28 September 2020

Ms. Jolie Harrison, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's (NMFS) 28 August 2020 notice (85 Fed. Reg. 53606) and the letter of authorization application submitted by the Southwest Fisheries Science Center (SWFSC) seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act. The taking would be incidental to conducting fisheries research surveys during a five-year period. Regulations were issued previously for SWFSC's fisheries research surveys and will expire on 30 October 2020 (80 Fed. Reg. 58982)

Background

SWFSC would conduct fisheries research surveys within the California Current ecosystem and the Scotia Sea off Antarctica during a five-year period. The objectives are to evaluate the status of exploited fishery resources and the marine environment. Researchers would conduct approximately 18 survey programs during the five-year period. The surveys could occur during daytime and nighttime hours.

SWFSC requested authorization to take by Level A harassment, serious injury, or mortality (M/SI) individuals from numerous species and stocks of marine mammals incidental to interactions with fisheries survey gear. SWFSC would use towed nets and trawls, longline gear, seine nets, other gear (e.g., plankton, manta, bongo, and Oozeki nets), and unmanned aerial systems to conduct the surveys. Among these, based on historical data from research surveys and/or commercial fisheries, marine mammals are likely to interact only with trawls, longline gear, and seine nets. Researchers would implement standard mitigation measures including (1) using move-on rules and delay procedures, (2) using pingers and marine mammal excluder devices, (3) implementing visual monitoring, and (4) prohibiting chumming. In addition, SWFSC would conduct concurrent hydrographic, bathymetric, and oceanographic sampling. Researchers could use multi-frequency, narrow-beam echosounders, multibeam echosounders, narrow-beam sonars, acoustic Doppler current profilers, and net monitoring systems that operate at frequencies from 18 to 333 kHz at source levels 205 to 224 dB re 1 µPa at 1 m. SWFSC has requested to take by Level B harassment individuals from numerous marine mammal genera, species, and stocks incidental to its use of

acoustic sources and human presence. Researchers would implement various monitoring[1] and reporting measures[2] during the proposed activities.

Acoustic sources

During the comment period for the advanced notice of proposed rulemaking, the Commission informally inquired why NMFS did not use its tool for estimating Level B harassment zones for high-resolution geophysical surveys. NMFS's tool accounts for beamwidth and absorption and yields much smaller Level B harassment zones than SWFSC estimated in its 2013 analysis[3] and that it retained for the 2020 rulemaking. NMFS indicated that SWFSC's analysis provided a conservative assessment of potential impacts and that SWFSC may elect to use more accurate and less conservative methods in future rules but preferred to maintain consistency with its 2015 National Environmental Policy Act documentation.

In its 23 February 2015 letter on SWFSC's previous proposed rule for fisheries research surveys, the Commission recommended that NMFS develop criteria (e.g., based on source level, frequency, beamwidth, signal duration and duty cycle, affected species or stocks) and guidance for determining when prospective applicants should request taking by Level B harassment from the use of echosounders, sonars, and subbottom profilers. More than five years later, no such criteria and guidance are available to action proponents. The Commission understands that NMFS is working with the Bureau of Ocean Energy Management to develop criteria and guidance regarding whether taking is likely to result from particular activities (85 Fed. Reg. 27037) and notes that the Navy and NMFS have deemed similar sources *de minimis* in other previous authorizations and rulemaking. The Commission recommends that NMFS ensure that any criteria and guidance developed regarding which sources are considered *de minimis* consider the overall level of impacts and are used consistently across all action proponents and applications. That is, NMFS should not consider a source *de minimis* for one action proponent and then authorize taking for another action proponent that would use the same source merely because it requested authorization for such taking.

