



# MARINE MAMMAL COMMISSION

13 July 2016

Ms. Jolie Harrison, Chief  
Permits and Conservation Division (F/PR1)  
Office of Protected Resources  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, Maryland 20910

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by BlueCrest Alaska Operating, LLC, (BlueCrest) seeking authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA) to take small numbers of marine mammals by harassment incidental to an oil and gas drilling program in Cook Inlet, Alaska. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 2 June 2016 notice (81 Fed. Reg. 35548) announcing receipt of the application and proposing to issue the authorization subject to certain conditions.

## Background

BlueCrest is proposing to conduct an oil and gas production drilling program at two locations in lower Cook Inlet. BlueCrest would use a tug to tow a jack-up drill rig to and from the well sites and would use the rig to drill up to three wells. Drilling activities would involve installing drive pipes prior to drilling and vertical seismic profiling (VSP) of the wells after drilling is complete. BlueCrest would drive a 30-inch drive pipe at each of the well sites using an impact hammer. Pipe driving is expected to last up to three days at each site. VSP activities would be conducted at each well site using an airgun array<sup>1</sup> with a maximum volume of 880 in<sup>3</sup> and would occur for two days at each well site. Pipe driving and VSP activities would be limited to daylight hours only and when sea conditions are calm. The proposed activities would occur during the 2017 open-water season.<sup>2</sup>

NMFS preliminarily has determined that the proposed activities could modify temporarily 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. 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 will be at the least practicable level because of BlueCrest's proposed mitigation measures. The mitigation, monitoring, and reporting measures include—

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<sup>1</sup> The description of the proposed activity in the *Federal Register* notice indicated an array of airguns between 600 and 880 in<sup>3</sup> would be used, but the proposed authorization text specifies an airgun array with a total discharge volume of 720 in<sup>3</sup>.

<sup>2</sup> Based on information provided by NMFS after the notice was published, the effective date of the authorization will be delayed from 2016 to 2017.

- using observers on the drill rig to monitor the Level A harassment zones (based on thresholds of 190 and 180 dB re 1  $\mu$ Pa for pinnipeds and cetaceans, respectively) and the Level B harassment zone (based on a Level B harassment threshold of 160 dB re 1  $\mu$ Pa) during all pipe-driving and VSP activities, for at least 30 minutes prior to ramp-up of the airguns, and at other times when sound sources are not operating;
- using various ramp-up/soft-start, delay, and shut-down procedures;
- implementing additional delay and shut-down procedures if a beluga whale, humpback whale, Steller sea lion, or any marine mammal for which take has not been authorized, is observed approaching or within the Level B harassment zone;
- reducing rig towing speeds to 8 knots or less at the approach of any whales or Steller sea lions within 610 m of the towing operations;
- ensuring that helicopters maintain an altitude of at least 305 m except during takeoffs, landings, or emergency situations;
- ceasing seismic survey operations immediately if a live marine mammal stranding event occurs within 5 km of the airgun array and informing NMFS where and when airguns were being operated and at what discharge volumes;
- reporting injured and dead marine mammals to the Chief of the Permits and Conservation Division at the NMFS Office of Protected Resources and the Alaska Regional Stranding Coordinators using NMFS's phased approach and suspending activities, if appropriate; and
- submitting field and technical reports and a final comprehensive report to NMFS.

### **Inadequate basis for issuance of beluga whale incidental take authorizations**

As indicated in previous letters regarding proposed incidental harassment authorizations for other sound-producing activities in Cook Inlet<sup>3</sup>, the Commission remains concerned about the potential impacts of human activities on the endangered Cook Inlet beluga whale population. The Commission has recommended that NMFS defer issuance of incidental take authorizations and regulations until it has better information on the cause or causes of the decline in the population and, as part of NMFS's small numbers and negligible impact determinations, has a reasonable basis for determining that authorizing additional takes by harassment would not contribute to or exacerbate that decline. Consistent with these concerns, the Commission once again recommends that NMFS defer issuance of any incidental take authorizations or regulations to BlueCrest or any other applicant proposing to conduct sound-producing activities in Cook Inlet until such time that NMFS can, with reasonable confidence, support a conclusion that those activities would affect no more than a small number of Cook Inlet beluga whales and have no more than a negligible impact on the population. Such a conclusion should be based on clear and consistent criteria regarding the MMPA's small numbers and negligible impact requirements, the standards for which currently do not exist. Therefore, the Commission further recommends that, before issuing any further authorizations such as the one requested, NMFS develop a policy that sets forth clear criteria and/or thresholds for determining what constitutes small numbers and negligible impact for the purpose of authorizing incidental takes of marine mammals. The Commission understands that NMFS has been in the process of developing such a policy and that the draft policy will be available for review in the

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<sup>3</sup> See the Commission's 21 October 2011, 9 January 2013, 31 January 2014, 4 April 2014, 9 May 2014, 14 September 2014, 13 April 2015, 20 April 2015, 24 July 2015, 12 January 2016, 7 March 2016, and 28 March 2016 letters.

coming months. The Commission would welcome the opportunity to discuss the policy as it is further refined.

