Company	Structure	Dates	Marine mammal sightings (individuals)	Biological impacts observed to marine mammals
El Paso	South Timbalier Area, Block 212, Platform C.	August 23 to 26, 2010	None	None.
EOG Resources	Viosca Knoll Area, Block 31, Platform A.	September 9 to 12, 18, 20 to 22, 2010.	None	None.
EOG Resources	Viosca Knoll Area, Block 74, Platform 2.	September 1 to 4, 2010	None	None.
EOG Resources	Viosca Knoll Area, Block 124, Platform A.	September 5 to 8, 2010	None	None.

Pursuant to these regulations, NMFS has issued an LOA to El Paso and EOG Resources. Issuance of the LOAs is based on a finding made in the preamble to the final rule that the total taking by these activities (with monitoring, mitigation, and reporting measures) will result in no more than a negligible impact on the affected species or stock(s) of marine mammals and will not have an unmitigable adverse impact on subsistence uses. NMFS will review reports to ensure that the applicants are in compliance with meeting the requirements contained in the implementing regulations and LOA, including monitoring, mitigation, and reporting requirements.

Dated: June 3, 2011.

Helen M. Golde,

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

[FR Doc. 2011–14312 Filed 6–8–11; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XA476

Pacific Fishery Management Council; Public Meeting

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

ACTION: Notice of a public meeting.

SUMMARY: The Pacific Fishery Management Council's (Pacific Council) Tule Chinook Workgroup (TCW) will hold a meeting to review work products and develop an abundance-based harvest management approach for Columbia River natural tule Chinook. This meeting of the TCW is open to the public.

DATES: The meeting will be held Thursday, July 14, 2011, from 9 a.m. to 4 p.m.

ADDRESSES: The meeting will be held at the Pacific Fishery Management Council, 7700 NE. Ambassador Place, Suite 101, Portland, OR 97220–1384; telephone: (503) 820–2280.

FOR FURTHER INFORMATION CONTACT: Mr. Chuck Tracy, Salmon Management Staff Officer, Pacific Fishery Management Council; telephone: (503) 820–2280.

SUPPLEMENTARY INFORMATION: This meeting of the TCW will involve review of initial work products and refining future work plans. Eventually, TCW work products will be reviewed by the Pacific Council, and if approved, would be submitted to NMFS for possible consideration in the next Lower Columbia River tule biological opinion for ocean salmon seasons in 2012 and beyond, and distributed to State and Federal recovery planning processes. In the event that a usable approach emerges from this process, the Pacific Council may consider a fishery management plan (FMP) amendment process beginning after November 2011 to adopt the approach as a formal conservation objective in the Salmon FMP.

Although non-emergency issues not contained in the meeting agenda may come before the TCW for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically listed in this notice and any issues arising after publication of this notice that require emergency action under Section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the intent to take final action to address the emergency.

Special Accommodations

The meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Mr. Kris Kleinschmidt at (503) 820–2280 at least 5 days prior to the meeting date.

Dated: June 6, 2011.

Tracey L. Thompson,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2011–14240 Filed 6–8–11; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XA255

Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Central Gulf of Alaska, June 2011

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

ACTION: Notice; issuance of an incidental take authorization (ITA).

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA) regulation, notification is hereby given that NMFS has issued an Incidental Harassment Authorization (IHA) to the U.S. Geological Survey (USGS) to take marine mammals, by Level B harassment, incidental to conducting a marine geophysical survey in the central Gulf of Alaska (GOA), June 2011.

DATES: Effective June 5 through July 25, 2011.

ADDRESSES: A copy of the IHA and application are available by writing to P. Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910 or by telephoning the contacts listed here.

A copy of the application containing a list of the references used in this document may be obtained by writing to the above address, telephoning the contact listed here (see **FOR FURTHER INFORMATION CONTACT**) or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.* The following associated documents are also available at the same Internet address: Environmental Assessment (EA), prepared by USGS. The NMFS Biological Opinion will be available online at: *http://www.nmfs.noaa.gov/pr/consultation/opinions.htm.* Documents

cited in this notice may be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Howard Goldstein or Jolie Harrison, Office of Protected Resources, NMFS, 301–713–2289, ext. 172.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the MMPA (16 U.S.C. 1371 (a)(5)(D)) directs the Secretary of Commerce (Secretary) to authorize, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Authorization for the incidental taking of small numbers of marine mammals shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). The authorization must set forth the permissible methods of taking, other means of effecting the least practicable adverse impact on the species or stock and its habitat, and requirements pertaining to the mitigation, monitoring and reporting of such takings. 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 United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) of the MMPA establishes a 45-day time limit for NMFS's review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the public 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].

16 U.S.C. 1362(18)

Summary of Request

NMFS received an application on January 21, 2011, from USGS for the taking by harassment, of marine mammals, incidental to conducting a marine geophysical survey in the central GOA within the U.S. Exclusive Economic Zone (EEZ) and adjacent international waters in depths from approximately 2,000 meters (m) (6,561.7 feet [ft]) to greater than 6,000 m (19,685 ft). USGS plans to conduct the survey from approximately June 5 to 25, 2011. On April 1, 2011, NMFS published a notice in the **Federal Register** (76 FR 18167) disclosing the effects on marine mammals, making preliminary determinations and including a proposed IHA. The notice initiated a 30-day public comment period.

USGS plans to use one source vessel, the R/V *Marcus G. Langseth* (*Langseth*) and a seismic airgun array to collect seismic reflection and refraction profiles to be used to delineate the U.S. Extended Continental Shelf (ECS) in the GOA. In addition to the operations of the seismic airgun array, USGS intends to operate a multibeam echosounder (MBES) and a sub-bottom profiler (SBP) continuously throughout the survey.

Acoustic stimuli (*i.e.,* increased underwater sound) generated during the operation of the seismic airgun array may have the potential to cause a short-term behavioral disturbance for marine mammals in the survey area. This is the principal means of marine mammal taking associated with these activities and USGS has requested an authorization to take 13 species of marine mammals by Level B harassment. Take is not expected to result from the use of the MBES or SBP, for reasons discussed in this notice; nor is take expected to result from collision with the vessel because it is a single vessel moving at a relatively slow speed during seismic acquisition within the survey, for a relatively short period of time (approximately 21 days). It is likely that any marine mammal would be able to avoid the vessel.

Description of the Specified Activity

USGS's planned seismic survey in the central GOA is between approximately 200 to 650 kilometers (km) (108 to 351 nautical miles [nmi]) offshore in the area 53 to 57° North, 135 to 148° West (see Figure 1 of the IHA application). Water depths in the survey area range from approximately 2,000 m (6,561.7 ft) to greater than 6,000 m (19,685 ft). The project is scheduled to occur from approximately June 5 to 25, 2011. Some minor deviation from these dates is possible, depending on logistics and weather.

