3. Operational knowledge of federal agencies and interactions with the Fishery Management Councils and/or regional and state partners.

Letters of support will be accepted, and may be submitted with the application or separately. Applications and letters of support should be sent to (see **ADDRESSES**) and must be received by (see **DATES**). The full text of the MAFAC Charter and its current membership can be viewed at the NMFS Web page at *www.nmfs.noaa.gov/ocs/mafac/.*

Dated: December 5, 2012.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, performing the functions and duties of the Assistant Administrator for Fisheries.

[FR Doc. 2012–29758 Filed 12–7–12; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XC374

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Seismic Survey in Cook Inlet, AK

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS received an application from Apache Alaska Corporation (Apache) for an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to a proposed 3D seismic survey in Cook Inlet, Alaska, between January 2013 and January 2014. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS requests comments on its proposal to issue an IHA to Apache to take, by Level B harassment only, five species of marine mammals during the specified activity.

DATES: Comments and information must be received no later than January 9, 2013.

ADDRESSES: Comments on the application should be addressed to Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910. The mailbox address for providing email comments is *ITP.Hopper@noaa.gov.* NMFS is not responsible for email comments sent to addresses other than the one provided here. Comments sent via email, including all attachments, must not exceed a 10-megabyte file size.

Instructions: All comments received are a part of the public record and will generally be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

An electronic copy of the application used in this document may be obtained by writing to the address specified above, telephoning the contact listed below (see **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm.* Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Brian D. Hopper, Office of Protected Resources, NMFS, (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. NMFS has defined ''negligible impact'' in 50 CFR 216.103 as ''* * * an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.''

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the U.S. can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: ''any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].''

Summary of Request

NMFS received an application on June 15, 2012, from Apache for the taking, by harassment, of marine mammals incidental to a 3D seismic survey program in Cook Inlet, Alaska. This is the second IHA application NMFS has received from Apache for takes of marine mammals incidental to conducting a seismic survey in Cook Inlet. On April 30, 2012, NMFS issued a one-year IHA to Apache for their first season of seismic acquisition in Cook Inlet (77 FR 27720). Except for the location and the size of the survey area, the activities proposed for the second survey season are essentially the same as those conducted during the first season.

The proposed 3D seismic surveys would employ the use of two source vessels. Each source vessel would be equipped with compressors and 2400 in^3 air gun arrays, as well as additional lower-powered and higher frequency survey equipment for collecting bathymetric and shallow sub-bottom data. In addition, one source vessel would be equipped with a 440 in^3 shallow water air gun array, which it can deploy at high tide in the intertidal area in less than 1.8 m of water. The proposed survey would take place in Cook Inlet, and during the second survey season Apache anticipates completing ~1,010 km^2 of seismic acquisition in an area that extends from just south of Anchor Point along the east coast extending up to Point Possession and along the west coast from the

McArthur River up to the Beluga river, in water depths of 0–128 m (0–420 ft).

In Area 2, Apache intends to mobilize crews and equipment in January 2012 in order to be ready to conduct offshore/transition (intertidal) zone marine surveys in March-April 2013, but could commence sooner if weather conditions permit. Nearshore areas adjacent to uplands and offshore areas will be surveyed between April and September 2013. Impacts to marine mammals may occur from noise produced from active acoustic sources (primarily air guns) used in the surveys.

Description of the Specified Activity

In 2010, Apache acquired over 300,000 acres of oil and gas leases in Cook Inlet with the primary objective to explore for and develop oil fields. In the spring of 2011, Apache conducted a seismic test program to evaluate the feasibility of using new nodal (i.e., no cables) technology seismic recording equipment for operations in the Cook Inlet environment and to test various seismic acquisition parameters to finalize the design for a 3D seismic program in Cook Inlet. The test program took place in late March 2011 and results indicated that the nodal technology was feasible in the Cook Inlet environment. Apache proposes to conduct a phased 3D seismic survey program throughout Cook Inlet over the course of the next three to five years. The first area surveyed—and the subject of the IHA issued in April 2012—was located in mid-Cook Inlet extending along the west coast from the Big River up to south of the Beluga River, and on the east coast from Salamantof on the Kenai peninsula to 4.4 miles north of the Swanson River. The second area to be surveyed—and the subject of this IHA—would cover a lower portion of Cook Inlet, but also includes all of Area 1.

The proposed operations are essentially the same as those that were conducted in Area 1 under the IHA for the first seismic season. The proposed operations would again be performed from multiple vessels. Apache would employ the use of two source vessels. Each source vessel would be equipped with compressors and 2400 in^3 air gun arrays. In addition, one source vessel would be equipped with a 440 in^3 shallow water air gun array, which it can deploy at high tide in the intertidal area in less than 1.8 m of water. Three shallow draft vessels would support cable/nodal deployment and retrieval operations, and one mitigation/chase vessel would be used, which would also provide berthing for the Protected Species Observers (PSOs). Finally, two smaller jet boats would be used for personnel transport and node support in the extremely shallow water of the intertidal area. For additional information, such as vessel specifications, see Apache's application.

Acquiring ~1,010 km^2 would take approximately 160 days to complete over the course of 8–9 months. Apache anticipates conducting survey operations 24 hours per day. During each 24 hour period, seismic operations would be active; however air guns would only be used for approximately 2.5 hours during each of the slack tide periods. There are approximately four slack tide periods in a 24-hour day, therefore, air gun operations would be active during approximately 10–12 hours per day, if weather conditions allow.

3D Seismic Surveys

Seismic surveys are designed to collect bathymetric and sub-seafloor data that allow the evaluation of potential shallow faults, gas zones, and archeological features at prospective exploration drilling locations. Data are typically collected using multiple types of acoustic equipment. During the surveys, Apache proposes to use the following in-water acoustic sources: two 2400 in^3 air gun arrays; a single 440 in^3 air gun array; a 10 in^3 air gun; a Scout Ultra-Short Baseline (USBL) Transceiver; and a Lightweight Release (LR) USBL Transponder. Apache successfully measured the sounds produced by the air guns and pingers during a 2D test program conducted in March 2011 and found levels to be consistent with the modeled mitigation threshold levels (180 dB for cetaceans, 190 dB for pinnipeds); therefore, a sound source verification study would not be included in the proposed 3D seismic survey.

In addition, Apache plans to detonate 4 kg of Orica OSX Pentolite explosives onshore to acquire data. Except for the explosives, the operating frequencies and estimated source levels of the survey equipment are provided below.

(1) Airguns

The 2400 in^3 air gun arrays and the 440 in^3 air gun array would be used to obtain geological data during the survey. The acoustic source level of the 2400 in^3 air gun array was predicted using an air gun array source model (AASM) developed by JASCO. The AASM simulates the expansion and oscillation of the air bubbles generated by each air gun within a seismic array, taking into account pressure interaction effects between bubbles from different air guns. It includes effects from surface-reflected pressure waves, heat transfer from the bubbles to the surrounding water, and the movements of bubbles due to their buoyancy. The model outputs high-resolution air gun pressure signatures for each air gun, which are superimposed with the appropriate time delays to yield the overall array source signature in any direction. The 190, 180, and 160 dB_{rms} re 1 µPa isopleths were estimated at three different water depths (5 m, 25 m, and 45 m) for nearshore surveys and at 80 m for channel surveys. The distances to these thresholds for the nearshore survey locations are provided in Table 1 and correspond to the three transects modeled at each site in the onshore, offshore, and parallel to shore directions. The distances to the thresholds for the channel survey locations are provided in Table 2 and correspond to the broadside and endfire directions. The areas ensonified to the 160 dB isopleth for the nearshore survey are provided in Table 3. The area ensonifed to the 160 dB isopleth for the channel survey is 389 km^2.

TABLE 1—DISTANCES TO SOUND THRESHOLDS FOR THE NEARSHORE SURVEYS

Threshold (dB re 1 µPa)	Water depth at source location (m)	Distance in the onshore direction (km)	Distance in the offshore direction (km)	Distance in the parallel to shore direction (km)
160	5	0.85	3.91	1.48
	25	4.70	6.41	6.34
	45	5.57	4.91	6.10
180	5	0.46	0.60	0.54
	25	1.06	1.07	1.42
	45	0.70	0.83	0.89

TABLE 1—DISTANCES TO SOUND THRESHOLDS FOR THE NEARSHORE SURVEYS—Continued

Threshold (dB re 1 μPa)	Water depth at source location (m)	Distance in the onshore direction (km)	Distance in the offshore direction (km)	Distance in the parallel to shore direction (km)
190	5	0.28	0.33	0.33
	25	0.35	0.36	0.44
	45	0.10	0.10	0.51

TABLE 2—DISTANCE TO SOUND THRESHOLDS FOR THE CHANNEL SURVEYS

Threshold (dB re 1 μPa)	Water depth at source location (m)	Distance in the broadside direction (km)	Distance in the endfire direction (km)
160	80	4.24	4.89
180	80	0.91	0.98
190	80	0.15	0.18

TABLE 3—AREAS ENSONIFIED TO 160 DB FOR NEARSHORE SURVEYS

Nearshore survey depth classification	Depth range (m)	Area ensonifed to 160 dB (km^2)
Shallow	5–21	346
Mid-Depth	21–38	458
Deep	38–54	455

(2) Pingers

These instruments would be operated during survey operations to determine the exact position of the nodes after they have been placed on the seafloor. One device, the Scout Ultra-Short Baseline Transceiver, operates at frequencies between 33 and 55 kHz with a source level of 188 dB re 1 μPa at 1 m. The other device, an LR Ultra-Short Baseline Transponder, operates at a frequency of 35–50 kHz at a source level of 185 dB re 1 μPa at 1 m. With respect to these two sources, Apache provided and NMFS relied on the distances to the Level B harassment thresholds estimated for the ''louder'' of the two; therefore, assuming a simple spreading loss of 20 log R (where R is radius), with a source level of 188 dB the distance to the 190, 180, and 160 dB isopleths would be 1, 3, and 25 m, respectively. Another technique for locating the nodes in deeper water is called Ocean Bottom Receiver Location, which uses a small volume air gun (10 in^3) firing parallel to the node line.

(3) Detonations of Explosives

The onshore areas would be surveyed using explosives as the sound source. Seismic surveys on land use ''shot holes'' that are drilled every 50 m along source lines and are oriented perpendicular to the receiver lines and parallel to the coast. At each source location, Apache would drill to the prescribed hole depth of approximately 10 m and load it with 4 kg of explosives. The hole would then capped with a ''smart cap'' that makes it impossible to detonate the explosive without the proper detonator. During a 2D test program conducted in March 2011, Apache deployed acoustic recorders to measure underwater sound produced by land-based explosives; however, the resulting measurements were inconclusive and Apache conducted a sound source verification (SSV) study in September 2011 to characterize the underwater received sound levels and determine if marine mammal monitoring would be required for future onshore operations. The SSV study found that in-water noise generated from explosive detonations onshore did not rise to a level that would result in the harassment of marine mammals in the water.

Description of Marine Mammals in the Area of the Specified Activity

The marine mammal species under NMFS's jurisdiction that could occur near operations in Cook Inlet include three cetacean species, all odontocetes (toothed whales): beluga whale (*Delphinapterus leucas*), killer whale (*Orcinus orca*), and harbor porpoise (*Phocoena phocoena*), and two pinniped species: harbor seal (*Phoca vitulina richardsi*) and Steller sea lions (*Eumetopias jubatus*). The marine mammal species that is likely to be encountered most widely (in space and time) throughout the period of the planned surveys is the harbor seal.

