



MARINE MAMMAL COMMISSION

2 April 2018

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) 5 March 2018 notice (83 Fed. Reg. 9366) and the letter of authorization application submitted by the U.S. Navy (the Navy) seeking issuance of regulations under section 101(a)(5)(A) of the Marine Mammal Protection Act. The taking would be incidental to conducting construction activities related to marine structure maintenance and pile replacement at facilities in Washington during a five-year period.

The Navy plans to remove and install piles during construction activities at six facilities¹ in Washington. During the five years of activities, operators would install up to 822 concrete, timber, plastic, or steel piles up to 36in in diameter using a vibratory and impact hammer. They would remove the same number of piles using a vibratory hammer, cutting/chipping, clamshell bucket, and/or direct pull. The Navy's activities could occur on approximately 435 days during the five-year period. It would limit pile-driving and -removal activities to daylight hours². In-water activities would occur from July 16 through January 15 at Bangor and Zelatched Point. At the remaining four facilities, in-water activities would occur from July 16 through February 15.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level A and/or B harassment of small numbers of 11 marine mammal species or stocks. It also anticipates that any impact on the affected species and stocks would be negligible. NMFS does not anticipate any take of marine mammals by death or serious injury and believes that the potential for disturbance will be at the least practicable level because of the proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

- using only one hammer at any given time at a facility;

¹ At Naval Base Kitsap Bangor (Bangor), Naval Base Kitsap Bremerton (Bremerton), Naval Base Kitsap Keyport (Keyport), Naval Base Kitsap Manchester (Manchester), Zelatched Point, and Naval Station Everett (Everett).

² In-water activities would occur only during daylight hours (sunrise to sunset). From July 16 to September 15, impact pile-driving activities would only occur starting two hours after sunrise and ending two hours before sunset.

- using a bubble curtain³ during impact pile driving of 24- to 36-in piles and implementing various performance standards measures;
- using soft-start, delay, and shut-down procedures, including ceasing activities if any marine mammal comes within 10 m of a pile;
- using delay and shut-down procedures, if a species for which authorization has not been granted or if a species for which authorization has been granted but the authorized takes have been met, approaches or is observed within the Level A and/or B harassment zone⁴;
- using qualified protected species observers to monitor the harassment zones for 15 minutes before, during, and for 30 minutes after pile driving and removal⁵;
- obtaining both marine mammal sightings and acoustic detection data from the Orca Network⁴;
- developing for NMFS's approval and submitting by 1 March of each year a facility-specific marine mammal monitoring plan for each year's anticipated activities;
- reporting any pinniped hauled out at unusual sites (e.g., in work boats) immediately to the local stranding network, and as soon as time allows to NMFS, and following any procedures or measures stipulated by the stranding network⁴;
- reporting injured and dead marine mammals to the West Coast Regional Stranding Coordinator and NMFS using NMFS's phased reporting approach and suspending activities, if appropriate;
- implementing adaptive management, as necessary; and
- submitting draft and final annual and final monitoring reports to NMFS.

Appropriateness of the Level A harassment zones

The Commission supports NMFS's use of the updated permanent threshold shift (PTS) thresholds and associated weighting functions that are used to estimate the Level A harassment zones. However, there are some shortcomings that need to be addressed regarding the methodology for determining the extent of the Level A harassment zones based on the associated PTS cumulative sound exposure level (SEL_{cum}) thresholds for the various types of sound sources, including stationary sound sources. For determining the range to the PTS SEL_{cum} thresholds, NMFS uses a baseline accumulation period of 24 hours unless an activity would occur for less time (e.g., 8 hours). The Commission supports that approach if an action proponent is able to conduct more sophisticated sound propagation and animal modeling. However, that approach is less than ideal for action proponents that either are unable, or choose not, to conduct more sophisticated modeling.

³ Bubble curtains would not be used at Bremerton and possibly Keyport due to risk of disturbing contaminated sediments at those sites. Use of the bubble curtain at Keyport would be further investigated.

⁴ The Commission noted that these standard measures were not included in the proposed rule. NMFS has since clarified that the measures would be included in the final rule.

⁵ Including monitoring during 100 percent of the activities and the use of survey vessels for most projects. The Navy expects marine mammal monitoring to be more extensive than previous monitoring due to the size of the harassment zones and its intent to shut down activities when cetaceans are observed in the Level B harassment zone.

