



MARINE MAMMAL COMMISSION

11 July 2013

Mr. P. Michael Payne, Chief
Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Maryland 20910-3226

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application from SAExploration, Inc. (SAE), seeking an incidental harassment authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act. SAE is seeking authorization to take small numbers of marine mammals by harassment incidental to a 3-dimensional (3D) ocean-bottom cable seismic survey program in the Alaskan Beaufort Sea during the 2013 Arctic open-water season. The Commission also has reviewed the National Marine Fisheries Service's 14 June 2013 notice (78 Fed. Reg. 35851) 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—

- encourage the development of conflict avoidance agreements that reflect the interests of all potentially affected communities and co-management organizations and account for potential adverse impacts on all marine mammal species taken for subsistence;
- only authorize an in-season adjustment in the size of the exclusion and/or disturbance zones if the size(s) of the estimated (modeled) zones are determined to be too small;
- specify reduced vessel speeds of 9 knots or less when in transit and 5 knots or less when weather conditions or darkness reduce visibility;
- require that after 25 August, SAE (1) refrain from initiating or cease seismic activities if an aggregation of bowhead or gray whales (i.e., 12 or more whales of any age/sex class that appear to be engaged in a non-migratory, significant biological behavior (e.g., feeding, socializing)) is observed within the 160-dB re 1 μ Pa zone, and (2) establish and monitor the 120-dB re 1 μ Pa zone and refrain from initiating or cease seismic activities if a female-calf pair is observed within that zone;
- require SAE to monitor for marine mammals for 30 minutes before the proposed activities begin, during the proposed activities, and for 30 minutes after the proposed activities have ceased;
- encourage SAE to deploy additional protected species observers to 1) increase the probability of detecting marine mammals in or approaching the exclusion and disturbance

zones and 2) assist in the collection of data on activities, behavior, and movements of marine mammals around the source;

- encourage SAE to include spotted seal haulouts in the eastern portion of the Colville River Delta in its pinniped survey;
- encourage SAE to make the database(s) of passive acoustic monitoring, protected species observer, and pinniped survey data provided by SAE available in a timely manner on a publicly accessible website, such as the Ocean Biogeographic Information System-Spatial Ecological Analysis of Megavertebate Populations (OBIS-SEAMAP) website; and
- provide a 30-day public review and comment period that starts with the publication of notices in the printed edition of the *Federal Register*.

RATIONALE

SAE, in partnership with Kuukpik Corporation, plans to conduct a 3D ocean-bottom cable seismic survey in the nearshore waters of the Colville River Delta in the Beaufort Sea, Alaska, during the 2013 open water season (15 July–31 October). SAE plans to conduct its survey in a 995-km² area. The survey would involve deploying and retrieving nodal sensor recorders (nodes) on the ocean floor. SAE would use two source vessels that would alternate their shot mode (i.e., one vessel shooting while the other is recharging). The seismic source vessel would use 880- and 1,760-in³ sleeve airgun arrays for deeper waters (>1.5 m) and a 440-in³ array for shallower waters. Six additional vessels would be used for node deployment and retrieval, crew transfer, and additional monitoring for marine mammals. Pingers and transducers would be used to position and interpolate the location of the nodes.

The Service's preliminary determination is that the proposed activities could result in a temporary modification in the behavior of small numbers of up to nine species of marine mammals, but that the total taking would have a negligible impact on the affected species or stocks. The Service does not anticipate any take of marine mammals by death or serious injury. The Service also believes that the potential for temporary or permanent hearing impairment from SAE's activities would be at the least practicable level because of the proposed mitigation and monitoring measures. Those measures include—

- (1) conducting in-situ sound source and sound propagation measurements for the airgun array (including the full array and the single airgun used during power-down procedures);
- (2) adjusting, as necessary, the exclusion zones (i.e., based on Level A harassment thresholds of 180 and 190 dB re 1 μ Pa for cetaceans and pinnipeds, respectively) and the disturbance zones (i.e., based on Level B harassment threshold of 160 dB re 1 μ Pa for all marine mammals) for the full airgun array and the single airgun;
- (3) using trained and experienced, Service-approved protected species observers on both survey vessels and also on the mitigation vessel to monitor the exclusion and disturbance zones for at least 30 minutes before and during airgun operations that occur during daylight hours;
- (4) using ramp-up, delay, power-down, and shut-down procedures;
- (5) restricting ramping up from a full shutdown at night or in periods of poor visibility (e.g., fog, heavy snow or rain) if the entire exclusion zone is not visible for at least 30 minutes;
- (6) firing a single airgun approximately once per minute for not longer than three hours during turns or brief transits to avoid implementation of ramp-up procedures;

- (7) operating vessels that are in transit at speeds necessary to ensure no physical contact with whales occurs;
- (8) avoiding vessel-related interactions with marine mammals by (a) avoiding concentrations or groups of whales when operating vessels, (b) reducing vessel speed to less than 5 knots when a whale (or whales) are within 274 m, (c) steering around whales, (d) restricting vessel operations that separate members of a group or cause whales to make multiple changes in direction, and (e) checking the waters immediately adjacent to a vessel for whales before engaging the propellers;
- (9) reducing vessel speed when weather conditions or darkness diminish visibility;
- (10) 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
- (11) submitting field and technical reports and a final comprehensive report to the Service.