Of the five marine mammal species likely to occur in the proposed marine survey area, only Cook Inlet beluga whales and Steller sea lions are listed as endangered under the ESA (Steller sea lions are listed as two distinct population segments (DPSs), an eastern and a western DPS; the relevant DPS in Cook Inlet is the western DPS). These species are also designated as ''depleted'' under the MMPA. Despite these designations, Cook Inlet beluga whales and the western DPS of Steller sea lions have not made significant progress towards recovery. The Cook Inlet population of beluga whales has been decreasing at a rate of 1.5 percent annually for nearly a decade (Allen and Angliss, 2010). With respect to Steller sea lions, results of aerial surveys conducted in 2008 (Fritz *et al.,* 2008) confirmed that the recent (2004–2008) overall trend in the western population of adult and juvenile Steller sea lions in Alaska is stable or possibly in decline; however, there continues to be considerable regional variability in recent trends. Pursuant to the ESA, critical habitat has been designated for Cook Inlet beluga whales and Steller sea lions. The proposed action falls within critical habitat designated in Cook Inlet for beluga whales, but is not within

critical habitat designated for Steller sea lions. The portion of beluga whale critical habitat—identified as Area 2 in the critical habitat designation—where the seismic survey will occur is located south of the Area 1 critical habitat where belugas are particularly vulnerable to impacts due to their high seasonal densities and the biological importance of the area for foraging, nursery, and predator avoidance. Area 2 is largely based on dispersed fall and winter feeding and transit areas in waters where whales typically appear in smaller densities or deeper waters (76 FR 20180, April 11, 2011).

Cetaceans

Beluga Whales—Cook Inlet beluga whales reside in Cook Inlet year-round although their distribution and density changes seasonally. Factors that are likely to influence beluga whale distribution within the inlet include prey availability, predation pressure, sea-ice cover, and other environmental factors, reproduction, sex and age class, and human activities (Rugh *et al.,* 2000; NMFS 2008). Seasonal movement and density patterns as well as site fidelity appear to be closely linked to prey availability, coinciding with seasonal salmon and eulachon concentrations (Moore *et al.,* 2000). For example, during spring and summer, beluga whales are generally concentrated near the warmer waters of river mouths where prey availability is high and predator occurrence in low (Huntington 2000; Moore *et al.,* 2000). During the winter (November to April), belugas disperse throughout the upper and mid-inlet areas, with animals found between Kalgin Island and Point Possession (Rugh *et al.,* 2000). During these months, there are generally fewer observations of beluga whales in the Anchorage and Knik Arm area (NMML 2004; Rugh *et al.,* 2004).

Beluga whales use several areas of the upper Cook Inlet for repeated summer and fall feeding. The primary hotspots for beluga feeding include the Big and Little Susitna rivers, Eagle Bay to Eklutna River, Ivan Slough, Theodore River, Lewis River, and Chickaloon River and Bay (NMFS 2008). Availability of prey species appears to be the most influential environmental variable affecting Cook Inlet beluga whale distribution and relative abundance (Moore *et al.* 2000). The patterns and timing of eulachon and salmon runs have a strong influence on beluga whale feeding behavior and their seasonal movements (Nemeth *et al.,* 2007; NMFS 2008). The presence of prey species may account for the seasonal changes in beluga group size and composition (Moore *et al.,* 2000). Aerial and vessel-based monitoring conducted by Apache during the March 2011 2D test program in Cook Inlet reported 33 beluga sightings. One of the sightings was of a large group (~25 individuals on March 27, 2011) of feeding/milling belugas near the mouth of the Drift River. Also on March 27, 2011, PSOs onboard the *M/V Dreamcatcher* reported a group of seven beluga whales approximately 0.5 nm from the vessel. Land-based PSOs were able to observe this group of beluga whales for approximately 2.5 hrs. A single beluga whale was observed near the mouth of the Drift River by the aerial-based monitors on March 28, 2011, prior to the seismic ramp-up period. If belugas are present during the late summer/early fall, they are more likely to occur in shallow areas near river mouths in upper Cook Inlet. For example, no beluga whales were sighted in Trading Bay during the SSV conducted in September 2011 because during this time of year they are more likely to be in the upper regions of Cook Inlet. Expected densities were calculated from the annual aerial surveys conducted by NMFS between 2000 and 2011 (Rugh *et al.* 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007; Shelden *et al.* 2008, 2009, 2010; Hobbs *et al.* 2011). Those densities are presented below in Table 5.

Killer Whales—In general, killer whales are rare in upper Cook Inlet, where transient killer whales are known to feed on beluga whales and resident killer whales are known to feed on anadromous fish (Shelden *et al.,* 2003). The availability of these prey species largely determines the likeliest times for killer whales to be in the area. Between 1993 and 2004, 23 sightings of killer whales were reported in the lower Cook Inlet during aerial surveys by Rugh *et al.* (2005). Surveys conducted over a span of 20 years by Shelden *et al.* (2003) reported 11 sightings in upper Cook Inlet between Turnagain Arm, Susitna Flats, and Knik Arm. No killer whales were spotted during recent surveys by Funk *et al.* (2005), Ireland *et al.* (2005), Brueggeman *et al.* (2007a, 2007b, 2008), or Prevel Ramos *et al.* (2006, 2008). Eleven killer whale strandings have been reported in Turnagain Arm, six in May 1991 and five in August 1993. Therefore, very few killer whales, if any, are expected to approach or be in the vicinity of the action area.

Harbor Porpoise—The most recent estimated density for harbor porpoises in Cook Inlet is 7.2 per 1,000 km^2 (Dahlheim *et al.,* 2000) indicating that only a small number use Cook Inlet. Harbor porpoise have been reported in lower Cook Inlet from Cape Douglas to the West Foreland, Kachemak Bay, and offshore (Rugh *et al.,* 2005). Small numbers of harbor porpoises have been consistently reported in upper Cook Inlet between April and October, except for a recent survey that recorded higher than usual numbers. Prevel Ramos *et al.* (2008) reported 17 harbor porpoises from spring to fall 2006, while other studies reported 14 in the spring of 2007 (Brueggeman *et al.* 2007) and 12 in the fall (Brueggeman *et al.* 2008). During the spring and fall of 2007, 129 harbor porpoises were reported between Granite Point and the Susitna River; however, the reason for the increase in numbers of harbor porpoise in the upper Cook Inlet remains unclear and the disparity with the result of past sightings suggests that it may be an anomaly. The spike in reported sightings occurred in July, which was followed by sightings of 79 harbor porpoises in August, 78 in September, and 59 in October, 2007. It is important to note that the number of porpoises counted more than once was unknown, which suggests that the actual numbers are likely smaller than those reported. In addition, recent passive acoustic research in Cook Inlet by the Alaska Department of Fish and Game and the National Marine Mammal Laboratory have indicated that harbor porpoises occur in the area more frequently than previously thought, particularly in the West Foreland area in the spring (NMFS 2011); however overall numbers are still unknown at this time.

Pinnipeds

Two species of pinnipeds may be encountered in Cook Inlet: harbor seal and Steller sea lion.

Harbor Seals—Harbor seals inhabit the coastal and estuarine waters of Cook Inlet. In general, harbor seals are more abundant in lower Cook Inlet than in upper Cook Inlet, but they do occur in the upper inlet throughout most of the year (Rugh *et al.* 2005). Harbor seals are non-migratory; their movements are associated with tides, weather, season, food availability, and reproduction. The major haulout sites for harbor seals are located in lower Cook Inlet and their presence in the upper inlet coincides with seasonal runs of prey species. For example, harbor seals are commonly observed along the Susitna River and other tributaries along upper Cook Inlet during the eulachon and salmon migrations (NMFS 2003). During aerial surveys of upper Cook Inlet in 2001, 2002, and 2003, harbor seals were observed 24 to 96 km south-southwest of Anchorage at the Chickaloon, Little Susitna, Susitna, Ivan, McArthur, and

Beluga Rivers (Rugh *et al.,* 2005). During the 2D test program in March 2011, two harbor seals were observed by vessel-based PSOs. On March 25, 2011, one harbor seal was observed approximately 400 m from the *M/V Miss Diane.* At the time of the observation, the vessel was operating the positioning pinger and PSOs instructed the operator to implement a shut-down. The pinger was shut down for 30 minutes while PSO monitored the area and re-started the device when the animal was not sighted again during the 30 minute site clearing protocol. No unusual behaviors were reported during the time the animal was observed. The second harbor seal was observed on March 26, 2011, by vessel-based PSO onboard the *M/V Dreamcatcher* approximately 4260 m from the source vessel, which was operating the 10 in^3 air gun at the time. The animal was well outside of the 160 dB zone (330 m for the 10 in^3 air gun) and no unusual behaviors were observed. Many harbor seals were observed during the 3D seismic survey conducted under the April 2012 IHA, especially when survey operations were conducted close to shore. NMFS and Apache do not anticipate encountering large haulouts of seals in Area 2—the closest haulout site to the action area is located on Kalgin Island, which is approximately 22 km away from the McArthur River—but we do expect to see curious individual harbor seals; especially during large fish runs in the various rivers draining into Cook Inlet.

Steller Sea Lion—Two separate stocks of Steller sea lions are recognized within U.S. waters: an eastern U.S. stock, which includes animals east of Cape Suckling, Alaska; and a western U.S. stock, which includes animals west of Cape Suckling (NMFS 2008). Individuals in Cook Inlet are considered part of the western U.S. stock, which is listed as endangered under the ESA. Steller sea lions primarily occur in lower, rather than upper Cook Inlet and are rarely sighted north of Nikiski on the Kenai Peninsula. Haul-outs and rookeries are located near Cook Inlet at Gore Point, Elizabeth Island, Perl Island, and Chugach Island (NMFS 2008). No Steller seal lion haul-outs or rookeries are located in the vicinity of the proposed seismic survey. Furthermore, no sightings of Steller sea lions were reported by Apache during the 2D test program in March 2011. During the 3D seismic survey, one Steller sea lion was observed from the *M/V Dreamcatcher* on August 18, 2012, during a period when the air guns were not active. Although Apache has requested takes of Steller sea lions, Steller sea lions would be rare in the action area during seismic survey operations.

Apache's application contains information on the status, distribution, seasonal distribution, and abundance of each of the species under NMFS jurisdiction mentioned in this document. Please refer to the application for that information (see **ADDRESSES**). Additional information can also be found in the NMFS Stock Assessment Reports (SAR). The Alaska 2011 SAR is available at: *http://www.nmfs.noaa.gov/pr/pdfs/sars/ak2011.pdf.*

Potential Effects of the Specified Activity on Marine Mammals

Operating active acoustic sources, such as air gun arrays, has the potential for adverse effects on marine mammals.

Potential Effects of Air Gun Sounds on Marine Mammals

The effects of sounds from air gun pulses might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, and temporary or permanent hearing impairment or non-auditory effects (Richardson *et al.* 1995). As outlined in previous NMFS documents, the effects of noise on marine mammals are highly variable, often depending on species and contextual factors, and can be categorized as follows (based on Richardson *et al.* 1995):

(1) Tolerance

Numerous studies have shown that pulsed sounds from air guns are often readily detectable in the water at distances of many kilometers. Numerous studies have also shown that marine mammals at distances more than a few kilometers from operating survey vessels often show no apparent response. That is often true even in cases when the pulsed sounds must be readily audible to the animals based on measured received levels and the hearing sensitivity of that mammal group. In general, pinnipeds and small odontocetes (toothed whales) seem to be more tolerant of exposure to air gun pulses than baleen whales. Although various toothed whales, and (less frequently) pinnipeds have been shown to react behaviorally to air gun pulses under some conditions, at other times, mammals of both types have shown no overt reactions. For example, the available evidence also indicates that Cook Inlet beluga whales are less impacted behaviorally by anthropogenic sounds compared to marine mammals in more pristine acoustic environments (e.g., the Beaufort Sea) given the Cook Inlet population's greater experience with anthropogenic sounds.

