caps. To the extent that the Council still wishes to move forward in analyzing hard caps, we suggest considering the use of a multi-year average cap, rather than or in addition to an annual cap. NMFS has used multi-year estimates when analyzing impacts of commercial fisheries on species protected under the MMPA and the ESA in order to account for rare events or inter-annual variability. Managing this fishery using annual caps to address rare interactions with marine mammals or sea turtles can unnecessarily close the fishery, resulting in forgone opportunity in an already tightly constrained fishery, and is not based on the best available science around rare bycatch events (Carretta and Moore, 2014). An example of the incongruity between annual marine mammal hard caps proposed by the Council and PBR under the MMPA is reflected in the population of fin whales that occur along the U.S. West Coast. The Council has proposed an annual hard cap of two fin whales. The DGN fishery has had one observed fin whale interaction in over 8,500 observed fishing sets dating back to 1990. The current PBR, or allowable removal level, for fin whales under the MMPA is 16 whales. Should the DGN fishery accidentally entangle two (observed) fin whales in a given year, the fishery would be closed but the PBR level for the species would not have been approached or exceeded for that single year (or per the multi-year assessment NMFS undertakes for evaluating fishery impacts under the MMPA).

NMFS does not want to assume incorrectly that the Council has based its PPA on ESA or MMPA-related analysis, although the terms and references in the record could lead to that judgment. Indeed, NMFS acknowledges that the Council may justify low levels of hard caps – and single-year application of them – on its desire to further reduce bycatch under the Magnuson-Stevens Act (MSA). If that is the case, NMFS encourages further discussion and development of the Council’s reasoning and rationale.

Serious Injury Determinations. The PPA proposes to manage the fishery using annual hard caps based on serious injury/mortality of listed species, but this may not be feasible given the current NMFS process under the MMPA for making these determinations. NMFS has an extensive and multi-step review process for distinguishing marine mammal serious injuries from non-serious injuries; the process takes several months to complete and occurs at the end of each calendar year after all of the data has been submitted and verified. In 2012, we finalized the guidelines for process and procedures, available on our website¹. For commercial fisheries occurring off California, the marine mammal serious injury determination process is initiated by the SWFSC and involves engagement with other NMFS science centers, regional offices, and the Scientific Review Groups in preparation for marine mammal stock assessment reports. As a result, NMFS urges the Council to recommend a process to allow for in-season considerations if it chooses to make a serious injury determination in assessing whether a cap has been met, recognizing that NMFS does not now have the resources in place to support a separate “serious injury determination” process.

The Council should be mindful that there is no existing process for distinguishing serious injuries from non-serious injuries for sea turtles in gillnets, nor is there a requirement under the ESA to

¹ http://www.nmfs.noaa.gov/op/pds/categories/02-protected_resources_management.html

manage fishery impacts to a serious injury standard. If the Council pursues a hard cap for sea turtles, the Council would also need to consider the standard (serious injury or some other) as well as methods and procedures for making such determinations.

Observer Coverage and Electronic Monitoring. The Council's PPA to maintain the current 30 percent target observer coverage also includes a recommendation for the agency to require electronic monitoring for the purpose of target species and bycatch accounting and allow no exemptions for unobservable vessels. By 2018, 100 percent observer coverage would be required. Achieving the current 30 percent observer coverage in this fishery is already a financial challenge for NMFS, so without requiring industry to pay for observers, this alternative is impractical, particularly in the long run, as it is unlikely that funds would be available through NMFS to support and sustain 100 percent observer coverage in the future. The PPA is also unclear whether hard caps supported by 30 percent observer coverage would result in a viable management protocol, as imprecision in the resulting estimates of rare event bycatch counts could result in unacceptably high uncertainty regarding the point when a hard cap is reached.

