



MARINE MAMMAL COMMISSION

5 November 2013

Mr. Craig Heberer
Southwest Regional Office
National Marine Fisheries Service
501 W. Ocean Blvd, Suite 4200
Long Beach, CA 90802

Dear Mr. Heberer:

On 4 September 2013 the National Marine Fisheries Service (NMFS) published two federal notices. The first (78 Fed. Reg. 54548) issued temporary regulations to close certain waters and modify observer requirements for the California thresher shark/swordfish drift gillnet (≥ 14 inch mesh) fishery (CA DGN) to reduce the likelihood that sperm whales will be incidentally killed or seriously injured. The second (78 Fed. Reg. 54553) issued a permit to the same fishery authorizing the taking of three species of whales listed under the Endangered Species Act (ESA), including sperm whales. These two notices will be referred to herein as the 'temporary rule' and 'permit' notices, respectively. The Marine Mammal Commission (MMC), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed these notices and offers comments and recommendations below.

RECOMMENDATIONS

The Marine Mammal Commission recommends¹ that the National Marine Fisheries Service—

- amend the incidental take authorization (permit) to require that immediately following the 2013-2014 fishing season (i.e., in February 2014) the performance of the temporary measures be assessed, modifications be made to the measures as needed, and a permanent rule be developed and issued before the 2014-2015 season (i.e., before 15 August 2014);
- amend the temporary rule to make the fixed cap “one sperm whale serious injury or mortality in any fishery within the U.S. Exclusive Economic Zone (EEZ) off the States of Washington, Oregon and California,” or provide an explanation for why the cap should be based on serious injury or mortality from only the CA DGN fishery;
- establish and specify appropriate observer coverage targets shoreward of the Zone, and maximize the probability of detecting interactions with sperm whales shoreward of the Zone by stratifying and focusing observer coverage with respect to the probability of co-occurrence between sperm whales and the CA DGN fishery and the presence of deep water inshore of the Zone;

¹ Full recommendations are provided in the body of the letter. The core of each recommendation is repeated here to provide a readily accessible summary of the MMC's recommendations.

- consider undertaking or expediting the research and monitoring necessary to (1) reassess the distribution and abundance of sperm whales in the U.S. EEZ off the States of Washington, Oregon and California, (2) improve information on the movements of sperm whales in the eastern Pacific and the factors driving those movements, and (3) investigate the factors affecting the vulnerability of sperm whales to entanglement in the CA DGN fishery; and
- in re-examining its criteria for making negligible impact determinations, specifically consider the relationship between sections 101(a)(5)(E) and 118 of the MMPA, and whether it is appropriate to base a negligible impact determination largely on whether the number of fishery-related serious injuries and mortalities is less than the stock's PBR.

BACKGROUND

The Endangered Species Act generally prohibits the take of listed species in the absence of an authorization. In the case of commercial fishing, such authorizations are issued in an incidental take statement after preparation of a biological opinion, and corresponding incidental take permit issued under 101(a)(5)(E) of the Marine Mammal Protection Act (MMPA). In 2004 NMFS completed a biological opinion for the highly migratory species fisheries management plan, which included the CA DGN fishery, and appended an incidental take statement for that fishery. On 26 October 2007 NMFS issued a three-year permit under the MMPA authorizing the incidental take of sperm whales (California-Oregon-Washington stock) by the fishery (72 Fed. Reg. 60814). On 5 December 2010, less than two months after the permits had expired, two sperm whales were caught in one net – one died and the other was seriously injured. In June 2011 the Sustainable Fisheries Division of NMFS notified Southwest Region's Protected Resources Division that the taking of two sperm whales during the 2010-2011 fishing season of the CA DGN fishery likely exceeded the authorized take level. In July 2012, consultation under section 7 of the ESA was reinitiated. This resulted in the release of a new biological opinion and incidental take statement in May 2013 (NMFS 2013a). On 8 May 2013 NMFS requested comments on the proposed issuance of an MMPA permit to the CA DGN fishery to authorize the incidental taking of sperm whales (78 Fed. Reg. 26751), which was based on analyses in the biological opinion and a proposed "negligible impact termination" (NMFS 2013b) suggesting that incidental take of sperm whales by the fishery was below the stock's potential biological removal (PBR) level. However, further analyses showed that the level of take exceeded PBR, which led the Service to withdraw its proposal to issue an incidental take permit under the MMPA.