The seismic survey will collect seismic reflection and refraction profiles to be used to delineate the U.S. ECS in the GOA. The ECS is the region beyond 200 nmi where a nation can show that it satisfies the conditions of Article 76 of the United Nations Convention on the Law of the Sea. One of the conditions in Article 76 is a function of sediment thickness. The seismic profiles are designed to identify the stratigraphic "basement" and to map the thickness of the overlying sediments. Acoustic velocities (required to convert measured travel times to true depth) will be measured directly using sonobuoys and ocean-bottom seismometers (OBSs), as well as by analysis of hydrophone streamer data. Acoustic velocity refers to the velocity of sound through sediments or crust.

The survey will involve one source vessel, the *Langseth*. The *Langseth* will deploy an array of 36 airguns as an energy source. The receiving system will consist of one 8 km (4.3 nmi) long hydrophone streamer and/or five OBSs. As the airgun is towed along the survey lines, the hydrophone streamer will receive the returning acoustic signals and transfer the data to the on-board processing system. The OBSs record the returning acoustic signals internally for later analysis.

The planned seismic survey (*e.g.,* equipment testing, startup, line changes, repeat coverage of any areas, and equipment recovery) will consist of approximately 2,840 km (1,533.5 nmi) of transect lines in the central GOA survey area (see Figure 1 of the IHA application), with an additional 140 km (75.6 nmi) of turns. The 36 airgun array (6,600 in^3) will be powered-down to one airgun (40 in^3) during turns. All of the survey will take place in water deeper than 1,000 m (3,280.8 ft). A multi-channel seismic (MCS) survey using the hydrophone streamer will take place along 17 MCS profile lines and 2 OBS lines. Following the MCS survey, five OBSs will be deployed and a refraction survey will take place along one of the 11 lines. If time permits, an additional 340 km (183.6 nmi) contingency line will be added to the MCS survey. In addition to the operations of the airgun array, a Kongsberg EM 122 MBES and Knudsen 320B SBP will also be

operated from the *Langseth* continuously throughout the cruise. There will be additional seismic operations associated with equipment testing, start-up, and possible line changes or repeat coverage of any areas where initial data quality is sub-standard. In USGS's calculations, 25% has been added for those additional operations.

All planned geophysical data acquisition activities will be conducted by Lamont-Doherty Earth Observatory (L–DEO), the *Langseth's* operator, with on-board assistance by the scientists who have planned the study. The Principal Investigators are Drs. Jonathan R. Childs and Ginger Barth of the USGS. The vessel will be self-contained, and the crew will live aboard the vessel for the entire cruise.

Description of the Dates, Duration, and Specified Geographic Region

The survey will occur in the central GOA, between approximately 200 and 650 km offshore, in the area 53 to 57° North, 135 to 148° West. The seismic survey will take place in water depths of 2,000 to greater than 6,000 m. The exact dates of the activities depend on logistics and weather conditions. The *Langseth* will depart from Dutch Harbor, Alaska on June 5, 2011, and return there on June 25, 2011. Seismic operations will be carried out for an estimated 12 to 14 days.

NMFS outlined the purpose of the program in a previous notice for the proposed IHA (76 FR 18167, April 1, 2011). The activities to be conducted have not changed between the proposed IHA notice and this final notice announcing the issuance of the IHA. For a more detailed description of the authorized action, including vessel and acoustic source specifications, the reader should refer to the proposed IHA notice (76 FR 18167, April 1, 2011), the IHA application and associated documents referenced above this section.

Comments and Responses

A notice of receipt of the USGS application and proposed IHA was published in the **Federal Register** on April 1, 2011 (76 FR 18167). During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (Commission) only. The Commission's comments are online at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm.* Following are their comments and NMFS's responses:

Comment 1: The Commission recommends that the NMFS require the USGS to re-estimate the proposed exclusion and buffer zones and associated takes of marine mammals using site-specific information.

Response: In the water depths that the survey is to be conducted, site-specific source signature measurements are neither warranted nor practical. Site signature measurements are normally conducted commercially by shooting a test pattern over an ocean bottom instrument in shallow water. This method is neither practical nor valid in water depths as great as 2,000 m (6,561.7 ft). The alternative method of conducting site-specific attenuation measurements would require a second vessel, which is impractical both logistically and financially. Sound propagation is going to vary notably less between deep water sites than it would between shallow water sites (because of the reduced significance of bottom interaction), thus decreasing the importance of site-specific estimates.

Should the action agency endeavor to undertake a sound source verification study, confidence in the results is necessary in order to ensure for conservation purposes that appropriate monitoring and mitigation measures are implemented; therefore inappropriate or poorly executed efforts should be avoided and discouraged.

Based on these reasons, and the information provided by USGS in their IHA application and EA, NMFS is satisfied that the data supplied are sufficient for NMFS to conduct its analysis and make any determinations and therefore no further effort is needed by the applicant. While exposures of marine mammals to acoustic stimuli are difficult to estimate, NMFS is confident that the levels of take authorized herein are estimated based upon the best available scientific information and estimation methodology. The 160 dB zone used to estimate exposure is appropriate and sufficient for purposes of supporting NMFS's analysis and determinations required under section 101(a)(5)(D) of the MMPA and its implementing regulations. See NMFS's response to Comment 2 (below) for additional details.

Comment 2: The Commission recommends that if site-specific information is not used to estimate the proposed exclusion and buffer zones and associated takes of marine mammals, the USGS provide a detailed justification for basing the exclusion and buffer zones for the proposed survey in the GOA on empirical data collected in the GOM or on modeling that uses measurements from the GOM and that explains the significance of any deviations in survey method, such as the proposed change in tow depth.

Response: USGS has revised Appendix A in the EA to include information from the calibration study conducted on the *Langseth* in 2007 and 2008. This information is now available in the final EA on USGS's Web site at *http://walrus.wr.usgs.gov/EA/ECS_EA/* as well as on NSF's Web site at *http://www.nsf.gov/geo/oce/envcomp/index.jsp.* The revised Appendix A describes the L–DEO modeling process and compares the model results with empirical results of the 2007 to 2008 *Langseth* calibration experiment in shallow, intermediate, and deep water. The conclusions identified in Appendix A show that the model represents the actual produced levels, particularly within the first few kms, where the predicted exclusion zones (EZs, *i.e.,* safety radii) lie. At greater distances, local oceanographic variations begin to take effect, and the model tends to over predict. Further, since the modeling matches the observed measurement data, the authors have concluded that the models can continue to be used for defining EZs, including for predicting mitigation radii for various tow depths. The data results from the studies were peer reviewed and the calibration results, viewed as conservative, were used to determine the cruise-specific EZs.

