



MARINE MAMMAL COMMISSION

14 May 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) 13 April 2018 notice (83 Fed. Reg. 16027) 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 pier construction activities at the Naval Submarine Base New London in Groton, Connecticut, during a five-year period.

The Navy plans to remove and install piles during construction activities at Piers 32 and 10. Operators would install up to 525 concrete, fiberglass-reinforced plastic or steel piles up to 36 in in diameter using a vibratory hammer, impact hammer, and/or rock socket drilling. They would remove 440 piles using a vibratory hammer and/or direct pull. The Navy's activities could occur on approximately 565 days during the five-year period. It would limit pile-driving and -removal activities to daylight hours.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level A and/or B harassment of small numbers of harbor and gray seals. 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 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 zone¹;
- using three qualified protected species observers to monitor the harassment zones for 15 minutes before, during, and for 30 minutes after pile driving and removal;

¹ The Commission noted that this standard measure was not included in the proposed rule. NMFS has since clarified that the measure would be included in the final rule.

- reporting injured and dead marine mammals to the Greater Atlantic 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.

Hydroacoustic monitoring

During the comment period for the advanced notice of proposed rulemaking (82 Fed. Reg. 45828), the Commission informally noted that the Navy should be conducting hydroacoustic monitoring during the proposed activities. That requirement is necessary because the Navy (1) used proxy source levels for the majority of the piles to be installed or removed in lieu of measurements for the specific pile type², size³, and method⁴ (83 Fed. Reg. 16035) and (2) assumed that the Level B harassment zone for vibratory installation and rock socket drilling does not extend beyond 4.6 km from the project site⁵ based on the supposition that pilings and submarines at the piers would effectively block the transmission of sound⁶ downriver. Although NMFS requested and the Navy agreed to conduct hydroacoustic monitoring, details of such monitoring were not included in the proposed rule⁷. The Commission contends that those details, and the basic requirement to conduct hydroacoustic monitoring, should have been included.

In the absence of specific requirements, the Commission informally recommended to NMFS that the Navy conduct hydroacoustic measurements during—

- vibratory *and* impact installation of at least five 16-in fiberglass-reinforced plastic piles—measurements for source levels;
- rock socket drilling of at least three 30-in and three 16-in piles—measurements for source levels and the extent of the Level B harassment zones;
- vibratory installation of at least three 36-in steel piles—measurements for the extent of the Level B harassment zone; and
- vibratory removal of at least three 24-in concrete and three 33-in concrete piles—measurements for source levels and the extent of the Level B harassment zones.

NMFS and the Commission also requested, at a minimum, that the Navy report—

- root-mean-square sound pressure levels (SPL_{rms}), 1-sec sound exposure levels (SELs), duration of recordings used to derive SELs, cumulative SEL (SEL_{cum}) based on the number of piles and driving duration for each scenario, and SEL source spectra for vibratory pile driving/removal source level measurements;

² For example, source levels from plastic piles were used to represent fiberglass-reinforced plastic piles, and source levels from steel pipe piles were used to represent concrete and concrete-encased steel H-piles.

³ Piles of smaller sizes (13- rather than 16-in and 24- rather than 33-in) were used to represent larger sized piles.

⁴ Installation was used to represent extraction, and auger drilling and casing installation/removal were used to represent rock socket drilling.

⁵ At the railroad bridge.

⁶ The largest estimated Level B harassment zone is more than 15 km.

⁷ Which was conveyed to NMFS in the months prior to publication of the proposed rule.

- peak SPLs (SPL_{peak}), SPL_{rms} , integration time/pulse duration for SPL_{rms} , single-strike SELs (SEL_{s-s}), SEL_{cum} based on the number of piles and driving duration for each scenario, and SEL_{s-s} spectra for impact pile driving source level measurements;
- the measured (or extrapolated, if not reached) distances at which the SPL_{rms} decays to 120 dB re 1 μ Pa or to ambient, whichever is higher, and integration time/pulse duration for SPL_{rms} for verification of the extent to the Level B harassment zones;
- all sound levels via medians, means, minimums, and maximums and linear average (i.e., averaging the sound intensity/pressure before converting to dB); and
- sediment type, water depth, hydrophone⁸ depth, etc.

The Navy had agreed to all of these requirements except monitoring the extent of the Level B harassment zones. The Navy indicated that conducting hydroacoustic monitoring to the extent of the Level B harassment zones is not a common requirement based on the five most recent active incidental harassment authorizations, including U.S. Army Corps of Engineers' (USACE) Tampa Harbor Big Bend Channel expansion project, the City of Astoria's waterfront bridge replacement project; the Navy's Bravo wharf recapitalization project, Alaska Department of Transportation's Haines Ferry terminal modification project, and U.S. Coast Guard's (USCG) Monterey waterfront repair project. Among the projects noted, the Navy acknowledged that USCG was required to conduct hydroacoustic monitoring to the extent of the Level B harassment zone⁹, but it apparently missed the same requirement for the USACE (83 Fed. Reg. 19706)¹⁰. The Navy also conducted far-field measurements¹¹ in 2015 for the initial year of the Bravo wharf recapitalization project (Illingworth and Rodkin 2015). The two remaining projects did not propose to reduce the size of the Level B harassment zone—thus, hydroacoustic monitoring was not necessary.

In summary, determining the extent of the Level B harassment zone has been a requirement for the majority of the action proponents noted by the Navy and in all circumstances when the extent of the Level B harassment zone was either unknown or reduced. Therefore, the Commission recommends that, at a minimum, NMFS include all aforementioned hydroacoustic monitoring requirements in the final rule, including measuring the source levels and determining the extents of the Level B harassment zones¹² for the various pile types, sizes, and methods. This also will be necessary for determining to what extent the Navy should extrapolate actual takes of pinnipeds.

⁸ Hydrophones also must be able to record up to a minimum of 20 kHz.

⁹ Which was required because USCG made assumptions regarding reduced sound transmission through the breakwater. The Commission notes that the breakwater is a solid structure that is more likely to inhibit sound transmission (similar to land) than pilings or random placement of submarines. However, it was still assumed to transmit some of the energy.

¹⁰ The extent of sound transmission generally is unknown for confined underwater blasting events, which is why this requirement was included.

¹¹ Including determining in-situ propagation loss coefficients.

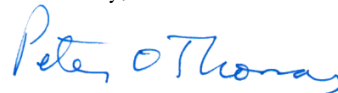
¹² The extents of the Level B harassment zones can be determined either by placing hydrophones in the far field to determine exactly where the sound decays either to 120 dB re 1 μ Pa or ambient or by placing hydrophones sufficiently in the far field to determine in-situ propagation loss and then calculating the range to the 120 dB re 1 μ Pa based on that propagation loss. This should be a requirement in the final rule, thereby eliminating the relevancy to the location of the railroad bridge.

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 matter¹³, 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

Illingworth and Rodkin. 2015. Final hydroacoustic and airborne monitoring at the Naval Station Mayport. Petaluma, California. 37 pages.

¹³ See the Commission's [29 November 2016 letter](#) detailing this issue.