



# MARINE MAMMAL COMMISSION

3 April 2015

Ms. Jolie Harrison, Chief  
Permits and Conservation Division  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, Maryland 20910-3226

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application from Shell Gulf of Mexico Inc. (Shell) seeking an incidental harassment authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA). Shell is seeking authorization to take small numbers of marine mammals by harassment incidental to exploratory drilling activities in the Alaskan Chukchi Sea during the 2015 open-water season. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 4 March 2015 notice (80 Fed. Reg. 11726) announcing receipt of the application and proposing to issue the authorization subject to certain conditions.

Some issues raised in previous Commission letters reflect ongoing concerns that apply more broadly to incidental take authorization applications, not just to Shell's application. For example, the Commission has recommended numerous times that NMFS adjust density estimates used to estimate the numbers of potential takes by incorporating some measure of uncertainty<sup>1</sup> when available density data are either out of date or originate from other geographical areas and temporal scales and that it formulate a policy or other guidance setting forth a consistent approach for how applicants should incorporate uncertainty in density estimates. The Commission would welcome the opportunity to work with NMFS as it develops such policies.

## Background

Shell has proposed to conduct exploratory drilling at up to four drill sites at its Burger prospect in the Chukchi Sea, Alaska, during the 2015 open-water season (July through October). Drilling would occur 105 to 125.5 km from shore, in waters 43.7 to 45.8 m in depth. Shell would use two drilling units, the *Noble Discoverer* and the semi-submersible *Transocean Polar Pioneer*. Other acoustic sources associated with drilling include the construction of a mudline cellar at each drill site, dynamic positioning of supply and support vessels when tending to a drilling unit, anchor handling, ice management activities, and zero-offset vertical seismic profiling (ZVSP) using a seismic airgun array.

NMFS's preliminary determination is that the proposed exploratory drilling and associated activities would result in temporary modification of the behavior of small numbers of up to 12 species of marine mammals, but that the total taking would have a negligible impact on the affected

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<sup>1</sup> Including using the maximum density when other measures of uncertainty are not provided.

species or stocks. NMFS does not anticipate any take of marine mammals by death or serious injury. NMFS also believes that the potential for temporary or permanent hearing impairment from Shell's proposed drilling and associated activities would be at the least practicable level because of the proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

- (1) conducting sound source verification measurements for the drilling units, support vessels, airgun array, and other sources not measured in previous seasons and adjusting the Level A and B harassment zones, as necessary;
- (2) using a sufficient number of trained protected species observers on both drilling units and all support vessels during active drilling and airgun operations and before and during start-ups of airguns day and night;
- (3) using standard ramp-up, power-down, and shut-down procedures for airgun operations;
- (4) prohibiting initiation of airgun operations during nighttime or low visibility conditions after an extended shutdown;
- (5) reducing vessel speed to a maximum of 5 knots or less and avoiding multiple changes in vessel direction and speed when a vessel is within 274 m of whales;
- (6) avoiding injury to whales by reducing vessel speed and changing direction as necessary when weather conditions diminish visibility;
- (7) limiting aircraft overflights to an altitude of 457 m or higher and a horizontal distance of 305 m or greater when marine mammals are present (except during takeoff, landing, or an emergency situation);
- (8) conducting aerial photographic surveys in waters over the drill site and conducting nearshore aerial surveys when weather does not permit flying offshore;
- (9) deploying acoustic recorders widely across the U.S. Chukchi Sea to obtain information on the distribution of marine mammals in the region;
- (10) reporting injured and dead marine mammals to the NMFS Office of Protected Resources and the Alaska regional stranding coordinator(s) using NMFS's phased approach and suspending survey activities, if appropriate; and
- (11) submitting field and technical reports and a final comprehensive report to NMFS.