(2) Behavioral Disturbance

Marine mammals may behaviorally react to sound when exposed to anthropogenic noise. These behavioral reactions are often shown as: Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where noise sources are located; and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries).

The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. However, the consequences of behavioral modification have the potential to be biologically significant if the change affects growth, survival, or reproduction. Examples of significant behavioral modifications include:

- Drastic change in diving/surfacing patterns (such as those thought to be causing beaked whale stranding due to exposure to military mid-frequency tactical sonar);
- Habitat abandonment due to loss of desirable acoustic environment; and
- Cessation of feeding or social interaction.

The onset of behavioral disturbance from anthropogenic noise depends on both external factors (characteristics of noise sources and their paths) and the receiving animals (hearing, motivation, experience, demography) and is also difficult to predict (Southall *et al.* 2007).

Currently NMFS uses a received level of 160 dB re 1 μPa to estimate the onset threshold for marine mammal behavioral harassment for impulse noises (such as air gun pulses). As explained below, NMFS has determined that use of this threshold is appropriate for Apache's IHA considering the scientific literature pertaining to this issue and the evidence specific to the marine mammal species and populations in question.

(3) Masking

Marine mammals use acoustic signals for a variety of purposes, which differ among species, but include communication between individuals, navigation, foraging, reproduction, and learning about their environment (Erbe and Farmer, 2000; Tyack, 2000). Masking, or auditory interference,

generally occurs when sounds in the environment are louder than, and of a similar frequency as, auditory signals an animal is trying to receive. Masking is a phenomenon that affects animals that are trying to receive acoustic information about their environment, including sounds from other members of their species, predators, prey, and sounds that allow them to orient in their environment. Masking these acoustic signals can disturb the behavior of individual animals, groups of animals, or entire populations.

Masking occurs when noise and signals (that the animal utilizes) overlap at both spectral and temporal scales. For the air gun noise generated from the proposed seismic surveys, noise will consist of low frequency (under 500 Hz) pulses with extremely short durations (less than one second). Lower frequency man-made noises are more likely to affect detection of communication calls and other potentially important natural sounds such as surf and prey noise. There is little concern regarding masking near the noise source due to the brief duration of these pulses and relatively longer silence between air gun shots (approximately 12 seconds). However, at long distances (over tens of kilometers away), due to multipath propagation and reverberation, the durations of air gun pulses can be ''stretched'' to seconds with long decays (Madsen *et al.* 2006), although the intensity of the noise is greatly reduced.

This could affect communication signals used by low frequency mysticetes when they occur near the noise band and thus reduce the communication space of animals (e.g., Clark *et al.* 2009) and cause increased stress levels (e.g., Foote *et al.* 2004; Holt *et al.* 2009); however, no baleen whales are expected to occur within the action area. Marine mammals are thought to be able to compensate for masking by adjusting their acoustic behavior by shifting call frequencies, and/or increasing call volume and vocalization rates. For example, blue whales are found to increase call rates when exposed to seismic survey noise in the St. Lawrence Estuary (Di Iorio and Clark 2010). The North Atlantic right whales (*Eubalaena glacialis*) exposed to high shipping noise increase call frequency (Parks *et al.* 2007), while some humpback whales respond to low-frequency active sonar playbacks by increasing song length (Miller *el al.* 2000).

(4) Hearing Impairment

Marine mammals exposed to high intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak *et al.* 1999; Schlundt *et al.* 2000; Finneran *et al.* 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold will recover over time (Southall *et al.* 2007). Just like masking, marine mammals that suffer from PTS or TTS could have reduced fitness in survival and reproduction, either permanently or temporarily. Repeated noise exposure that leads to TTS could cause PTS. For transient sounds, the sound level necessary to cause TTS is inversely related to the duration of the sound.

Researchers have studied TTS in certain captive odontocetes and pinnipeds exposed to strong sounds (reviewed in Southall *et al.,* 2007). However, there has been no specific documentation of TTS let alone permanent hearing damage, i.e., permanent threshold shift (PTS), in free-ranging marine mammals exposed to sequences of airgun pulses during realistic field conditions.

Temporary Threshold Shift—TTS is the mildest form of hearing impairment that can occur during exposure to a strong sound (Kryter, 1985). While experiencing TTS, the hearing threshold rises and a sound must be stronger in order to be heard. At least in terrestrial mammals, TTS can last from minutes or hours to (in cases of strong TTS) days. For sound exposures at or somewhat above the TTS threshold, hearing sensitivity in both terrestrial and marine mammals recovers rapidly after exposure to the noise ends. Few data on sound levels and durations necessary to elicit mild TTS have been obtained for marine mammals, and none of the published data concern TTS elicited by exposure to multiple pulses of sound. Available data on TTS in marine mammals are summarized in Southall *et al.* (2007).

To avoid the potential for injury, NMFS (1995, 2000) concluded that cetaceans and pinnipeds should not be exposed to pulsed underwater noise at received levels exceeding 180 and 190 dB re 1 μPa (rms), respectively. The 180 and 190 dB (rms) criteria are not considered to be the levels above which TTS might occur. Rather, they are the received levels above which, in the view of a panel of bioacoustics specialists convened by NMFS before TTS measurements for marine mammals started to become available, one could not be certain that there would be no injurious effects, auditory or otherwise, to marine mammals. NMFS also assumes that cetaceans and pinnipeds exposed to levels exceeding 160 dB re 1 μPa (rms) may experience Level B harassment.

For toothed whales, researchers have derived TTS information for odontocetes from studies on the bottlenose dolphin and beluga. The experiments show that exposure to a single impulse at a received level of 207 kPa (or 30 psi, p-p), which is equivalent to 228 dB re 1 Pa (p-p), resulted in a 7 and 6 dB TTS in the beluga whale at 0.4 and 30 kHz, respectively. Thresholds returned to within 2 dB of the pre-exposure level within 4 minutes of the exposure (Finneran *et al.,* 2002). For the one harbor porpoise tested, the received level of airgun sound that elicited onset of TTS was lower (Lucke *et al.,* 2009). If these results from a single animal are representative, it is inappropriate to assume that onset of TTS occurs at similar received levels in all odontocetes (*cf.* Southall *et al.,* 2007). Some cetaceans apparently can incur TTS at considerably lower sound exposures than are necessary to elicit TTS in the beluga or bottlenose dolphin.

In pinnipeds, researchers have not measured TTS thresholds associated with exposure to brief pulses (single or multiple) of underwater sound. Initial evidence from more prolonged (non-pulse) exposures suggested that some pinnipeds (harbor seals in particular) incur TTS at somewhat lower received levels than do small odontocetes exposed for similar durations (Kastak *et al.,* 1999, 2005; Ketten *et al.,* 2001). The TTS threshold for pulsed sounds has been indirectly estimated as being an SEL of approximately 171 dB re 1 $\mu Pa^2 \cdot s$ (Southall *et al.,* 2007) which would be equivalent to a single pulse with a received level of approximately 181 to 186 dB re 1 μPa (rms), or a series of pulses for which the highest rms values are a few dB lower. Corresponding values for California sea lions and northern elephant seals are likely to be higher (Kastak *et al.,* 2005).

No cases of TTS are expected as a result of Apache's proposed activities given the strong likelihood that marine mammals would avoid the approaching air guns (or vessel) before being exposed to levels high enough for there to be any possibility of TTS, and the mitigation measures proposed to be implemented during the survey described later in this document.

Permanent Threshold Shift—When PTS occurs, there is physical damage to the sound receptors in the ear. In severe cases, there can be total or partial deafness, whereas in other cases, the animal has an impaired ability to hear sounds in specific frequency ranges

(Kryter, 1985). There is no specific evidence that exposure to pulses of airgun sound can cause PTS in any marine mammal, even with large arrays of airguns. However, given the possibility that mammals close to an airgun array might incur at least mild TTS, there has been further speculation about the possibility that some individuals occurring very close to airguns might incur PTS (e.g., Richardson *et al.,* 1995; Gedamke *et al.,* 2008). Single or occasional occurrences of mild TTS are not indicative of permanent auditory damage, but repeated or (in some cases) single exposures to a level well above that causing TTS onset might elicit PTS.

Relationships between TTS and PTS thresholds have not been studied in marine mammals, but are assumed to be similar to those in humans and other terrestrial mammals (Southall *et al.,* 2007). PTS might occur at a received sound level at least several dBs above that inducing mild TTS if the animal were exposed to strong sound pulses with rapid rise times. Based on data from terrestrial mammals, a precautionary assumption is that the PTS threshold for impulse sounds (such as airgun pulses as received close to the source) is at least 6 dB higher than the TTS threshold on a peak-pressure basis, and probably greater than 6 dB (Southall *et al.,* 2007).

Given the higher level of sound necessary to cause PTS as compared with TTS, it is considerably less likely that PTS would occur during the proposed seismic survey in Cook Inlet. Cetaceans generally avoid the immediate area around operating seismic vessels, as do some other marine mammals. Some pinnipeds show avoidance reactions to airguns, but their avoidance reactions are generally not as strong or consistent as those of cetaceans, and occasionally they seem to be attracted to operating seismic vessels (NMFS, 2010).

(5) Non-Auditory Physical Effects

Non-auditory physical effects might occur in marine mammals exposed to strong underwater pulsed sound. Possible types of non-auditory physiological effects or injuries that theoretically might occur in mammals close to a strong sound source include stress, neurological effects, bubble formation, and other types of organ or tissue damage. Some marine mammal species (i.e., beaked whales) may be especially susceptible to injury and/or stranding when exposed to strong pulsed sounds. However, there is no definitive evidence that any of these effects occur even for marine mammals in close proximity to large arrays of air guns, and beaked whales do not occur in the proposed project area. In addition, marine mammals that show behavioral avoidance of seismic vessels, including most baleen whales, some odontocetes (including belugas), and some pinnipeds, are especially unlikely to incur non-auditory impairment or other physical effects. The distances to the 180 and 190 dB thresholds for the air gun array proposed to be used by Apache are provided above in Tables 1 and 2.

Therefore, it is unlikely that such effects would occur during Apache's proposed surveys given the brief duration of exposure and the planned monitoring and mitigation measures described later in this document.

(6) Stranding and Mortality

Marine mammals close to underwater detonations of high explosive can be killed or severely injured, and the auditory organs are especially susceptible to injury (Ketten *et al.* 1993; Ketten 1995). Air gun pulses are less energetic and their peak amplitudes have slower rise times. To date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to air gun pulses, even in the case of large air gun arrays.

However, in numerous past IHA notices for seismic surveys, commenters have referenced two stranding events allegedly associated with seismic activities, one off Baja California and a second off Brazil. NMFS has addressed this concern several times, including in the **Federal Register** notice announcing the IHA for Apache's first seismic survey in 2012, and, without new information, does not believe that this issue warrants further discussion. For information relevant to strandings of marine mammals, readers are encouraged to review NMFS' response to comments on this matter found in 69 FR 74905 (December 14, 2004), 71 FR 43112 (July 31, 2006), 71 FR 50027 (August 24, 2006), 71 FR 49418 (August 23, 2006), and 77 FR 27720 (May 11, 2012).

