



# MARINE MAMMAL COMMISSION

14 October 2014

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

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the July 2014 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 exploratory drilling in Cook Inlet, Alaska, during the 2015 open-water season. The Commission has also reviewed the National Marine Fisheries Service's (NMFS) 11 September 2014 *Federal Register* notice (79 Fed. Reg. 54398) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions. The Commission commented in its 29 September 2014 letter to the U.S. Fish and Wildlife Service regarding the proposed taking of sea otters during BlueCrest's proposed drilling activities at the same site for the 2014/2015 open-water season.

## Background

BlueCrest proposes to conduct exploratory drilling in Cook Inlet from April through October 2015. BlueCrest would drill one well at BlueCrest's Cosmopolitan State #B-1 site, located in state waters off Cape Starichkof, north of Anchor Point on the eastern side of Cook Inlet. Sound-generating activities would include the towing of the drill rig and the use of an impact hammer, seismic airguns, and a deep-well pumo. Specifically, BlueCrest would install a 30-in conductor pipe at the well site using an impact hammer prior to drilling. Following completion of drilling, BlueCrest would conduct vertical seismic profiling (VSP) using a 750 cubic inch airgun array.<sup>1</sup> Activities could occur for up to 97 days in total.

NMFS preliminarily has determined that the proposed activities could modify temporarily the behavior of small numbers of up to six species of marine mammals<sup>2</sup> but that the total taking

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<sup>1</sup> The description of proposed activities in the body of the *Federal Register* notice indicated that BlueCrest would use an airgun array with a total volume "between 600 and 880 cubic inches." The distances to the proposed harassment threshold isopleths are based on sound source measurements made in 2013 of a 750 cubic-inch array (Illingworth and Rodkin 2014). Although NMFS included the use of a 720-cubic-inch array in its proposed authorization language at the end of the *Federal Register* notice, the Commission understands that NMFS would authorize the use of up to a 750 cubic-inch array. If that is indeed the case, NMFS should amend the reference to a 720 cubic-inch array in the proposed authorization language.

<sup>2</sup> Harbor seals, harbor porpoises, Dall's porpoises, killer whales, gray whales, and minke whales

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 and monitoring measures, as well as additional measures proposed by NMFS, which include<sup>3</sup>—

- (1) using a sufficient number of NMFS-qualified protected species observers to monitor the specified Level A and B harassment zones (exclusion and disturbance zones, respectively) during all daytime activities;
- (2) implementing standard soft-start, ramp-up, delay, and shut-down procedures during conductor pipe driving and VSP activities—in addition, requiring a shutdown of activities if a marine mammal for which takes are not authorized<sup>4</sup> approaches the Level B harassment zone for such activities;
- (3) implementing shutdown procedures for VSP activities should Bluecrest become aware of a live marine mammal stranding event in Cook Inlet;
- (4) prohibiting initiation of activities from a shutdown at night or during low-light hours;
- (5) reducing vessel speed to 8 knots or less if a whale or Steller sea lion is observed approaching within 610 m of towing operations;
- (6) limiting helicopter flights to an altitude of not less than 305 m (except during takeoff, landing, and emergency situations);
- (7) reporting injured and dead marine mammals to NMFS and the Alaska Regional Stranding Coordinators using NMFS's phased approach and suspending activities, as appropriate; and
- (8) submitting field and technical reports and a final comprehensive report to NMFS.

### **Potential takes of beluga whales, Steller sea lions, and humpback whales**

BlueCrest has not requested authorization to take beluga whales, Steller sea lions, or humpback whales incidental to the proposed activities, despite the fact that those species' ranges are known to overlap with the proposed project area. Instead, BlueCrest has stated, and NMFS has agreed, that humpback whales are not likely to be encountered in the project area and that implementation of BlueCrest's proposed mitigation measures would prevent any takes of beluga whales and Steller sea lions. The Commission disagrees with NMFS's proposed exclusion of marine mammal species known to occur in or near the project area and notes that under the applicable regulations incidental harassment authorizations are to include all marine mammals that could potentially be taken during the proposed activities, even if those takes are expected to be "infrequent, unavoidable, or accidental" (50 C.F.R. § 216.103).

As the basis for excluding humpback whales from the take request, NMFS stated in its notice that humpback whales typically do not venture north of Kachemak Bay (based on B. Mahoney, pers. comm.). However, BlueCrest requested authorization to take four other species that

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<sup>3</sup> Several references to proposed mitigation and monitoring measures in the body of the *Federal Register* notice were either ambiguous or not consistent with the measures specified in the proposed authorization language at the end of the notice. Where inconsistencies existed, the Commission based its description of activities and recommendations on the proposed authorization language at the end of the notice.