Subsequently, NMFS reconvened the Pacific Offshore Cetacean Take Reduction Team (POCTRT), which met in twice in 2013, once in July and again in August, to develop and recommend modified or new measures that would reduce the likelihood of interactions between sperm whales and gear from the CA DGN fishery. Based on the recommendations of the POCTRT, NMFS issued a temporary rule under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, effective from 15 August 2013 through 31 January 2014 (78 Fed. Reg. 54548). The rule defines what it calls the 100 percent observer coverage zone (the Zone), which contains most California waters deeper than the main 1,100 fathom (approximately 2,000 m) contour, which runs north-south from the Oregon to the Mexican border. Two exceptions are the deep-water canyons and basins within the Southern California Bight shoreward of the north-south

1,100 fathom contour, and a small area seaward of the Santa Lucia Escarpment. The rule makes three changes to the management of the CA DGN:

1. The fishery will be closed for the remainder of the season (until 31 January 2014) if one sperm whale is seriously injured or killed in the fishery;
2. All vessels fishing in the Zone are required to carry a NMFS-trained observer; and
3. All vessels are required to install, activate, carry, and operate a vessel monitoring system.

NMFS believes that, because most documented interactions between the fishery and sperm whales have occurred in deep water, these measures will greatly reduce the likelihood of interactions between the CA DGN fishery and sperm whales, and reduce the chances that serious injury and mortality of sperm whales will exceed the stock's PBR. As a consequence, NMFS issued an incidental take permit to the fishery for a period of three years (78 Fed. Reg. 54553), contingent on implementing the management measures described above.

The MMC commends NMFS for its diligence in adhering to statutory requirements, rules and guidelines governing the analyses and processes for determination of negligible impact, issuance of an incidental take statement and an incidental take permit. In addition, the MMC notes that NMFS took steps to address new information affecting the negligible impact findings under MMPA, including the reconvening of the POCTRT and the acceptance of the POCTRT's recommendations.

RATIONALE

Time Frame

NMFS issued an MMPA permit on 4 September 2013 authorizing the incidental taking of California-Oregon-Washington sperm whales by the CA DGN fishery, contingent on the issuance of the temporary fishery-management rule described above. To be able to issue the permit, NMFS needed to make a finding of negligible impact, something it could not do based on historic take, but was able to do based on its judgment that the new management measures would reduce the likelihood of serious injuries and mortalities of sperm whales to less than the stock's PBR level. The MMC concurs with this assessment, but notes that the temporary measures will have to be extended if the finding of negligible impact is to be sustained for the full three-year period of the permit. The permit notice states that "NMFS intends to reconvene the Team [POCTRT] to consider long-term measures for reducing sperm whale mortality and serious injury...in subsequent fishing seasons," but the temporary rule is silent on this issue. Therefore, the MMC recommends that NMFS amend the incidental take authorization (permit) to require that immediately following the 2013-2014 fishing season (i.e., in February 2014) the performance of the temporary measures be assessed, modifications be made to the measures as needed, and a permanent rule be developed and issued before the 2014-2015 season (i.e., before 15 August 2014).

Take Cap

The finding of negligible impact was predicated on an assessment that, with the new, temporary measures in place, serious injury and mortality likely would not exceed PBR. The negligible impact determination made by NMFS appropriately hinges on the total of all fisheries-related serious injury and mortality remaining below PBR. Accordingly, the permit notice (78 Fed.

Reg. 54554) states that “if a mortality or serious injury...occurs in *any* fishery, that would be included in the total fishery-related serious injury and mortality considered in a future negligible impact determination” (emphasis added). Presumably this means the taking of a sperm whale in *any* fishery within the United States off the states of Washington, Oregon and California should be considered. However, the take cap established as part of the temporary rule states “this rule will establish a fixed cap of one serious injury or mortality for sperm whales in the DGN fishery...” The MMC recommends that NMFS amend the temporary rule to make the fixed cap “one sperm whale serious injury or mortality in any fishery within the U.S. Exclusive Economic Zone (EEZ) off the States of Washington, Oregon and California,” or provide an explanation for why the cap should be based on serious injury or mortality from only the CA DGN fishery.