The Commission understands that NMFS does not typically authorize the taking of marine mammals incidental to mudline construction and anchor handling. If NMFS intends to authorize the taking of marine mammals incidental to these types of activities, the Commission believes that NMFS should provide guidance and follow a consistent approach in assessing the potential for taking by Level B harassment<sup>2</sup>, including whether applicants should include requests for authorizations of such taking in their applications. Therefore, the Commission recommends that NMFS develop criteria (e.g., based on source levels and effects on specific species or stocks) and guidance for determining when applicants should request taking of marine mammals by Level B harassment from mudline construction and anchor handling.

### **Availability of marine mammals for subsistence**

Shell has developed a plan of cooperation in consultation with North Slope communities outlining measures that it would implement to minimize any adverse effects on the availability of marine mammals for subsistence. That plan includes requirements to maintain the minimum

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<sup>2</sup> Those types of sources do emit source levels sufficient to reach the Level A harassment threshold.

approach distances and operational requirements outlined in the previous section, as well as (1) developing and implementing a communications plan before initiating exploration drilling operations, (2) employing subsistence advisors to provide consultation and guidance regarding whale migration and subsistence activities, (3) refraining from bringing its drilling units and support vessels into the Chukchi Sea before July 1, (4) obtaining real-time ice and weather forecasting, and (5) placing booms in the water prior to all fuel transfers between vessels. Shell also has signed a conflict avoidance agreement with the Alaska whaling communities outlining measures that it would implement to minimize impacts on bowhead whale hunts. Based on the survey design, the timing and location of the proposed exploration drilling operations, and the proposed mitigation measures, NMFS has preliminarily determined that the proposed taking would not have an unmitigable adverse impact on the availability of marine mammals for subsistence use by Alaska Natives.

### **Take estimates**

When estimating the number of bowhead takes, Shell assumed that 50 percent of all bowheads would avoid the Level B harassment zone during exploratory drilling and related support activities. That assumption was based on studies of bowhead whale behavioral response to drilling sounds in the Arctic. Based on this assumed avoidance, Shell reduced the estimated number of bowheads that would be taken by incidental harassment by 50 percent. The Commission generally does not agree with using assumptions of marine mammal avoidance of certain activities when estimating takes, unless the studies supporting such assumptions were based on the same or very similar circumstances<sup>3</sup> and NMFS has determined that such avoidance would not result in an abandonment or significant alteration of behavioral patterns for instances such as this when NMFS has reduced the number of Level B harassment takes. If NMFS intends to adjust take estimates based on assumed levels of avoidance, the Commission believes that NMFS should provide guidance and follow a consistent approach in the adjustment of those estimates. Therefore, the Commission recommends that NMFS develop criteria for marine mammal avoidance that specifies the types of information needed to support such assumptions, including the affected species or stocks, behavioral state (migrating, feeding, calving, resting, etc.), geographic area, season, activity or sound source(s), and how avoidance should be used in various take estimation analyses

### **Mitigation and monitoring measures**

NMFS has proposed that Shell monitor for marine mammals for 30 minutes before and continuously during airgun operations. No post-activity monitoring appears to have been proposed. However, post-activity monitoring is needed to ensure that marine mammals have not been taken in unexpected or unauthorized ways or in unanticipated numbers. Some types of taking (e.g., taking by death or serious injury) may not be observed until after the activity has ceased. Accordingly, the Commission recommends that NMFS require Shell to monitor for marine mammals for 30 minutes before airgun operations begin, while those activities are being conducted, and for 30 minutes after those operations have ceased.

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<sup>3</sup> Including the target species and behavioral state (e.g., migrating, feeding, calving, resting, etc.), location, timing, and activity or source.

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### **Peer review panel recommendations**

The Commission understands that the peer review panel met during the public comment period for this notice to discuss Shell's marine mammal mitigation and monitoring plan. The recommendations of the panel will not be available until after the close of the comment period. If NMFS issues the incidental harassment authorization for Shell's proposed drilling activities, the Commission recommends that NMFS incorporate the peer review panel's recommendations into the authorization.

I trust these comments will be helpful. Please let me know if you or your staff have questions with regard to this letter.

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".

Rebecca J. Lent, Ph.D.  
Executive Director

Cc: Jon Kurland, National Marine Fisheries Service Alaska Regional Office