### **Programmatic approach to evaluating and limiting incidental takes of beluga whales**

The Commission is concerned that NMFS is continuing to propose and issue authorizations for the incidental taking of Cook Inlet beluga whales without adequate consideration of the combined or cumulative impacts of current and planned activities on that population. The Commission's 14 July 2015 letter on NMFS's Draft Cook Inlet Beluga Whale Recovery Plan contained a recommendation that NMFS place annual limits on the total number and types of incidental takes authorized, based on the most recent population estimate.

In 2014 NMFS issued a notice of intent to prepare a programmatic environmental impact statement (PEIS) on the issuance of incidental take authorizations in Cook Inlet (79 Fed. Reg. 61616). The Commission continues to believe that the PEIS should be drafted and finalized before any further authorizations are granted. The Commission therefore recommends that NMFS delay issuance of this or any incidental take authorizations or regulations regarding Cook Inlet beluga whales until all activities for which incidental harassment authorizations have been or are expected to be issued are considered with respect to their anticipated, cumulative take of Cook Inlet beluga whales, as part of a PEIS. Given the number of sound-producing activities expected to occur in Cook Inlet and the potential impact of such activities on beluga whales, the Commission also reiterates its recommendation that NMFS establish annual limits on the total number and type of takes that are authorized for all sound-producing activities in Cook Inlet before issuing any additional incidental take authorizations or regulations.

Should NMFS decide, once again, to issue the requested authorization despite the Commission's recommendation that issuance be deferred, the Commission would have the following additional concerns regarding this proposed authorization.

### **Estimation of takes**

The method used to estimate the numbers of takes, which sums fractions of takes for each species across days, does not account for NMFS's 24-hour reset policy. This has resulted in underestimating the potential number of takes for harbor seals. Instead of summing fractions of takes across days and then rounding to estimate total takes, NMFS should have calculated a daily take estimate (determined by multiplying the estimated density of marine mammals in the area by the daily ensonified area) and then rounding that to a whole number *before* multiplying it by the number of days that activities would occur. The Commission has commented on NMFS's inconsistent use of its 24-hour reset and standard rounding rules numerous times, yet these issues persist in NMFS's proposed authorizations. Therefore, the Commission recommends that NMFS (1) follow its policy of a 24-hour reset for enumerating the number of harbor seals that could be taken and (2) apply standard rounding rules before summing the numbers of estimated takes across days. A similar approach should be used for all future incidental harassment authorizations.

For the species for which NMFS estimated that total takes would be fewer than two (i.e., all other species for which takes have been requested), it appears that NMFS used sighting data from previous years' monitoring of the same drilling site, NMFS's aerial survey data, and group size to

increase its proposed numbers of Level B harassment takes (Table 7 of the *Federal Register* notice). The Commission is generally in support of this approach as a precautionary measure, rather than assuming no Level B harassment takes are likely to occur. As additional mitigation measures, NMFS has proposed that BlueCrest delay or cease impact hammering and VSP activities if a species listed under the Endangered Species Act (i.e., a beluga or humpback whale or a Steller sea lion) is observed approaching or entering the Level B harassment zones associated with those activities. Implementation of such additional mitigation measures would reduce the likelihood of a Level B harassment take. To account for the additional proposed mitigation measures and the resulting reduced likelihood of taking a beluga whale, NMFS has included a small number of beluga whale takes (5) in its proposed authorization. However, NMFS has not similarly adjusted the proposed numbers of Level B harassment takes for humpback whales or Steller sea lions (15 and 25, respectively) to account for the additional mitigation measures it proposes to implement for those two species. The Commission recommends that NMFS account for the proposed additional mitigation measures (i.e., delay and shutdown procedures within the Level B harassment zone) for humpback whales and Steller sea lions by adjusting the number of Level B harassment takes that it proposes to authorize for those species, as it appears to have done for beluga whales. The Commission further recommends that NMFS use a consistent approach for adjusting the numbers of estimated takes based on the requirement to implement additional mitigation measures to reduce the likelihood of taking marine mammals in the respective Level B harassment zones.

## **Mitigation and monitoring measures**

### *Distances to the harassment thresholds*

The *Federal Register* notice stated that distances to the Level A and B harassment thresholds were based on Blackwell (2005) for impact pipe-driving activities and on Illingworth and Rodkin (2014) for VSP activities (81 Fed. Reg. 35572). However, data were collected by Illingworth and Rodkin (2014) for both impact pipe-driving and VSP activities, and those activities occurred in the same action area as the proposed activities. As such, the Commission recommends that NMFS use data from Illingworth and Rodkin (2014) to estimate the distances to the various thresholds and associated ensonified areas for impact pile-driving activities as well as VSP activities.

