



MARINE MAMMAL COMMISSION

18 August 2014

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 application submitted by the Maine Department of Transportation (ME DOT) seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act to take small numbers of marine mammals by harassment. The taking would be incidental to construction activities at the pier in Eastport, Maine. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 31 July 2014 notice (79 Fed. Reg. 44407) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

Background

ME DOT plans to demolish and replace the current approach pier, expand the existing pier head, and construct a new wave attenuator in waters 2.4 to 17 m in depth in Cobscook Bay. The project would last more than one year but only the first year of activities would be authorized under the proposed incidental harassment authorization. During the project, operators would remove the sheet piles using a vibratory extractor and/or underwater saw. They also would install approximately 151 steel piles ranging in size from 16 to 36 inches in diameter and 215 steel sheet piles. The piles would be installed using a vibratory hammer, impact hammer, and/or down-hole hammer. ME DOT expects pile removal and installation to take 287 hours (weather permitting) and would limit activities to daylight hours only.

NMFS preliminarily has determined that, at most, the proposed activities would modify temporarily the behavior of small numbers of four marine mammal species. NMFS anticipates that any impact on the affected species and stocks would be negligible. NMFS also 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 and monitoring measures. The measures include—

- using sound attenuation devices during impact pile driving;
- conducting in-situ measurements of the various in-water sound-producing activities and adjusting the Level A and B harassment zones, as necessary;
- using two NMFS-approved protected species observers to monitor 30 minutes prior to, during, and 30 minutes after impact pile driving;

- using two NMFS-approved protected species observers to monitor the buffer zone during at least three vibratory pile-driving/underwater-sawing events;
- using ramp-up, delay, and shut-down procedures during the in-water construction activities;
- reporting injured and dead marine mammals to NMFS and the local stranding network using NMFS's phased approach and suspending activities, if appropriate, and
- submitting a final report.

Zones to the relevant thresholds and in-situ measurements

Although ME DOT proposes to install steel pipe piles ranging in size from 16–36 in, ME DOT and NMFS based the size of the Level A and B harassment zones on in-situ measurements from the installation of 30-in pipe piles in water depths 26–32 m¹. Those data originated from acoustic monitoring for Ocean Renewable Power Company, LLC, (ORPC) pile-driving activities in Cobscook Bay. The Commission questions the appropriateness of those zones for 36-in piles not only because the 30-in piles are smaller but also because the water depths were much greater for the ORPC project² and those in-situ measurements are much less than reported by other entities for 36-in piles (please refer to California Department of Transportation (2009) for information regarding source levels and 79 Fed. Reg. 34826 for recent measurements and distances to Level A and B thresholds for a project in Washington). Specifically, the Level B harassment zone for vibratory pile driving of the 30-in pile is three to four times less than what has been measured for 36-in piles elsewhere³. ORPC apparently used a drifting hydrophone system to collect measurements in the far-field. That type of system is not appropriate for determining ranges to zones, due to the high-velocity tidal currents as was observed in Maine. The Commission could not locate information on the in-situ propagation loss observed during ORPC's activities⁴ in its monitoring report.

In addition, ME DOT plans to use a down-hole hammer to drive the 16–24-in pipe piles. NMFS indicated in the *Federal Register* notice that the hydroacoustic impacts of the down-hole hammer are largely unknown but that in-situ measurements in Maine suggested that the peak sound pressure level (SPL_{peak}) may reach 240 dB re 1 μPa_{peak} . That SPL_{peak} is greater than what has been described for impact driving of 36-in pipe piles and, more importantly, is greater than the 202 dB re 1 μPa_{peak} that was determined by ORPC during in-situ monitoring of impact installation of the 30-in piles in Maine. Further, neither ME DOT nor NMFS provided the range to the 120-dB re 1 μPa for installation of the sheet piles using a vibratory hammer—it is very likely that the range to that threshold is much greater than 500 m. Based on all these issues, the Commission questions the appropriateness of the estimated Level A and B harassment zones as described in NMFS's *Federal Register* notice. Therefore, the Commission recommends that NMFS (1) require ME DOT to use exclusion zones greater than 10 m that are precautionary for pile driving using both the impact and down-hole hammer and (2) consult with its analysts who have expertise in pile-driving activities and associated in-situ monitoring to determine the appropriate exclusion zones based on Level A harassment threshold of 180 dB re 1 μPa for 36-in piles installed using both an impact and down-hole hammer. The Commission also recommends that NMFS (1) consult with its analysts who have

¹ 10 and 275 m associated with impact pile driving at the 180- and 160-dB re 1 μPa thresholds, respectively. 500 m associated with vibratory pile driving at the 120-dB re 1 μPa threshold.

