26 July 2012

Mr. P. Michael Payne, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Mr. Payne:

The Marine Mammal 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 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 reconstruction of the Port Townsend Ferry Terminal Transfer Span in Puget Sound, Washington. The incidental harassment authorization would be valid for one year. The Commission also has reviewed the National Marine Fisheries Service's 3 July 2012 notice (77 Fed. Reg. 39471) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service issue the incidental harassment authorization but require the Ferries Division to—

- implement ramp-up procedures after 15 minutes if pile-driving or -removal activities were delayed or shut down because of the presence of a marine mammal within or approaching the exclusion zone and observers did not see that marine mammal leave the zone;
- monitor before, during, and after all ramp-ups of vibratory and impact pile-driving to gather the data needed to determine the effectiveness of this technique as a mitigation measure; and
- monitor the Level A and B harassment zones to detect the presence and characterize the behavior of marine mammals during all pile-driving and -removal activities that use a vibratory or impact hammer.

RATIONALE

The Ferries Division plans to replace the current cable-lift transfer span at Slip 1 of the Port Townsend ferry terminal with a hydraulic lift H-span. During the project, operators would remove 40 12-in timber piles and 8 24- to 30-in steel piles using a vibratory hammer, clamshell bucket, and/or direct pull. They also would install 16 24- to 30-in steel piles and 2 80-in steel cylinder shaft casings using a vibratory hammer, with 8 of the steel piles being proofed with an impact hammer. Eight 24- to 30-in steel piles would be installed temporarily to help guide the permanent piles into

their proper location and then removed after the span has been constructed. The Ferries Division would use one hammer at any given time to install and/or remove piles in waters approximately 7.3 m in depth. It expects pile installation and removal to take 18 days (weather permitting) between December 2012 and 15 February 2013. It would limit activities to daylight hours only and could use multiple barges at any one time to support construction activities.

The Service preliminarily has determined that, at most, the proposed activities temporarily would modify the behavior of small numbers of 11 marine mammal species. The Service anticipates that any impact on the affected species and stocks would be negligible. The Service 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—

- restricting in-water activities after 16 February to protect juvenile salmon
- using a bubble curtain to reduce sound pressure levels during impact driving of steel piles
- using no more than one impact or vibratory hammer at any given time
- conducting in-situ sound propagation measurements during vibratory installation of the 24- and 80-in piles and adjusting the Level A and B harassment zones, if necessary
- using a Service-approved protected species observer to monitor the Level A and B harassment zones 30 minutes prior to, during, and 20 minutes after impact pile driving and vibratory pile driving of the 80-in piles
- using delay and shut-down procedures
- using ramp-up procedures for vibratory and impact pile driving at the beginning of each pile installation, unless no marine mammals have been observed within the exclusion zone for the prior 50 minutes
- using two Service-approved protected species observers to monitor the Level B harassment zones for marine mammals during vibratory pile-driving and -removal activities at least two days per week
- requiring a Service-approved protected species observer to be on-site at all times during pile installation and removal
- reporting injured and dead marine mammals to the Service and local stranding network using the Service's phased approach and suspending activities, if appropriate, and
- submitting a final report.

Mitigation and monitoring measures

The Service would require the operators to implement ramp-up procedures only at the beginning of each work day and only when pile-driving or -removal activities have ceased for more than one hour. In addition, the Service would require that, if a marine mammal is sighted within or on a path toward an exclusion zone (i.e., based on the Level A harassment zone) during impact pile driving, operators cease pile driving until that marine mammal has cleared the zone and is on a path away from the zone or 15 minutes has lapsed since the last sighting.

One situation raises concern when a marine mammal has been sighted in or approaching the Level A harassment zone, pile driving has been interrupted, and the marine mammal has not been seen for 15 minutes. The question is whether the marine mammal has left the zone and it is safe to resume pile driving at full power, or whether the operators should follow ramp-up procedures as they resume pile driving. The Commission continues to believe that the operators should use ramp-up procedures in those cases. The whole purpose of shutting down after a marine mammal is sighted in (or about to enter) an exclusion zone is to protect it from unsafe sound pressure levels. If the marine mammal has not been seen for 15 minutes, there are two possibilities: it has left the zone or it has not. The mere fact that the animal has not been seen is not proof that it has left the zone. Even the marine mammals with the shortest dive times may remain submerged for most of the 15-minute period, and even the best observers may not detect a marine mammal each time it surfaces. Without knowing the specifics involved (e.g., species, observer qualifications, environmental conditions) it is simply not possible to be confident that the animal has left the zone. For those reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Ferries Division to implement ramp-up procedures after 15 minutes if pile-driving or -removal activities were delayed or shut down because of the presence of a marine mammal within or approaching the exclusion zone and observers did not see that marine mammal leave the zone.

The previous recommendation notwithstanding, the Commission has noted in previous correspondence that the effectiveness of ramp-up as a mitigation measure has yet to be empirically verified. As with the ramp-up of airguns, the Service should not assume, absent empirical verification, that ramp-up procedures achieve their intended purpose. Verification may require not only collecting opportunistic data but also designing and conducting studies to test specific hypotheses regarding the utility of ramp-up procedures and analysis of responses of the various species encountered. Because the vibratory hammer has the potential to harass marine mammals and the Service proposes only intermittent monitoring, the Marine Mammal Commission repeats its recommendation that the National Marine Fisheries Service require the Ferries Division to monitor before, during, and after all ramp-ups of vibratory and impact pile-driving to gather the data needed to determine the effectiveness of this technique as a mitigation measure.

The proposed authorization included monitoring by protected species observers to implement shut-down or delay procedures, validate take estimates, and document marine mammal responses. However, the authorization would require monitoring of the Level B harassment zones for a minimum of two days per week during vibratory pile driving and removal. The Service did not provide a rationale for not including continuous monitoring in the proposed authorization, but the Commission believes its rationale would be similar to other proposed authorizations. For example, the Service has indicated previously that it would not require continuous observations during vibratory pile driving and removal because it believes that the sound levels from those activities would not cause Level A harassment or mortality, the operators would be able to determine adequately the number of animals taken, and they should be able to determine actual impacts by correcting for observer effort (77 Fed. Reg. 32573).

For a number of reasons, the Commission believes that protected species observers should be monitoring the construction sites during all activities (i.e., vibratory pile driving and removal and impact pile driving). Marine mammal responses to vibratory pile driving are not well studied and

continuous monitoring is the only way to ensure that unexpected responses are detected, documented, and evaluated. Intermittent or infrequent observations may be sufficient for characterizing what might be called "normal" responses, but the Service also should want to know if, on occasion, these activities cause stronger and more significant responses. Finally, monitoring during all pile-driving activities (i.e., during impact and vibratory hammer use) is the only way for the operators and the Service to be confident that they are causing the least practicable impact. For all of these reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the Ferries Division to monitor the Level A and B harassment zones to detect the presence and characterize the behavior of marine mammals during all pile-driving and -removal activities that use a vibratory or impact hammer.

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

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director

References

California Department of Transportation. 2009. Technical guidance for assessment and mitigation of the hydroacoustic effects of pile driving on fish. Prepared by ICF Jones and Stokes and Illingworth and Rodkin, Inc., 298 pages.

Richardson, W.J., C.R. Greene, Jr., C.I. Malme, and D.H. Thomson. 1995. Marine Mammals and Noise. Academic Press, San Diego, CA, 576 pages.