The Commission has recommended for many years that NMFS update its generic behavior thresholds and in recent years has urged it to prioritize such efforts. NMFS continues to rely on the generic behavior thresholds[4] from a 2005 *Federal Register* notice (see Table 1, 70 Fed. Reg. 1873). Those thresholds do not reflect the best available science and in fact date back even further, to incidental take authorizations from 1994 (volume 59, number 23 of the *Federal Register* from 3 February 1994) and 1995 (60 Fed. Reg. 30067). In addition, NMFS's generic thresholds are based on

[1] The Commission informally noted that NMFS included the outdated definition of a Level 2 response in Table 9 of the *Federal Register* notice. NMFS agreed. NMFS indicated that the correct version will be included in the preamble to the final rule and any LOA issued under the rule.
[2] The Commission informally noted that NMFS required SWFSC to report whether the move-on rule was waived for California sea lions (see 219.6(f)(2)(ii)(C) in the 2015 final rule). That information is still relevant, would apply to purse seines in addition to longlines for the proposed rule, and should be included in the final rule. NMFS indicated that it will include the reporting requirement in the final rule.
[3] For example, the Level B harassment zone would be 12 m for the Simrad EK60/80 and 9 m for the Simrad SX90 (downward-facing mode) in shallow water using NMFS's tool. NMFS has considered Level B harassment zones of 25 m or less discountable and not having the potential to result in marine mammal harassment for previous authorizations (e.g., 85 Fed. Reg. 14903, 85 Fed. Reg. 30930). Those two sources account for 85 percent of the survey activities in shallow water (Table 6-11 in SWFSC's application).
[4] 160 dB re 1 µPa for impulsive sources and 120 dB re 1 µPa for continuous sources.

impulsive and continuous sources—SWFSC's sources are neither impulsive nor continuous. NMFS asserted that the Commission has misinterpreted how NMFS characterizes echosounders, sonars, and subbottom profilers and is incorrect in claiming that NMFS is using an incorrect threshold because those devices do not produce impulsive sound (85 Fed. Reg. 27038). NMFS's 160-dB re 1 μPa threshold was clearly based on and denoted as applying to impulsive sources in the 1990s and in 2005. However, NMFS also specified as recently as 2017 that the threshold applies to impulsive sources (82 Fed. Reg. 20576), after which time NMFS asserted that the threshold applied to non-impulsive, intermittent sources as well. The fact of the matter is that because NMFS has yet to update its generic behavior thresholds, it has had to apply thresholds that it has used for more than 25 years to sources for which those thresholds were never intended to apply.

The Commission has provided detailed information regarding how certain species, including pinnipeds, harbor porpoises, beaked whales, and other cetaceans[5]—all of which occur in the SWFSC's project area—respond to similar sources at received levels below 160 dB re 1 μPa (see the Commission's 23 February 2015 letter as one example). Furthermore, certain sources that operate at frequencies higher than 180 kHz (Category 1)[6] can elicit behavioral responses, particularly in pinnipeds, based on the subharmonics of the source (Hastie et al. 2014). The Commission has repeatedly recommended that, until such time that NMFS revises its generic Level B harassment thresholds for non-Navy-related acoustic sources, NMFS estimate the numbers of marine mammals to be taken based on the 120- rather than the 160-dB re 1 μPa threshold for echosounders, sonars, and subbottom profilers. NMFS has yet to implement that recommendation, specifying in a recent response (85 Fed. Reg. 27038) that—

- the majority of the references the Commission has provided are for acoustic alarms or deterrents. The Commission notes that acoustic alarms and deterrents are more similar to echosounders, sonars, and subbottom profilers than airguns, which are the source upon which the 160-dB re 1 μPa threshold was based. Thus, the Commission's references are more applicable than the data underlying NMFS's current threshold.
- the majority of the references the Commission has acknowledged apply to the most acoustically sensitive species. The Commission agrees that many of the references involve sensitive species (i.e., harbor porpoises and beaked whales), since those are the species that prompt the studies to be undertaken, but a third of the references involve various pinniped and delphinid species, as well as sperm whales. Diversity of affected species aside, if research shows that certain species are more sensitive to acoustic stimuli, thresholds that relate to and provide adequate protection for those species should be used until species-specific thresholds are available.
- behavioral response to a stimulus does not necessarily indicate that Level B harassment has occurred, and subharmonics produced by the Category 1 sources would either be below the 160-dB re 1 μPa threshold or would attenuate to such a level within a few meters. The Commission reiterates what it has stated previously that the current threshold has no bearing on what the threshold should be. That is, the 200- and 375-kHz sonars produced source levels of 166 and 135 dB re 1 μPa at 1 m, respectively, at 20 kHz and caused seals to spend significantly more time hauled out when the 200-kHz source was active and to surface at

[5] Including multiple small delphinid species, pilot whales, and sperm whales.
[6] Which is NMFS's current cut-off for sources that it deems highly unlikely to be of sufficient intensity to result in behavioral harassment.

locations farther from the 375-kHz source than when the sonar was inactive (Hastie et al. 2014). Both behavioral responses are clearly considered avoidance behavior, which served as the basis for the 160-dB re 1 μPa threshold and should be considered accordingly moving forward.