Thank you for considering the important factors involved in this matter. We look forward to further discussions with the Council on its proposal and the potential for alternatives that may best clarify and achieve the Council's objectives. If you have any questions about this letter or other MMPA or ESA issues, please contact Chris Yates, Assistant Regional Administrator for Protected Resources Division (562-980-4007, Chris.Yates@noaa.gov), or Bob Turner, Assistant Regional Administrator for Sustainable Fisheries Division (360-359-3580, Bob.Turner@noaa.gov).

Sincerely,



William W. Stelle, Jr.
Regional Administrator

cc: Dr. Cisco Werner (SWFSC)

Attachments:

- 1) Pacific Offshore Cetacean Take Reduction Team – Working Group Conference Call Summary, August 25, 2014
- 2) Pacific Offshore Cetacean Take Reduction Team – Working Group Conference Call/Webinar Summary, October 10, 2014

References:

Barlow, J., and G.A. Cameron. 2003. Field experiments show that acoustic pingers reduce marine mammal bycatch in the California drift gill net fishery. *Marine Mammal Science* 19, no. 2: 265-283.

Carretta, J.V., and J. Barlow. 2011. Long-term effectiveness, failure rates, and “dinner bell” properties of acoustic pingers in a gillnet fishery. *Marine Technology Society Journal* 45, no. 5: 7-19.

Carretta, J.V., J. Barlow, and L. Enriquez. 2008. Acoustic pingers eliminate beaked whale bycatch in a gill net fishery. *Marine Mammal Science* 24, no 4: 956-961.

Carretta J.V. and J.E. Moore. 2014. Recommendations for pooling annual bycatch estimates when events are rare. NOAA Technical Memorandum; NOAA-TM-NMFS-SWFSC-528.

Moore, J.E., and J. Barlow. 2011. Bayesian state-space model of fin whale abundance trends from a 1991–2008 time series of line-transect surveys in the California Current. *Journal of Applied Ecology* 48, no. 5: 1195-1205.

Pacific Offshore Cetacean Take Reduction Team – Working Group Conference Call Summary

August 25, 2014; 1:00 – 3:00 PST

Meeting purpose: To begin discussing options (for subsequent consideration by the full TRT) for possible amendments to the TRT.

Attendees: POCTRT Team members/alternates (Tina Fahy, Kathy Fosmark, Dave Haworth, Dennis Heinemann, Michelle Horezcko, Kristy Long), SFD (Charles Villafana, SWFSC (Jim Carretta), General Counsel (Kathryn Kempton), and Facilitators (Bennett Brooks and Scott McCreary)

Working Group (WG) Team members who were unable to attend included Hannah Bernard and Arthur Lorton

UPDATES

Tina Fahy began the meeting with relevant updates pertinent to the work of the TRT. These included:

Possible PFMC bycatch reduction caps. T. Fahy reviewed summary of the progress that the HMS Management Team (MT) had made at its August 12-14, 2014 meeting in La Jolla, which included preparing the briefing book for the Pacific Fishery Management Council (Council) for its September, 2014 meeting in Spokane, Washington. Of relevance to the charge of this WG is that at its June meeting, the Council directed the HMS MT to look at alternative scenarios to reduce bycatch. These options may include management of the DGN fishery using protected species “caps,” which, if met, would lead to further restrictions on the fishery. As examples, the Council referenced the incidental take statement for 3 listed marine mammals (and 4 listed sea turtles) included in the May, 2013 biological opinion. They also referenced the potential biological removal levels contained in the marine mammal stock assessment reports, suggesting that they might be used as an upper level cap, given the annual serious injury/mortality attributed to the DGN fishery. Therefore, this potential management strategy might include imposing caps on non-listed marine mammals. If such a strategy were pursued, given the time required to prepare a requisite National Environmental Policy Act document and a subsequent Endangered Species Act consultation, any implementing management measures would not be expected to be in place earlier than the 2016-2017 fishing season.

MMPA Section 101(a)(5)(E) permit. The proposed MMPA Section 101(a)(5)(E) permit was published August 25, 2014, with a 30-day comment period ending September 24, 2014. In the meantime, on August 11, 2014, Oceana, CBD and TIRN filed a 60-day notice to sue NMFS for authorizing the fishery without a valid permit to take ESA- listed marine mammals.