At present, the L–DEO model does not account for site-specific environmental conditions. The calibration study of the L–DEO model predicted that using site-specific information may actually provide less conservative EZ radii at greater distances. The Draft Programmatic Environmental Impact Statement for Marine Seismic Research Funded by the National Science Foundation or Conducted by the U.S. Geological Survey (DPEIS) prepared pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) did incorporate various site-specific environmental conditions in the modeling of the Detailed Analysis Areas. The NEPA process associated with the DPEIS is still ongoing and the USGS and NSF have not yet issued a Record of Decision. Once the NEPA process for the PEIS has concluded, USGS and/or NSF will look at upcoming cruises on a site-specific basis for any impacts not already considered in the DPEIS.

The IHA issued to USGS, under section 101(a)(5)(D) of the MMPA provides monitoring and mitigation requirements that will protect marine mammals from injury, serious injury, or mortality. USGS is required to comply with the IHA's requirements. These analyses are supported by extensive scientific research and data. NMFS is

confident in the peer-reviewed results of the L–DEO seismic calibration studies which, although viewed as conservative, are used to determine cruise-specific EZs and which factor into exposure estimates. NMFS has determined that these reviews are the best scientific data available for review of the IHA application and to support the necessary analyses and determinations under the MMPA, Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*) and NEPA.

Based on NMFS's analysis of the likely effects of the specified activity on marine mammals and their habitat, NMFS has determined that the EZs identified in the IHA are appropriate for the survey and that additional field measurement is not necessary at this time. While exposures of marine mammals to acoustic stimuli are difficult to estimate, NMFS is confident that the levels of take authorized herein are estimated based upon the best available scientific information and estimation methodology. The 160 dB zone used to estimate exposure are appropriate and sufficient for purposes of supporting NMFS's analysis and determinations required under section 101(a)(5)(D) of the MMPA and its implementing regulations.

Comment 3: The Commission recommends that the NMFS specify in the authorization all conditions under which an 8 min period could be followed by a resumption of the airguns at full power.

Response: In the instance of a power-down or shut-down based on the presence of a marine mammal in the EZ, USGS will restart the airgun array to the full operating source level (*i.e.,* 36 airguns 6,600 cubic inches [in^3]) only if the PSVO visually observes the marine mammal exiting the EZ for the full source level within an 8 min period of the shut-down or power-down. The 8 min period is based on the 180 dB radius for the 36 airgun subarray at a depth of 9 m in relation to the minimum planned speed of the *Langseth* while shooting (8.5 km/hr [4.6 kts]). In the event that a marine mammal would re-enter the EZ after reactivating the airguns, USGS would reinitiate a shut-down or power-down as required by the IHA.

Should the airguns be inactive or powered-down for more than 8 min, and the PSVO does not observe the marine mammal leaving the EZ, then USGS must wait 15 min (for small odontocetes and pinnipeds) or 30 min (for mysticetes and large odontocetes) after the last sighting before USGS can initiate ramp-up procedures. However, ramp-up will not occur as long as a marine mammal is detected within the EZ, which provides more time for animals to leave the EZ, and accounts for the position, swim speed, and heading for marine mammals within the EZ.

Finally, USGS may need to temporarily perform a shut-down due to equipment failure or maintenance. In this instance, USGS will restart the airgun array to the full source level within an 8 min period of the shut down only if the PSVOs do not observe marine mammals within the EZ for the full source level. If the airguns are inactive or powered-down for more than 8 min, then USGS would follow the ramp-up procedures required by the IHA. USGS would restart the airguns beginning with the smallest airgun in the array and add airguns in a sequence such that the source level of the array does not exceed approximately 6 decibels (dB) per 5 min period over a total duration of approximately 30 min. Again, the PSVOs would monitor the EZs for marine mammals during this time and would initiate a power-down or a shut-down, as required by the IHA.

Comment 4: The Commission recommends that the NMFS extend the 30 min period following a marine mammal sighting in the EZ to cover the full dive times of all species likely to be encountered.

Response: NMFS recognizes that several species of deep-diving cetaceans are capable of remaining underwater for more than 30 min (*e.g.,* sperm whales, Cuvier's beaked whales, Baird's beaked whales); however, for the following reasons NMFS believes that 30 min is an adequate length for the monitoring period prior to the ramp-up of airguns:

(1) Because the *Langseth* is required to monitor before ramp-up of the airgun array, the time of monitoring prior to start-up of any but the smallest array is effectively longer than 30 min (ramp-up will begin with the smallest airgun in the array and airguns will be added in sequence such that the source level of the array will increase in steps not exceeding approximately 6 dB per 5 min period over a total duration of 20 to 30 min;

(2) In many cases PSVOs are observing during times when USGS is not operating the seismic airguns and would observe the area prior to the 30 min observation period;

(3) The majority of the species that may be exposed do not stay underwater more than 30 min; and

(4) All else being equal and if deep-diving individuals happened to be in the area in the short time immediately prior to the pre-ramp-up monitoring, if an animal's maximum underwater dive time is 45 min, then there is only a one in three chance that the last random surfacing would occur prior to the beginning of the required 30 min monitoring period and that the animal would not be seen during that 30 min period.

Finally, seismic vessels are moving continuously (because of the long, towed array and streamer) and NMFS believes that unless the animal submerges and follows at the speed of the vessel (highly unlikely, especially when considering that a significant part of their movements is vertical [deep-diving]), the vessel will be far beyond the length of the EZ radii within 30 min, and therefore it will be safe to start the airguns again.

The effectiveness of monitoring is science-based and the requirement is that monitoring and mitigation measures be "practicable." NMFS believes that the framework for visual monitoring will: (1) Be effective at spotting almost all species for which take is requested; and (2) that imposing additional requirements, such as those suggested by the Commission, would not meaningfully increase the effectiveness of observing marine mammals approaching or entering the EZs and thus further minimize the potential for take.

Comment 5: The Commission recommends that the NMFS provide additional justification for its preliminary determination that the proposed monitoring program will be sufficient to detect, with a high level of confidence, all marine mammals within or entering the identified exclusion and buffer zones, which at a minimum should:

(1) Identify those species that it believes can be detected with a high degree of confidence using visual monitoring only;

(2) Describe detection probability as a function of distance from the vessel;

(3) Describe changes in detection probability under various sea state and weather conditions and light levels; and

(4) Explain how close to the vessel marine mammals must be for Protected Species Observers (PSOs) to achieve high nighttime detection rates.

