



MARINE MAMMAL COMMISSION

11 April 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 Washington State Department of Transportation Ferries Division (WSDOT) seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (the MMPA) to take small numbers of marine mammals by harassment. The taking would be incidental to reconfiguring the Seattle Ferry Terminal at Colman Dock in Washington. This is a multi-year project, but the incidental harassment authorization would be valid for one year. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 29 March 2017 notice (82 Fed. Reg. 15497) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

WSDOT plans to reconfigure and replace portions of the Seattle Ferry Terminal at Colman Dock. Operators will install and/or remove up to 856 piles ranging in size from 14-in timber piles to 36-in steel piles in the first year of activities. Piles would be installed using a vibratory and/or impact hammer and removed using a vibratory hammer. Up to three hammers could be used at any given time. WSDOT expects activities to take 83 days, weather permitting. It would limit activities to daylight hours only, during the timeframe from 1 August 2017 to 15 February 2018.

NMFS preliminarily has determined that, at most, the proposed activities could cause Level A and B harassment of small numbers of eight marine mammal species or stocks but 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 mitigation, monitoring, and reporting measures include—

- using a sound attenuation device during impact pile driving;
- conducting in-situ measurements when up to three vibratory hammers are used to install both 24- and 36-in piles and adjusting the Level B harassment zones accordingly¹;
- ceasing pile-driving and -removal activities if any marine mammal comes within 10 m of the equipment¹;

¹ NMFS informed the Commission that it incorrectly omitted from the *Federal Register* notice these few mitigation and monitoring measures, which would be included in the final authorization.

- using two to seven qualified protected species observers (land- and/or vessel-based) to monitor the Level A and B harassment zones for 30 minutes before, during, and for 30 minutes after the proposed activities;
- using standard² soft-start, delay, and shut-down procedures;
- using delay and shut-down procedures, if a species for which authorization has not been granted (including Southern Resident killer whales³) or if a species for which authorization has been granted but the authorized takes have been met, approaches or is observed within the Level B harassment zone;
- obtaining both marine mammal (1) sightings data from the Orca Network and/or Center for Whale Research and (2) acoustic detection data from the Orca Network on a daily basis;
- reporting injured and dead marine mammals to NMFS and the West Coast Regional Stranding Coordinator using NMFS's phased approach and suspending activities, if appropriate; and
- submitting a final report.

The Commission understands based on discussions with NMFS that there are some issues⁴ associated with the estimated numbers of Level A and B harassment takes as described in the *Federal Register* notice. Based on typos and analytical errors noted by the Commission, NMFS plans to increase the number of Level B harassment takes from 114 to 116 for Steller sea lions and from 137 to 143 for Dall's porpoises. In addition, the Commission noted that the maximum counts for harbor seals and California sea lions⁵ were not used to inform the number of Level A and/or B harassment takes as described in the *Federal Register* notice. Due to those discrepancies, NMFS plans to increase the Level A and B harassment takes for harbor seals from 168 to 364 and from 330 to 715, respectively, and increase the Level B harassment takes for California sea lions from 1,245 to 3,901. Finally, the Commission indicated that harbor porpoise density data had recently been updated for the area near Seattle based on Jefferson et al. (2016), which yielded a density of 0.69 rather than 0.58⁶ porpoises/km². NMFS plans to use the density data from Jefferson et al. (2016)—thus, the Level A and B harassment takes⁷ would increase from 195 to 233 and 1,657 to 2,056 for harbor porpoises, respectively. The Commission agrees that NMFS should include all the aforementioned revisions in the final incidental harassment authorization.

Appropriateness of the Level A harassment zones

The Commission has concerns regarding the appropriateness of the manner in which NMFS has estimated Level A harassment zones. For impact driving of 30- and 36-in piles using three hammers concurrently, the Level A harassment zones for both low- and high-frequency cetaceans were estimated to be much greater (1.85 and 2.84 km, respectively) than the Level B harassment

² NMFS informed the Commission that it incorrectly omitted from the *Federal Register* notice the standard 15-minute clearance time for small cetaceans and pinnipeds, which would be clarified in the final authorization.

³ Including shutting down when killer whales are observed and their stock is unknown.