VMS/48-hour notice. The VMS and 48-hour notice proposed rule is still in review and should be finalized soon. In the meantime, the extension of the emergency regulations expired on August 5, 2014.

Jim Carretta then summarized potential future changes to how bycatch is estimated for rarely-encountered species; these could include more model-based methods rather than using ratio estimators and arbitrary pooling periods. For example, given the observer coverage level and PBR, the SWFSC could estimate the probability of observing takes of rarely-caught species in a particular year which helps interpret zeros in the dataset. Annual mean bycatch estimates would be derived from long-term datasets rather than on data from just one or several years; doing the latter is intrinsically problematic for rare-event datasets and incomplete coverage. This would mean that some species would have bycatch estimates even in years when none were observed entangled, based on models that utilize historical bycatch per unit effort data and current levels of fishing effort.

DISCUSSION

The WG spent the bulk of the call discussing possible options for permanent amendments to the Take Reduction Plan to reduce M/SI of sperm whales, taking into account M/SI of strategic marine mammal stocks covered by the plan. T. Fahy and K. Long clarified that these recommendations would be intended to ensure M&SI stayed below PBR, and are not focused at this point on reducing M&SI below ZMRG (10% of PBR). T. Fahy also noted that any options developed by the WG would next be considered by the full Team before the agency would take action.

As a starting point for deliberations, T. Fahy reviewed and sought feedback on the recommendations developed at the TRT's February, 2014 meeting, to test whether WG group members' views were still consistent with those meeting outcomes. Below is a summary of key topics discussed.

Observer coverage levels. WG members discussed the merits of requiring 100% observer coverage on vessels wishing to fish in the Zone (waters deeper than 2,000 m, with exceptions). The potential exception would allow NMFS to waive the 100% observer requirement for vessels, previously deemed observable, to fish in the Zone without an observer. Circumstances that may warrant a "waiver" may include observer unavailability. WG members broadly supported this recommendation and offered the following additional comments:

- Consistent with the Team's February 2014 deliberations, WG members strongly recommended that NMFS ensure that the level of coverage (if less than 100%) be sufficient to detect M/SI of sperm whales and ensure that any subsequent estimates would not exceed the "cap," if one were in place. The details of this arrangement would be explained in the proposed regulations.
- NMFS would then need to stratify sampling design between deep and other waters to balance the need for higher coverage in deeper waters to track sperm whale interactions with the need to ensure sufficient coverage of other species in shallower waters. Future discussions of this potential recommendation should include a briefing by NMFS on potential tradeoffs tied to higher observer coverage requirements in deeper water.
- NMFS needs to be sensitive to the impact of any future electronic monitoring requirements to ensure the fishery is not required to pay for electronic monitoring when it is already carrying observers. More broadly, NMFS needs to consider fishery views on electronic monitoring versus observers.

Cap on sperm whale takes. The WG next discussed the option of a “cap” on sperm whales, with the consequences of exceeding the cap to be discussed at a subsequent meeting. Key points included the following:

- WG members generally reiterated their support for the idea of a cap, as PBR is still low (2.7 animals), and it is important to reduce the risk of further M&SI. Important considerations for future WG and Team deliberations on this point include the updated abundance estimate of sperm whales (Moore and Barlow (in press)) and the current methodology used to estimate bycatch of sperm whales in the DGN fishery (Carretta and Moore, 2014), both of which will be included in the draft 2014 Stock Assessment Report and the proposed issuance of the MMPA Section 101(a)(5)(E) permit (both subject to public input).
- WG members generally supported the concept of closing the fishery based on takes, but more discussion is needed to define both the cap and trigger. (Several participants reiterated their support for a cap below PBR since a partial shutdown of the higher-risk deeper waters (prior to exceedance of PBR) is both precautionary for sperm whales and preferable to a complete shutdown of the entire fishery (if a trigger is tied to PBR exceedance). At the same time, members are sensitive to an unduly restrictive cap.)

