



# MARINE MAMMAL COMMISSION

23 June 2011

Mr. P. Michael Payne, Chief  
Permits, Conservation, and Education 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 from the Cher-Ae Heights Indian Community of the Trinidad Rancheria seeking to renew its 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 pile driving, pile removal, and other activities related to reconstruction of the Trinidad Pier in California. The planned reconstruction activities would occur from 1 August 2011 through 1 May 2012, with pile driving and pile removal occurring from 1 August 2011 through 31 January 2011. The Commission also has reviewed the National Marine Fisheries Service's 18 May 2011 *Federal Register* notice (76 Fed. Reg. 28733) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

## RECOMMENDATION

The Marine Mammal Commission recommends that the National Marine Fisheries Service defer issuance of the incidental harassment authorization until it has—

- required the applicant to develop a more realistic estimate of the number of harbor seal takes that (1) accounts for all harbor seal haul-out sites in the area, (2) corrects seal abundance estimates to account for seals in the water during the counts, (3) incorporates a more realistic assessment of the portion of seals that will enter the water in the Level B harassment zone during the proposed construction operations, (4) includes a reasoned basis for estimating takes that occur from in-air construction sound, and (5) is based on a realistic estimate of the time required to remove 205 wood piles;
- reviewed estimates of numbers of takes for California sea lions and gray whales during the proposed activities;
- re-estimated the distances to various in-water and in-air Level A and B harassment thresholds for all three types of proposed sound-producing activities and then re-evaluated the proposed mitigation and monitoring measures to ensure that the appropriate areas are adequately monitored;
- required the applicant to verify the associated Level A and B harassment zones through calibrated in-situ sound measurements and to adjust those zones as appropriate;
- required that shut-down procedures be established for both species of pinnipeds;
- provided further analysis and justification regarding the efficacy of visual monitoring for the proposed activities and the manner in which the number of takes can be determined accurately;

- required the applicant to use 30 minutes as the appropriate clearance time for gray whales before ramp-up activities may commence and to use hydrophones for acoustic detection of gray whales; and
- addressed the deficiencies identified by the Commission and publish a new proposed incidental harassment authorization in the *Federal Register* with the corrected information and provide for an additional 30-day comment period.

## **BACKGROUND**

The Cher-Ae Heights Indian Community of the Trinidad Rancheria plans to reconstruct the aging Trinidad Pier to correct structural deficiencies and eliminate non-point source run-off. The applicant would remove 205 creosote-treated wood piles and install 115 cast-in-steel-shell concrete piles using a vibratory hammer and auger. The piles are 45.7 cm in diameter. The applicant would replace the current decking; electrical, water, sewer, and phone utilities; lighting; railing; hoists; storage facilities; and a saltwater intake pipe. A vibratory hammer and auger and increased human activity associated with pier construction would be the main sources of disturbance of marine mammals.

The Service preliminarily has determined that, at most, the proposed activities temporarily would modify the behavior of small numbers of harbor seals, California sea lions, and gray whales. It also anticipates that any impact on the affected species and stocks would be negligible. The Service 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—

- (1) timing the proposed sound-producing activities to occur during seasonal lows in marine mammal presence;
- (2) generally limiting the proposed activities to no more than five days per week;
- (3) scheduling the proposed activities to occur between 7 a.m. and 7 p.m., with sound-generating activities occurring only from one-half hour after sunrise until one-half hour before sunset;
- (4) using a vibratory hammer rather than an impact hammer to minimize sound intensity during pile installation;
- (5) using ramp-up procedures (i.e., short periods of vibratory hammer use with intervening pauses of comparable duration before continuous hammer use);
- (6) using shut-down procedures (i.e., suspending activities if any marine mammal other than a harbor seal is detected within the Level B harassment zones and resuming activities only after 15 minutes have elapsed unless the animal is observed leaving the shut-down zone);
- (7) requiring that qualified observers be present at the pier from one hour prior to initiating the proposed activities until one hour after completing activities for the day (However, for reasons not clear to the Commission, monitoring by the observers would be required in the vicinity of the proposed activities for 30 minutes prior to, during, and 30 minutes after the activities only);

