



# MARINE MAMMAL COMMISSION

31 January 2014

Mr. P. Michael Payne, Chief  
Permits and Conservation Division  
National Marine Fisheries Service  
Office of Protected Resources  
1315 East-West Highway, Room 13635  
Silver Spring, MD 20910

Dear Mr. Payne:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the November 2013 application submitted by Apache Alaska Corporation (Apache) 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 a 3D seismic survey in Cook Inlet, Alaska to be conducted from March to December 2014. The Commission also has reviewed the National Marine Fisheries Service's (NMFS) 31 December 2013 notice (78 Fed. Reg. 80386) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions. The Commission reviewed similar applications from Apache in 2011 and 2012 for incidental harassment authorizations associated with proposed seismic surveys in Cook Inlet. The Commission provides the following recommendations and rationale.

## RECOMMENDATIONS

Based on its review of the information provided, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- defer issuance of the proposed incidental harassment authorization until such time as the National Marine Fisheries Service can, with reasonable confidence, support a conclusion that the proposed 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; and
- work with the Fish and Wildlife Service and the Commission to 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.

If the National Marine Fisheries Service decides to issue the requested authorization notwithstanding the risk of significant impacts on the Cook Inlet population of beluga whales, the Marine Mammal Commission recommends that the National Marine Fisheries Service—

- authorize, at a minimum, the average estimated number of takes of harbor seals;
- advise Apache to request the authorization of incidental takes of gray whales associated with its proposed activities; and

- encourage Apache and other applicants proposing to conduct seismic surveys in Cook Inlet in 2014 to collaborate on those surveys and, to the extent possible, submit a single application seeking authorizations for incidental takes.

## BACKGROUND

Apache proposes to conduct a 3D seismic survey in Cook Inlet, Alaska, from 1 March to 31 December 2014 in an area of approximately 4,238 km<sup>2</sup>. As with its past two applications, Apache has requested that the incidental harassment authorization cover a larger area of operation than it actually intends to survey to allow for operational flexibility. The project area is located primarily in the middle portion of the inlet and includes nearshore intertidal and offshore areas along the east coast of the inlet in waters up to 128 m in depth. Apache would use two survey vessels, each equipped with a 2,400-in<sup>3</sup> airgun array and operated using a ping/pong shooting technique. Apache has indicated that although the vessels would use the 2,400-in<sup>3</sup> airgun configuration most frequently, a 1,200-in<sup>3</sup> airgun configuration would be used by the vessels when possible. Other survey equipment would include a 440-in<sup>3</sup> airgun array, a 10-in<sup>3</sup> airgun, a 33- to 55-kHz ultra-short baseline transceiver (pinger), and a 35- to 50-kHz lightweight release ultra-short baseline transponder. In addition, Apache plans to detonate 4 kg of Orica OSX pentolite explosives onshore to acquire additional data. Apache would use bottom-mounted, cableless hydrophones to collect all seismic data. Apache would conduct the survey for an estimated 160 days—100 days in offshore waters and 60 days in nearshore waters.

NMFS preliminarily has determined that the proposed activities could modify temporarily the behavior of small numbers of up to five 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 Apache's proposed mitigation and monitoring measures, as well as additional measures proposed by NMFS, which include—

- (1) using shore- and vessel-based observers to monitor the exclusion zones (based on Level A harassment thresholds of 190 and 180 dB re 1  $\mu$ Pa) and disturbance zone (based on Level B harassment threshold of 160 dB re 1  $\mu$ Pa) (a) during all daylight hours when airguns are operating, (b) for a minimum of 30 minutes prior to ramp-up of the airguns, and (c) during most daylight hours when airguns are not operating;
- (2) using standard ramp-up, delay, power-down, and shut-down procedures;
- (3) prohibiting ramp-up of airguns during nighttime operations or during low-light hours after an extended shut-down (i.e., when airguns have not been operating for at least 10 minutes);
- (4) implementing additional delay and shut-down procedures if a beluga whale or an aggregation of five or more killer whales or harbor porpoises is observed approaching or within the disturbance zone;
- (5) ceasing airgun operations within 16 km of the mean high waterline of the Susitna River from 15 April to 15 October;
- (6) ceasing seismic survey operations if authorized numbers of takes for any marine mammals are met or exceeded;