WG members discussed but did not completely resolve how best to set a cap. WG members generally understood and appreciate the logic of using the methodology presented in Carretta and Moore (2014) (i.e., pooling annual estimates over multiple years (>5 years)) as a starting point for establishing a cap for sperm whales. This could be an annual cap, where the estimated bycatch for that year would be combined with the estimated bycatch over 12-13 years (current scenario), averaged, and compared to PBR, or a cap averaged across multiple years.

Working with these options, Jim Carretta agreed to develop text and calculations for various potential cap scenarios for further consideration by the work group, given that PBR for sperm whales may change in future stock assessment reports.

Other Topics. One WG member encouraged the Team to also consider other gear and fishing practice modifications that could reduce the risk of sperm whale M&SI as it develops its management options.

Next Steps:

Based on the discussion, the WG agreed to the next steps:

1. T. Fahy is to draft a brief memorandum summarizing WG discussions
2. J. Carretta is to develop text and calculations for various potential cap scenarios for further consideration by the work group
3. The WG is to continue its deliberations with a follow-up teleconference in the next few weeks. It was recommended that the call include a webinar option so participants have the ability to see and test variations on the calculations associated with different cap scenarios.

4. It was noted that, given scheduling constraints, there were no TRT members from either conservation organizations or the scientific community on the call, so the next call will strive to incorporate the full range of interests.

Any questions and comments regarding this summary should be directed to T. Fahy.

**Pacific Offshore Cetacean Take Reduction Team
Working Group Conference Call/Webinar Summary
October 10, 2014**

MEETING PURPOSE

To continue discussing options (for subsequent consideration by the full TRT) for possible amendments to the Pacific Offshore Cetacean Take Reduction Plan (TRP).

PARTICIPATION

The following Working Group members participated in the call: Chuck Cook, Tina Fahy, Kathy Fosmark, Doyle Hanan, Dave Haworth, Dennis Heinemann, Michelle Horeczko, and Kristy Long. Staff from NMFS West Coast Regional Office divisions (Protected Resources and Sustainable Fisheries) and the NMFS Southwest Fisheries Science Center supported the deliberations, as did NOAA Office of General Counsel. Other participants included Steve Reinecke with The Nature Conservancy and Elizabeth Hellmers with the California Department of Fish and Wildlife, Gary Burke, and John Gonzales representing fishing industry interests. Scott McCreary with CONCUR and Bennett Brooks with the Consensus Building Institute facilitated the discussion. Working Group (WG) Team member Hannah Bernard was unable to attend.

UPDATES

T. Fahy began the meeting with relevant updates pertinent to the work of the TRT. These included the following:

- **MMPA Section 101(a)(5)(E) permit.** T. Fahy informed Working Group members that the 30-day comment period associated with the proposed MMPA Section 101(a)(5)(E) permit was extended until October 24, 2014. Only two comments have been received so far.
- **VMS/48-hour notice.** T. Fahy reminded Working Group members that the VMS and 48-hour notice proposed rule is expected to be in place by the end of October. She note that the Agency had received a total of two comments: one opposing the rule, and one recommending four pings per hour as opposed to one ping per hour.
- **September 2014 Council overview.** T. Fahy provided an update on Pacific Fishery Management Council (Council) discussions related to the drift gillnet fishery. Based on its September 2014 meeting, the Council (by strong majority vote) recommended *consideration* of the following: (1) annual hard caps (serious injury/mortality) for ESA-listed species, which nearly mirror the 2013 incidental take statement in the biological opinion on the drift gillnet fishery; (2) transition to 100% observer coverage, with no exceptions, and electronic monitoring by 2018; and (3) performance objectives/bycatch reduction targets to reduce interactions with non-ESA-listed marine mammal species. NMFS continues to work with the Council to clearly explain the Take Reduction Plan/process and voice its concerns with unintended consequences and the adverse precedent-setting nature of the proposed Council actions currently under consideration. Working Group members voiced strong concerns regarding the possible Council action and asked that the Team be kept informed of any new developments. T. Fahy mentioned that members of the drift gillnet fishery planned to send a

letter to the Council expressing their concerns with the preliminary preferred alternative. This will be discussed at the November Council meeting.