Response: NMFS believes that the planned monitoring program will be sufficient to detect (using visual monitoring and passive acoustic monitoring [PAM]), with reasonable certainty, marine mammals within or entering identified EZs. This monitoring, along with the required mitigation measures, will result in the least practicable adverse impact on the affected species or stocks and will result in a negligible impact on the affected species or stocks of marine mammals.

Also, NMFS expects some animals to avoid areas around the airgun area ensonified at the level of the EZ.

NMFS acknowledges that the detection probability for certain species of marine mammals varies depending on animal size and behavior as well as sea state and weather conditions and light levels. The detectability of marine mammals likely decreases in low light (*i.e.,* darkness), higher Beaufort sea states and wind conditions, and poor weather (*e.g.,* fog and/or rain). However, at present, NMFS views the combination of visual monitoring and PAM as the most effective monitoring and mitigation techniques available for detecting marine mammals within or entering the EZ. The final monitoring and mitigation measures are the most effective feasible measures and NMFS is not aware of any additional measures which could meaningfully increase the likelihood of detecting marine mammals in and around the EZ. Further, public comment has not revealed any additional monitoring or mitigation measures that could be feasibly implemented to increase the effectiveness of detection.

USGS (the Federal funding agency for this survey), NSF, and L–DEO are receptive to incorporating proven technologies and techniques to enhance the current monitoring and mitigation program. Until proven technological advances are made, nighttime mitigation measures during operations include combinations of the use of Protected Species Visual Observers (PSVOs) for ramp-ups, PAM, night vision devices (NVDs), and continuous shooting of a mitigation airgun. Should the airgun array be powered-down, the operation of a single airgun would continue to serve as a sound source deterrent to marine mammals. In the event of a complete shut-down of the airgun array at night for mitigation or repairs, USGS suspends the data collection until one-half hour after nautical twilight-dawn (when PSVOs are able to clear the EZ). USGS will not activate the airguns until the entire EZ is visible for at least 30 min.

In cooperation with NMFS, L–DEO will be conducting efficacy experiments of NVDs during a future *Langseth* cruise. In addition, in response to a recommendation from NMFS, L–DEO is evaluating the use of handheld forward-looking thermal imaging cameras to supplement nighttime monitoring and mitigation practices. During other low power seismic and seafloor mapping surveys, USGS successfully used these devices while conducting nighttime seismic operations.

Comment 6: The Commission recommends that the NMFS consult with the funding agency (*i.e.,* NSF) and individual applicants (*e.g.,* USGS and L–DEO) to develop, validate, and implement a monitoring program that provides a scientifically sound, reasonably accurate assessment of the types of marine mammal taking and the number of marine mammals taken.

Response: Numerous studies have reported on the abundance and distribution of marine mammals inhabiting the GOA, which overlaps with the seismic survey area, and USGS has incorporated this data into their analyses used to predict marine mammal take in their application. NMFS believes that USGS's current approach for estimating abundance in the survey area (prior to the survey) is the best available approach.

There will be significant amounts of transit time during the cruise, and PSVOs will be on watch prior to and after the seismic portions of the survey, in addition to during the survey. The collection of this visual observational data by PSVOs may contribute to baseline data on marine mammals (presence/absence) and provide some generalized support for estimated take numbers, but it is unlikely that the information gathered from this single cruise alone would result in any statistically robust conclusions for any particular species because of the small number of animals typically observed.

NMFS acknowledges the Commission's recommendations and is open to further coordination with the Commission, USGS (the Federal research funding agency for this cruise), NSF (the vessel owner), and L–DEO (the ship operator on behalf of NSF), to develop, validate, and implement a monitoring program that will provide or contribute towards a more scientifically sound and reasonably accurate assessment of the types of marine mammal taking and the number of marine mammals taken. However, the cruise's primary focus is marine geophysical research and the survey may be operationally limited due to considerations such as location, time, fuel, services, and other resources.

Comment 7: The Commission recommends that NMFS require the applicant:

(1) To report on the number of marine mammals that were detected acoustically and for which a power-down or shut-down of the airguns was initiated;

(2) Specify if such animals also were detected visually; and

(3) Compare the results from the two monitoring methods (visual versus acoustic) to help identify their respective strengths and weaknesses.

Response: The IHA requires that PSAOs on the *Langseth* do and record the following when a marine mammal is detected by the PAM:

(i) Notify the on-duty PSVO(s) immediately of a vocalizing marine mammal so a power-down or shut-down can be initiated, if required;

(ii) Enter the information regarding the vocalization into a database. The data to be entered include an acoustic encounter identification number, whether it was linked with a visual sighting, date, time when first and last heard and whenever any additional information was recorded, position, and water depth when first detected, bearing if determinable, species or species group (*e.g.,* unidentified dolphin, sperm whale), types and nature of sounds heard (*e.g.,* clicks, continuous, sporadic, whistles, creaks, burst pulses, strength of signal, *etc.*), and any other notable information.

USGS reports on the number of acoustic detections made by the PAM system within the post-cruise monitoring reports as required by the IHA. The report also includes a description of any acoustic detections that were concurrent with visual sightings, which allows for a comparison of acoustic and visual detection methods for each cruise.

The post-cruise monitoring reports also include the following information: the total operational effort in daylight (hrs), the total operation effort at night (hrs), the total number of hours of visual observations conducted, the total number of sightings, and the total number of hours of acoustic detections conducted.

LGL Ltd., Environmental Research Associates (LGL), a contractor for USGS, has processed sighting and density data, and their publications can be viewed online at: *http://www.lgl.com/index.php?option=com_content&view=article&id=69&Itemid=162&lang=en.* Post-cruise monitoring reports are currently available on the NMFS's MMPA Incidental Take Program Web site and future reports will also be available on the NSF Web site should there be interest in further analysis of this data by the public.

Comment 8: The Commission recommends that NMFS condition the authorization, if issued, to require the USGS to monitor, document, and report observations during all ramp-up procedures; this data will provide a stronger scientific basis for determining the effectiveness of and deciding when to implement this particular mitigation measure.

Response: The IHA requires that PSVOs on the *Langseth* make observations for 30 min prior to ramp-up, during all ramp-ups, and during all daytime seismic operations and record the following information when a marine mammal is sighted:

(i) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction of the airguns or vessel (*e.g.,* none, avoidance, approach, paralleling, *etc.,* and including responses to ramp-up), and behavioral pace; and

(ii) Time, location, heading, speed, activity of the vessel (including number of airguns operating and whether in state of ramp-up or power-down), Beaufort wind force and sea state, visibility, and sun glare.

