18 August 2010

Ms. Diane Noda, Field Supervisor
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003

Dear Ms. Noda:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the National Oceanic and Atmospheric Administration Restoration Center, Southwest Region, 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 planned as part of a tidal wetlands project at the Elkhorn Slough National Estuarine Research Reserve in northern Monterey County, California, from September 2010 to March 2011. The Commission also has reviewed the Fish and Wildlife Service's 20 July 2010 *Federal Register* notice (75 Fed. Reg. 42121) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

RECOMMENDATIONS

The Marine Mammal Commission recommends that, prior to issuing the incidental harassment authorization, the Fish and Wildlife Service—

- use behavioral observations documented during the proposed activity to begin building a database of information for determining more realistic thresholds for when taking by harassment may result from in-air sounds;
- advise the applicant to consult with the National Marine Fisheries Service regarding the need for a separate incidental harassment authorization for harbor seals and California sea lions;
- require the applicant to determine in-situ safety zones based on specific sound thresholds associated with Level A and Level B harassment and use those safety zones to supplement monitoring by observers; and
- require that observations be made during all ramp-up procedures to gather the data needed to analyze and report on their effectiveness as mitigation measures.

RATIONALE

The National Oceanic and Atmospheric Administration Restoration Center, Southwest Region, plans to construct a partially submerged tidal barrier (i.e., a sill) at the mouth of the Parson's Slough Channel to reduce tidal scour and decrease erosion within Elkhorn and Parson's Sloughs. The sill would be a fixed structure consisting of 14 steel end-bearing piles and a single row of sheetpile extending 82 m across the mouth of the channel, with the center portion submerged and a notch for water passage and fish and wildlife movement. The applicant would install an additional 14 temporary end-bearing piles in the main channel of Elkhorn Slough for temporary float docks and a boat ramp that will serve as a staging site to transport materials to and from the construction

site. The applicant will set all piles using a vibratory hammer but, if necessary, may use an impact hammer with cushioning blocks to complete driving of the piles. Typical near-source sound exposure levels at 10 m are 150–165 and 170–180 dB re 1 μPa^2-sec for vibratory and impact pile driving, respectively. The construction work is expected to take six to ten weeks.

Sea Otters

The Service preliminarily has determined that, at most, the proposed activities would result in a temporary modification in the behavior of small numbers of sea otters and that any impact is expected to be negligible. The Service does not anticipate any take of sea otters by death or serious injury and expects that the potential for temporary or permanent hearing impairment will be at the lowest level practicable because of the proposed mitigation measures. Observers will be present for 30 minutes before, during, and 30 minutes after all construction activities and will have the authority to stop construction if sea otters appear to be "unduly harassed or in danger of injury." In addition, the observers will document baseline abundance and distribution of sea otters beginning as early as two weeks before construction begins and ending no sooner than 24 hours before construction begins. Monitoring will continue for four weeks following construction and will focus on peak times of day and portions of the tidal cycle when sea otters are present.

Sea otters, in particular, spend a considerable amount of time with their ears out of the water. The addendum to the application states that "the proposed project is not expected to result in sound levels that would cause injury to marine mammals" based on "the expected above-water sound levels." However, the applicant then supports this view by citing a Level A harassment threshold of 190 dB re 1 μPa (rms), which is used by the National Marine Fisheries Service for impulsive underwater sound. Clearly, a conversion is needed for sounds received in air. However, even if 190 dB re 1 μPa (rms) is the appropriate underwater threshold, it is not clear that a simple conversion of the underwater level is the appropriate indicator for Level A harassment from sound in air. For that reason, the Marine Mammal Commission supports giving observers the authority to halt operations as they deem necessary and supports the Fish and Wildlife Service requiring observers to document all behavioral responses to construction activities. In addition, the Marine Mammal Commission recommends that the Fish and Wildlife Service use behavioral observations documented during the proposed activity to begin building a database of information for determining more realistic thresholds for when taking by harassment may result from in-air sounds.

Harbor Seals and California Sea Lions

Harbor seals and California sea lions occur in or near the proposed survey area but are under the jurisdiction of the National Marine Fisheries Service. The applicant suggests that the potential effects on harbor seals are expected to be minimal and that only "short-term minor adverse effects (Level B harassment)" would occur. Such harassment, however, is sufficient to require an incidental take authorization from the National Marine Fisheries Service. Therefore, the Marine Mammal Commission recommends that the Fish and Wildlife Service advise the applicant to consult with the National Marine Fisheries Service regarding the need for a separate incidental harassment authorization for harbor seals and California sea lions.

The Need for Safety Zones

The applicant does not expect sound levels to exceed thresholds being used by the National Marine Fisheries Service for Level A harassment (190 dB re 1 μPa (rms)) or Level B harassment thresholds (160 and 120 dB re 1 μPa (rms) and continuous (vibratory hammer) sources, respectively). However, the application addendum refers to typical sound levels that would exceed those thresholds. The *Federal Register* notice and the application state that observers would have the authority to stop construction activities if animals appear to be harassed or may be injured. The question is whether giving the observers authority to halt operations is sufficient to ensure protection of marine mammals in the area. In essence, this is a question of whether the observers may fail to detect or recognize situations that pose unwarranted risks to the marine mammals in the area or may fail to halt activities quickly enough if adverse reactions are detected. The Marine Mammal Commission does not consider the use of observers alone to be sufficient and recommends that the Fish and Wildlife Service also require the applicant to determine in-situ safety zones based on specific sound thresholds associated with Level A and Level B harassment and use those safety zones to supplement monitoring by observers. Such safety zones may be essential in those cases where observers are not able to detect or evaluate the significance of a reaction by a marine mammal exposed to construction activities.

Mitigation

The Marine Mammal Commission has reviewed the proposed mitigation measures and is unsure of their adequacy due to the lack of detail in the *Federal Register* notice and the application. In particular, the effectiveness of ramp-up has yet to be empirically verified. The Commission has emphasized this point in many letters to the National Marine Fisheries Service and also emphasizes it here. Marine mammal behavior is sufficiently unpredictable that scientists and managers should not simply assume that marine mammals always will react to potentially harmful sounds by moving away. Neither should they assume that ramp-up is an effective mitigation measure, particularly when collecting data to test that assumption should be relatively straightforward and almost certainly would help resolve this question. For those reasons, the Marine Mammal Commission recommends that the Fish and Wildlife Service require that observations be made during all ramp-up procedures to gather the data needed to analyze and report on their effectiveness as mitigation measures. Such analyses would provide a stronger scientific basis for this particular monitoring measure. The Commission would be pleased to discuss with the Service the collection and analysis of such data and the possible design of experiments to promote a better understanding of the utility and shortcomings of ramp-up as a mitigation measure.

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

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director