- (8) using observers to monitor the Level B harassment zones visually, but recognizing that the maximum effective range of such monitoring is 0.8 km for pinnipeds and 1.6 km for gray whales;
- (9) requiring that activities be suspended whenever observers cannot see the water surface clearly out to a distance of at least 30.5 m;
- (10) detecting the presence of marine mammals audibly using only “the human ear”;
- (11) monitoring underwater sound in accordance with conditions set forth in the applicable Coastal Development Permit (permit 1–07–046);
- (12) providing a monitoring report to the Service; and
- (13) reporting all injured or dead marine mammals to the Service “as soon as practicable.”

## **RATIONALE**

Section 101(a)(5)(D) of the Marine Mammal Protection Act provides a mechanism under which U.S. citizens may obtain authorization to take by harassment small numbers of marine mammals incidental to activities other than commercial fishing, provided that the taking will have no more than a negligible impact on the affected species or stock. Authorizations issued under this provision are to prescribe (1) permissible methods of taking by harassment pursuant to the activity, and other means of effecting the least practicable impact on the marine mammal species or stocks and (2) requirements pertaining to the monitoring and reporting of such taking. As discussed below, the information presented in the *Federal Register* notice contains numerous inconsistencies, errors, and insufficiencies that, taken together, raise questions as to how the Service can determine that the proposed activities will meet the statutory and regulatory requirements for obtaining an authorization.

### **Estimating the Number of Takes**

Although the term “small numbers” is not specifically defined, the applicant and the Service still should provide (1) a realistic estimate of the number of marine mammals that will be taken incidental to a proposed activity and (2) a rational explanation for why that number reasonably can be considered small. In this case, the applicant estimated that removal of wood piles would cause 754 in-water takes of harbor seals. Among other things, this estimate is based on 1) the mean maximum abundance of 37 harbor seals at Indian Beach between August and January (Goley et al. 2007), 2) an estimate that seals spend 10 percent of their time in the water within the area of effect, and 3) an assumption that 3.5 piles would be removed per day during a 58-day period (76 Fed. Reg. 28747). The Commission has a number of concerns with this estimate and the information on which it is based.

First, the estimate is based only on the nearest harbor seal haul-out site when there are a number of other sites near the pier (i.e., within 25 km). In this case, “nearness” should be defined based on the movement patterns of harbor seals. The scientific literature is sufficient to demonstrate that harbor seals make frequent movements on the order of 25 to 50 km from their haul-out sites (Brown and Mate 1983, Suryan and Harvey 1998). That being the case, basing the estimated takes only on abundance at one haul-out site effectively discounts the other sites and the seals that also may be taken during the proposed action.

Second, the abundance used to approximate the number of takes is underestimated because it fails to take into account the number of seals in the water at the time of the counts. Harvey and Goley (*in press*) calculated a correction factor of 1.54 to account for harbor seals at sea based on data from this area. A correction factor of 1.54 suggests that the estimated number of seals that might be taken from this one haul-out site is at least 50 percent greater than stated in the application.

Third, the applicant and Service then assumed that (1) seals spend only 10 percent of their time in the water each day and, (2) for that reason, the estimated number of seals in the area and subject to take can be reduced by 90 percent. Again, the Commission believes that this assumption is contrary to all the existing information on harbor seal behavior. If the Service is going to use this correction factor, it should provide the scientific basis for doing so. A more realistic approach (that is, one more consistent with the literature), would be to assume that virtually all seals within the range of the Level B harassment zone likely will be in the water at some time during the proposed construction periods and therefore likely will be exposed to the sound from the vibratory hammer.