² 26–32 m compared to 2.4–17 m.

³ The Level A harassment zone also is smaller.

⁴ The propagation loss also could explain some of those issues.

expertise in pile-driving activities and associated in-situ monitoring to estimate appropriate Level B harassment zones for (a) 36-in pipe piles installed using impact and down-hole hammers and vibratory hammers based on 160 and 120 dB re 1 μ Pa, respectively, (b) sheet piles installed using a vibratory hammer based on 120 dB re 1 μ Pa, and (c) sheet piles removed using either a vibratory extractor or underwater saw based on 120 dB re 1 μ Pa and (2) include those zones in the final incidental harassment authorization. Absent estimation of those Level A and B harassment zones, neither the Commission nor public can comment meaningfully on the proposed activity. Furthermore, the Commission is unsure how NMFS could propose authorization for ME DOT activities and make preliminary findings based on small numbers and negligible impact absent those zones.

ME DOT proposed to conduct in-situ measurements of the various activities during the project, which the Commission supports fully. In the *Federal Register* notice, NMFS stated that underwater sound measurements would be taken at the initial installation of each pile-driving method to ensure that the harassment isopleths are not extending past the estimated distances⁵. However, ME DOT further indicated that acoustic monitoring would be required at the beginning of all activities, apparently during sheet removal as well, and would occur until the recorded sound is shown to be consistently below the threshold for potential harassment. Due to these inconsistencies, it is unclear if NMFS would require ME DOT to conduct in-situ measurements during both pile driving and sheet removal and if both the Level A and B harassment zones would be adjusted based on those measurements. In addition, the statement “acoustic monitoring would occur until the recorded sound is shown to be consistently below the threshold for potential harassment” is vague. This then leads to questions regarding whether acoustic monitoring would occur for only a subset of piles (e.g., two piles) under each installation or removal method or for a specified time (e.g., two weeks) of interspersed monitoring of that installation or removal method. Due to these inconsistencies and ambiguities, the Commission recommends that NMFS (1) explicitly require in the final incidental harassment authorization ME DOT to conduct in-situ measurements of all activities (impact, down-hole, and vibratory installation of the 36-in piles and vibratory extraction and sawing of the sheet piles) and (2)(a) consult with its analysts who have expertise in acoustic monitoring to determine the appropriate methods for collecting the in-situ measurements and establishing the duration of collection (e.g., 10 piles or sheets using each method) and (b) include those methods in the final incidental harassment authorization. This latter recommendation is especially important for environments that have high-velocity tidal currents such as Cobscook Bay.

The Commission understands that ME DOT would not prohibit its contractor from using multiple hammers concurrently during the proposed activities. ME DOT indicated that the Level A and B harassment zones would be monitored and adjusted accordingly during concurrent use. The Commission appreciates ME DOT’s inclusion of those monitoring methods and believes NMFS should specify those requirements in the final incidental harassment authorization. Therefore, the Commission recommends that NMFS explicitly require in the final incidental harassment ME DOT to conduct in-situ measurements of any concurrent activities (impact, down-hole, and vibratory installation and vibratory extraction and sawing of the sheet piles) and adjust the individual Level A and B harassment zones accordingly.

⁵ Exclusion zones and harassment isopleths may be adjusted accordingly for marine mammals so that they are not exposed to Level A harassment sound pressure levels of 180 dB re 1 μ Pa. ME DOT would be required to contact NMFS within 48 hours to make the necessary adjustments.