<sup>4</sup> Including but not limited to beluga whales, Steller sea lions, and humpback whales.

occur less commonly in Cook Inlet (i.e., Dall's porpoises, killer whales, gray whales, and minke whales). Although not common in mid- to lower Cook Inlet, there are reports of humpback whale sightings near the project area. Sheldon et al. (2013) reported three sightings of humpback whales north of Anchor Point during aerial surveys conducted in 2004 and 2011. In addition, BlueCrest's vessel-based monitoring of a nearby well at its Cosmopolitan lease site<sup>5</sup> in 2013 resulted in 29 sightings of 48 humpback whales (Owl Ridge Natural Resource Consultants 2014). Based on those reported sightings, the Commission disagrees with NMFS's determination that humpback whales are not likely to be encountered in the proposed project area. If there is more than a remote likelihood of an incidental take of a humpback whale occurring in the project area, NMFS should include them in any authorization it issues for those activities.

The Commission is also concerned that NMFS has concurred with BlueCrest's assertion that mitigation measures will prevent all takes of beluga whales and Steller sea lions, two species that are likely to occur in the project area. Goetz et al. (2012) modeled summertime movements of beluga whales in Cook Inlet and determined that they are likely to occur in Kachemak Bay, south and east of the project area. Kachemak Bay is part of the Critical Habitat Area 2 designated by NMFS for Cook Inlet beluga whales (76 Fed. Reg. 20180). Although no beluga whales have been sighted in the project area during NMFS's summer surveys, which are conducted during only a relatively small portion of the span during which the proposed activities would occur, one beluga whale was sighted during BlueCrest's monitoring of a nearby well in 2013 (Owl Ridge Natural Resource Consultants 2014), and movements of beluga whales through the project area to and from Kachemak Bay to other beluga whale habitats in upper Cook Inlet should be expected.

To prevent takes of any species for which authorization is not granted, BlueCrest has proposed to cease activities if those species are detected approaching the disturbance zones. The Commission does not believe that NMFS should use an applicant's proposed implementation of mitigation measures as the sole basis for excluding a species from an incidental take authorization, unless there is a very high probability that those measures will be effective in avoiding any potential takes. We do not think that this standard is met when those measures are reliant on vessel-based visual monitoring, particularly when some of the proposed activities will take place at night or under low-light conditions and during sea state conditions that are not optimal for detecting marine mammals. The Commission has argued on several occasions, most recently in a letter dated 4 April 2014, that reliance on vessel-based (or in this case, rig-based) visual monitoring as the only method to detect marine mammals that may be within or approaching the disturbance zone may have significant limitations, especially for activities in which the disturbance zone is of considerable size (which is the case for pipe driving and VSP activities). Some animals may be at the surface but not detected by observers because of weather, sea state, or because of difficulty in detecting animals due to the typically turbid conditions in Cook Inlet. Other animals may be underwater and therefore not available for detection by observers before the animals enter the harassment zone. Thus, reliance on the detection of all marine mammals entering the disturbance zones and a shutdown of activities in time to avoid taking any marine mammal not included in the authorization before it enters those zones is not justified. BlueCrest relied on observer-based shutdowns as a mitigation measure to avoid takes of all marine mammals in 2013 but that measure was not completely effective and at

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<sup>5</sup> In 2013, BlueCrest, in joint partnership with Buccaneer Alaska Operations LLC, drilled at its Cosmopolitan State #A-1 site located 1.6 km from its #B-1 site (Figure 1 of BlueCrest's IHA application).

least one take of an unidentified marine mammal by Level B harassment occurred (Owl Ridge Natural Resource Consultants 2014).

At least one other company conducting seismic activities during the 2014 open-water season in the same area of Cook Inlet as BlueCrest's proposed activities has requested and been issued an authorization by NMFS to take beluga whales and Steller sea lions by Level B harassment (see 79 Fed. Reg. 13626). Rather than requesting authority for incidental takes of all species that may occur in the project area, it appears that BlueCrest has refrained from seeking take authorizations for any species listed as endangered or threatened to avoid triggering the formal consultation requirements applicable under section 7 of the Endangered Species Act (ESA).

The Commission recognizes that the greatest risk of failing to detect a marine mammal within or approaching the disturbance zones is during pipe driving and when conducting VSP activities, as the disturbance zones associated with those activities are much larger than those associated with drilling and rig towing. The Commission also recognizes that pipe-driving and VSP activities will occur for shorter durations (i.e., three days for impact hammering and two days for VSP activities). Therefore, the potential for takes of beluga whales and Steller sea lions associated with those activities is relatively low, but not zero, even with the proposed shut-down requirement. As such, BlueCrest and NMFS should have included in the proposed authorization small numbers of takes for each species to reflect the possibility that animals could approach or enter the disturbance zone undetected, resulting in a take prior to shutdown.

The Commission therefore recommends that, prior to issuance of the final authorization, NMFS include take estimates associated with each proposed activity for beluga whales, Steller sea lions, and humpback whales that could potentially be taken in the project area, regardless of any assumptions regarding the efficacy of proposed mitigation measures.