It should be noted that strandings related to sound exposure have not been recorded for marine mammal species in Cook Inlet. Beluga whale strandings in Cook Inlet are not uncommon; however, these events often coincide with extreme tidal fluctuations (''spring tides'') or killer whale sightings (Shelden *et al.,* 2003). For example, in August 2012, a group of Cook Inlet beluga whales stranded in the mud flats of Turnagain Arm during low tide and were able to swim free with the flood tide. No strandings or marine mammals in distress were observed during the 2D test survey conducted by Apache in March 2011 and none were reported by Cook Inlet inhabitants. Furthermore, no strandings were reported during seismic survey operations conducted under the April 2012 IHA. As a result, NMFS does not expect any marine mammals will incur serious injury or mortality in Cook Inlet or strand as a result of the proposed seismic survey.

Potential Effects From Pingers on Marine Mammals

Active acoustic sources other than the airguns have been proposed for Apache's 2013 seismic survey in Cook Inlet. The specifications for the pingers (source levels and frequency ranges) were provided earlier in this document. In general, the potential effects of this equipment on marine mammals are similar to those from the airguns, except the magnitude of the impacts is expected to be much less due to the lower intensity of the source.

Potential Effects From Vessels and Vessel Noise on Marine Mammals

Vessel activity and noise associated with vessel activity will temporarily increase in the action area during Apache's seismic survey as a result of the operation of eight vessels. To minimize the effects of vessels and noise associated with vessel activity, Apache will follow NMFS' Marine Mammal Viewing Guidelines and Regulations and will alter heading or speed if a marine mammal gets too close to a vessel. In addition, vessels will be operating at slow speed (2–4 knots) when conducting surveys and in a purposeful manner to and from work sites in as direct a route as possible. Marine mammal monitoring observers and passive acoustic devices will alert vessel captains as animals are detected to ensure safe and effective measures are applied to avoid coming into direct contact with marine mammals. Therefore, NMFS neither anticipates nor authorizes takes of marine mammals from ship strikes.

Odontocetes, such as beluga whales, killer whales, and harbor porpoises, often show tolerance to vessel activity; however, they may react at long distances if they are confined by ice, shallow water, or were previously harassed by vessels (Richardson, 1995). Beluga whale response to vessel noise varies greatly from tolerance to extreme sensitivity depending on the activity of the whale and previous experience with vessels (Richardson, 1995). Reactions to vessels depends on whale activities and experience, habitat, boat type, and boat behavior (Richardson, 1995) and may

include behavioral responses, such as altered headings or avoidance (Blane and Jaakson, 1994; Erbe and Farmer, 2000); fast swimming; changes in vocalizations (Lesage *et al.,* 1999; Scheifele *et al.,* 2005); and changes in dive, surfacing, and respiration patterns.

There are few data published on pinniped responses to vessel activity, and most of the information is anecdotal (Richardson, 1995). Generally, sea lions in water show tolerance to close and frequently approaching vessels and sometimes show interest in fishing vessels. They are less tolerant when hauled out on land; however, they rarely react unless the vessel approaches within 100–200 m (330–660 ft; reviewed in Richardson, 1995).

The addition of eight vessels and noise due to vessel operations associated with the seismic survey would not be outside the present experience of marine mammals in Cook Inlet, although levels may increase locally. Given the large number of vessels in Cook Inlet and the apparent habituation to vessels by Cook Inlet beluga whales and the other marine mammals that may occur in the area, vessel activity and noise is not expected to have effects that could cause significant or long-term consequences for individual marine mammals or their populations.

Potential Effects From Aircraft Noise on Marine Mammals

Apache plans to utilize the crew helicopter to conduct aerial surveys near river mouths in order to identify locations or congregations of beluga whales and other marine mammals prior to the commencement of operations. The helicopter will not be used every day, but will be used for surveys near river mouths. Aerial surveys will fly at an altitude of 305 m (1,000 ft) when practicable and weather conditions permit. In the event of a marine mammal sighting, aircraft will try to maintain a radial distance of 457 m (1,500 ft) from the marine mammal(s). Aircraft will avoid approaching marine mammals from head-on, flying over or passing the shadow of the aircraft over the marine mammals.

Studies on the reactions of cetaceans to aircraft show little negative response (Richardson *et al.,* 1995). In general, reactions range from sudden dives and turns and are typically found to decrease if the animals are engaged in feeding or social behavior. Whales with calves or in confined waters may show more of a response. Generally there has been little or no evidence of marine mammals responding to aircraft overflights when altitudes are at or above 1,000 ft, based on three decades of flying experience in the Arctic (NMFS, unpublished data). Based on long-term studies that have been conducted on beluga whales in Cook Inlet since 1993, NMFS expect that there will be no effects of this activity on beluga whales or other cetaceans. No change in beluga swim directions or other noticeable reactions have been observed during the Cook Inlet aerial surveys flown from 600 to 800 ft. (e.g., Rugh *et al.,* 2000). By applying the operational requirements discussed above, sound levels underwater are not expected to reach NMFS' harassment thresholds.

The majority of observations of pinnipeds reacting to aircraft noise are associated with animals hauled out on land or ice. There are very little data describing the reactions of pinnipeds in water to aircraft (Richardson *et al.,* 1995). In the presence of aircraft, pinnipeds hauled out for pupping or molting generally became alert and then rushed or slipped (when on ice) into the water. Stampedes often result from this response and may increase pup mortality due to crushing or an increase rate of pup abandonment. The greatest reactions from hauled out pinnipeds were observed when low flying aircrafts passed directly above the animal(s) (Richardson *et al.,* 1995). Although noise associated with aircraft activity could cause hauled out pinnipeds to rush into the water, there are no known haul out sites in the vicinity of the survey site.

Therefore, the operation of aircraft during the seismic survey is not expected to have effects that could cause significant or long-term consequences for individual marine mammals or their populations. To minimize the noise generated by aircraft, Apache will follow NMFS' Marine Mammal Viewing Guidelines and Regulations found at *http://www.alaskafisheries.noaa.gov/protectedresources/mmv/guide.htm.*

Land-Based Explosives

The onshore component of the seismic survey involves the underground detonation of explosive devices to acquire seismic data on land. Because underwater sound levels associated with the land-based explosives were previously unknown, in September 2011, Apache conducted a SSV study, which found that marine mammals would not be exposed to underwater sound levels that exceed the NMFS injury or harassment thresholds.

Anticipated Effects on Marine Mammal Habitat

The primary potential impacts to marine mammal habitat and other marine species are associated with elevated sound levels produced by airguns and other active acoustic sources. However, other potential impacts to the surrounding habitat from physical disturbance are also possible and are discussed below.

Potential Impacts on Prey Species

With regard to fish as a prey source for cetaceans and pinnipeds, fish are known to hear and react to sounds and to use sound to communicate (Tavolga *et al.,* 1981) and possibly avoid predators (Wilson and Dill, 2002). Experiments have shown that fish can sense both the strength and direction of sound (Hawkins, 1981). Primary factors determining whether a fish can sense a sound signal, and potentially react to it, are the frequency of the signal and the strength of the signal in relation to the natural background noise level.

The level of sound at which a fish will react or alter its behavior is usually well above the detection level. Fish have been found to react to sounds when the sound level increased to about 20 dB above the detection level of 120 dB (Ona, 1988); however, the response threshold can depend on the time of year and the fish's physiological condition (Engas *et al.,* 1993). In general, fish react more strongly to pulses of sound rather than a continuous signal (Blaxter *et al.,* 1981), and a quicker alarm response is elicited when the sound signal intensity rises rapidly compared to sound rising more slowly to the same level.

Investigations of fish behavior in relation to vessel noise (Olsen *et al.,* 1983; Ona, 1988; Ona and Godo, 1990) have shown that fish react when the sound from the engines and propeller exceeds a certain level. Avoidance reactions have been observed in fish such as cod and herring when vessels approached close enough that received sound levels are 110 dB to 130 dB (Nakken, 1992; Olsen, 1979; Ona and Godo, 1990; Ona and Toresen, 1988). However, other researchers have found that fish such as polar cod, herring, and capeline are often attracted to vessels (apparently by the noise) and swim toward the vessel (Rostad *et al.,* 2006). Typical sound source levels of vessel noise in the audible range for fish are 150 dB to 170 dB (Richardson *et al.,* 1995).

Potential Impacts to the Benthic Environment

Apache's seismic survey requires the deployment of a submersible recording system in the inter-tidal and marine zones. An autonomous ''nodal'' (i.e., no cables) system would be placed on the seafloor by specific vessels in lines parallel to each other with a node line spacing of 402 m. Each nodal ''patch'' would have six to eight node lines parallel to each other. The lines generally run perpendicular to the shoreline. An entire patch would be placed on the seafloor prior to air gun activity. As the patches are surveyed, the node lines would be moved either side to side or inline to the next location. Placement and retrieval of the nodes may cause temporary and localized increases in turbidity on the seafloor. The substrate of Cook Inlet consists of glacial silt, clay, cobbles, pebbles, and sand (Sharma and Burrell, 1970). Sediments like sand and cobble dissipate quickly when suspended, but finer materials like clay and silt can create thicker plumes that may harm fish; however, the turbidity created by placing and removing nodes on the seafloor would settle to background levels within minutes after the cessation of activity.

In addition, seismic noise will radiate throughout the water column from air guns and pingers until is dissipates to background levels. No studies have demonstrated that seismic noise affects the life stages, condition, or amount of food resources (fish, invertebrates, eggs) used by marine mammals, except when exposed to sound levels within a few meters of the seismic source or in few very isolated cases. Where fish or invertebrates did respond to seismic noise, the effects were temporary and of short duration. Consequently, disturbance to fish species due to the activities associated with the seismic survey (i.e, placement and retrieval of nodes and noise from sound sources) would be short term and fish would be expected to return to their pre-disturbance behavior once seismic survey activities cease.

Based on the preceding discussion, the proposed activity is not expected to have any habitat-related effects that could cause significant or long-term consequences for individual marine mammals or their populations.

Proposed Mitigation

In order to issue an incidental take authorization under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

For the proposed seismic survey in Cook Inlet, Apache worked with NMFS and proposed the following mitigation measures to minimize the potential impacts to marine mammals in the project vicinity as a result of the survey activities.

Mitigation Measures Proposed in Apache's IHA Application

For the proposed mitigation measures, Apache listed the following protocols to be implemented during its seismic survey in Cook Inlet.

(1) Operation of Mitigation Air Gun at Night

Apache proposes to conduct both daytime and nighttime operations. Nighttime operations would only be initiated if a mitigation air gun (typically the 10 in^3) has been continuously operational from the time that PSO monitoring has ceased for the day. The mitigation airgun would operate on a longer duty cycle than the full airgun arrays, firing every 30–45 seconds. Seismic activity would not ramp up from an extended shut-down (i.e., when the airgun has been down with no activity for at least 10 minutes) during nighttime operations and survey activities would be suspended until the following day because dedicated PSOs would not be on duty and any unseen animals may be exposed to injurious levels of sound from the full array. At night, the vessel captain and crew would maintain lookout for marine mammals and would order the airgun(s) to be shut down if marine mammals are observed in or about to enter the established safety radii.

(2) Safety and Disturbance Zones

NMFS mitigation or shutdown ''safety radii'' for limiting marine mammal exposure to impulse sources typically correspond to the distances within which received sound levels are ≥180 dB_{rms} re 1 μPa for cetaceans and ≥190 dB_{rms} re 1 μPa for pinnipeds. These safety criteria are based on an assumption that SPLs received at levels lower than these will not injure these animals or impair their hearing abilities. Disturbance or behavioral effects to marine mammals from underwater sound may occur from exposure to sound at lower SPLs, at distances greater than the safety radii (Richardson *et al.,* 1995). The disturbance zone is defined as the area between the 180/190 dB threshold and the 160 dB threshold where NMFS has determined that harassment in the form of behavioral disturbance may occur.