Observer Coverage

The temporary rule establishes 100 percent observer coverage in the Zone (100 percent observer coverage area) but does not specify what the coverage will be outside the Zone (i.e., in ‘shallower’ waters). Previously, the target observer coverage in the CA DNG fishery was roughly 20%, although a recent NMFS report recommended that it be increased to 30% (Karp et al. 2011). Because interactions between the fishery and sperm whales could occur outside the Zone, and because the take of other species needs to be monitored, adequate observer coverage also is needed outside the Zone. The temporary rule notice suggests that coverage will continue throughout the fishery, but does not indicate what the coverage would be outside the Zone (78 Fed. Reg. 54550). The target coverage level should be stated and the coverage should be stratified to maximize the probability of detecting interactions.

Other than the tendency for sperm whales to occur in deep water and for sightings to be clumped at fine scale, sperm whale sightings are distributed fairly uniformly at the scales of the entire U.S. Exclusive Economic Zone off California (Figure 2 in Carretta 2013.). DGN fishing effort, however, is not distributed uniformly (Figure 1 in Carretta 2013). Fishing effort is highly concentrated in the southeast corner of the Southern California Bight and over the continental slope north of the central part of the Southern California Bight. Elsewhere, fishing effort is much sparser. These areas of concentrated fishing effort include the two deep-water exceptions to the Zone – the Santa Clara Escarpment and Southern California Bight canyons and basins. Thus, these areas represent the most likely locations in which fishery interactions with sperm whales might go unobserved under the proposed scheme. As such, the likelihood of detecting fishery interactions involving sperm whales outside the Zone could be improved if observer coverage was stratified with greater coverage occurring in these two areas. Thus, the MMC recommends that NMFS establish and specify appropriate observer coverage targets shoreward of the Zone, and maximize the probability of detecting interactions with sperm whales shoreward of the Zone by stratifying and focusing observer coverage with respect to the probability of co-occurrence between sperm whales and the CA DGN fishery and the presence of deep water inshore of the Zone.

Critical Data

Effective mitigation of the entanglement risks to the California-Oregon-Washington stock of sperm whales posed by the CA DGN fishery requires an understanding of the factors affecting distribution and local abundance (e.g., movements and prey availability), the distribution of fishing

effort in the fishery, and the factors that determine the vulnerability of sperm whales to entanglement in drift gill nets. Unfortunately, much of that knowledge is lacking, which leads to significant uncertainty regarding the best mitigation measures to employ.

Three west coast cetacean surveys conducted between 1993 and 2005 provided population size estimates increasing from roughly 1 to 3 thousand animals, and the large CVs associated with each of those estimates added further uncertainty with respect to the status of the stock. Those estimates suggested that the stock might be increasing, but, the large CVs, and other factors, precluded reaching reliable conclusions regarding trends. Furthermore, if the three abundance estimates were correct, the population would have had to increase at a rate of roughly seven percent per year. However, it seems impossible that such a rate of change could reflect intrinsic population growth, given the species' theoretical maximum growth rate of 1 percent per year (Whitehead 2003). The lack of precise knowledge of the stock's dynamics adds to the uncertainty regarding the best management options.

There is limited evidence of exchange between this stock and other Pacific Ocean stocks, such as those in the Gulf of Alaska, eastern tropical Pacific, or off Baja California (Carretta et al. 2012). However, sperm whales have recently been found to have exceptionally low mitochondrial DNA diversity (Alexander et al. 2013), which may be related to the fact that sperm whales are known to travel thousands of kilometers (e.g., references in Jaquet et al. 2003), distances much greater than the nominal range of this stock. The lack of congruence in these facts further points to a significant lack of knowledge about this species and stock. Sperm whales forage largely on squid, which are characterized by large annual and distributional variations in abundance. The greater than two-fold variation in estimated abundance of this stock could be due to the stock's movements into, through and out of the survey area in response to multiple poorly understood factors, and/or to sampling error (NMFS 2013b).