The Commission remains concerned that NMFS is not adequately addressing the combined or cumulative effects of the multiple activities occurring in Cook Inlet on beluga whales when considering the issuance of additional incidental take authorizations. NMFS is not able to rule out the possibility that the combined or cumulative disturbance associated with the broad suite of human activities occurring in Cook Inlet (e.g., oil and gas exploration and production, port construction, shipping, coastal development, military activities, fishing, discharge of contaminated water, etc.) is contributing to the continued decline of that endangered population. The Commission does not believe that NMFS's approach of analyzing each activity in isolation and looking only at the incremental increase in disturbance, without adequate consideration of other activities being conducted concurrently or the cumulative impact of all sources of disturbance in Cook Inlet on the beluga whale population, meets the requirements of the MMPA or the ESA, especially when the status quo already appears to be having significant adverse impacts on the population.

Rather than continuing to consider only the incremental effects of new activities in its issuance of incidental take authorizations, and in light of increasing oil and gas-related activities in Cook Inlet, the Commission once again recommends that NMFS develop policies and issue criteria for ensuring full consideration of the cumulative effects of new activities in combination with the effects of other ongoing and planned activities in Cook Inlet. There are several potentially useful tools for accomplishing this, including the development of clear criteria for making negligible impact

determinations as the Commission has previously recommended. In addition, the ongoing development of a recovery plan for the Cook Inlet beluga whale provides an opportunity to promote research needed to identify the cause or causes of the population's decline and to investigate the possible cumulative effects of multiple activities. That research should be coupled with periodic comprehensive (as opposed to project by project) reviews of all sources of potential disturbance to beluga whales in Cook Inlet, adoption of measures to mitigate such disturbance, and regular evaluations of the effectiveness of current mitigation and conservation measures.

The Commission believes that precautionary management of authorizations issued under section 101(a)(5) of the MMPA is important for minimizing and preventing takes in the face of considerable uncertainty, as is the case for Cook Inlet beluga whales. The Commission is aware that NMFS is planning a meeting in November 2014 to engage stakeholders more broadly in efforts to address and minimize cumulative effects of human activities on Cook Inlet beluga whales and appreciates NMFS's involvement of the Commission in the planning and convening of this stakeholder-based forum.

### **Density estimates**

Several applicants have proposed to conduct activities in the same general area of Cook Inlet and at the same time of year. To date, each has used a different method and/or different data for estimating densities of marine mammals. For example, BlueCrest's density estimate for harbor seals was based on surveys conducted in 1996 by Boveng et al. (2003). That estimate was lower than that provided by Furie, which was based on more recent aerial surveys conducted in Cook Inlet in 2009, 2010, and 2012 (79 Fed. Reg. 12177). Similarly, BlueCrest's density estimate for harbor porpoises was based on sightings recorded during a single aerial survey conducted in 1998 (Hobbs and Waite 2010) rather than more regular and recent aerial survey data collected over the past decade (Shelden et al. 2013). Considering the limited information available on densities of marine mammals in Cook Inlet, there should be consistency in how those species-specific density estimates are derived and used, including use of the most appropriate and up-to-date information. Therefore, the Commission recommends that NMFS work with applicants who are conducting activities in the same area at the same time of year to ensure that the most appropriate and up-to-date information is used to derive densities to inform take estimates.

### **Mitigation and monitoring measures**

In other incidental harassment authorizations involving seismic activities in Cook Inlet during the open-water season, NMFS has required that operators implement additional delay and shut-down procedures if an aggregation of five or more killer whales or harbor porpoises is observed within or approaching the disturbance zone (e.g., 79 Fed. Reg. 13626). To ensure that BlueCrest is implementing mitigation measures consistent with other activities in the same area, that requirement should be included here. The Commission therefore recommends that NMFS require BlueCrest to implement additional delay and shut-down procedures if an aggregation of five or more killer whales or harbor porpoises is observed approaching or within the disturbance zone during VSP activities.

As a supplement to rig-based visual monitoring, passive acoustic monitoring could be useful in the detection of beluga whales and other cetaceans throughout the survey area. Researchers have successfully detected beluga whales and other cetaceans in Cook Inlet with moored buoys (Lammers et al. 2013), and the Commission believes that a series of moored buoys deployed throughout all of the proposed open-water seismic survey and drilling areas in Cook Inlet could provide useful information. Although calls recorded by the buoys may not be useful for real-time mitigation, the data could be analyzed after the open-water season to better understand beluga and other marine mammal use of those areas before, during and after activities. As such, the Commission recommends that NMFS require BlueCrest to coordinate with other seismic and drilling operators who may be working in Cook Inlet in 2015 to deploy a series of bottom-mounted, passive acoustic monitoring buoys throughout the combined project areas to collect additional information on cetacean presence and movements.