The proposed survey would use airgun sources composed of two 2400 in^3 airguns, a single 440 in^3 airgun, and a single 10 in^3 airgun. Safety and disturbance radii for the sound levels produced by the planned airgun configurations and pinger have been estimated (see Table 4) and would be used for mitigation purposes during the seismic survey activities.

TABLE 4—ESTIMATED DISTANCES TO SOUND THRESHOLDS

Source	190 dB	180 dB	160 dB
Pinger	1 m	3 m	25 m
10 cui Airgun	10 m	33 m	330 m
440 cui Airgun	NA	NA	NA
2,400 cui airgun (nearshore)	0.51 km	1.42 km	6.41 km
2,400 cui airgun (offshore)	1.18 km	0.98 km	4.89 km

In addition to the marine mammal monitoring radii described above, pursuant to Alaska Department of Fish and Game restrictions, there would be a 1.6 km setback of sound source points from the mouths of any anadromous streams.

Apache also plans to use dedicated vessels to deploy and retrieve the nodal recording system. Sounds produced by the vessels are not expected to exceed 180 dB (rms). Therefore, mitigation related to acoustic impacts from these activities is not expected to be necessary.

(3) Speed and Course Alterations

If a marine mammal is detected outside the applicable safety radius and, based on its position and the relative motion, is likely to enter the safety radius, changes of the vessel's speed and/or direct course would be considered if this does not compromise operational safety. For marine seismic surveys using large arrays, course alterations are not typically possible. However, for the smaller air gun arrays planned during the proposed site surveys, such changes may be possible. After any such speed and/or course alteration is begun, the marine mammal activities and movements relative to the survey vessel would be closely monitored to ensure that the marine mammal does not approach within the safety radius. If the mammal appears likely to enter the safety radius, further mitigative actions would be taken, including a power down or shut down of the airgun(s).

(4) Power-Downs

A power-down for mitigation purposes is the immediate reduction in the number of operating airguns such that the radii of the 190 dB rms and 180 dB rms zones are decreased to the extent that an observed marine mammal(s) are not in the applicable safety zone of the full array. During a power-down, one air gun, typically the 10 in^3, continues firing. Operation of the 10 in^3 air gun decreases the safety radii to 10 m, 33 m, and 330 m for the 190 dB, 180 dB, and 160 dB, respectively. The continued operation of one airgun is intended to (a) alert marine mammals to the presence of the survey vessel in the area, and (b) retain the option of initiating a ramp up to full operations under poor visibility conditions.

The array would be immediately powered down whenever a marine mammal is sighted approaching close to or within the applicable safety zone of the full array, but is outside the applicable safety zone of the single mitigation airgun. Likewise, if a mammal is already within the safety zone when first detected, the airguns would be powered down immediately. If a marine mammal is sighted within or about to enter the applicable safety zone of the single mitigation airgun, it too would be shut down (see following section).

Following a power-down, operation of the full airgun array would not resume until the marine mammal has cleared the safety zone. The animal would be considered to have cleared the safety zone if it:

- Is visually observed to have left the safety zone of the full array, or
- Has not been seen within the zone for 15 min in the case of pinnipeds or small odontocetes, or
- Has not been seen within the zone for 30 min in the case of large odontocetes.

(5) Shut-Downs

The operating airgun(s) would be shut down completely if a marine mammal approaches or enters the safety radius and a power-down is not practical or adequate to reduce exposure to less than 190 or 180 dB rms, as appropriate. In most cases, this means the mitigation airgun would be shut down completely if a marine mammal approaches or enters the estimated safety radius around the single 10 in^3 air gun while it is operating during a power dow090Airgun activity would not resume until the marine mammal has cleared the safety radius. The animal would be considered to have cleared the safety radius as described above under power down procedures.

(6) Ramp-Ups

A ramp-up of an airgun array provides a gradual increase in sound levels, and involves a step-wise increase in the number and total volume of air guns firing until the full volume is achieved. The purpose of a ramp-up (or ''soft start'') is to ''warn'' cetaceans and pinnipeds in the vicinity of the airguns and to provide the time for them to leave the area and thus avoid any potential injury or impairment of their hearing abilities.

During the proposed seismic survey, the seismic operator will ramp up the airgun array slowly. NMFS requires the rate of ramp-up to be no more than 6 dB per 5-minute period. Ramp-up is used at the start of airgun operations, after a power- or shut-down, and after any period of greater than 10 minutes in duration without airgun operations (i.e., extended shutdown).

A full ramp-up after a shut down will not begin until there has been a minimum of 30 minutes of observation of the safety zone by PSOs to assure that no marine mammals are present. The entire safety zone must be visible during the 30-minute lead-in to a full ramp up. If the entire safety zone is not visible, then ramp-up from a cold start cannot begin. If a marine mammal(s) is sighted within the safety zone during the 30-minute watch prior to ramp-up, ramp-up will be delayed until the marine mammal(s) is sighted outside of the safety zone or the animal(s) is not sighted for at least 15–30 minutes: 15 minutes for small odontocetes and pinnipeds (e.g. harbor porpoises, harbor seals, and Steller sea lions), or 30 minutes for large odontocetes (e.g., killer whales and beluga whales).

(7) Shut-Downs for Aggregations of Whales and Beluga Cow-Calf Pairs

The following additional protective measures beluga whale cow-calf pairs and aggregations of whales are proposed. Specifically, a 160-dB vessel monitoring zone would be established and monitored in Cook Inlet during all seismic surveys. Whenever an aggregation of beluga whales or killer whales (five or more whales of any age/sex class that appear to be engaged in a non-migratory, significant biological behavior (e.g., feeding, socializing)), or beluga whale cow-calf pairs are observed approaching the 160-dB safety zone around the survey operations, the survey activity would not commence or would shut down, until they are no longer present within the 160-dB safety zone of seismic surveying operations.

Additional Mitigation Measures Proposed by NMFS

Furthermore, NMFS proposes the following measures be included in the IHA, if issued:

(1) All vessels should reduce speed when within 300 yards (274 m) of whales, and those vessels capable of steering around such groups should do so. Vessels may not be operated in such a way as to separate members of a group of whales from other members of the group;

(2) Avoid multiple changes in direction and speed when within 300 yards (274 m) of whales; and

(3) When weather conditions require, such as when visibility drops, support vessels must adjust speed (increase or decrease) and direction accordingly to avoid the likelihood of injury to whales.

Mitigation Measures Considered But Not Proposed

NMFS considered whether time/area restrictions were warranted. NMFS has preliminary determined that such restrictions are not necessary or practicable here. Beluga whales remain in Cook Inlet year-round, but demonstrate seasonal movement within the Inlet; in the summer and fall, they concentrate in upper Cook Inlet's rivers and bays, but tend to disperse offshore and move to mid-Inlet in winter (Hobbs *et al.,* 2005). The available information indicates that in the winter months belugas are dispersed in deeper waters in mid-Inlet past Kalgin Island, with occasional forays into the upper inlet, including the upper ends of Knik and Turnagain Arms. Their winter

distribution does not appear to be associated with river mouths, as it is during the warmer months. The spatial dispersal and diversity of winter prey are likely to influence the wider beluga winter range throughout the mid-Inlet. Apache now expects to mobilize crews and equipment for its seismic survey in January 2013, which would coincide with the time of year when belugas are dispersed offshore in the mid-Inlet and away from river mouths. In the spring, beluga whales are regularly sighted in the upper Inlet beginning in late April or early May, coinciding with eulachon runs in the Susitna River and Twenty Mile River in Turnagain Arm, and well outside of the area where Apache will be conducting seismic surveys. Therefore, NMFS believes that the timing and location of the seismic survey, as proposed, will avoid areas and seasons that overlap with important beluga whale behavioral patterns.

NMFS also considered whether to require time area restrictions for areas identified as home ranges during August through March for 14 satellite-tracked beluga whales in Hobbs *et al.,* 2005. NMFS has preliminarily determined not to require time/area restrictions for these areas within the phase 2 survey area. The areas in question within phase 2 are relatively large areas in which belugas are dispersed. In addition, data for 14 tracked belugas does not establish that belugas will not appear in other areas—particularly during the periods of the year when belugas are more dispersed in Cook Inlet. Time/area restrictions for these areas thus would not yield a material benefit for the species. Such restrictions also are not practicable given the applicant's need to survey the areas in question and the need for operational flexibility given weather conditions, real-time adjustment of operations to avoid marine mammals and other factors.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth ''requirements pertaining to the monitoring and reporting of such taking''. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for ITAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Monitoring Measures Proposed in Apache's IHA Application

The monitoring plan proposed by Apache can be found in section 13 of the IHA application. The plan may be modified or supplemented based on comments or new information received from the public during the public comment period. A summary of the primary components of the plan follows.

(1) Visual Vessel-Based Monitoring

Vessel-based monitoring for marine mammals would be done by experienced PSOs throughout the period of marine survey activities. PSOs would monitor the occurrence and behavior of marine mammals near the survey vessel during all daylight periods during operation and during most daylight periods when airgun operations are not occurring. PSO duties would include watching for and identifying marine mammals, recording their numbers, distances, and reactions to the survey operations, and documenting ''take by harassment'' as defined by NMFS.

A sufficient number of PSOs would be required onboard the survey vessel to meet the following criteria: (1) 100 percent monitoring coverage during all periods of survey operations in daylight; (2) maximum of 4 consecutive hours on watch per PSO; and (3) maximum of 12 hours of watch time per day per PSO.

PSO teams would consist of experienced field biologists. An experienced field crew leader would supervise the PSO team onboard the survey vessel. Apache currently plans to have PSOs aboard the three vessels: the two source vessels (*M/V Peregrine Falcon* and *M/V Arctic Wolf*) and one support vessel (*M/V Dreamcatcher*). Two PSOs would be on the source vessels and two PSOs would be on the support vessel to observe the safety, power down, and shut down areas. When marine mammals are about to enter or are sighted within designated safety zones, airgun or pinger operations would be powered down (when applicable) or shut down immediately. The vessel-based observers would watch for marine mammals during all periods when sound sources are in operation and for a minimum of 30 minutes prior to the start of airgun or pinger operations after an extended shut down.

Crew leaders and most other biologists serving as observers would be individuals with experience as observers during seismic surveys in Alaska or other areas in recent years.

The observer(s) would watch for marine mammals from the best available vantage point on the source and support vessels, typically the flying bridge. The observer(s) would scan systematically with the unaided eye and 7×50 reticle binoculars. Laser range finders would be available to assist with estimating distance. Personnel on the bridge would assist the observer(s) in watching for marine mammals.

All observations would be recorded in a standardized format. Data would be entered into a custom database using a notebook computer. The accuracy of the data would be verified by computerized validity data checks as the data are entered and by subsequent manual checks of the database. These procedures would allow for initial summaries of the data to be prepared during and shortly after the completion of the field program, and would facilitate transfer of the data to statistical, geographical, or other programs for future processing and achieving. When a mammal sighting is made, the following information about the sighting would be recorded:

(A) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from the PSO, apparent reaction to activities (e.g., none, avoidance, approach, paralleling, etc.),

closest point of approach, and behavioral pace;

(B) Time, location, speed, activity of the vessel, sea state, ice cover, visibility, and sun glare; and

(C) The positions of other vessel(s) in the vicinity of the PSO location.

The ship's position, speed of support vessels, and water temperature, water depth, sea state, ice cover, visibility, and sun glare would also be recorded at the start and end of each observation watch, every 30 minutes during a watch, and whenever there is a change in any of those variables.