- recent sound source verification testing of these and other similar Category 1 sources did not document any subharmonics in any of the sources tested under controlled conditions (Crocker and Fratantonio 2016). However, none of SWFSC's (or any other Science Center's) acoustic sources, nor any of the sources referenced in Deng et al. (2014) and Hastie et al. (2014), were tested by Crocker and Fratantonio (2016). Thus, subharmonics could in fact be present.

NMFS should not continue to ignore available data that contradict its stance that the 160-dB re 1 μPa threshold should be used for non-impulsive, intermittent sources. If NMFS continues to believe that Level A harassment takes need to be authorized for echosounders, other sonars, and subbottom profilers and *until such time* that NMFS revises its generic Level B harassment thresholds to be specific to species, genera, or groups of marine mammals or to non-impulsive intermittent sources in general, the Commission recommends that NMFS require SWFSC to estimate the numbers of marine mammals to be taken based on the 120- rather than the 160-dB re 1 μPa threshold for non-impulsive, intermittent sources, including those sources whose primary operating frequency is above 180 kHz that have been shown to elicit behavioral responses above the 120-dB re 1 μPa threshold.

Many of these ongoing issues would be resolved if NMFS had updated thresholds. The Commission had recommended in early 2018 that NMFS should revise its behavior thresholds, have them peer-reviewed, make them available to the public for review, and finalize them within a year or two. That has not occurred and the Commission understands that COVID-19 may have stalled NMFS's work on some of its priority issues such as the development of its behavior thresholds. However, updating its behavior thresholds is a priority that should move forward. Numerous recent and forthcoming studies address behavioral effects on marine mammals, dose response functions, and suggested thresholds. NMFS must determine how it plans to finish developing the thresholds in consideration of new data and how to finalize them in a timely manner, as it cannot continue to use inappropriate thresholds from nearly three decades ago. The Commission recommends that NMFS prioritize updating its generic behavior thresholds and formulate a strategy for developing thresholds for all types of sound sources (i.e., impulsive and non-impulsive, which can be either intermittent or continuous) and for incorporating new data regarding behavior thresholds as soon as possible.

On-ice Level B harassment takes of pinnipeds

The Commission informally noted that the estimated number of on-ice Level B harassment takes of southern elephant seals were inconsistent within the *Federal Register* notice (Table 10 and 12) and between the notice and the application[7]. NMFS confirmed that the number of takes specified in Table 10 of the notice was correct for southern elephant seals (n=1). NMFS also indicated that the number of takes specified in Table 12 for Weddell seals was incorrect but that those takes included

[7] The densities were inconsistent between Tables 3-2 and 6-2 in the application. The density denoted in Table 3-2 would have yielded a take estimate of 12 rather than 1.

in Table 10 were correct (n=225). NMFS indicated that the correct numbers of takes will be included in the preamble to the final rule and any LOA issued under the rule.

In situations when the estimated number of takes is estimated to be one, the Commission has indicated that the number should be increased to group size or, in the case of pinnipeds, to a small number. If southern elephant seals happen to be present when SWFSC is conducting its activities and more than a single elephant seal is disturbed and thus taken, SWFSC could meet or exceed the authorized number of takes. As such, the Commission recommends that NMFS include up to five on-ice Level B harassment takes of southern elephant seals and authorize up to seven total Level B harassment takes[8] of southern elephant seals in the final rule.