Take estimates

The *Federal Register* notice indicated that ME DOT estimated the potential numbers of takes based on the maximum group size of animals observed during ORPC's marine mammal observations⁶ multiplied by the maximum expected number of pile-driving and underwater-sawing days. However, ME DOT's application and apparently the numbers included in Table 8 of the notice were based on numbers of marine mammals observed by ORPC on an hourly basis for each month scaled to ME DOT's assumed activity hours (Table 7). As an example, ME DOT's method included 4.6 hours of observation in January during a three-year period in which zero harbor or gray seals were observed. That was then scaled to 28 hours of estimated ME DOT activities, equating to zero estimated takes of seals during January. The Commission finds that method flawed—estimating marine mammal takes based on ORPC's hourly observation effort scaled to ME DOT assumed activity hours, which can actually occur on various days within any given month. In addition, the Commission believes the assumption then that no seals would occur in the project area in January is unfounded. That assumption is not substantiated by the information in ME DOT's application, which indicated harbor seals are found in Maine's coastal waters year-round. NMFS should be basing the numbers of takes to be authorized on the potential to be taken. Since seals are found in Maine year-round, they have the potential to be taken in January, particularly since January appears to have the greatest number of ME DOT activity hours after August. Furthermore, NMFS authorized ORPC to take 72 seals, 72 harbor porpoises, and 12 Atlantic white-sided dolphins for only 12 days of activities. ME DOT proposed to take, and NMFS proposed to authorize the taking of, only 45 seals, 39 harbor porpoises, and 2 Atlantic white-sided dolphins. Based on ME DOT's proposed 287 hours of activities, ME DOT and NMFS have underestimated the potential takes by at least a factor of two or three⁷. Accordingly, the Commission recommends that NMFS authorize the estimated numbers of marine mammal takes for ME DOT activities based on the maximum group size of animals observed during ORPC's marine mammal observation effort⁸ multiplied by the maximum expected number of pile/sheet installation and sheet removal days, consistent with the ORPC incidental harassment authorization. The Commission hopes that NMFS addresses these types of inconsistencies before publishing a proposed authorization in the *Federal Register* notice.

Although a minke whale was observed during ORPC marine mammal monitoring, incidental taking of that species was not proposed. Accordingly, the Commission recommends that NMFS specify in its final incidental harassment authorization that ME DOT would delay or cease pile installation or sheet removal/sawing if an animal(s) from any species or stock for which authorization has not been granted⁹ approaches or is observed within any of the Level B harassment zones and would not resume those activities until the animal(s) has been observed to leave the Level B harassment zone.

⁶ Six seals (harbor and gray seals combined), five to six harbor porpoises, and one Atlantic white-sided dolphin.

⁷ This would be even greater if the activities are interspersed over many days throughout the year, as referenced in Table 1 of the *Federal Register* notice.

⁸ Six seals (harbor and gray seals combined), five to six harbor porpoises, and one Atlantic white-sided dolphin.

⁹ Or for which authorization has been granted but the taking limit has been met, which is implied in the authorization.

Monitoring measures

NMFS indicated in the proposed incidental harassment authorization that monitoring of the Level B harassment zone (4,600 m)¹⁰ would be required during at least three events of vibratory pile driving/underwater sawing to conduct behavioral monitoring and validate take estimates. ME DOT, however, indicated that monitoring would occur during three days total, with interspersed monitoring over various days or weeks. Neither the Commission nor the public can evaluate the appropriateness of monitoring with such inconsistencies, which are complicated further because ME DOT did not provide the approximate number of days of proposed activities. If one assumes an 8-hour work day, then based on 287 hours of activities ME DOT would conduct activities on 36 days; a 12-hour work day would yield 25 days. However, if one refers to Table 1 of the *Federal Register* notice, both of these appear to be significant underestimates of the number of potential days of in-water sound-producing activities. Even underestimating the days of activity, the proposed levels of monitoring vibratory and sawing activities would only occur 8 to 12.5 percent of the time. The Commission does not believe that is sufficient for fulfilling basic monitoring requirements or validating take estimates. Therefore, the Commission recommends that NMFS require ME DOT to conduct monitoring out to the extent of the relevant Level B harassment zones for vibratory pipe pile installation, vibratory sheet pile installation, vibratory sheet extraction, and sheet sawing for at least the majority of time spent conducting each of the four activities.

Thank you for carefully considering the enclosed comments and recommendations. The Commission looks forward to receiving your responses. Please contact me if you have questions about our recommendations or rationale.

Sincerely,

A handwritten signature in blue ink that reads "Rebecca J. Lent". The signature is written in a cursive style.

Rebecca J. Lent, Ph.D.
Executive Director

¹⁰ The Commission assumes that distance is an error and likely was carried over from the ORPC authorization, since the Level B harassment zones for those ME DOT activities have not been determined.