- (7) altering vessel speed or course to avoid having a marine mammal enter the respective exclusion zone;
- (8) conducting aerial surveys on a daily basis in the project area, even if the airguns are not operating (weather and safety permitting);
- (9) conducting aerial surveys around the most important beluga whale foraging and reproductive areas of the upper inlet when airguns or pingers are being used north or east of a line from Tyonek across to the eastern side of Number 3 Bay of the Captain Cook State Recreation Area;
- (10) conducting aerial surveys to identify (and presumably avoid) large aggregations of beluga whales and harbor seal haul-out sites when survey operations occur near a river mouth;
- (11) limiting aerial surveys to an altitude not less than 305 m at all times and to a radial distance of 457 m or greater when marine mammals are present (except during takeoff, landing, or an emergency situation);
- (12) alerting NMFS immediately when a cumulative total of 25 (or more) belugas are detected in the disturbance zone;
- (13) reporting injured and dead marine mammals to NMFS and the local stranding network using NMFS's phased approach and suspending activities, if appropriate; and
- (14) submitting field and technical reports and a final comprehensive report to NMFS.

## **RATIONALE**

### **NMFS's determinations regarding small numbers and negligible impact on beluga whales**

In its letters regarding previous incidental harassment authorizations for Apache seismic surveys in Cook Inlet (see letters dated 21 October 2011 and 9 January 2013), the Commission stated its concerns regarding the declining numbers of Cook Inlet beluga whales and the likelihood of continued declines, even in the absence of any additional stressors, such as disturbance associated with seismic activities. The Commission recommended on both occasions that NMFS defer issuance of the proposed incidental harassment authorization until it has better information on the cause or causes of the ongoing decline and has a reasonable basis for determining that authorizing additional takes would not contribute to or exacerbate that decline. The Commission continues to believe that, given the precarious status of the Cook Inlet beluga whale population, any activity that may contribute to or that may worsen the observed decline should not be viewed as having a negligible impact on the population. However, in its notices of issuance of incidental harassment authorizations for Apache's 2012 and 2013 seismic surveys, NMFS did not respond to the Commission's recommendation nor did it address the Commission's concerns regarding its small numbers and negligible impact determinations.

The Commission remains concerned that Apache's proposed seismic activities in Cook Inlet, when added to the existing baseline of activities in Cook Inlet, will pose significant risks to the beluga population. Although monitoring reports submitted by Apache for its 2012 activities suggest that the proposed mitigation measures will minimize the likelihood of exceeding the requested number of takes, the requested number of takes remains of concern given continued declines in the beluga population. As stated in previous letters to NMFS, the MMPA allows the authorization of incidental taking only if it involves "small numbers of marine mammals of a species or population stock" and has a negligible impact on such species or stock. It remains unclear how NMFS is

defining both small numbers and negligible impact in this situation and more generally. Reviewing courts have ruled that “small numbers” and “negligible impact” are not synonymous and the former cannot be defined on the basis of the latter—that is, they are separate standards. Defining the term “small numbers” for application to multiple species or stocks has been a challenge. An absolute definition (i.e., a set number of animals) might make sense in some cases but would not in others. A relative definition (e.g., a percentage) also might be appropriate in some cases but not in others. Because the Cook Inlet beluga population has been significantly reduced and is relatively small (about 300 individuals), defining small numbers as a percentage of the population’s abundance would seem most appropriate in this instance.

Consistent with these ongoing and unresolved concerns, the Commission once again recommends that NMFS defer issuance of the proposed incidental harassment authorization until such time as NMFS can, with reasonable confidence, support a conclusion that the proposed 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.

Perhaps the best approach for developing generally applicable criteria for defining “small numbers” would be for NMFS, the Fish and Wildlife Service, and the Commission to form a task force to develop an appropriate working definition that could then be made available for public review and comment. As such, the Commission recommends that NMFS work with the Fish and Wildlife Service and the Commission to 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 working on developing a policy and would welcome an opportunity to discuss this policy further before it is finalized.

The Commission remains concerned that NMFS is not addressing the cumulative effects of activities in Cook Inlet on Cook Inlet beluga whales. The Commission previously has recommended that NMFS defer issuing any incidental take authorizations for Cook Inlet beluga whales until it has a better understanding of the factor or factors that are causing or contributing to the observed population trend or until the population begins to demonstrate sustained growth. This is particularly important in view of the fact that NMFS has not ruled out the possibility that the combined, aggregate, or cumulative disturbance associated with the broad suite of activities occurring in the Inlet (e.g., oil and gas exploration, development, and production, port construction, shipping, coastal development, military activities, fisheries, etc.) is the cause or a significant contributor to the continued 10-year decline of this endangered population. The Commission remains concerned about authorizing additional sources of disturbance based on the theory that their incremental impact on the existing baseline is “negligible” when the status quo already appears to be at a possible tipping point for this population’s persistence.