The most recent survey, conducted in 2008, produced a population estimate of just 300 sperm whales (CV=0.51) off the west coast (California, Oregon and Washington). This order-of-magnitude change from the previous survey suggests a much greater degree of uncertainty about the stock's distribution, abundance, and status, or much larger sampling errors than the earlier data had indicated. Coupled with climate change that is altering the distribution and abundance of many prey species, it is not unreasonable to expect that uncertainty regarding sperm whales and their interactions with the CA DGN and other fisheries will remain high in the absence of a greater research effort.

Although only 10 sperm whales have been observed as bycatch in just six out of the thousands of sets made in the fishery from 1990 to 2012, the total number killed or seriously injured presumably is much higher because only a fraction of the total effort in the fishery was observed. Those 10 events were sufficiently rare and the associated data were too sparse to adequately understand the factors that contribute to entanglement of sperm whales. One concern about the risk this fishery poses to sperm whales is the tendency for more than one whale at a time to be caught in a single net. In three of the observed entanglements, a single whale was caught, while two sets caught two whales each, and one set caught three whales. The primary cause of multiple entanglements occurring in a single set is not known. This phenomenon may be related to synchronous surfacing by groups of foraging sperm whales, which has been observed by sperm whale researchers but has not been studied systematically.

Considering the uncertainty about the behavior, movements and population dynamics of these sperm whales, the MMC recommends that NMFS consider undertaking or expediting the research and monitoring necessary to (1) reassess the distribution and abundance of sperm whales in the U.S. EEZ off the States of Washington, Oregon and California, (2) improve information on the movements of sperm whales in the eastern Pacific and the factors driving those movements, and (3) investigate the factors affecting the vulnerability of sperm whales to entanglement in the CA DGN fishery. The MMC understands that NMFS's ability to undertake such studies is affected by funding constraints and other priority management needs, and urges NMFS to elucidate the resource limitations that impede the acquisition of the basic knowledge of sperm whales, and their interactions with this drift gillnet fishery, that is needed to substantially improve entanglement risk mitigation in this stock.

Negligible Impact Determination Criteria

In its 25 July 2013 letter commenting on the proposed issuance of an incidental take permit, the MMC recommended that NMFS, in consultation with the MMC, review and revise its negligible impact determination criteria, and take the steps necessary to establish improved criteria that are clear, logical, internally consistent, and cover all probable scenarios. NMFS, in its 4 September 2013 issuance of an incidental take permit (78 Fed. Reg. 54558), agreed that such a review is needed. The MMC encourages NMFS to initiate the review promptly so that any changes are in place before any new incidental take permits under section 101(a)(5)(E) of the MMPA are considered. Accordingly, the MMC notes that the permit issued to the Hawaii-based longline fisheries for the incidental take of whales from the Central North Pacific stock of humpback whales expired in May 2013, and that NMFS's Pacific Islands Regional Office has initiated the process for reissuance of the permit, in conjunction with an ESA section 7 consultation on the Hawaii-based deep-set longline fishery (L. Van Atta, pers. comm.).

In particular, the Commission believes that NMFS should review the relationship between incidental take authorizations under section 118, which are linked to a mandate to reduce incidental mortality and serious injury, initially to below the affected stocks' PBR levels and ultimately to achieve the zero mortality rate goal, and those issued under section 101(a)(5)(E). Section 101(a)(5)(E) applies only to endangered and threatened marine mammal species, requires a negligible impact determination, and was intended to provide greater protection for endangered and threatened species than for non-listed species under section 118. However, criterion 3 for making negligible impact determinations (which was the basis for the negligible impact determination for sperm whales in this case), essentially requires nothing more than that the level of taking be less than the stock's PBR level.² The MMC recommends that NMFS, in re-examining its criteria for making negligible impact determinations, specifically consider the relationship between sections 101(a)(5)(E) and 118 of the MMPA, and whether it is appropriate to base a negligible impact determination

² The criterion also requires that the stock be stable or increasing. However, PBR is defined under section 3(20) of the MMPA as "the maximum number of animals, not including natural mortalities, that may removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population." Thus, except in instances where declines are being driven by natural factors, populations should always be stable or growing when human-related removals are below PBR.

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largely on whether the number of fishery-related serious injuries and mortalities is less than the stock's PBR.

Thank you for the opportunity to comment on these actions affecting sperm whales in California. Please contact me if you have any questions about our recommendations and rationale.

Sincerely,



Rebecca J. Lent, Ph.D.
Executive Director

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