Fourth, the applicant and Service largely fail to account for takes of seals by in-air sounds. The estimate for such takes is 1 harbor seal per day and 0.6 sea lions during the entire construction period. Neither the Service nor the applicant described the method by which in-air takes were estimated. However, the Level B harassment zone for harbor seals was estimated to be 2.8 km, which indicates that any seal hauled out or with its head above water within that zone would be taken. Although in-air sounds will attenuate more quickly and the distances at which seals would be taken is less than for in-water sounds, the applicant and the Service should describe the method used to estimate the number of in-air takes.

Fifth, the Service assumes the piles will be removed in 58 days, but Table 6 of the *Federal Register* notice indicates that two wood pilings would be removed each day during the 58-day period. At that rate, only 116 pilings would be removed in 58 days, and it would take considerably longer to remove all 205 piles (i.e., 103 days).

Given the above problems, the Marine Mammal Commission recommends that the National Marine Fisheries Service require the applicant to develop a more realistic estimate of the number of harbor seal takes that (1) accounts for all harbor seal haul-out sites in the area, (2) corrects seal abundance estimates to account for seals in the water during the counts, (3) incorporates a more realistic assessment of the portion of seals that will enter the water in the Level B harassment zone during the proposed construction operations, (4) includes a reasoned basis for estimating takes that occur from in-air construction sound, and (5) is based on a realistic estimate of the time required to remove the 205 wood piles.

These are but some of the inconsistencies, apparent errors, and omissions in the application and the *Federal Register* notice. The Commission provided the Service with detailed preliminary comments on these documents that noted several concerns regarding the information used to estimate the number of takes of harbor seals, sea lions, and gray whales incidental to the proposed activities. None of these comments have been addressed in the published notice. The previously identified issues that have not been addressed by the Service include such things as the scientific justification for basing the estimated number of California sea lion takes on 1 percent of the

estimated number of harbor seal takes; the selection of an appropriate correction factor to account for sea lions at sea, if haul-out counts are used; the basis for using observations from a single site nearest the pier to estimate the abundance of gray whales and whether using data from a single site adequately accounts for gray whale foraging and migratory behaviors; and inconsistencies in the expected frequency of activities (i.e., the number of times each activity would be conducted per day) and then the total duration of those activities during the course of pier reconstruction (i.e., the number of days needed to complete the activities). To address these and other problems, the Marine Mammal Commission recommends that the National Marine Fisheries Service also review its estimates of numbers of takes for California sea lions and gray whales during the proposed activities.

### **Ensuring Adequate Mitigation Measures**

Mitigation measures listed in the application include visually monitoring the zones of exposure that are determined using source levels and measures of attenuation to identify the area around the sound source that would be ensonified to certain threshold levels. The *Federal Register* notice and application contain errors in calculating the zones of exposure, provide conflicting information on the extent of those zones, and introduce a new sound threshold level for in-water Level B harassment without explanation. The *Federal Register* notice states that underwater sound from pile-driving would elevate sound above 120 dB re 1  $\mu$ Pa at 800 m, assuming a sound level of 168 dB re 1  $\mu$ Pa at 20 m and an attenuation rate of -4.5 dB re 1  $\mu$ Pa per doubling of distance. The Service's application of this attenuation rate is incorrect and, as a result, the Service has underestimated the zone of exposure by a factor of 40. Based on the specified sound level and attenuation rate, sound would be elevated above 120 dB re 1  $\mu$ Pa out to about 34 km from the source, not 800 m.

Table 3 of the *Federal Register* notice further confuses the situation. It states that the Level B harassment zone would extend to a more appropriate distance of 23.3 km, but then introduces a new threshold of 126 dB re 1  $\mu$ Pa for when Level B harassment would occur as a result of in-water exposure. The Service provides no explanation for the shift from its past use of 120 dB re 1  $\mu$ Pa to 126 dB re 1  $\mu$ Pa as the appropriate threshold for in-water Level B harassment. The Service should either revise this proposed authorization to be consistent with past practice or explain the basis for the new threshold.