- **2014-15 Fishing Season.** T. Fahy provided a brief overview of the 2014-2015 season as of the 3rd quarter. Key points included: (1) the season is off to a slow start thus far, with 2 trips, 18 sea days and 10 sets observed; (2) 100% observer coverage to-date, with 7 available observers; and (3) no reported protected species interactions.

OPTIONS FOR REDUCING RISK OF SPERM WHALE BYCATCH

The bulk of the call focused on discussing possible options for reducing sperm whale M&SI interactions, while taking into account other strategic marine mammal stocks.

T. Fahy initiated the conversation by providing a brief summary of key themes from the August 26, 2014, Working Group call. J. Carretta then reviewed a series of brief illustrative computations intended to help the Working Group better understand the impacts of and challenges associated with measuring bycatch for rare events. Key points from his presentation included the following:

- Five years is too short of a time period to reliably estimate mean annual bycatch for rare-events using models that generate estimates using within-year data only; ten years or more provides greater precision. Alternative bycatch models that pool data over many years to estimate mean annual bycatch are the preferred alternative for rare-event bycatch.
- It is possible to model the likelihood of bycatch events based on current bycatch rates. Simulating 1,000 years of fishing at 500 sets per year (the current level of effort) results in the following probabilities of observing entanglements¹:

Years (Sets)	Zero	One	Two	Three	Four	Five or more
1 (500)	0.666	0.264	0.065	0.005	0	0
2 (1000)	0.441	0.354	0.162	0.035	0.008	0
3 (1500)	0.298	0.341	0.237	0.095	0.024	0.005
4 (2000)	0.185	0.331	0.253	0.155	0.057	0.019
5 (2500)	0.13	0.277	0.255	0.185	0.099	0.054

¹ Note that these values changed slightly from J. Carretta's presentation during the October 10, 2014, Working Group meeting, as J. Carretta sent T. Fahy a corrected version soon after the conclusion of the meeting. Values below 0.05 (in red) denote statistical significance in the traditional sense (discussed as a trigger "option" later in the call).

10 (5000)	0.011	0.076	0.134	0.229	0.193	0.357
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- If, hypothetically, the fishery suddenly started taking sperm whales at a level that far exceeded the expected probabilities, that scenario would likely be an indication that either the fishery or sperm whale abundance had changed and would merit considering a shorter time frame for estimating mean bycatch from observer data.

In addition to posing a series of clarifying questions, Working Group members discussed the implications of the information shared by J. Caretta. Discussion themes centered on the key points summarized in the sections below.

Related to observer coverage:

- Working Group members continued to voice broad support for 100% observer coverage in the deepwater (> 2,000 meters, with limited exceptions). There were mixed views on the merits of requiring 100% coverage in the shallower water (as currently being advocated within the Council process), with some Working Group members suggesting it is both too costly and too burdensome for NMFS.
- Some Working Group members expressed interest in further investigating options for electronic monitoring if it can help lower costs, stretch limited resources, relieve burden on the fleet, open now closed areas to fishing and be at least as effective as observers in identifying interactions. As was noted in the conversation, however, the “jury is still out” on whether electronic monitoring is: (a) technologically robust enough to accurately capture all marine mammal events; (b) really more cost effective; and (c) has the potential to be funded given the array of existing line item commitments.
- It was suggested that NMFS submit a letter to the Council explaining the limitations of electronic monitoring and 100% coverage in all waters. As noted earlier, T. Fahy explained that NMFS is preparing a letter outlining concerns with the Council’s possible actions related to observer coverage and hard caps.

Related to caps and triggers:

Working Group members discussed alternative strategies of caps or both caps and triggers. Most broadly, the Working Group expressed interest in focusing on triggers as a way to flag changes within the fishery or in sperm whale dynamics rather than instituting hard caps. As one Working Group member said: “I like the idea of having a trigger and cap for extreme events, but I don’t want to lose the flexibility for scientists to figure out what’s going on and avoid knee-jerk reactions.”