Comment 9: The Commission recommends that NMFS in collaboration with the NSF, analyze these data to determine the effectiveness of ramp-up procedures as a mitigation measure for geophysical surveys.

Response: One of the primary purposes of monitoring is to result in "increased knowledge of the species" and the effectiveness of monitoring and mitigation measures; the effectiveness of ramp-up as a mitigation measure and marine mammal reaction to ramp-up would be useful information in this regard. NMFS has asked USGS, NSF, and L–DEO to gather all data that could potentially provide information regarding the effectiveness of ramp-ups as a mitigation measure. However, considering the low numbers of marine mammal sightings and low numbers of ramp-ups, it is unlikely that the information will result in any statistically robust conclusions for this particular seismic survey. Over the long term, these requirements may provide information regarding the effectiveness of ramp-up as a mitigation measure, provided animals are detected during ramp up.

Description of the Marine Mammals in the Area of the Proposed Specified Activity

Twenty-five marine mammal species (18 cetacean, 6 pinniped, and the sea otter) are known to or could occur in the GOA. Several of these species are listed as endangered under the U.S. Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*), including the North Pacific right whale (*Eubalaena japonica*), humpback (*Megaptera novaeangliae*), sei (*Balaenoptera borealis*), fin (*Balaenoptera physalus*), blue (*Balaenoptera musculus*), and sperm (*Physeter macrocephalus*) whales, as well as the Cook Inlet distinct population segment (DPS) of beluga whales (*Dephinapterus leucas*) and the western stock of Steller sea lions (*Eumetopias jubatus*). The eastern stock of Steller sea lions is listed as threatened, as is the southwest Alaska DPS of the sea otter (*Enhydra lutris*).

The marine mammals that occur in the survey area belong to four taxonomic groups: odontocetes (toothed cetaceans, such as dolphins), mysticetes (baleen whales), pinnipeds (seals, sea lions, and walrus), and fissipeds (sea otter). Cetaceans and pinnipeds are the subject of the IHA application to NMFS. Walrus sightings are rare in the GOA. Sea otters generally inhabit nearshore areas inside the 40 m (131.2 ft) depth contour (Riedman and Estes, 1990) and likely would not be encountered in the deep, offshore waters of the study area. The sea otter and Pacific walrus are two marine mammal species mentioned in this document that are managed by the U.S. Fish and Wildlife Service (USFWS) and are not considered further in this analysis; all others are managed by NMFS. Coastal cetacean species (gray whales, beluga whales, and harbor porpoises) and pinniped species (California sea lions and harbor seals) likely would not be encountered in the deep, offshore waters of the survey area.

Table 1 presents information on the abundance, distribution, population status, conservation status, and density of the marine mammals that may occur in the survey area during June, 2011.

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Table 1. The habitat, regional abundance, and conservation status of marine mammals that may occur in or near the seismic survey areas in the central GOA. (See text and Tables 2 to 4 in USGS's application and EA for further details.)

Species	Occurrence in/near Survey Area	Habitat	Abundance (Alaska)	Regional Abundance	ESA[1]	MMPA[2]	Density (#/1,000 km^2) Best[3] | Max[4]	
Mysticetes								
North Pacific right whale (*Eubalaena japonica*)	Rare	Coastal, shelf	28-31[5]	Low hundreds[6]	EN	D	0	0
Gray whale (*Eschrichtius robustus*)	Uncommon	Coastal	N.A.	19,126[7]	DL	NC D (Western populations)	N.A.	N.A.
Humpback whale (*Megaptera novaeangliae*)	Common	Coastal, banks	3,000 to 5,000[8]	20,800[9]	EN	D	2.61	6.53
Minke whale (*Balaenoptera acutorostrata*)	Uncommon	Coastal, shelf	1,233[10]	25,000[11]	NL	NC	0	0
Sei whale (*Balaenoptera borealis*)	Rare	Pelagic	N.A.	7,260 to 12,620[12]	EN	D	0	0
Fin whale (*Balaenoptera physalus*)	Common	Pelagic	1,652[10]	13,620 to 18,680[13]	EN	D	2.90	10.38
Blue whale (*Balaneoptera musculus*)	Rare	Pelagic, shelf, coastal	N.A.	3,500[14]	EN	D	0	0
Odontocetes								
Sperm whale (*Physeter macrocephalus*)	Uncommon	Pelagic	159[15]	24,000[16]	EN	D	0.38	1.69
Cuvier's beaked whale (*Ziphius cavirostris*)	Common	Pelagic	N.A.	20,000[17]	NL	NC	1.42	1.81
Baird's beaked whale (*Berardius bairdii*)	Rare	Pelagic	N.A.	6,000[18]	NL	NC	0.44	0.60
Stejneger's beaked whale (*Mesoplodon stejnegeri*)	Common	Likely pelagic	N.A.	N.A.	NL	NC	0	0

Species	Occurrence in/near Survey Area	Habitat	Abundance (Alaska)	Regional Abundance	ESA[1]	MMPA[2]	Density (#/1,000 km^2) Best[3]	Max[4]
Beluga whale (*Delphinapterus leucas*)	Extralimital	Coastal and ice edges	340[19]	N.A.	EN[34] NL	D[34] NC	N.A.	N.A.
Pacific white-sided dolphin (*Lagenorhynchus obliquidens*)	Common	Pelagic, shelf, coastal	26,880[20]	988,000[21]	NL	NC	N.A.	N.A.
Risso's dolphin (*Grampus griseus*)	Extralimital	Pelagic, shelf, coastal	N.A.	838,000[2]	NL	NC	N.A.	N.A.
Killer whale (*Orcinus orca*)	Common	Pelagic, shelf, coastal	2,636[23]	8,500[24]	NL[35]	NC	3.79	13.53
Short-finned pilot whale (*Globicephala macrorhynchus*)	Extralimital	Pelagic, shelf, coastal	N.A.	53,000[22]	NL	NC	N.A.	N.A.
Harbor porpoise (*Phocoena phocoena*)	Uncommon	Coastal	11,146[25] 31,046[26]	168,387[27]	NL	NC	N.A.	N.A.
Dall's porpoise (*Phocoenoides dalli*)	Common	Pelagic, shelf	83,400[20]	1,186,000[28]	NL	NC	25.69	62.50
Pinnipeds								
Northern fur seal (*Callorhinus ursinus*)	Uncommon	Pelagic, breeds coastally	653,171[7]	1.1 million[29]	NL	D	105.90	158.85
Steller sea lion (*Eumetopias jubatus*)	Common	Coastal, offshore	58,334- 72,223[30] 42,366[31]	N.A.	T[36] EN[36]	D	9.80	14.70
California sea lion (*Zalophus c. californianus*)	Uncommon	Coastal	N.A.	238,000[33]	NL	NC	N.A.	N.A.
Harbor seal (*Phoca vitulina richardsi*)	Uncommon	Coastal	45,975[26]	180,017[32]	NL	NC	N.A.	N.A.
Northern elephant seal (*Mirounga angustirostris*)	Uncommon	Coastal, offshore	N.A.	124,000[33]	NL	NC	0	0