As with the previous section, the Commission has provided the Service with detailed preliminary comments identifying these and other concerns regarding sound-related issues. These include (1) the need to conduct in-situ sound measurements, which already are being collected, to verify and, if needed, to redefine the Level A and B harassment zones; and (2) the failure to require shut-down procedures for harbor seals.

For these reasons, the Marine Mammal Commission recommends that the National Marine Fisheries Service re-estimate the distances to various in-water and in-air Level A and B harassment thresholds for all three types of proposed sound-producing activities and then re-evaluate the proposed mitigation and monitoring measures to ensure that the appropriate areas are adequately

monitored. The Commission further recommends that the Service require the applicant to verify the associated Level A and B harassment zones through calibrated in-situ sound measurements and to adjust those zones as appropriate. In addition, the Commission recommends that the Service require that shut-down procedures be established for both species of pinnipeds.

### **Ensuring Adequate Monitoring and Reporting**

Most of the mitigation measures associated with the proposed incidental harassment authorization are based on visual detection of marine mammals. As such, these measures can only be as effective as the ability to see the animals. The *Federal Register* notice indicated that the range for detecting pinnipeds using binoculars is approximately 0.8 km, depending on visibility and sea state, and that the maximum distance at which a gray whale could be detected visually is 1.6 km. These distances are much less than the corrected radius of the Level B harassment zone. Therefore, it is unclear how the applicant will use visual observation alone to detect and assess reliably the number and impacts of the takes that occur incidental to reconstruction of the pier. Adequate monitoring would be difficult in the best of conditions and is compounded by the frequent foggy and inclement conditions in this area during the timeframe of the proposed activities.

Here, too, the Commission has provided the Service with detailed preliminary comments on the monitoring and reporting requirements for this incidental harassment authorization. In addition to the unrealistically optimistic assessment of the efficacy of visual monitoring, other concerns include: insufficient mechanisms for assessing the number of takes that occur, inconsistencies between this proposed authorization and past authorizations regarding clearance time before initiating ramp-up after detecting cetaceans, and confusion regarding the adequacy of acoustic monitoring devices (e.g., the “human ear”) for detecting the presence of marine mammals. The Marine Mammal Commission therefore recommends that the National Marine Fisheries Service provide further analysis and justification regarding the efficacy of visual monitoring for the proposed activities and the manner in which the number of takes can be determined accurately. The Commission also recommends that the Service require the applicant to use 30 minutes as the appropriate clearance time for gray whales before ramp-up activities may commence and to use hydrophones for acoustic detection of gray whales.

Because of the issues outlined in this letter on this proposed incidental harassment authorization, the Commission does not believe that the Service has adequately determined and documented that the statutory requirements for issuing an incidental harassment authorization have been met. Furthermore, because of the errors and deficiencies in the proposed authorization the Commission questions whether the public has had an adequate opportunity to evaluate and comment meaningfully on the proposed authorization. The Marine Mammal Commission therefore recommends that the National Marine Fisheries Service address the deficiencies identified by the Commission and publish a new proposed incidental harassment authorization in the *Federal Register* with the corrected information and provide for an additional 30-day comment period.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Timothy J. Ragen", followed by a small "for" written in the same style.

Timothy J. Ragen, Ph.D.  
Executive Director

### References

- Brown, R.F., and B.R. Mate. 1983. Abundance, movements and feeding habits of harbor seals, *Phoca vitulina*, at Netarts and Tillamook bays, Oregon. Fishery Bulletin 81:291-301.
- Goley, D., A. Ougzin, and C. Hudson. 2007. Gray whale and harbour seal distribution and abundance in northern California: A report to supplement the Trinidad Pier Reconstruction Project. Humboldt State University, 16 pages.
- Harvey, J.T., and D. Goley. *In press*. Determining a correction factor for aerial surveys of harbor seals in California. Marine Mammal Science.
- Suryan, R.M., and J.T. Harvey. 1998. Tracking of harbor seals (*Phoca vitulina richardsi*) to determine dive behavior, foraging activity and haul-out site use. Marine Mammal Science 14(2):361-372.