



MARINE MAMMAL COMMISSION

9 January 2017

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) 9 December 2016 notice (81 Fed. Reg. 89066) 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 Cobscook Bay. This is the second year of activities. During the project, operators would install approximately 64 16- to 36-in steel pipe and 80 pairs of steel sheet piles. They also would remove the old sheet piles by cutting them at the mudline¹. The piles would be installed using a vibratory and/or impact hammer. ME DOT expects pile removal and installation to occur on 160 days and would limit activities to daylight hours only².

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 measures. The proposed mitigation, monitoring, and reporting measures include—

- ceasing heavy machinery activities if any marine mammal comes within 10 m of the equipment;
- using soft-start, delay, and shut-down procedures;

¹ Per the *Federal Register* notice and application. The application noted the use of an underwater saw.

² Impact pile driving activities also would be restricted from April–November when various fish species would be present.

- using two qualified land-based protected species observers (PSOs) to monitor the Level A and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities;
- reporting injured and dead marine mammals to NMFS and the Greater Atlantic Regional Fisheries Office Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting a final report.

General concerns and comments

The Commission has extensive questions and comments regarding the proposed incidental harassment authorization. Some of these are similar to recommendations made by the Commission for the first year of activities (see the enclosed 18 August 2014 letter). The Commission's current comments involve general concerns regarding standard mitigation and monitoring measures, inaccurate assessments of species-specific takes based on biological and ecological considerations, and inclusion of the relevant pile sizes and installation methods to determine the extent of the Level A and B harassment zones³. After multiple communications with the Commission, NMFS indicated that several issues would be resolved prior to issuance of the incidental harassment authorization. Those revisions include—

- requiring the use of a sound attenuation device (e.g., pile cushions or confined bubble curtain) during impact driving of steel piles;
- requiring the use of delay and shut-down procedures, if a species for which authorization has not been or if a species for which authorization has been granted but the authorized number of takes has been met, approaches or is observed within the Level B harassment zone;
- requiring the use of the standard 15- and 30-minute clearance times for small cetaceans and pinnipeds and large cetaceans, respectively; and
- increasing Level B harassment takes from 8 to 72 Atlantic white-sided dolphins based on group size and frequency of occurrence.

The Commission agrees that those revisions should be included in the final incidental harassment authorization.

Outstanding issues

Although NMFS has resolved several issues, it has yet to explain how it plans to resolve the remaining issues. Those issues include—

- lack of information regarding the extent of the Level A and B harassment zones⁴ for installation of 36-in piles using a vibratory hammer⁵;
- lack of information regarding the extent of the Level A and B harassment zones⁴ for

³ Which did not affect the estimated numbers of takes but would affect the areas to be observed in support of implementation of mitigation and monitoring measures.

⁴ Including the proxy source levels to be used.

⁵ Although the *Federal Register* notice incorrectly indicated that both an impact and a vibratory hammer would be used.

- installation of the 16- and 20-in piles using a vibratory hammer;
- inclusion of two Level B harassment zones (400 and 665 m) for installation of sheet piles using a vibratory hammer—the zone to be monitored has yet to be stipulated;
- clarity regarding whether sheet piles would be removed and if so, by which method (e.g., vibratory extraction or cutting);
- under-estimation of the number of Level B harassment takes for gray/harbor seals⁶; and
- inclusion of Level B harassment takes for minke whales.

The Commission notes that proxy source levels exist for vibratory installation of the various pile sizes to be used by ME DOT. Those have been measured in recent years by Washington Department of Transportation, California Department of Transportation, and U.S. Navy (the Navy). Regarding installation of sheet piles, ME DOT did measure the extent of the Level B harassment zone for installation of two sheet piles using a vibratory hammer. However, NMFS did not specify which harassment zone it plans to monitor. Since only two sheet piles were monitored, the larger Level B harassment zone should be used as a precautionary approach. In addition, NMFS needs to specify whether sheet pile removal would occur and, if by vibratory extraction, the appropriate Level B zone should be monitored. The Commission recommends that NMFS (1) use 161 and 167 dB re 1 μ Pa as the proxy source levels⁷ for vibratory installation of 16- to 20-in and 36-in piles, respectively, to determine the extent of the Level A and B harassment zones⁸, (2) require ME DOT to monitor the 665-m Level B harassment zone during vibratory installation of sheet piles, and (3) specify whether removal of sheet piles would occur and, if by vibratory extraction, require ME DOT to monitor the 665-m Level B harassment zone for vibratory installation as a proxy for vibratory extraction.

