



MARINE MAMMAL COMMISSION

11 June 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 December 2014 application from Hilcorp Alaska, LLC (Hilcorp), seeking an incidental harassment authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act to take small numbers of marine mammals by harassment incidental to a shallow geohazard and strudel scour survey in Foggy Island Bay, Beaufort Sea, Alaska, during the 2015 Arctic open-water season. The Commission has also reviewed the National Marine Fisheries Service's (NMFS) 15 May 2015 notice (80 Fed. Reg. 27901) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

Background

Hilcorp proposes to conduct a shallow geohazard and strudel scour survey at its Liberty field in Foggy Island Bay, Alaska during the 2015 open-water season. The purpose of the proposed survey is to evaluate the existence and location of archaeological resources, evaluate potential geologic hazards on the seafloor and in the shallow subsurface, and investigate strudel scours and ice gouges. The survey would occur in two passes, with a side-scan sonar and magnetometer used in the first pass and a multibeam echosounder and sub-bottom profiler used in the second pass—a single beam echosounder would be used only as necessary in shallower water. The survey would encompass approximately 6.5 km² along Hilcorp's proposed pipeline corridor in waters 0.9 to 6.1 m in depth. Survey lines would cover approximately 483 km, not including turns and cross-lines. The survey is expected to begin on 1 July 2015 and be completed in 45 days including downtime due to inclement weather and equipment issues, with approximately 34 days of actual surveying. The survey would be conducted 24 hours per day.

NMFS has preliminarily determined that the proposed activities could temporarily modify the behavior of small numbers of up to six species of marine mammals, but that the total taking would have a negligible impact on the affected species or stocks. NMFS does not anticipate any take of marine mammals by death or serious injury. It believes that the potential for temporary or permanent hearing impairment from the survey would be at the least practicable level because of Hilcorp's proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

- (1) using two NMFS-approved observers on the source vessel and one on the skiff to monitor marine mammals within the Level B harassment zone (based on the 160-dB re 1 μ Pa threshold);
- (2) monitoring activities during daylight hours throughout the entire survey period, including when airguns and other sound sources are not operating;
- (3) using ramp-up, delay, power-down, and shut-down procedures for the sub-bottom profiler to minimize takes of marine mammals within the Level B harassment zone;
- (4) refraining from ramping up the airgun from a full shutdown in periods of poor visibility or darkness if the entire Level B harassment zone is not visible;
- (5) limiting operation of the sub-bottom profiler during turning and short transits, which includes firing no more than one shot per minute and operating for no longer than 3 hours in duration;
- (6) implementing vessel and aerial operation and speed reduction procedures, as appropriate, to avoid interactions with whales;
- (7) reporting injured and dead marine mammals to the NMFS Office of Protected Resources, the NMFS Alaska Stranding Hotline, and the Alaska Regional Stranding Coordinators; and
- (8) submitting field and technical reports and a final comprehensive report to NMFS.

Availability of marine mammals for subsistence

Hilcorp 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 approach distances and operational requirements referred to in the previous section, as well as (1) participating with other operators in the Communication and Call Centers (Com-Center) Program, (2) routing barge and transit vessels offshore, and (3) completing transit through the Bering Strait by 15 November 2015. Hilcorp has signed a conflict avoidance agreement with the Alaska whaling communities, which may include additional measures that it would implement to minimize impacts on bowhead whale hunts. Based on the survey design, the timing and location of the proposed survey, 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.

Appropriate threshold for Level B harassment zone

NMFS has proposed to authorize takes associated with the use of the sub-bottom profiler¹, a non-impulsive, acoustic sound source, which NMFS has characterized as impulsive relative to the Level B harassment threshold of 160 dB re 1 μ Pa. However, researchers have observed that various species of marine mammals respond to sound from sources with characteristics similar to a sub-bottom profiler (including acoustic deterrent devices, acoustic harassment devices, pingers, echosounders, and multibeam sonars) at received levels below 160 dB re 1 μ Pa. Previous letters to NMFS regarding sub-bottom profilers, echosounders, and other sonars have pointed out that those sources have temporal and spectral characteristics which suggest that a lower, more precautionary

¹ Which operates at frequencies below 200 kHz.

Level B harassment threshold of 120 dB re 1 μ Pa would be more appropriate than the 160-dB re 1 μ Pa threshold that continues to be used².

For the proposed authorization, Hilcorp used a more precautionary method to estimate Level B harassment takes of cetaceans³ from use of the sub-bottom profiler rather than the standard area-density⁴ method. Specifically, Hilcorp estimated cetacean takes by multiplying species-specific densities by the total 160-dB re 1 μ Pa ensonified area per hour⁵ by the number of hours for the survey. That method resulted in a greater estimate of Level B harassment takes than would have resulted from using the area-density method. If Hilcorp were to have used the standard area-density method, with the area based on the larger 120-dB re 1 μ Pa harassment zone of 450 m (based on Warner and McCrodan (2011)), the estimated numbers of takes would have been the same or less than the takes proposed by Hilcorp and NMFS. Therefore, the Commission is not recommending that the take estimates be recalculated to account for the larger 120-dB re 1 μ Pa harassment zone, but it is concerned about the appropriateness of the proposed harassment zone for monitoring purposes. Because the 50-m harassment zone was based on the 160-dB re 1 μ Pa threshold, monitoring of that zone would be inadequate for detecting and enumerating Level B harassment takes associated with the use of the sub-bottom profiler. Therefore, the Commission recommends that NMFS require Hilcorp to monitor the larger 120-dB re 1 μ Pa harassment zone of 450 m for the purpose of enumerating marine mammal takes associated with the use of the sub-bottom profiler.

Peer review panel recommendations

NMFS convened an independent peer review panel in March 2015 to discuss Hilcorp's marine mammal mitigation and monitoring plan, pursuant to regulations at 50 C.F.R. § 216.108(d). The Commission commends Hilcorp for incorporating nearly all of the panel's recommendations. However, the following three recommendations were not incorporated: (1) deploying an additional observer on the source vessel such that at least two observers are on watch during all daylight hours⁶, (2) deploying a third autonomous multichannel acoustic recorder to increase the effectiveness of passive acoustic monitoring, and (3) limiting operations at night or during periods of low visibility so that marine mammals do not enter the 50-m harassment zone. Considering the limited duration and geographic area that would be ensonified during the survey and the fact that source levels are not expected to exceed much above 160 dB re 1 μ Pa, the Commission agrees that those recommendations may not be critical to NMFS's issuance of an incidental harassment authorization.

² Based on data from Watkins and Schevill (1975), Olesiuk et al. (1995), Kastelein et al. (1997), Kastelein et al. (2000), Morton (2000), Culik et al. (2001), Johnston (2002), Morton and Symonds (2002), Kastelein et al. (2005), Barlow and Cameron (2003), Kastelein et al. (2006a and 2006b), Carretta et al. (2008), Calström et al. (2009), Brandt et al. (2012 and 2013), Götz and Janik (2013), Hastie et al. (2014), Tougaard et al. (2015).

³ Take estimates for pinnipeds were based on sightings rates rather than specific enumeration of ensonified areas.

⁴ Area x density.

⁵ Based on the source vessel traveling at 3 knots.

⁶ The proposed configuration is for only one of the two observers to be on watch on the source vessel at any given time.

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The Commission hopes you find its letter useful. Please contact me if you have questions regarding these recommendations.

Sincerely,



Rebecca J. Lent, Ph.D.
Executive Director

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

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