(2) Visual Shore-Based Monitoring

In addition to the vessel-based PSOs, Apache proposes to utilize a shore-based station to visually monitor for marine mammals. The shore-based station would follow all safety procedures, including bear safety. The location of the shore-based station would need to be sufficiently high to observe marine mammals; the PSOs would be equipped with pedestal mounted ''big eye'' (20x110) binoculars. The shore-based PSOs would scan the area prior to, during, and after the air gun operations, and would be in contact with the vessel-based PSOs via radio to communicate sightings of marine mammals approaching or within the project area.

(3) Aerial-Based Monitoring

When survey operations occur near a river mouth, Apache will utilize the crew helicopter to conduct aerial surveys near river mouths prior to the commencement of airgun operations in order to identify locations where beluga whales congregate. The helicopter may also be used at other times. The helicopter would not be used every day, but will be used when survey operations occur near a river mouth. The types of helicopters currently planned for use by Apache include a Bell 407, Bell UH1B, and ASB3. Weather and scheduling permitting, aerial surveys would fly at an altitude of 305 m (1,000 ft). In the event of a marine mammal sighting, aircraft would attempt to maintain a radial distance of 457 m (1,500 ft) from the marine mammal(s). Aircraft would avoid approaching marine mammals from head-on, flying over or passing the shadow of the aircraft over the marine mammal(s). By following these operational requirements, sound levels underwater are not expected to meet or exceed NMFS harassment thresholds (Richardson *et al.,* 1995; Blackwell *et al.,* 2002).

(4) Acoustic Monitoring

To further enhance detection of cetaceans, Apache proposes to deploy passive acoustic monitoring (PAM) devices during the seismic survey. Apache anticipates utilizing the same system that was deployed under the April 2012 IHA, which involved an over-the-side hydrophone floating from the M/V *Dreamcatcher.* Apache would continue to use this system until a better mooring system for the PAM buoys is developed. The PAM operators would use specialized real-time detection software and audio playback to detect marine mammal sounds. If the PAM operators detect marine mammals, Apache would initiate a temporary shut-down of the airgun arrays to avoid takes. Following a shut-down, the airguns may be restarted in accordance with the ramp-up procedure described earlier.

Based on data collected from Apache during its survey operations conducted under the April 2012 IHA, NMFS believes that the foregoing monitoring measures will allow Apache to identify animals nearing or entering the 160 db zone with a reasonably high degree of accuracy.

Reporting Measures

(1) Field Reports

During the proposed survey program, the PSOs would prepare a report each day or at such other interval as the IHA (if issued), or Apache may require, summarizing the recent results of the monitoring program. The field reports would summarize the species and numbers of marine mammals sighted. These reports would be provided to NMFS and to the survey operators on a weekly basis. At the end of each month, a summary of the weekly reports would be submitted to NMFS.

(2) Technical Report

The results of Apache's 2013 monitoring program, including estimates of ''take'' by harassment (based on presence in the 160 dB harassment zone), would be presented in the ''90-day'' and Final Technical reports. The Technical Report would include:

(a) Summaries of monitoring effort (e.g., total hours, total distances, and marine mammal distribution through the study period, accounting for sea state and other factors affecting visibility and detectability of marine mammals);

(b) Analyses of the effects of various factors influencing detectability of marine mammals (e.g., sea state, number of observers, and fog/glare);

(c) Species composition, occurrence, and distribution of marine mammal sightings, including date, water depth, numbers, age/size/gender categories (if determinable), group sizes, and ice cover;

(d) Analyses of the effects of survey operations;

- Sighting rates of marine mammals during periods with and without seismic survey activities (and other variables that could affect detectability), such as:
- Initial sighting distances versus survey activity state;
- Closest point of approach versus survey activity state;
- Observed behaviors and types of movements versus survey activity state;
- Numbers of sightings/individuals seen versus survey activity state;
- Distribution around the source vessels versus survey activity state; and
- Estimates of take by harassment based on presence in the 160 dB disturbance zone.

(3) Comprehensive Report

Following the survey season, a comprehensive report describing the vessel-based, shore-based, aerial-based, and acoustic monitoring programs would be prepared. The comprehensive report would describe the methods, results, conclusions and limitations of each of the individual data sets in detail. The report would also integrate (to the extent possible) the studies into a broad based assessment of industry activities, and other activities that occur in Cook Inlet, and their impacts on marine mammals. The report would help to establish long-term data sets that can assist with the evaluation of changes in the Cook Inlet ecosystem. The report would attempt to provide a regional synthesis of available data on industry activity in this part of Alaska that may influence marine mammal density, distribution and behavior.

(4) Notification of Injured or Dead Marine Mammals

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as an injury (Level A harassment), serious injury or mortality (e.g., ship-strike, gear interaction, and/or entanglement), Apache would immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the Alaska Regional Stranding Coordinators. The report would include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved;
- Vessel's speed during and leading up to the incident;
- Description of the incident;
- Status of all sound source use in the 24 hours preceding the incident;
- Water depth;
- Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with Apache to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Apache would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

In the event that Apache discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), Apache would immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators. The report would include the same information identified in the paragraph above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with Apache to determine whether modifications in the activities are appropriate.

In the event that Apache discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Apache would report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, and the NMFS Alaska Stranding Hotline and/or by email to the Alaska Regional Stranding Coordinators, within 24 hours of the discovery. Apache would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

Estimated Take of Marine Mammals

Except with respect to certain activities not pertinent here, the MMPA defines ''harassment'' as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment]. Only take by Level B behavioral harassment is anticipated as a result of the proposed marine survey program. Anticipated impacts to marine mammals are associated with noise propagation from the sound sources (e.g., airguns and pingers) used in the seismic survey; no take is expected to result from the detonation of explosives onshore, as supported by the SSV study, or from vessel strikes.

Apache requests authorization to take five marine mammal species by Level B harassment. These five marine mammal species are: Cook Inlet beluga whale (*Delphinapterus leucas*); killer whale (*Orcinus orca*); harbor porpoise (*Phocoena phocoena*); harbor seal (*Phoca vitulina richardsi*), and Steller sea lion (*Eumetopias jubatus*).

The full suite of potential impacts to marine mammals was described in detail in the ''Potential Effects of the Specified Activity on Marine Mammals'' section found earlier in this document. The potential effects of sound from the proposed seismic survey might include one or more of the following: Tolerance; masking of natural sounds; behavioral disturbance; non-auditory physical effects; and, at least in theory, temporary or permanent hearing impairment (Richardson *et al.* 1995). The most common and likely impact would be from behavioral disturbance, including avoidance of the ensonified area or changes in speed, direction, and/or diving profile of the animal. Hearing impairment (TTS and PTS) are highly unlikely to occur based on the proposed mitigation and monitoring measures that would preclude marine mammals being exposed to noise levels high enough to cause hearing impairment.

For impulse sounds, such as those produced by airgun(s) used in the seismic survey, NMFS uses the 160 dB_{rms} re 1 μPa isopleth to indicate the onset of Level B harassment. To estimate take by Level B harassment, Apache provided calculations for the 160-dB isopleths and then overlaid those isopleths with the density of marine mammals in the total area ensonified within those isopleths over the time of the surveys. Apache provided a full description of the methodology used to estimate takes by harassment in its IHA application (see **ADDRESSES**), which is also provided in the following sections. NMFS used Apache's takes estimates in its analyses.

Basis for Estimating ''Take by Harassment''

As stated previously, it is current NMFS policy to estimate take by Level B harassment for impulse sounds at a received level of 160 dB_{rms} re 1μPa. As described earlier in this notice, impulsive sounds would be generated by airgun arrays that would be used to obtain geological data during the surveys. To estimate potential takes by Level B harassment in this application, as well as for mitigation radii to be implemented by PSOs, ranges to the 160 dB_{rms} re 1 μPa isopleths were estimated at three different water depths (5 m, 25 m, and 45 m) for nearshore surveys and at 80 m for channel surveys. The distances to this threshold for the nearshore survey locations are provided in Table 1 and correspond to the three transects modeled at each site in the onshore, nearshore, and parallel to shore directions. The distances to the thresholds for the channel survey locations are provided in Table 2 and correspond to the broadside and endfire directions. The areas ensonified to the 160 dB isopleth for the nearshore survey are provided in Table 3. The area ensonifed to the 160 dB isopleth for the channel survey is 389 km^2.

The following subsections describe the estimated densities of marine mammals that may occur in the areas where activities are planned, and areas of water that may be ensonified by pulsed sounds to ≥160 dB.

Marine mammal densities near the planned activities in Cook Inlet were estimated from the annual aerial surveys conducted by NMFS between 2000 and 2011 for Cook Inlet beluga whales (Rugh *et al.* 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007; Shelden *et al.* 2008, 2009, 2010; Hobbs *et al.* 2011). These surveys are flown in June to collect abundance data for beluga whales, but sightings of other marine mammals are also reported. Although these data are only collected in one month each year, these surveys provide the best available relatively long-term data set for sighting information in the proposed action area, but do not correct for missed whales or account for seasonal variations in

distribution or habitat use of each species.

The maximum and average densities over the course of the total survey years (2000–2011) are provided in Table 5. As discussed below, beluga whales are observed in higher concentrations near river mouths, particularly the Susitna River, due to feeding. In the IHA application for Area 1, Apache attempted to account for the higher concentrations near river mouths by using the highest number of beluga whales observed for each survey to provide a density for near river mouths. Conversely, to account for the lower concentrations away from river mouths, the average number of beluga whales observed for each survey was used to provide a density away from river mouths. However, based on comments received regarding this methodology, for the Area 2 IHA application, Apache has included only the highest daily total observed in the survey (not total over the entire survey period because of re-sighting). These densities were used to estimate the number of Level B takes incidental to the proposed activity.

TABLE 5—SUMMARY OF MARINE MAMMAL DENSITIES

Species	Density (number/km^2)	
	Maximum	Average
Beluga whale (maximum number observed—rivers)	0.00128	0.00051
Harbor seal (total number observed)	0.00644	0.00317
Harbor porpoise (total number observed)	0.00179	0.00006
Killer whale (total number observed)	0.00011	0.00001
Steller sea lion (total number observed)	0.00035	0.00011

Fifteen species of marine mammals are known to occur in Cook Inlet, but only five (Cook Inlet beluga whales, killer whales, harbor porpoises, harbor seals, and Steller sea lions) are likely to be encountered during the proposed survey activities. Two of the five species (Cook Inlet beluga whales and western population of Steller sea lions) are listed as endangered under the ESA.

Potential Number of Takes by Harassment

This subsection provides estimates of the number of individuals potentially exposed to sound levels ≥ 160 dB_{rms} re 1 μPa during seismic survey operations. The estimates were calculated by multiplying the expected densities by the anticipated area ensonified by levels ≥ 160 dB_{rms} re 1 μPa by the number of expected days that will be subject to seismic survey activities in the action area. According to section 2 in Apache's IHA application, a survey crew will collect seismic data 10–12 hours per day over approximately 160 days over the course of 8 to 9 months. Apache assumes that over the course of these 160 days, 100 days would be working in the offshore region and 60 days would be working in the shallow, intermediate, and deep nearshore region. Of those 60 days in the nearshore region, 20 days would be spent working in each of the three depths. It is important to note that environmental conditions (such as ice, wind, and fog) will play a significant role in the actual number of operating days; therefore, these estimates are conservative in order to provide a basis for the probability of encountering these marine mammal species in the action area.