Mitigation, monitoring, and reporting measures

Vessel strike—As noted for other recent authorizations[9], NMFS has relaxed the reporting measures that would be required to be implemented when unauthorized taking (i.e., an injury or death by vessel strike) occurs. SWFSC's final rule would require that it only report the unauthorized taking. This is in stark contrast to NMFS's approach for the recent proposed authorization for Dominion Energy Virginia, in which it would require Dominion to report *and* cease activities in the event of a vessel strike[10]. When unauthorized taking occurs, action proponents should cease the associated activities until NMFS determines what additional measures are necessary to minimize additional injuries or deaths. The final authorizations or rules must include clear, concise, explicit measures to minimize any ambiguity regarding what action proponents should do in those circumstances, and standard mitigation and reporting measures regarding injuries and deaths should be consistent among final authorizations and rules. The Commission recommends that NMFS include in all proposed and final incidental harassment authorizations and rules, including the SWFSC's final rule, the explicit requirement to cease activities if a marine mammal is injured or killed by vessel strike, *until* NMFS reviews the circumstances involving any injury or death that is likely attributable to the activities *and* determines what additional measures are necessary to minimize additional injuries or deaths.

Exceeding authorized limits—In incidental harassment authorizations, NMFS requires applicants to cease or delay activities if the number of takes that has been authorized for a given species is met. NMFS should have included the same condition in the proposed rule. Determining whether any authorized taking limit has been met necessitates that SWFSC keep a running tally of the numbers of animals taken by M/SI and on-ice disturbance and the line-kilometers surveyed[11]. The Commission recommends that NMFS (1) include a specific condition either in section 219.5 of the final rule or in any LOA issued under the final rule requiring SWFSC to cease its activities and consult with NMFS

[8] The other two takes are based on acoustic disturbance (Table 12 in the *Federal Register* notice).
[9] See the Commission's 10 February 2020 letter for a more extensive rationale regarding this matter.
[10] See condition 6(c)(ii) in the final authorization (https://www.fisheries.noaa.gov/webdam/download/106874057). The condition specifies that activities must not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with Dominion to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Dominion may not resume its activities until notified by NMFS.
[11] SWFSC enumerates the numbers of acoustic takes based on the densities used to inform the final rule and the line-kilometers surveyed in a given year (see reporting requirement 219.6(e)(2)(ii)(A) in the proposed rule).

if the number of authorized takes has been met for any species[12] and (2) reinforce that SWFSC should keep a running tally of the numbers of species-specific M/SI and on-ice Level B harassment takes and the line-kilometers surveyed to ensure that the authorized taking limits are not exceeded.

Reporting requirements—NMFS proposed to require SWFSC to include in its annual monitoring reports summary information related to any on-ice disturbance of pinnipeds, including event-specific total counts of animals present, counts of reactions according to a three-point scale of response severity, and distance of the closest approach (section 219.6(e)(2)(ii)(D) of the proposed rule). In addition to the closest point of approach, the distance at which any pinniped is disturbed should be reported, since certain species or age classes may be prone to disturbance at greater distances than others. The distance at which any pinniped is disturbed is more useful, as it represents onset of behavioral disturbance and would either substantiate or refute SWFSC's assumption that only pinnipeds approached at 100 m or less would be disturbed. SWFSC also should report the numbers of takes differentiated by species and age class[13] and should include any raw sightings datasheets in its annual reports, consistent with other authorizations involving disturbance of hauled-out pinnipeds. The Commission recommends that NMFS require SWFSC in any LOA issued to include in each annual monitoring report (1) the distance at which a pinniped is disturbed and the closest point of approach[14] for each disturbance event, (2) the numbers of takes differentiated by species and age class for each disturbance event, and (3) the raw sightings data in each annual monitoring report.

Negligible impact determination

Any time that NMFS is proposing to authorize incidental taking that results in M/SI and that taking, combined with other removals from the population, exceeds PBR, the situation merits heightened scrutiny when considering whether such taking would have a negligible impact on marine mammal species and stocks. The Commission raised this issue in its 19 March 2019 letter, commenting on a similar proposed rule involving fisheries research surveys to be conducted by the Southeast Fisheries Science Center. The Commission observed that, "[a]lthough the use of PBR and the criteria for making negligible impact determinations for the take of endangered and threatened species incidental to commercial fisheries under section 101(a)(5)(E) of the MMPA are not directly applicable to or synonymous with a negligible impact finding under 101(a)(5)(A), … use of PBR to aid in the section 101(a)(5)(A) analysis is appropriate." This is particularly true in this instance because in both cases (i.e., under section 101(a)(5)(E) in general and in this application of section 101(a)(5)(A)), we are looking at removals from the population due to taking that results in M/SI.[15] Since the 19 March 2019 letter, NMFS has revised its criteria for making negligible impact determinations for commercial fisheries under section 101(a)(5)(E). If one were to apply those new