Rather than continuing to consider only the incremental effects of new activities in its issuance of incidental take authorizations, NMFS needs to adopt policies and issuance criteria that ensure full consideration of the effects of each new activity in combination with the cumulative effect of ongoing and planned activities in Cook Inlet. There are several potentially useful tools for accomplishing this, including the development of clearer criteria for making negligible impact determinations recommended above. In addition, the recovery plan for the Cook Inlet beluga whale

currently under development provides an excellent opportunity to promote the research needed to identify the cause or causes of the population's decline and to investigate the possible cumulative effects of multiple factors. This could be coupled with periodic 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 conservation measures. The Commission continues to believe that NMFS needs to give greater attention to and invest more resources in understanding and addressing the factors contributing to the decline of the Cook Inlet beluga whale population and to promote more aggressively the conservation and recovery of this population. Authorizations under section 101(a)(5) of the MMPA are one tool to achieve that goal.

If NMFS decides to issue the requested authorization, notwithstanding the Commission's recommendations and the possibly significant impacts on the Cook Inlet beluga population, then the Commission has the following additional comments and recommendations regarding other concerns with Apache's application and NMFS's analysis of it.

### **Ensuring takes of beluga whales do not exceed those requested**

Apache has once again requested authorization to take a number of beluga whales that is less than what Apache estimated could be taken in the proposed survey area. In its estimation of potential takes, Apache identified two zones of operation—Zone 1 in the northern portion of the project area and Zone 2 in the southern portion (Figure 2 in the application). It then calculated the average number of beluga whales expected to occur in each square kilometer of the survey area using the habitat model developed by Goetz et al. (2012). Multiplying those densities by the area of the disturbance zone associated with each of the two zones of proposed survey operation, Apache estimated that up to 57 belugas could be taken—28 in Zone 1 and 29 in Zone 2 (see Table 4 of the *Federal Register* notice). NMFS has proposed that Apache limit takes of belugas to no more than 30 whales (the number of belugas NMFS has authorized in previous incidental harassment authorizations; see for example 78 Fed. Reg. 12720) by requiring that Apache (1) use a number of visual monitoring methods (i.e., aerial-, shore-, and vessel-based surveys) to maximize the likelihood of detecting any belugas that may be present in the survey area, (2) shut down seismic operations if belugas are sighted within or approaching the disturbance zone, (3) alert NMFS immediately once a cumulative total of 25 or more belugas have been detected within the disturbance zone and (3) cease operations once 30 belugas have been taken. The Commission generally considers NMFS's proposed mitigation, monitoring, and reporting measures reasonable for the purpose of ensuring that no more than 30 belugas are taken by Level B harassment.

### **Unclear basis for requested number of takes of harbor seals**

Besides belugas, the other marine mammal species seen most frequently during Apache's monitoring of the project area and surrounding areas in 2012 and 2013 were harbor seals and harbor porpoises.<sup>1</sup> The Commission recommended in its comments on Apache's last authorization application that NMFS require Apache to either amend its application to seek authorization for the maximum numbers of marine mammals that may be taken or provide sufficient and consistent justification for requesting lesser numbers of takes for these two species. In its response to the

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<sup>1</sup> <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>

Commission’s recommendation, NMFS stated that it would use average estimates for these two species because using maximum estimates would result in overestimates that do not account for marine mammals avoiding the sound source before they are in the disturbance zone (78 Fed. Reg. 12720).

Although this may be the case, the fact that a potentially significant number of marine mammals may be disturbed to the point where they change their behavior to avoid the project area at lower sound levels suggests that the disturbance zone previously used by NMFS and again included in this proposed authorization is insufficient to account for all of the takes that are likely to occur. If it is going to rely on such an argument as the rationale for not using maximum estimates, NMFS should explain why it believes marine mammals that avoid an area in response to a sound source, even if their exposure is below the assumed disturbance threshold, should not be considered to have been taken under the MMPA’s definition of Level B harassment (16 U.S.C. § 1362(18)(A)(ii)).