The number of estimated takes by Level B harassment was calculated using the following assumptions:

- The number of nearshore and shallow water survey days is 20 and daily acoustic footprint is 356 km^2.
- The number of nearshore and intermediate water depth survey days is 20 and daily acoustic footprint is 468 km^2.
- The number of nearshore and deep water depth survey days is 20 days and daily acoustic footprint is 455 km^2.
- The number of offshore survey days is 100 and daily acoustic footprint is 389 km^2.

Table 6 shows the probability of sightings per species for the second year of seismic surveys in Area 2 with the methods and assumptions outlined above. As noted earlier, the use of the NMML aerial survey data has inherent weaknesses. For example, the densities used here were calculated based on a relatively large area that was surveyed compared to Area 2, sightings of beluga whales are not corrected from missed animals, and the results do not account for changes in the seasonal distribution of all species.

In addition, the probability of sightings for harbor seals and Steller sea lions is higher than what is anticipated because there are no haul-out sites within the action area. These density estimates are skewed by the numbers observed in large haul outs during aerial surveys. Seals in the water usually travel in small groups or as single individuals; therefore, although Table 6 indicates an average of 204 and maximum of 414 seals to be observed, it is highly unlikely that those number of seals will actually be taken by harassment during the proposed seismic survey.

Similarly, and for many of the same reasons, the number of actual takes by Level B harassment of Steller sea lions is expected to be much lower than the average of four and maximum of 22. During the NMFS aerial surveys, no Steller sea lions were observed in upper Cook Inlet. Less than five Steller sea lions have been observed by the Port of Anchorage monitoring program, and those observed have been juvenile animals (likely male). To date, only one Steller sea lions has been observed during seismic survey operations conducted under the April 2012 IHA. Therefore, Apache anticipates that there will be less than five Steller sea lions in the proposed action area during the one-year effective period of the IHA, if issued.

The average and maximum observations for harbor porpoise and killer whales shown in Table 6 appear to be reasonable based on the NMFS aerial surveys, although the actual number of animals is expected to be low.

The average and maximum estimated sightings of Cook Inlet beluga whales in Area 2 are 32 and 82, respectively. However, it is important to note that a combination of factors—including extensive visual and acoustic monitoring used throughout this project, particularly for sighting beluga whales approaching the area—are expected to result in the actual number of takes being much lower than these estimates. In addition, the total number of days surveying that will actually occur near river mouths is much lower than the 160 days used to estimate takes in the different water depths; therefore, this take estimate is likely to be extremely conservative. As a result, due to the

actual number of days and hours Apache is likely to be operating air guns near river mouths and taking into account the monitoring and mitigation measures applicable when operating seismic survey equipment near rivers, Apache expects the actual number of takes by Level B harassment estimated for Cook Inlet beluga whales to be much lower than the numbers provided in Table 6.

TABLE 6—PROBABILITY OF SIGHTINGS PER SPECIES FOR YEAR 2

Species	Shallow (356 km^2)		Intermediate (458 km^2)		Deep (455 km^2)		Offshore (389 km^2)		Total	
	20 days		20 days		20 days		100 days		60 days	
	max	avg	max	avg	max	avg	max	avg	max	avg
Beluga whales	9.1	3.6	11.7	4.6	11.6	4.6	49.7	19.7	82.1	32.6
Harbor seals	45.9	22.6	59.0	29.0	58.6	28.9	250.5	123.4	414	203.8
Harbor porpoises	12.8	0.4	16.4	0.6	16.3	0.6	69.7	2.4	115.2	4.0
Killer whales	0.8	0.1	1.0	0.1	1.0	0.1	4.3	0.6	7.2	1.0
Steller sea lions	2.5	0.8	3.2	1.1	3.2	1.0	13.6	4.5	22.5	7.4

Estimated Take Conclusions

Cetaceans—Effects on cetaceans are generally expected to be restricted to avoidance of an area around the seismic survey and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment''.

Using the 160 dB criterion, the requested take numbers of individual cetaceans exposed to sounds > 160 dB_{rms} re 1 µPa represent varying proportions of the populations of each species in Cook Inlet (Table 7). For Cook Inlet beluga whales, Apache requests 30 takes by Level B harassment. The number of beluga whale takes requested is based, in part, on the average number of sightings estimated over the course of the survey (see Table 6), as well as the seasonal distribution and habitat use of belugas in Cook Inlet and the monitoring information acquired during the seismic survey conducted under the 2012 IHA. This number is approximately 10 percent of the population of approximately 284 animals (Hobbs *et al.* 2011). For other cetaceans that might occur in the vicinity of the seismic survey in Cook Inlet, the requested takes represent an even smaller percentage of their respective populations. The requested takes of 10 killer whales and 20 harbor porpoises represent 0.89 percent and 0.06 percent of their respective populations in the proposed action area.

Pinnipeds—Two pinniped species may be encountered in the proposed action area, but the harbor seal is likely to be the more abundant species in this area. The number of takes requested for individuals exposed to sounds at received levels >160 dB_{rms} re 1 µPa during the proposed seismic survey are as follows: harbor seals (200) and Steller sea lions (20). These numbers represent 0.69 percent and 0.12 percent of their respective populations in the proposed action area.

TABLE 7—REQUESTED NUMBER OF TAKES

Species	Number of requested takes	Population abundance	Percent of population
Beluga whales	30	284	10.56
Harbor seals	200	29,175	0.69
Harbor porpoises	20	31,406	0.06
Killer whales	10	1,437	0.89
Steller sea lions	20	41,197	0.12

Preliminary Determinations

Negligible Impact

NMFS has defined ''negligible impact'' in 50 CFR 216.103 as ''* * * an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.'' In making a negligible impact determination, NMFS considers a variety of factors, including but not limited to: (1) The number of anticipated mortalities; (2) the number and nature of anticipated injuries; (3) the number, nature, intensity, and duration of Level B harassment; and (4) the context in which the takes occur.

Given the required mitigation and related monitoring, no injuries or mortalities are anticipated to occur as a result of Apache's proposed seismic survey in Cook Inlet, and none are proposed to be authorized. Additionally, animals in the area are not expected to incur hearing impairment (i.e., TTS or PTS) or non-auditory physiological effects. The small number of takes that are anticipated are expected to be limited to short-term Level B behavioral harassment. Although it is possible that some marine mammals individuals may be exposed to sounds from seismic survey activities more than once, the duration of these multi-exposures is expected to be low since both the animals and the survey vessels will be moving constantly in and out of the survey area and the seismic airguns do not operate continuously all day, but for a few hours at a time totaling about 12 hours a day.

Odontocete (including Cook Inlet beluga whales, killer whales, and harbor porpoises) reactions to seismic energy pulses are usually assumed to be limited to shorter distances from the airgun(s) than are those of mysticetes, in part because odontocete low-frequency hearing is assumed to be less sensitive than that of mysticetes. When in the Canadian Beaufort Sea in summer, belugas appear to be fairly responsive to seismic energy, with few being sighted within 6–12 mi (10–20 km) of seismic vessels during aerial surveys (Miller *et al.* 2005). However, as noted above, Cook Inlet belugas are more accustomed

to anthropogenic sound than beluga whales in the Beaufort Sea. Accordingly, NMFS does not find this data determinative here. Also, due to the dispersed distribution of beluga whales in Cook Inlet during winter and the concentration of beluga whales in upper Cook Inlet from late April through early fall, belugas would likely occur in small numbers in the phase two survey area during the survey period and few will likely be affected by the survey activity in a manner that would be considered behavioral harassment. In addition, due to the constant moving of the survey vessel, the duration of the noise exposure by cetaceans to seismic impulse would be brief. For the same reason, it is unlikely that any individual animal would be exposed to high received levels multiple times.

Taking into account the mitigation measures that are planned, effects on cetaceans are generally expected to be restricted to avoidance of a limited area around the survey operation and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment''. Animals are not expected to permanently abandon any area that is surveyed, and any behaviors that are interrupted during the activity are expected to resume once the activity ceases. Only a very small portion of marine mammal habitat will be affected at any time, and other areas within Cook Inlet will be available for necessary biological functions. In addition, the area where the survey will take place is not known to be an important location where beluga whales congregate for feeding, calving, or nursing.

Furthermore, the estimated numbers of animals potentially exposed to sound levels sufficient to cause Level B harassment are low percentages of the population sizes in Cook Inlet, as shown in Table 7.

Mitigation measures such as controlled vessel speed, dedicated marine mammal observers, non-pursuit, and shut downs or power downs when marine mammals are seen within defined ranges will further reduce short-term reactions and minimize any effects on hearing sensitivity. In all cases, the effects of the seismic survey are expected to be short-term, with no lasting biological consequence. Therefore, the exposure of cetaceans to sounds produced by the phase two seismic survey is not anticipated to have an effect on annual rates or recruitment or survival.

Some individual pinnipeds may be exposed to sound from the proposed marine surveys more than once during the time frame of the project. However, as discussed previously, due to the constant moving of the survey vessel, the probability of an individual pinniped being exposed to sound multiple times is much lower than if the source is stationary. Taking into account the mitigation measures that are planned, effects on pinnipeds are generally expected to be restricted to avoidance of a limited area around the survey operation and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment''. Animals are not expected to permanently abandon any area that is surveyed, and any behaviors that are interrupted during the activity are expected to resume once the activity ceases. Only a very small portion of marine mammal habitat will be affected at any time, and other areas within Cook Inlet will be available for necessary biological functions. In addition, the area where the survey will take place is not known to be an important location where pinnipeds haulout. The closest known haulout site is located on Kalgin Island, which is about 22 km from the McArther River. Therefore, NMFS has preliminarily determined that the exposure of pinnipeds to sounds produced by the proposed seismic survey in Cook Inlet is not expected to result in more than Level B harassment and is anticipated to have no more than a negligible impact on the animals.

Potential impacts to marine mammal habitat were discussed previously in this document (see the ''Anticipated Effects on Habitat'' section). Although some disturbance is possible to food sources of marine mammals, the impacts are anticipated to be minor enough as to not affect rates of recruitment or survival of marine mammals in the area. Based on the size of Cook Inlet where feeding by marine mammals occurs versus the localized area of the marine survey activities, any missed feeding opportunities in the direct project area would be minor based on the fact that other feeding areas exist elsewhere.

Small Numbers

The requested takes proposed to be authorized represent 10 percent of the Cook Inlet beluga whale population of approximately 284 animals (Hobbs *et al.,* 2011), 0.89 percent of the combined Alaska resident stock and Gulf of Alaska, Aleutian Island and Bering Sea stock of killer whales (1,123 residents and 314 transients), and 0.06 percent of the Gulf of Alaska stock of approximately 31,046 harbor porpoises. The take requests presented for harbor seals represent 0.69 percent of the Gulf of Alaska stock of approximately 29,175 animals. The requested takes proposed for Steller sea lions represent 0.12 percent of the western stock of approximately 41,197 animals. These take estimates represent the percentage of each species or stock that could be taken by Level B behavioral harassment if each animal is taken only once. The number of marine mammals taken is small relative to the affected species or stocks. In addition, the mitigation and monitoring measures (described previously in this document) proposed for inclusion in the IHA (if issued) are expected to reduce even further any potential disturbance to marine mammals.