Those measures were listed in the draft incidental harassment authorization included at the end of the *Federal Register* notice and are assumed to be those that would be required by the final authorization.

Availability of marine mammals for subsistence

SAE has signed a conflict avoidance agreement with the Alaska whaling communities outlining measures that it would implement to minimize impacts on bowhead whale hunts. SAE also has prepared a plan of cooperation to address potential impacts on subsistence seal hunting. Based on the project design, the timing and location of the proposed activities, and the proposed mitigation measures, the Service 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.

The Commission commends SAE for signing a conflict avoidance agreement in support of its 2013 activities in the Beaufort Sea, but believes that such agreements should cover all communities that take marine mammals for subsistence in the affected area, and include all marine mammals that might be affected by exploration activities. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service encourage the development of conflict avoidance agreements that reflect the interests of all potentially affected communities and co-management organizations and account for potential adverse impacts on all marine mammal species taken for subsistence.

Use of maximum densities in estimating takes

The Commission has commented on several occasions that the Service is inconsistent in its use of average versus maximum densities to estimate the numbers of marine mammal takes. Given the uncertainty in the density and abundance estimates for marine mammal species in the Beaufort Sea and the increasing inter-annual variability in environmental conditions in a changing Arctic, the use of average densities is not sufficiently precautionary to ensure that the total potential taking has no more than a negligible impact on the affected stocks.

Considerable uncertainty is associated with SAE's density estimates for bowhead and beluga whales and ringed, spotted, and bearded seals. For this reason, SAE elected to use maximum density

estimates for those species when determining its requested take estimates. The Marine Mammal Commission commends SAE and subsequently the Service for their use of maximum densities in estimating the numbers of marine mammals that could be taken, which is consistent with a precautionary approach.

Mitigation, monitoring, and reporting measures

Sound source verification

Accurate characterization of the sizes of the exclusion and disturbance zones is critical for implementing mitigation measures and estimating the numbers of animals taken. In the past, the Commission has recommended a rapid turnaround of the in-situ sound source verification analysis to ensure that exclusion zones are the appropriate size. However, in at least one instance, rapid turnaround has resulted in errors, as occurred with ION's measurements of source levels during its 2012 in-ice survey. In that case, the size of the exclusion zone was decreased from that modeled using erroneous field-report results. The error was not discovered until the end of the field season, when it was determined that the in-season adjustments resulted in unauthorized Level A harassment takes of bowhead whales. Since the purpose of verification is to ensure protection of marine mammals, one way to reduce risk to marine mammals would be to allow only for expansion, but not contraction, of the exclusion and/or disturbance zones after in-situ measurements are made. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service only authorize an in-season adjustment in the size of the exclusion and/or disturbance zones if the size(s) of the estimated (modeled) zones are determined to be too small.

Speed alterations

SAE proposed that vessels operating in the survey area would reduce their speed when in transit or in poor visibility conditions to ensure no physical contact with or injury of whales. However, the Service did not specify the appropriate vessel operating speeds in the proposed authorization. In other incidental harassment authorizations, the Service has specified that seismic operators reduce speeds to 9 knots or less while transiting the Beaufort Sea (76 Fed. Reg. 68974) or when weather conditions require, such as when visibility drops (77 Fed. Reg. 40007). To address any ambiguity regarding safe vessel operating speeds, the Marine Mammal Commission recommends that the National Marine Fisheries Service specify reduced vessel speeds of 9 knots or less when vessels are in transit or when weather conditions or darkness reduce visibility.

Mitigation measures for aggregations of whales and female-calf pairs

In the past, the Service has proposed that seismic operators conducting activities in the Arctic implement measures to ensure that feeding whales, aggregations of whales, and female-calf pairs are protected from disturbance from seismic activities (75 Fed. Reg. 27708). In that notice, the Service defined aggregations of whales as 12 or more whales of any age/sex class that appear to be engaged in a non-migratory, significant biological behavior (e.g., feeding, socializing). In the Beaufort Sea, those requirements applied to activities occurring after 25 August. To ensure those same protections are in place for the proposed authorization, the Marine Mammal Commission recommends that the National Marine Fisheries Service require that after 25 August, SAE (1) refrain from initiating or cease seismic activities if an aggregation of bowhead or gray whales (i.e., 12 or

more whales of any age/sex class that appear to be engaged in a non-migratory, significant biological behavior (e.g., feeding, socializing) is observed within the 160-dB re 1 μ Pa zone, and (2) establish and monitor the 120-dB re 1 μ Pa zone and refrain from initiating or cease seismic activities if a female-calf pair is observed within that zone. SAE has provided the distance to the 120-dB re 1 μ Pa zone in Table 6-1 of its application.