N.A. Not available or not assessed.
[1] U.S. Endangered Species Act: EN = Endangered, T = Threatened, NL = Not listed.
[2] U.S. Marine Mammal Protection Act: D = Depleted, NC = Not Classified.
[3] Best density estimate as listed in Table 3 of the application.[4] Maximum density estimate as listed in Table 3 of the application.
[5] Bering Sea and Aleutian Islands (Wade *et al.*, 2010).
[6] Western population (Brownell *et al.*, 2001)
[7] Eastern North Pacific (Allen and Angliss, 2010).
[8] GOA (Calambokidis *et al.*, 2008).
[9] North Pacific Ocean (Barlow *et al.*, 2009).
[10] Western GOA and eastern Aleutians (Zerbini *et al.*, 2006).
[11] Northwest Pacific (Buckland *et al.*, 1992; IWC, 2009).
[12] North Pacific (Tillman, 1977).

[9] North Pacific Ocean (Barlow *et al*., 2009).
[10] Western GOA and eastern Aleutians (Zerbini *et al*., 2006).
[11] Northwest Pacific (Buckland *et al*., 1992; IWC, 2009).
[12] North Pacific (Tillman, 1977).
[13] North Pacific (Ohsumi and Wada, 1974).
[14] Eastern North Pacific (NMFS, 1998).
[15] Western GOA and eastern Aleutians (Zerbini *et al*., 2004).
[16] Eastern temperate North Pacific (Whitehead, 2002b).
[17] Eastern Tropical Pacific (Wade and Gerrodette, 1993).
[18] Western North Pacific (Reeves and Leatherwood, 1994; Kasuya, 2002).
[19] Cook Inlet stock (Shelden *et al*., 2010)
[20] Alaska stock (Allen and Angliss, 2010).
[21] North Pacific Ocean (Miyashita, 1993b).
[22] Western North Pacific Ocean (Miyashita, 1993a).
[23] Minimum abundance in Alaska, includes 2,084 resident and 552 GOA, Bering Sea, Aleutian Islands transients (Allen and Angliss, 2010).
[24] Eastern Tropical Pacific (Ford, 2002).
[25] Southeast Alaska stock (Allen and Angliss, 2010).
[26] GOA stock (Allen and Angliss, 2010).
[27] Eastern North Pacific (totals from Carretta *et al*., 2009 and Allen and Angliss, 2010).
[28] North Pacific Ocean and Bering Sea (Houck and Jefferson, 1999).
[29] North Pacific (Gelatt and Lowry, 2008).
[30] Eastern U.S. Stock (Allen and Angliss, 2010).
[31] Western U.S. Stock (Allen and Angliss, 2010).
[32] Alaska statewide (Allen and Angliss, 2010).
[33] Caretta *et al*., 2009.
[34] Cook Inlet DPS is listed as Endangered and Depleted; other stocks are not listed.
[35] Stocks in Alaska are not listed, but the southern resident DPS is listed as endangered. AT1 transient in Alaska is considered depleted and a strategic stock (NOAA, 2004a).
[36] Eastern stock is listed as threatened, and the western stock is listed as endangered.

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Refer to Section III of USGS's application for detailed information regarding the abundance and distribution, population status, and life history and behavior of these species and their occurrence in the project area. The application also presents how USGS calculated the estimated densities for the marine mammals in the survey area. NMFS has reviewed these data and determined them to be the best available scientific information for the purposes of the IHA.

Potential Effects on Marine Mammals

Acoustic stimuli generated by the operation of the airguns, which introduce sound into the marine environment, may have the potential to cause Level B harassment of marine mammals in the survey area. The effects of sounds from airgun operations might include one or more of the following: tolerance, masking of natural sounds, behavioral disturbance, temporary or permanent hearing impairment, or non-auditory physical or physiological effects (Richardson *et al.,* 1995; Gordon *et al.,* 2004; Nowacek *et al.,* 2007; Southall *et al.,* 2007).

Permanent hearing impairment, in the unlikely event that it occurred, would constitute injury, but temporary threshold shift (TTS) is not an injury (Southall *et al.,* 2007). Although the possibility cannot be entirely excluded, it is unlikely that the project would result in any cases of temporary or permanent hearing impairment, or any significant non-auditory physical or physiological effects. Based on the available data and studies described here, some behavioral disturbance is expected, but NMFS expects the disturbance to be localized and short-term.

The notice of the proposed IHA (76 FR 18167, April 1, 2011) included a discussion of the effects of sounds from airguns on mysticetes, odontocetes, and pinnipeds including tolerance, masking, behavioral disturbance, hearing impairment, and other non-auditory physical effects. NMFS refers the reader to USGS's application, and EA for additional information on the behavioral reactions (or lack thereof) by all types of marine mammals to seismic vessels.

Anticipated Effects on Marine Mammal Habitat, Fish, and Invertebrates

NMFS included a detailed discussion of the potential effects of this action on marine mammal habitat, including physiological and behavioral effects on marine fish and invertebrates in the notice of the proposed IHA (76 FR 18167, April 1, 2011). While NMFS anticipates that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, this impact to habitat is temporary and reversible which NMFS considered in further detail in the notice of the proposed IHA (76 FR 18167, April 1, 2011) as behavioral modification. The main impact associated with the activity would be temporarily elevated noise levels and the associated direct effects on marine mammals.

Recent work by Andre *et al.* (2011) purports to present the first morphological and ultrastructural evidence of massive acoustic trauma (*i.e.,* permanent and substantial alterations of statocyst sensory hair cells) in four cephalopod species subjected to low-frequency sound. The cephalopods, primarily cuttlefish, were exposed to continuous 40 to 400 Hz sinusoidal wave sweeps (100% duty cycle and 1 s sweep period) for two hours while captive in relatively small tanks (one 2,000 liter [L, 2 m^3] and one 200 L [0.2 m^3] tank). The received SPL was reported as 157±5 dB re 1 μPa, with peak levels at 175 dB re 1 μPa. As in the McCauley *et al.* (2003) paper on sensory hair cell damage in pink snapper as a result of exposure to seismic sound, the cephalopods were subjected to higher sound levels than they would be under natural conditions, and they were

unable to swim away from the sound source.