[12] The Commission understands that NMFS has previously allowed action proponents to exceed the annual limits, as long as the total authorized limit for the five years is not exceeded.
[13] Pups and non-pups.
[14] That is, if a group of five pinnipeds is hauled out and one of the animals is disturbed at 110 m and the other four are disturbed at 50 m, both distances should be reported for the disturbance event.
[15] One of the canons of statutory construction is that a term (e.g., "negligible impact") is to be interpreted consistently within a statute unless there is reason to suggest a different legislative intent. The most obvious difference between section 101(a)(5)(A) and section 101(a)(5)(E) is that the latter applies only to taking by M/SI. However, because we are primarily considering impacts from taking by M/SI under the proposed rule in the case of the California coastal stock of bottlenose dolphins, the situations (i.e., taking that results in the permanent removal of marine mammals from the population) are analogous.

criteria to the proposed authorization as it applies to the California coastal stock of bottlenose dolphins, the impact arguably would not be considered negligible. The total human-caused M/SI would exceed PBR, and the M/SI contribution from SWFSC's proposed activities would exceed the "negligibility" threshold set for taking incidental to a particular fishery. If NMFS believes that the negligible impact determination criteria it adopted under section 101(a)(5)(E) are either (1) not relevant when assessing M/SI that occurs in other contexts or (2) if applied to the proposed incidental taking of California coastal stock bottlenose dolphins by SWFSC, would warrant a negligible impact determination notwithstanding M/SI exceeding PBR, then the agency should explain its rationale.

Although NMFS recognized that the M/SI it is proposing to authorize from the California coastal stock of bottlenose dolphins, in combination with other sources of human-caused M/SI, would exceed the stock's PBR calculated in the most recent stock assessment report, the agency downplayed the implications of this in the preamble to the proposed rule. First, NMFS argued that the PBR level included in the stock assessment is negatively biased. Second, it argued that estimates of M/SI are based in part on unpredictable incidents that are unlikely to recur and might therefore overestimate the expected human-caused M/SI level. The more appropriate place to make adjustments to calculated PBR levels or to provide additional context concerning estimates of human-caused M/SI is in the stock assessment reports themselves. If NMFS believes that a PBR calculation is biased, it should amend the stock assessment report accordingly, not downplay the implications of that PBR level in secondary documents or particular applications. The Commission agrees with NMFS that the specific incidents that led to the deaths of bottlenose dolphins summarized in the stock assessment report are unlikely to recur, but this does not necessarily mean that other, equally unforeseeable events resulting in the death or serious injury of a dolphin will not occur at similar or even greater rates in the future. In addition, because observer coverage in some coastal fisheries remains low and because there is an unknown, but perhaps low probability[16] of detecting or retrieving marine mammals entangled in any such gear, it is plausible that documented cases significantly under-represent actual M/SI rates. For these reasons, the Commission recommends that NMFS apply the information contained in the current stock assessment reports when making negligible impact determinations unless reliable, relevant new information that has yet to be fully assessed and incorporated into the reports warrants some other treatment.

Rather than downplaying the information in the stock assessment report, the Commission recommends that NMFS authorize a smaller number of takes by M/SI than proposed such that total estimated M/SI does not exceed PBR. In this instance, M/SI of California coastal bottlenose dolphins would need to be reduced from three to two[17] for the five years that the regulations would be in effect.

[16] The stock assessment report estimated that 25 percent of carcasses from the California coastal stock of bottlenose dolphins are recovered.

[17] Considering the one unidentified cetacean take that NMFS attributed to all relevant stocks, the total M/SI of California coastal bottlenose dolphins would decrease from four to three for SWFSC's proposed activities.

The Commission hopes you find this letter useful. Please contact me if you have questions regarding our rationale or recommendations.

Sincerely,

Peter O. Thomas, Ph.D.,
Executive Director

References

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