In its proposed authorization, NMFS has indicated that BlueCrest would deploy a “sufficient” number of NMFS-qualified, vessel-based protected species observers to monitor marine mammals near the drill rig. For activities in which the disturbance zone is of considerable size (i.e., during pipe driving and VSP activities), at least two observers should be deployed on the drilling rig and two to four additional vessel-based observers deployed on the perimeter of the zone to increase the probability of detecting marine mammals within or approaching the disturbance zone. Additional observers would also help to estimate Level B takes more accurately. The Commission recommends that NMFS require BlueCrest to deploy a minimum of two protected species observers on the drill rig and two to four additional vessel-based observers at the perimeter of the disturbance zone during pipe-driving and VSP activities to increase the probability of detecting all marine mammals within or approaching the disturbance zone to (1) enhance the effectiveness of the proposed mitigation measures and (2) estimate the numbers of marine mammals taken during the proposed activities more accurately.

Very little information is available regarding the ability of observers to monitor exclusion and disturbance zones of various sizes in various environmental settings. However, in a recent analysis, Cate et al. (2014) concluded that observers in the Chukchi Sea had only a 60 percent probability of detecting a marine mammal at a distance of 100 m and a near zero probability of seeing a marine mammal at a distance of 250 m or greater. To determine the probability of detecting marine mammals in Cook Inlet, the Commission further recommends that NMFS require BlueCrest to determine detection probabilities from each of the monitoring platforms and under the various sea states, weather conditions, and light levels encountered in Cook Inlet at times when activities would be conducted.

NMFS has proposed that BlueCrest monitor for marine mammals for 30 minutes before and continuously during pipe-driving and VSP activities. 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 BlueCrest to monitor for marine mammals for 30 minutes before pipe-driving and VSP activities begin, while those activities are being conducted, and for 30 minutes after those activities have ceased.

I trust these comments will be helpful to NMFS in meeting its responsibilities under the MMPA. Please let me know if you have any questions with regard to this letter.

Sincerely,



Rebecca J. Lent, Ph.D.  
Executive Director

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

## References

- Boveng, P.L., J.L. Bengtson, D.E. Withrow, J.C. Cesarone, M.A. Simpkins, K.J. Frost, and J.J. Burns. 2003. The abundance of harbor seals in the Gulf of Alaska. *Marine Mammal Science* 19:111–127.
- Cate, J., M. Smultea, M. Bles, M. Larson, S. Simpson, T. Jefferson, and D. Steckler. 2014. 90-Day report of marine mammal monitoring and mitigation during a 2D seismic survey by TGS in the Chukchi Sea, August through October 2013. AES Doc. No. 15416-04 13-185. Prepared by ASRC Energy Services, Smultea Environmental Sciences, Clymene Enterprises and Entiat River Technologies for TGS-NOPEC Geophysical Company, National Marine Fisheries Service, and U.S. Fish and Wildlife Service. 122 pages plus appendices.
- Goetz, K.T., R.A. Montgomery, J.M. Ver Hoef, R.C. Hobbs, and D.S. Johnson. 2012. Identifying essential summer habitat of the endangered beluga whale *Delphinapterus leucas* in Cook Inlet, Alaska. *Endangered Species Research* 16:135–147.
- Hobbs, R.C., and J.M. Waite. 2010. Abundance of harbor porpoise (*Phocoena phocoena*) in three Alaskan regions, corrected for observer errors due to perception bias and species misidentification, and corrected for animals submerged from view. *Fishery Bulletin* 108(3):251–267.
- Illingworth and Rodkin, Inc. 2014. 2013 Cook Inlet Exploratory Drilling Program–Underwater Sound Source Verification Assessment. Prepared for BlueCrest Energy Inc. 20 pages.
- Lammers, M.O., M. Castellote, R.J. Small, S. Atkinson, J. Jenniges, A. Rosinski, J.N. Oswald, and C. Garner. 2013. Passive acoustic monitoring of Cook Inlet beluga whales (*Delphinapterus leucas*). *Journal of the Acoustical Society of America* 134(3):2497–2504.
- Owl Ridge Natural Resource Consultants, Inc. 2014. Cosmopolitan State 2013 Drilling Program Marine Mammal Monitoring and Mitigation 90-day Report. Prepared for BlueCrest Alaska Operating LLC. 49 pages.
- Shelden, K.E.W., D.J. Rugh, K.T. Goetz, C.L. Sims, L. Vate Brattström, J.A. Mocklin, B.A. Mahoney, B.K. Smith, and R.C. Hobbs. 2013. Aerial surveys of beluga whales, *Delphinapterus leucas*, in Cook Inlet, Alaska, June 2005 to 2012. NOAA Technical Memorandum NMFS-AFSC-263. 122 pages.