Mitigation

In order to issue an ITA 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 the availability of such species or stock for taking for certain subsistence uses.

USGS has based the mitigation measures described herein, to be implemented for the seismic survey, on the following:

(1) Protocols used during previous USGS and L–DEO seismic research cruises as approved by NMFS;

(2) Previous IHA applications and IHAs approved and authorized by NMFS; and

(3) Recommended best practices in Richardson *et al.* (1995), Pierson *et al.* (1998), and Weir and Dolman, (2007).

To reduce the potential for disturbance from acoustic stimuli associated with the activities, USGS and/or its designees will implement the following mitigation measures for marine mammals:

(1) EZs;

(2) Power-down procedures;

(3) Shut-down procedures;

(4) Ramp-up procedures; and

(5) Special procedures for situations and species of concern.

Planning Phase—In designing the seismic survey, USGS has considered potential environmental impacts including seasonal, biological, and weather factors; ship schedules; and equipment availability. Part of the considerations was whether the research objectives could be met with a smaller source; tests will be conducted to determine whether the two-string sub-array (3,300 in ^{3}) will be satisfactory to accomplish the geophysical objectives. If so, the smaller array will be used to minimize environmental impact. Also, the array will be powered-down to a single airgun during turns, and the array will be shut down during OBS deployment and retrieval.

EZs—Received sound levels have been determined by corrected empirical measurements for the 36 airgun array, and an L–DEO model was used to predict the EZs for the single 1900LL 40 in ^{3} airgun, which will be used during power-downs. Results were recently reported for propagation measurements of pulses from the 36 airgun array in two water depths (approximately 1,600 m and 50 m [5,249 to 164 ft]) in the Gulf of Mexico (GOM) in 2007 to 2008 (Tolstoy *et al.,* 2009). It would be prudent to use the empirical values that resulted to determine EZs for the airgun array. Results of the propagation measurements (Tolstoy *et al.,* 2009) showed that radii around the airguns for various received levels varied with water depth. During the study, all survey effort will take place in deep (greater than 1,000 m) water, so propagation in shallow water is not relevant here. The depth of the array was different in the GOM calibration study (6 m [19.7 ft]) than in the survey (9 m); thus, correction factors have been applied to the distances reported by Tolstoy *et al.* (2009). The correction factors used were the ratios of the 160, 180, and 190 dB distances from the modeled results for the 6,600 in ^{3} airgun array towed at 6 m versus 9 m. Based on the propagation measurements and modeling, the distances from the source where sound levels are predicted to be 190, 180, and 160 dB re 1 μPa (rms) were determined (see Table 1 above). The 180 and 190 dB radii are to 940 m and 400 m, respectively, as specified by NMFS (2000); these levels were used to establish the EZs.

If the PSVO detects marine mammal(s) within or about to enter the appropriate EZ, the airguns will be powered-down (or shut-down, if necessary) immediately.

Table 2 summarizes the predicted distances at which sound levels (160, 180, and 190 dB [rms]) are expected to be received from the 36 airgun array and a single airgun operating in deep water depths.

TABLE 2—MEASURED (ARRAY) OR PREDICTED (SINGLE AIRGUN) DISTANCES TO WHICH SOUND LEVELS ≥ 190, 180, AND 160 dB

[Re: 1 μPa (rms) could be received in water depths >1,000 m during the survey in the central GOA, June 5 to 25, 2011]

Source and volume	Water depth	Predicted RMS distances (m)		
		190 dB	180 dB	160 dB
Single Bolt airgun (40 in ^{3})	Deep > 1,000 m	12	40	385
4 Strings 36 airguns (6,600 in^3)	Deep > 1,000 m	400	940	3,850

Power-Down Procedures—A power-down involves decreasing the number of airguns in use such that the radius of the 180 dB (or 190 dB) zone is decreased to the extent that marine mammals are no longer in or about to enter the EZ. A power-down of the airgun array can also occur when the vessel is moving from one seismic line to another. During a power-down for mitigation, USGS will operate one airgun. The continued operation of one airgun is intended to alert marine mammals to the presence of the seismic vessel in the area. In contrast, a shut-down occurs when the *Langseth* suspends all airgun activity.

If the PSVO detects a marine mammal outside the EZ, but it is likely to enter the EZ, USGS will power-down the airguns before the animal is within the EZ. Likewise, if a mammal is already within the EZ, when first detected USGS will power-down the airguns immediately. During a power-down of the airgun array, USGS will also operate the 40 in^3 airgun. If a marine mammal is detected within or near the smaller EZ around that single airgun (Table 1), USGS will shut-down the airgun (see next section).

Following a power-down, USGS will not resume airgun activity until the marine mammal has cleared the EZ. USGS will consider the animal to have cleared the EZ if:

- A PSVO has visually observed the animal leave the EZ, or
- A PSVO has not sighted the animal within the EZ for 15 min for species with shorter dive durations (*i.e.,* small odontocetes or pinnipeds), or 30 min for species with longer dive durations (*i.e.,* mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, killer, and beaked whales).

During airgun operations following a power-down (or shut-down) whose duration has exceeded the time limits specified previously, USGS will ramp-up the airgun array gradually (see Shut-down and Ramp-up Procedures).

Shut-Down Procedures—USGS will shut down the operating airgun(s) if a

marine mammal is seen within or approaching the EZ for the single airgun. USGS will implement a shut-down:

(1) If an animal enters the EZ of the single airgun after USGS has initiated a power-down; or

(2) If an animal is initially seen within the EZ of the single airgun when more than one airgun (typically the full airgun array) is operating.

USGS will not resume airgun activity until the marine mammal has cleared the EZ, or until the PSVO is confident that the animal has left the vicinity of the vessel. Criteria for judging that the animal has cleared the EZ will be as described in the preceding section.

Ramp-Up Procedures—USGS will follow a ramp-up procedure when the airgun array begins operating after a specified period without airgun operations or when a power-down has exceeded that period. USGS proposes that, for the present cruise, this period would be approximately eight min. This period is based on the 180 dB radius (940 m) for the 36 airgun array towed at a depth of 9 m in relation to the minimum planned speed of the *Langseth* while shooting (7.4 km/hr). USGS and L–DEO have used similar periods (approximately 8 to 10 min) during previous L–DEO surveys.