More discussion is needed to flesh out Working Group perspectives on this issue, but ideas discussed included the following:

- Varying views on possible triggers. Given the low probability of observing more than two takes in a single year, Working Group members were generally interested in setting a less stringent trigger. Trigger options discussed included: (1) setting a trigger at 2, since it is below PBR; (2) setting a trigger at 3 or more, since – though it is above PBR for a given year – it would have little impact on a rolling average unless the pattern repeated for multiple years; (3) setting a trigger at a number that models an event that has a very low statistical probability of occurring

(e.g., 5% or less); and (4) setting a two-tiered set of triggers – one based on a very low probability (e.g., 1%) that requires reexamination of underlying causes and a second even more unlikely trigger (for example, 0.1% probability or, say, 5-10 interactions in a year) that motivates more immediate management action. In general, Working Group members were not supportive of hard caps. Additionally, one Working Group member strongly recommended that the Team not recommend the setting of any caps for species that are not ESA-listed.

- Reluctance to tie trigger to pre-determined consequence. Given the low probability of observing more than two takes in a single year, Working Group members were reluctant to tie a potential trigger to an explicit consequence such as a fishery closure. Rather, several participants suggested the exceedance of such a trigger should first result in a close look at the causes for such an exceedance (changes in sperm whale population or location, modification to fishery practices or gear) and then customize the management action dependent on the situation.
- Importance of better understanding circumstances that drive bycatch events. Working Group members noted in their discussion that a range of circumstances (from ocean conditions and food supply to changes in fleet behavior) can lead to fluctuations in bycatch events. Several Working Group members asked that NMFS develop information that helps define “a large change” to the fishery (whether shifts in gear/fishery practices or changes in whale abundance), as this can then be used to help the Working Group identify an appropriate period within which to average data.
- Interest in additional discussions. Some Working Group members expressed interest in continuing to develop candidate options for triggers, possible caps (for only the most extreme events) and/or consequences for subsequent consideration by the full Team. Members asked that NMFS staff develop fleshed out examples for consideration during the next Working Group call.

Other comments:

- Participants generally agreed that, were there to be any potential cap, it should be based on calculation of a rolling average. One Working Group members suggested the rolling average be based on 5 years, since that is the same period used in the Stock Assessment Report (SAR).
- One Working Group member said that it would be useful for the Science Center to generate tables that calculate and show cumulative probabilities (e.g., likelihood of two or more entanglements) as opposed to the likelihood of just a set number of entanglements (e.g., exactly two).
- One Working Group member recommended that NMFS review the Bering Sea Pollock fishery (and associated salmon bycatch cap) as a possible model, as it embeds an incentive bycatch program and is based on a multi-year cap with rollover benefits. Another member suggested the structure of that fishery management regime – ITQs and cooperatives – may make it less relevant as a model. Others suggested the essence of the Bering Sea Pollock fishery programs is consistent with the ideas already incorporated into the MMPA.

NEXT STEPS

Based on the discussion, the WG agreed to the next steps:

- T. Fahy and J. Carretta are to:

- Prepare examples of different types of triggers for consideration by the Working Group.
- Provide information that helps define “a large change” to the fishery (whether shifts in gear/fishery practices or changes in whale abundance). This can then be used to help the Working Group identify an appropriate period to average data.
- Consider whether there are examples from the Bering Sea Pollock fisheries of salmon bycatch that can inform Working Group deliberations
- NMFS may reconvene the Working Group prior to the full Team’s meeting in early March 2015 to continue developing ideas for the full Team’s consideration. No date has yet been set for a follow-on call.
- Update the full Team on Council discussions related to hard caps/observer requirements for the drift gillnet fleet.
- CONCUR is to prepare a brief memorandum summarizing Working Group discussions

Any questions or comments regarding this summary should be directed to T. Fahy.