Conclusion

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS preliminarily finds that the total taking from Apache's proposed seismic survey in Cook Inlet will have a negligible impact on the affected species or stocks. NMFS also preliminarily finds that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

Section 101(a)(5)(D) also requires NMFS to determine that the authorization will not have an unmitigable adverse effect on the availability of marine mammal species or stocks for subsistence use. NMFS has defined ''unmitigable adverse impact'' in 50 CFR 216.103 as: An impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

The subsistence harvest of marine mammals transcends the nutritional and economic values attributed to the animal and is an integral part of the cultural identity of the region's Alaska Native communities. Inedible parts of the whale provide Native artisans with materials for cultural handicrafts, and the hunting itself perpetuates Native traditions by transmitting traditional

skills and knowledge to younger generations (NOAA 2007). However, due to dramatic declines in the Cook Inlet beluga whale population, on May 21, 1999, legislation was passed to temporarily prohibit (until October 1, 2000) the taking of Cook Inlet belugas under the subsistence harvest exemption in section 101(b) of the MMPA without a cooperative agreement between NMFS and the affected Alaska Native Organizations (ANOs) (Pub. L. 106–31, section 3022, 113 Stat. 57,100). That prohibition was extended indefinitely on December 21, 2000 (Pub. L. 106–553, section 1(a)(2), 114 Stat. 2762). NMFS subsequently entered into six annual co-management agreements (2000–2003, 2005–2006) with the Cook Inlet Marine Mammal Council, an ANO representing Cook Inlet beluga hunters, which allowed for the harvest of 1–2 belugas. On October 15, 2008, NMFS published a final rule that established long-term harvest limits on the Cook Inlet beluga whales that may be taken by Alaska Natives for subsistence purposes (73 FR 60976). That rule prohibits harvest for a 5-year period (2008–2012), if the average abundance for the Cook Inlet beluga whales from the prior five years (2003–2007) is below 350 whales. The next 5-year period that could allow for a harvest (2013–2017), would require the previous five-year average (2008–2012) to be above 350 whales.

There is a low level of subsistence hunting for harbor seals in Cook Inlet. Seal hunting occurs opportunistically among Alaska Natives who may be fishing or travelling in the upper Inlet near the mouths of the Susitna River, Beluga River, and Little Susitna River. Consistent with NMFS' implementing regulations, Apache met with the Cook Inlet Marine Mammal Council (CIMMC)—a now dissolved ANO that represented Cook Inlet tribes—on March 29, 2011, to discuss the proposed activities and discuss any subsistence concerns. Apache also met with the Tyonek Native Corporation on November 9, 2010 and the Salamatof Native Corporation on November 22, 2010. Additional meetings were held with the Native Village of Tyonek, the Kenaitze Indian Tribe, and Knik Tribal Council, and the Ninilchik Traditional Council. According to Apache, during these meetings, no concerns were raised regarding potential conflict with subsistence harvest of marine mammals. Apache has identified the following features that are intended to reduce impacts to subsistence users:

- In-water seismic activities will follow mitigation procedures to minimize effects on the behavior of marine mammals and, therefore, opportunities for harvest by Alaska Native communities; and
- Regional subsistence representatives may support recording marine mammal observations along with marine mammal biologists during the monitoring programs and will be provided with annual reports.

Since the issuance of the April 2012 IHA, Apache has maintained regular and consistent communication with federally recognized Alaska Natives. The Alaska Natives, Native Corporations, and ANOs that Apache has communicated with include: The Native Village of Tyonek; Tyonek Native Corporation; Ninilchik Native Association; Ninilchik Traditional Council; Salamatof Native Association; Knikatnu; Knik Native Council; Alexander Creek; Cook Inlet Region, Inc.; the Native Village of Eklutna; Kenaitze Indian Tribe; and Seldovia Native Association. Apache has shared information gathered during the seismic survey conducted under the April 2012 IHA, and plans on hosting an information exchange with Alaska Native Villages, Native Corporations, and other Non-Governmental Organizations in the spring of 2013 where data from the past year's monitoring operations would be presented.

Apache concluded, and NMFS agrees, that the size of the affected area, mitigation measures, and input from the consultations Alaska Natives should result in the proposed action having no effect on the availability of marine mammals for subsistence uses. Apache and NMFS recognize the importance of ensuring that ANOs and federally recognized tribes are informed, engaged, and involved during the permitting process and will continue to work with the ANOs and tribes to discuss operations and activities.

On February 6, 2012, in response to requests for government-to-government consultations by the CIMMC and Native Village of Eklutna, NMFS met with representatives of these two groups and a representative from the Ninilchik. We engaged in a discussion about the proposed IHA for Area 1, the MMPA process for issuing an IHA, concerns regarding Cook Inlet beluga whales, and how to achieve greater coordination with NMFS on issues that impact tribal concerns. Following the publication of the proposed IHA, NMFS will be contacting the local Native Villages to inform them of the availability of the **Federal Register** notice and the opening of the public comment period.

NMFS anticipates that any effects from Apache's proposed seismic survey on marine mammals, especially harbor seals and Cook Inlet beluga whales, which are or have been taken for subsistence uses, would be short-term, site specific, and limited to inconsequential changes in behavior and mild stress responses. NMFS does not anticipate that the authorized taking of affected species or stocks will reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (1) Causing the marine mammals to abandon or avoid hunting areas; (2) directly displacing subsistence users; or (3) placing physical barriers between the marine mammals and the subsistence hunters; and that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met. Therefore, NMFS has preliminarily determined that the proposed regulations will not have an unmitigable adverse impact on the availability of marine mammal stocks for subsistence uses.

Endangered Species Act (ESA)

There are two marine mammal species listed as endangered under the ESA with confirmed or possible occurrence in the proposed project area: the Cook Inlet beluga whale and Steller sea lion. In addition, the proposed action would occur within designated critical habitat for the Cook Inlet beluga whales. On September 2, 2011, NMFS' Permits and Conservation Division initiated consultation under section 7 of the ESA with the Alaska Regions, NMFS, Protected Resources Division on the issuance of IHAs to Apache under section 101(a)(5)(D) of the MMPA, which includes the action area for this proposed activity. In February 2012, this consultation was concluded and a Biological Opinion was issued. The Biological Opinion determined that the issuance of IHAs is not likely to jeopardize the continued existence of the Cook Inlet beluga whales or the western DPS of Steller sea lions, or destroy or adversely modify Cook Inlet beluga whale critical habitat. Finally, the BiOp included an Incidental Take Statement (ITS) for Cook Inlet beluga whales and Steller sea lions. The ITS contains reasonable and prudent measures implemented by terms and conditions to minimize the effects of this take.

National Environmental Policy Act (NEPA)

NMFS is currently preparing an Environmental Assessment, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment. This

analysis will be completed prior to the issuance or denial of the IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to Apache's seismic survey in Cook Inlet, Alaska, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: December 4, 2012.

Helen M. Golde,

Acting Director, Office of Protected Resources, National Marine Fisheries Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XC361

Schedules for Atlantic Shark Identification Workshops and Protected Species Safe Handling, Release, and Identification Workshops

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of public workshops.

SUMMARY: Free Atlantic Shark Identification Workshops and Protected Species Safe Handling, Release, and Identification Workshops will be held in January, February, and March of 2013. Certain fishermen and shark dealers are required to attend a workshop to meet regulatory requirements and to maintain valid permits. Specifically, the Atlantic Shark Identification Workshop is mandatory for all federally permitted Atlantic shark dealers. The Protected Species Safe Handling, Release, and Identification Workshop is mandatory for vessel owners and operators who use bottom longline, pelagic longline, or gillnet gear, and who have also been issued shark or swordfish limited access permits. Additional free workshops will be conducted during 2013 and will be announced in a future notice.

DATES: The Atlantic Shark Identification Workshops will be held January 17, February 21, and March 14, 2013.

The Protected Species Safe Handling, Release, and Identification Workshops will be held on January 16, January 23, February 7, February 13, March 6, and March 13, 2013.

See **SUPPLEMENTARY INFORMATION** for further details.

ADDRESSES: The Atlantic Shark Identification Workshops will be held in Kenner, LA; Norfolk, VA; and Fort Pierce, FL.

The Protected Species Safe Handling, Release, and Identification Workshops will be held in Manahawkin, NJ; Panama City, FL; Portland, ME; Kitty Hawk, NC; Houston, TX; and Clearwater, FL.

See **SUPPLEMENTARY INFORMATION** for further details on workshop locations.

FOR FURTHER INFORMATION CONTACT: Richard A. Pearson by phone: (727) 824–5399, or by fax: (727) 824–5398.

SUPPLEMENTARY INFORMATION: The workshop schedules, registration information, and a list of frequently asked questions regarding these workshops are posted on the Internet at: *http://www.nmfs.noaa.gov/sfa/hms/workshops/.*

Atlantic Shark Identification Workshops

Since January 1, 2008, Atlantic shark dealers have been prohibited from receiving, purchasing, trading, or bartering for Atlantic sharks unless a valid Atlantic Shark Identification Workshop certificate is on the premises of each business listed under the shark dealer permit which first receives Atlantic sharks (71 FR 58057; October 2, 2006). Dealers who attend and successfully complete a workshop are issued a certificate for each place of business that is permitted to receive sharks. These certificate(s) are valid for 3 years. Approximately 80 free Atlantic Shark Identification Workshops have been conducted since January 2007.

Currently, permitted dealers may send a proxy to an Atlantic Shark Identification Workshop. However, if a dealer opts to send a proxy, the dealer must designate a proxy for each place of business covered by the dealer's permit which first receives Atlantic sharks. Only one certificate will be issued to each proxy. A proxy must be a person who is currently employed by a place of business covered by the dealer's permit; is a primary participant in the identification, weighing, and/or first receipt of fish as they are offloaded from a vessel; and who fills out dealer reports. Atlantic shark dealers are prohibited from renewing a Federal shark dealer permit unless a valid Atlantic Shark Identification Workshop certificate for each business location which first receives Atlantic sharks has been submitted with the permit renewal application. Additionally, trucks or other conveyances that are extensions of a dealer's place of business must possess a copy of a valid dealer or proxy Atlantic Shark Identification Workshop certificate.

Workshop Dates, Times, and Locations

1. January 17, 2013, 12 p.m.–4 p.m., LaQuinta Inn & Suites, 2610 Williams Boulevard, Kenner, LA 70062.

2. February 21, 2013, 12 p.m.–4 p.m., LaQuinta Inn & Suites, 1387 North Military Highway, Norfolk, VA 23502.

3. March 14, 2013, 12 p.m.–4 p.m., LaQuinta Inn & Suites, 2655 Crossroads Parkway, Fort Pierce, FL 34945.

Registration

To register for a scheduled Atlantic Shark Identification Workshop, please contact Eric Sander at *esander@peoplepc.com* or at (386) 852–8588.

Registration Materials

To ensure that workshop certificates are linked to the correct permits, participants will need to bring the following specific items to the workshop:

- Atlantic shark dealer permit holders must bring proof that the attendee is an owner or agent of the business (such as articles of incorporation), a copy of the applicable permit, and proof of identification.
- Atlantic shark dealer proxies must bring documentation from the permitted dealer acknowledging that the proxy is attending the workshop on behalf of the permitted Atlantic shark dealer for a specific business location, a copy of the appropriate valid permit, and proof of identification.

Workshop Objectives

The Atlantic Shark Identification Workshops are designed to reduce the number of unknown and improperly identified sharks reported in the dealer reporting form and increase the accuracy of species-specific dealer-reported information. Reducing the number of unknown and improperly identified sharks will improve quota monitoring and the data used in stock assessments. These workshops will train shark dealer permit holders or their proxies to properly identify Atlantic shark carcasses.

Protected Species Safe Handling, Release, and Identification Workshops

Since January 1, 2007, shark limited-access and swordfish limited-access permit holders who fish with longline or gillnet gear have been required to submit a copy of their Protected Species Safe Handling, Release, and Identification Workshop certificate in order to renew either permit (71 FR 58057; October 2, 2006). These