Monitoring after survey operations

The Service proposed that SAE monitor for marine mammals for 30 minutes before and during the proposed activities. No post-activity monitoring requirement was specified. However, post-activity monitoring is needed to ensure that marine mammals are not 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. Post-activity monitoring is the best way, and in some situations may be the only reliable way, to detect certain impacts. Accordingly, the Marine Mammal Commission recommends that the National Marine Fisheries Service require SAE to monitor for marine mammals for 30 minutes before the proposed activities begin, during the proposed activities, and for 30 minutes after the proposed activities have ceased.

Enhanced monitoring to detect marine mammals and document behavioral responses

The overall objective of monitoring should be to provide reliable, statistically robust estimates of the marine mammals in the project area, data on their distribution and movement patterns, and evidence sufficient to determine if and how project activities affect their presence, distribution, movements, behavior, and activities. An increased number of observers on duty on the source vessels and other project-related vessels would increase the probability of detecting marine mammals in the area. Additional observers also could assist in the collection of data on activities, behavior, and movements of marine mammals in the exclusion and disturbance zones. Behavioral response information is critical for understanding the effects of acoustic activities on various marine mammal species. The Marine Mammal Commission recommends that the National Marine Fisheries Service encourage SAE to deploy additional protected species observers to 1) increase the probability of detecting marine mammals in or approaching the exclusion and disturbance zones and 2) assist in the collection of data on activities, behavior, and movements of marine mammals around the source.

Peer review panel recommendations

The peer review panel convened by the Service to review SAE's mitigation and monitoring plan made several recommendations to ensure that Level A harassment takes would not occur and to enhance monitoring for marine mammals. The Marine Mammal Commission commends the Service for working with SAE to implement the peer review panel's recommendations, including (1) using passive acoustic monitoring to supplement visual monitoring; (2) conducting a pinniped survey in the proposed seismic survey area to monitor habitat use before, during, and after survey operations; (3) consulting on and coordinating monitoring and data collection activities with other oil and gas companies and with federal, state, and borough agencies; and (4) providing a database of the information collected to help the Service assess potential impacts of the survey.

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The *Federal Register* notice does not provide details regarding the extent of the proposed pinniped survey. The Commission encourages SAE to include spotted seal haulouts in the eastern portion of the Colville River Delta as part of its survey. SAE should also consider making the data it collects publicly available on the Ocean Biogeographic Information System-Spatial Ecological Analysis of Megavertebrate Populations (OBIS-SEAMAP) website, consistent with practice followed by other researchers collecting visual and acoustic information on marine mammals. To that end, the Marine Mammal Commission recommends that the National Marine Fisheries Service encourage SAE to include spotted seal haulouts in the eastern portion of the Colville River Delta in its pinniped survey. The Commission further recommends that the Service encourage SAE to make the database(s) of passive acoustic monitoring, protected species observer, and pinniped survey data provided by SAE available in a timely manner on a publicly accessible website, such as the Ocean Biogeographic Information System-Spatial Ecological Analysis of Megavertebrate Populations (OBIS-SEAMAP) website.

Timely review of application and adequate opportunity for public comment

Section 101(a)(5)(D)(iii) of the Marine Mammal Protection Act requires that the Service publish proposed incidental harassment authorizations in the *Federal Register* no later than 45 days after receiving an application and request public comment for a period of 30 days after publication. The original *Federal Register* notice provided a 30-day public comment period. However, the Service subsequently published a second *Federal Register* notice that truncated the public comment period by four days—an abbreviated timeframe for which the Service provided no rationale.

The Service appears to be adopting the practice of curtailing the required comment periods for incidental harassment authorizations, as noted in its 9 January 2013 letter regarding a proposed incidental harassment authorization for Apache Alaska Corporation. If continued, this practice would undermine the opportunity for public involvement, as required by the Marine Mammal Protection Act. The Commission recognizes that staffing limitations, the growing number of incidental harassment authorization requests, and the complexity of some of those requests make it difficult, if not infeasible, for the Service to issue an authorization in a timely manner. However, the Commission does not believe that the Service should shorten public comment periods to offset delays in the review process. To ensure full compliance with both the letter and the spirit of the Marine Mammal Protection Act, the Marine Mammal Commission recommends that the National Marine Fisheries Service provide a 30-day public review and comment period that starts with the publication of notices in the printed edition of the *Federal Register*.

The Commission appreciates the opportunity to review this incidental harassment authorization. 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