As an example, for impact driving of 36-in piles with bubble curtain implementation⁶ for the proposed rule, the Level A harassment zones for both low- and high-frequency cetaceans were estimated to be much greater (736 and 541 m, respectively) than the Level B harassment zone (398 or 541 m depending on the site). Based on the extent of those zones, it is assumed that an animal would experience permanent hearing damage via PTS at ranges that far exceed the ranges at which an animal would exhibit a behavioral response. That notion runs counter to the logic that permanent and temporary physiological effects are expected to occur closest to the sound source, with behavioral responses triggered at lower received levels, and thus at farther distances. Numerous Navy environmental impact statements⁷, as well as a National Research Council (NRC) report (Figure 4-1; NRC 2005), support this logic.

NMFS has yet to address this issue adequately. Specifically, it has stated that animals would not likely remain in the area with intense sound that could cause severe levels of hearing damage and that, in reality, animals avoid those areas (82 Fed. Reg. 15511). NMFS further has stated that marine mammals taken by Level B harassment would most likely exhibit overt brief disturbance and avoidance of the area (82 Fed. Reg. 15511). However, those conclusions do not comport with NMFS's proposed Level A and B harassment zones, which indicate an animal would experience PTS before behaviorally responding and avoiding the area.

The Commission does not question the Level A harassment thresholds themselves, but rather the manner in which the PTS SEL_{cum} thresholds are currently implemented. The Level A and B harassment zones do not make sense biologically or acoustically due to NMFS's unrealistic assumption that the animals remain stationary throughout the entire day of the activity.⁸ This is particularly problematic when action proponents, including the Navy, are using a simple area x density method for take estimation. By assuming a stationary receiver, all of the energy emitted during a 24-hour period is accumulated for the PTS SEL_{cum} thresholds.

The Commission continues to believe that it would be prudent for NMFS to consult with scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated PTS SEL_{cum} thresholds in such situations. Those zones should incorporate more than a few hammer strikes (or acoustic pulses) but less than an entire workday's worth of strikes (or pulses). This recommendation is the same as those made in the Commission's [11 July 2017 letter](#) on NMFS's final Technical Guidance and multiple previous letters⁹. Other federal partners, including the Navy, have made similar recommendations. Since the Commission and other federal partners determined that this issue needs resolution, the Commission recommends that NMFS make this issue a *priority* to resolve in the near future. The Commission further recommends that NMFS consult with both

⁶ Level A harassment zone without a bubble curtain implemented was estimated to be 2,512 m for low- and high-frequency cetaceans, while the Level B harassment zone was estimated to be 1,359 m. Similarly, the Level A harassment zone for impact driving of 24-in concrete piles was estimated to be 216 m, while the Level B harassment zone was estimated to be 159 m.

⁷ With which NMFS has been a cooperating agency.

⁸ Which generally has been more of an issue for stationary sound sources. However, this also could be an issue for moving sound sources that have short distances between transect lines, in which the user spreadsheet may not be appropriate for use unless the source level could be adjusted accordingly.

⁹ Including its 11 May 2017, 11 April 2017, and 31 August 2015 letters.

Ms. Jolie Harrison
2 April 2018
Page 4

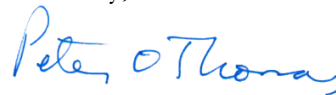
internal¹⁰ and external scientists and acousticians to determine the appropriate accumulation time that action proponents should use to determine the extent of the Level A harassment zones based on the associated PTS SEL_{cum} thresholds for the various types of sound sources, including stationary sound sources, when simple area x density methods are employed. Estimated swimming speeds of various species and behavior patterns (including residency patterns)¹¹ should be considered. Evaluating various scenarios using animat modeling should help address this issue as well.

Rounding of take estimates

The method NMFS used to estimate the numbers of takes during the proposed activities, which summed fractions of takes for each species across project days, does not account for and negates the intent of NMFS's 24-hour reset policy. As the Commission has indicated in previous letters regarding this matter¹², the issue at hand involves policy rather than mathematical accuracy. Although NMFS developed criteria associated with rounding quite some time ago, NMFS has indicated that the draft criteria need additional revisions before it can share them with the Commission. Therefore, the Commission recommends that NMFS promptly revise its draft rounding criteria in order to share them with the Commission in a timely manner.

Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,



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

Reference

NRC. 2005. Marine mammal populations and ocean noise: Determining when noise causes biologically significant effects. The National Academies Press, Washington, D.C. 126 pages

¹⁰ Including staff in the Marine Mammal and Sea Turtle Conservation Division of the Office of Protected Resources and staff in the Office of Science and Technology.

¹¹ Results from monitoring reports, including animal responses, submitted in support of incidental harassment authorizations issued by NMFS also may inform this matter.

¹² See the Commission's [29 November 2016 letter](#) detailing this issue.