Regarding the estimation of pinniped takes, NMFS proposed, based on previous monitoring data, to authorize the taking of up to six gray/harbor seals per day. Although ME DOT's monitoring report from the first-year authorization was not available for review, ME DOT confirmed that on some days 50 or more seals were observed but that it was confident no more than 6 individual seals were harassed on any given day. The Commission finds it curious that the PSOs were able to determine that 50⁺ sightings on a given day were of only 6 seals. Because observers very rarely are able to determine the number of individuals taken but can determine the number of seals observed in the respective harassment zones on a given day, the latter normally serves as the basis for enumerating and reporting the number of takes for sound-producing activities including pile-driving activities. With only six takes authorized per day for either pinniped species, ME DOT could easily reach its limit prior to completion of the proposed activities. At that point, ME DOT would have to shut down its activities any time a seal is observed within the Level B harassment zone, potentially causing major delays. The Commission recommends that NMFS (1) use the maximum number of gray/harbor seals that were observed in the Level B harassment zone on a given day during the first year of activities, which may be greater than 50, to inform the number of Level B harassment takes⁹ to be authorized and (2) ensure that ME DOT, and specifically the PSOs,

⁶ Gray and harbor seals were combined into a single category because they cannot always be identified to the species.

⁷ See 82 Fed. Reg. 701 and the Navy (2016).

⁸ Assuming practical spreading as well. The Commission also notes that the 1-km Level B harassment zone for vibratory installation of 36-in piles that was included in the first-year authorization (Table 1, 79 Fed. Reg. 59248) was an error and should not be included in the current authorization.

⁹ Based on the maximum daily count multiplied by the number of days of activities.

understand the manner in which they should be enumerating and reporting Level B harassment takes.

Lastly, minke whale takes were not included in the first-year authorization. However, monitoring efforts reported in Table 5 of ME DOT's application indicate that 28 minke whales were observed in the project area. The Commission brought this omission to NMFS's attention, and NMFS indicated it would include Level B harassment takes for minke whales but has yet to specify how many it plans to authorize. The average group size of minke whales is generally two animals, but the number of Level B harassment takes should be based on the greater of either the maximum number of whales observed on a given day or average group size. NMFS should use sightings data from the previous year's monitoring reports and any other monitoring efforts in the area to refine take estimates in subsequent authorizations. The Commission recommends that NMFS (1) base the number of minke whale takes on the greater of either (a) the maximum number of whales observed in a given day or (b) the average group size, together with the frequency of occurrence of minke whales in the project area and (2) use sightings data from monitoring reports and any other monitoring efforts to inform and refine subsequent authorizations for multi-year projects. If the monitoring reports are not finalized at the time NMFS reviews the application, it should request the available raw sightings data from the applicant to ensure the estimated numbers of takes in subsequent authorizations are appropriate. This practice could have alleviated issues with estimation of gray/harbor seal and minke whale takes prior to the proposed authorization being published in the *Federal Register*.

Authorization quality

The Commission notes that some of its concerns were resolved under the previous incidental harassment authorization (79 Fed. Reg. 59247). However, many were either not fully addressed in that authorization or were not incorporated into the current proposed authorization. In addition, ME DOT's current application¹⁰ included additional inaccuracies¹¹. These involved the manner¹² in which various sizes of piles would be installed, inclusion of activities that would not occur including use of down-hole hammers and underwater saws, incorrect specification of Level A and B harassment zones based on in-situ measurements from the first year of activities¹³, and an incorrect method for estimating the numbers of Level B harassment takes. Given all of the aforementioned issues, the Commission believes that NMFS should not have deemed ME DOT's application complete and should not have published the proposed incidental harassment authorization in the *Federal Register* in its current state. This is further complicated by the quick turnaround time for this authorization—the Commission understands NMFS plans to issue this authorization within a week of the close of the public comment period. The level of attention to the quality of the authorization should not be compromised due to insufficient timing.

¹⁰ It also does not appear to be posted on NMFS's website allowing for public comment.

¹¹ Some of which were included without correction in the *Federal Register* notice.

¹² Using either a vibratory or impact hammer or both.

¹³ In addition, the first-year incidental harassment authorization requirements to conduct in-situ measurements for the installation of the various sizes of piles doesn't appear to have been fulfilled (79 Fed. Reg. 59249)—36-in piles were not adequately monitored (only peak sound pressure levels were reported) and it is unclear if vibratory installation of 16- or 20-in piles occurred and were monitored.

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In general, the Commission has observed a decline in the quality, completeness, and accuracy of several action proponents' applications and of NMFS's proposed incidental harassment authorizations in recent months, especially for pile-driving and -removal activities. In response to this concern, the Commission stated in its 3 January 2017 letter specific recommended improvements for authorizations involving pile-driving and -removal activities, in addition to basic quality control elements noted herein. Due to these ongoing issues, the authorization process is becoming less transparent, making it difficult for the Commission and the public to comment effectively on the authorizations.

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 with a large initial "R" and a long horizontal stroke extending to the left.

Rebecca J. Lent, Ph.D.
Executive Director

Enclosure

Reference

Navy, 2016. Proxy source sound levels and potential bubble curtain attenuation for acoustic modeling of nearshore marine pile driving at Navy installations in Puget Sound. Naval Facilities Engineering Command Northwest, Silverdale, Washington. 57 pages.



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 with a blue ink color.

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.