In addition, for VSP activities, NMFS referenced the 90th percentile value from Illingworth and Rodkin (2014) as the basis for the distance to the 190-dB re 1  $\mu$ Pa threshold, yet used the average (best fit) value for the distances to the 180- and 160-dB re 1  $\mu$ Pa thresholds. NMFS did not provide a rationale for using two different methods in estimating distances to the various thresholds. In prior authorizations<sup>4</sup>, the 90<sup>th</sup> percentile values have been used for seismic activities but both the average and 90<sup>th</sup> percentile values have been used for pile-driving activities. The Commission is unsure if NMFS has a policy regarding which values (90<sup>th</sup> percentile or average) should be used for estimating the distances to the various thresholds for the multiple types of activities, but such a policy is needed. Therefore, the Commission recommends that NMFS 1) use a consistent method (i.e., the 90th percentile or average) for estimating the distances to the 190-, 180-, and 160-dB re 1  $\mu$ Pa thresholds for VSP activities and 2) provide guidance to applicants regarding its preference for using either the 90th percentile or average method when estimating distances to the Level A and B

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<sup>4</sup> For example, see 78 Fed. Reg. 80403 and Austin and Warner (2012).

harassment thresholds for both seismic and pile-driving (including pipe-driving) activities in future authorizations.

*Number of observers for monitoring purposes*

In its proposed authorization, NMFS would require applicants to use observers on drilling rigs to monitor the Level B harassment zone for all offshore exploration activities expected to result in underwater sound levels of 160 dB re 1  $\mu$ Pa or greater. Because the Level B harassment zones associated with such activities are of considerable size, at least two observers should stand watch at the same time on the drilling rig to increase the probability of detecting beluga whales and other marine mammals approaching or within the Level B harassment zone. Additional observers also could assist in the collection of data on activities, behavior, and movements of marine mammals in the Level B harassment zone to meet the monitoring and reporting goals identified by NMFS (81 Fed. Reg. 35570). Behavioral response information is critical for understanding the effect of sound-producing activities on various marine mammal species. Therefore, the Commission recommends that NMFS require BlueCrest to have a minimum of two protected species observers standing watch on the drilling rig to 1) increase the probability of detecting all beluga whales and other marine mammals in or approaching the Level B harassment zone and 2) assist in the collection of data on activities, behaviors, and movements of marine mammals within that zone.

*Post-activity monitoring*

NMFS did not propose post-activity monitoring for either impact pipe-driving or VSP activities. Post-activity monitoring is necessary 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 activities have ceased. Post-activity monitoring is the best way, and in some situations may be the only reliable way, to detect certain impacts. Accordingly, the Commission recommends that NMFS require all applicants to monitor the Level A and B harassment zones for at least 30 minutes before, during, and for 30 minutes after all proposed activities.

*Unauthorized takes*

The description of the proposed activities in the *Federal Register* notice indicated that additional delay and shut-down procedures would be implemented if any ‘cetacean’ for which take has not been authorized is observed approaching or within the Level B harassment zone, but the proposed authorization language specifies that those procedures would be implemented for any ‘marine mammal species’. The Commission assumes that NMFS intended for the latter to be required, but this inconsistency should be addressed prior to issuing the final incidental harassment authorization (if issued).

In addition, NMFS generally includes in its authorizations a requirement for the applicant to implement delay or shut-down procedures if a species, for which authorization has been granted but the authorized number of takes has been met (or exceeded), approaches or is observed within the Level B harassment zone. However, that requirement was not included in the proposed incidental harassment authorization. The Commission recommends that NMFS specify in the final incidental harassment authorization, if one is issued, that BlueCrest must implement delay and shut-down

Ms. Jolie Harrison

13 July 2016

Page 6

procedures if a species for which authorization has not been granted or if a species for which authorization has been granted but the authorized takes are met approaches or is observed within the Level B harassment zone.

Please let me know if you have any 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.

Rebecca J. Lent, Ph.D.  
Executive Director

cc: Jon Kurland, NMFS Alaska Regional Office

### References

Austin, M.A., and G. Warner. 2012. Sound source acoustic measurements for Apache's 2012 Cook Inlet seismic survey: Version 2.0. Technical report for Fairweather LLC and Apache Corporation by JASCO Applied Sciences. 65 pages.

Blackwell, S.B. 2005. Underwater measurements of pile driving sounds during the Port MacKenzie dock modifications, 13-16 August 2004. Report from Greenridge Sciences, Inc. and LGL Alaska Research Associates, Inc., in association with HDR Alaska, Inc., for the Knik Arm Bridge and Toll Authority, the Department of Transportation and Public Facilities, and the Federal Highway Administration, 33 pages.

Illingworth and Rodkin, Inc. 2014. 2013 Cook Inlet exploratory drilling program - underwater sound source verification assessment: Cook Inlet, Alaska. Prepared for BlueCrest Energy, Inc., 20 pages.