⁴ The Commission also highlighted some other typos and instances of missing information in the *Federal Register* notice, which NMFS indicated it would revise and include in the final authorization.

⁵ Maximum counts based on local abundance data were 13 rather than 6 harbor seals and 47 rather than 15 California sea lions as delineated in the incidental harassment authorization application.

⁶ The *Federal Register* notice incorrectly stated that the density used to inform the take estimates was 0.156 rather than 0.58 porpoises/km².

⁷ These also were amended based on analytical errors.

zone (1.20 km). That is, an animal would experience permanent hearing damage via a permanent threshold shift (PTS) at ranges that far exceed the zones at which an animal would exhibit a behavioral response. That notion is inaccurate and runs counter to what the National Research Council (NRC) described nearly 15 years ago (Figure 4-1; NRC 2005) and has been included in the numerous Navy environmental impact statements with which NMFS has been a cooperating agency for nearly 10 years. None of those documents describe physiological effects occurring at ranges that far exceed behavioral effects. Rather, physiological effects occur closest to the sound source.

NMFS indicated in the *Federal Register* notice 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. NMFS further stated that marine mammals taken by Level B harassment would most likely exhibit overt brief disturbance and avoidance of the area. However, those conclusions do not comport with NMFS's proposed Level A and B harassment zones—specifically, an animal would experience PTS before behaviorally responding and avoiding the area.

The Level A and B harassment zones do not make sense biologically or acoustically due to NMFS's unrealistic assumption the animals are stationary and do not move throughout the entire day of pile driving⁸. The Commission understands that some action proponents either are unable, or choose not, to conduct more sophisticated sound propagation and animal modeling. However, when an action proponent uses a simple area x density method, that 'area' should be based on reasonable harassment zones. By assuming a stationary receiver, all of the energy emitted during a 24-hour period is accumulated for the PTS sound exposure level-based (SEL_{cum}) thresholds. In this instance, that assumes the animals would be subjected to 24,000 hammer strikes per day.

The Commission believes that it would be prudent for NMFS to consult with scientists and acousticians to determine the relevant 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 but less than 24 hours worth of strikes (or an entire work day's worth of strikes). This is similar to a recommendation made in the Commission's [31 August 2015 letter](#) on NMFS's proposed acoustic guidance. The Commission also wants to be clear that it does not question the Level A harassment thresholds themselves, but rather questions the manner in which the PTS SEL_{cum} thresholds are currently implemented. As such, the Commission recommends that NMFS consult with both internal⁹ and external scientists and acousticians to determine the relevant 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 stationary sound sources.

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—a policy decision that NMFS made many years

⁸ Which is considered a stationary sound source.

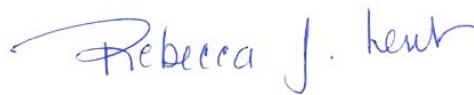
⁹ Including staff in the Marine Mammal and Sea Turtle Conservation Division of the Office of Protected Resources and staff in the Office of Science and Technology.

Ms. Jolie Harrison
11 April 2017
Page 4

ago and continues to implement¹⁰. As the Commission indicated in previous letters regarding this matter¹¹, the issue at hand involves policy rather than mathematical accuracy. For example, the numbers of takes for Level A (PTS) harassment were based on the respective cumulative sound exposure level thresholds summed across 83 days, which NMFS reaffirmed should be based on a 24-hour reset (81 Fed. Reg. 51694). The Commission understands the NMFS has developed criteria associated with rounding that it plans to share with the Commission shortly. The Commission looks forward to reviewing those criteria and resolving this matter in the near future.

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

Sincerely,



Rebecca J. Lent, Ph.D.
Executive Director

References

- Jefferson, T.A., M.A. Smultea, S.S. Courbis, and G.S. Campbell. 2016. Harbor porpoise (*Phocoena phocoena*) recovery in the inland waters of Washington: Estimates of density and abundance from aerial surveys, 2013–2015. *Canadian Journal of Zoology* 94:505–515.
- 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 See the *Federal Register* notice regarding NMFS's technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing—underwater acoustic thresholds for onset of PTS and temporary threshold shift (TTS; 81 Fed. Reg. 51694).

¹¹ See the Commission's [29 November 2016 letter](#) detailing this issue.