For its current application, Apache made adjustments to the average and maximum estimated densities for several species, including harbor seals, based on corrected NMFS survey data from 2000 to 2012 (Table 5 in the application). It also made adjustments to increase the size of the disturbance zone, from 6.4 km to 9.5 km, based on sound source measurements made in 2012. For harbor seals, both estimates increased significantly<sup>2</sup> (see Table 1). However, no corresponding adjustments were made either to Apache’s request or the number of takes included in NMFS’s proposed take authorization for harbor seals. Apache did not discuss its rationale for requesting the same number of harbor seal takes, given the higher take estimates. Instead, it noted in its application that (1) it does not anticipate harbor seals to haul out in large numbers in the proposed survey area, (2) the estimated numbers of takes are skewed upwards because the density estimates are based on the numbers of animals observed at large haul-out sites, and (3) seals on land would not be exposed to in-water sounds. However, these observations are at odds with reported sightings of large numbers of harbor seals in the survey area and adjacent areas during 2012 and 2013 aerial surveys (Lomac-MacNair et al. 2014), and the Commission’s long-standing position that seals identified at haul-out sites spend some portion of the day in the water (see letter to M. Payne dated 25 June 2012), thereby subjecting them to disturbance.

Table 1. Estimated and requested numbers of takes of harbor seals for Apache’s 2013 and 2014 survey seasons.

	2013 Activities		2014 Activities		Requested numbers of takes (both years)
	Maximum estimated takes	Average estimated takes	Maximum estimated takes	Average estimated takes	
<b>Harbor seals</b>	414	203.8	585.2	439.9	200

The Commission notes that NMFS is not necessarily bound by the numbers requested by the applicant and should request that applicants make adjustments as necessary based on best

<sup>2</sup> Average and maximum take estimates were adjusted also for other marine mammal species expected to be in the project area, but were still within the range of previous estimates.

available information. Therefore, to ensure that authorized takes for harbor seals are not exceeded for proposed activities in 2014, the Commission recommends that NMFS authorize, at a minimum, the average estimated number of takes for harbor seals.

### **Including a request for incidental takes of gray whales**

Apache has not requested authorization to take gray whales incidental to its previous or currently proposed seismic activities. However, in its 2012 monitoring reports, Apache reported four instances in which gray whales were observed approaching the disturbance zone resulting in shutdowns of operations. On two other occasions, the occurrence of gray whales in the project area prompted a delay of operations. Given the repeated instances of gray whale sightings and mitigation measures being implemented to avoid unauthorized takes in 2012, it is not clear why takes of this species are not being requested in Apache's current application. To ensure that unauthorized takes of gray whales do not occur in 2014, the Commission recommends that NMFS advise Apache to request the authorization of incidental takes of gray whales associated with its proposed activities.

### **Reducing the potential for duplicative seismic surveys**

It is the Commission's understanding that NMFS is reviewing at least two other applications requesting takes of beluga whales incidental to proposed seismic surveys in Cook Inlet in 2014, one submitted by the company that has conducted and may conduct a similar seismic survey on behalf of Apache in 2014. It is not clear whether these applications are seeking separate authorizations for some or all of the same activities. This should be clarified and the applicants encouraged to combine their requests if overlap exists. In any event, NMFS needs to adopt policies and institute procedures to ensure that separate applications to conduct essentially the same activities in the same areas are considered more holistically. If indeed the applicants are proposing to conduct multiple seismic surveys within the same area, it would increase the numbers of marine mammals taken and expose beluga whales and other marine mammals to unnecessary, avoidable risks. Section 101(a)(5)(D)(ii)(I) of the MMPA directs NMFS to structure incidental harassment authorizations so that they prescribe "other means of effecting the least practicable impact on such species or stock and its habitat." Allowing multiple operators to obtain separate authorizations to conduct duplicative surveys is inconsistent with that mandate.

The Commission has emphasized the need to minimize redundant seismic surveys in all areas of oil and gas exploration. NMFS has had some success in the past in encouraging applicants to collaborate on seismic surveys in areas of common interest. The Commission commends Apache's efforts to date to enter into data sharing agreements with other seismic operators to minimize the need for duplicative survey efforts. Data sharing and collaboration is critical in habitat areas used by endangered populations such as Cook Inlet beluga whales. To that end, the Commission recommends that NMFS encourage Apache and other applicants proposing to conduct seismic surveys in Cook Inlet in 2014 to collaborate on those surveys and, to the extent possible, submit a single application seeking authorization for incidental harassment of marine mammals.

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The Commission appreciates the opportunity to review this incidental harassment authorization. Please contact me if you have questions regarding these recommendations.

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

### References

- 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.
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