Ramp-up will begin with the smallest airgun in the array (40 in^3). Airguns will be added in a sequence such that the source level of the array will increase in steps not exceeding six dB per five min period over a total duration of approximately 35 min. During ramp-up, the PSOs will monitor the EZ, and if marine mammals are sighted, USGS will implement a power-down or shut-down as though the full airgun array were operational.

If the complete EZ has not been visible for at least 30 min prior to the start of operations in either daylight or nighttime, USGS will not commence the ramp-up unless at least one airgun (40 in^3 or similar) has been operating during the interruption of seismic survey operations. Given these provisions, it is likely that the airgun array will not be ramped-up from a complete shut-down at night or in thick fog, because the outer part of the EZ for that array will not be visible during those conditions. If one airgun has operated during a power-down period, ramp-up to full power will be permissible at night or in poor visibility, on the assumption that marine mammals will be alerted to the approaching seismic vessel by the sounds from the single airgun and could move away. USGS will not initiate a ramp-up of the airguns if a marine mammal is sighted within or near the applicable EZs during the day or close to the vessel at night.

Special Procedures for Situations and Species of Concern—USGS will implement special mitigation procedures as follows:

- The airguns will be shut-down immediately if ESA-listed species for which no takes are being requested (*i.e.,* North Pacific right, sei, blue, and beluga whales) are sighted at any distance from the vessel. Ramp-up will only begin if the whale has not been seen for 30 min.
- Concentrations of humpback, fin, and/or killer whales will be avoided if possible, and the array will be powered-down if necessary. For purposes of this survey, a concentration or group of whales will consist of three or more individuals visually sighted that do not appear to be traveling (*e.g.,* feeding, socializing, *etc.*).

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

(1) The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;

(2) The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and

(3) The practicability of the measure for applicant implementation.

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

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 IHAs 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 action area.

Monitoring

USGS would sponsor marine mammal monitoring during the present project, in order to implement the mitigation measures that require real-time monitoring, and to satisfy the anticipated monitoring requirements of the IHA. USGS's Monitoring Plan is described below this section. The monitoring work described here has been planned as a self-contained project independent of any other related monitoring projects that may be occurring simultaneously in the same regions. USGS is prepared to discuss coordination of its monitoring program with any related work that might be done by other groups insofar as this is practical and desirable.

Vessel-Based Visual Monitoring

USGS's PSVOs will be based aboard the seismic source vessel and will watch for marine mammals near the vessel during daytime airgun operations and during any ramp-ups at night. PSVOs will also watch for marine mammals near the seismic vessel for at least 30 min prior to the start of airgun operations after an extended shut-down.

PSVOs will conduct observations during daytime periods when the seismic system is not operating for comparison of sighting rates and behavior with and without airgun operations and between acquisition periods. Based on PSVO observations, the airguns will be powered-down or shut-down when marine mammals are observed within or about to enter a designated EZ.

During seismic operations in the central GOA, at least four PSOs will be based aboard the *Langseth*. USGS will appoint the PSOs with NMFS's concurrence. Observations will take place during ongoing daytime operations and nighttime ramp-ups of the airguns. During the majority of seismic operations, two PSVOs will be on duty from the observation tower to monitor marine mammals near the seismic vessel. Use of two simultaneous PSVOs will increase the effectiveness of detecting animals near the source vessel. However, during meal times and bathroom breaks, it is sometimes difficult to have two PSVOs on effort, but at least one PSVO will be on duty. PSVO(s) will be on duty in shifts of duration no longer than 4 hr.

Two PSVOs will also be on visual watch during all nighttime ramp-ups of the seismic airguns. A third PSO (*i.e.,* Protected Species Acoustic Observer

[PSAO]) will monitor the PAM equipment 24 hours a day to detect vocalizing marine mammals present in the action area. In summary, a typical daytime cruise would have scheduled two PSVOs on duty from the observation tower, and a third PSAO on PAM. Other crew will also be instructed to assist in detecting marine mammals and implementing mitigation requirements (if practical). Before the start of the seismic survey, the crew will be given additional instruction on how to do so.

The *Langseth* is a suitable platform for marine mammal observations. When stationed on the observation platform, the eye level will be approximately 21.5 m (70.5 ft) above sea level, and the PSVO will have a good view around the entire vessel. During daytime, the PSVOs will scan the area around the vessel systematically with reticle binoculars (*e.g.,* 7 x 50 Fujinon), Big-eye binoculars (25 x 150), and with the naked eye. During darkness, NVDs will be available (ITT F500 Series Generation 3 binocular-image intensifier or equivalent), when required. Laser range-finding binoculars (Leica LRF 1200 laser rangefinder or equivalent) will be available to assist with distance estimation. Those are useful in training observers to estimate distances visually, but are generally not useful in measuring distances to animals directly; that is done primarily with the reticles in the binoculars.

When marine mammals are detected within or about to enter the designated EZ, the airguns will immediately be powered-down or shut-down if necessary. The PSVO(s) will continue to maintain watch to determine when the animal(s) are outside the EZ by visual confirmation. Airgun operations will not resume until the animal is confirmed to have left the EZ, or if not observed after 15 min for species with shorter dive durations (small odontocetes and pinnipeds) or 30 min for species with longer dive durations (mysticetes and large odontocetes, including sperm, killer, and beaked whales).

PAM

PAM will complement the visual monitoring program, when practicable. Visual monitoring typically is not effective during periods of poor visibility or at night, and even with good visibility, is unable to detect marine mammals when they are below the surface or beyond visual range.

Besides the three PSVOs, an additional PSAO with primary responsibility for PAM will also be aboard the vessel. USGS can use acoustic monitoring in addition to visual observations to improve detection, identification, and localization of cetaceans. The acoustic monitoring will serve to alert visual observers (if on duty) when vocalizing cetaceans are detected. It is only useful when marine mammals call, but it can be effective either by day or by night, and does not depend on good visibility. It will be monitored in real time so that the PSVOs can be advised when cetaceans are detected. When bearings (primary and mirror-image) to calling cetacean(s) are determined, the bearings will be relayed to the visual observer to help him/her sight the calling animal(s).

The PAM system consists of hardware (*i.e.,* hydrophones) and software. The "wet end" of the system consists of a towed hydrophone array that is connected to the vessel by a cable. The array will be deployed from a winch located on the back deck. A deck cable will connect from the winch to the main computer laboratory where the acoustic station and signal conditioning and processing system will be located. The digitized signal and PAM system is monitored by PSAOs at a station in the main laboratory. The lead in from the hydrophone array is approximately 400 m (1,312 ft) long, the active section of the array is approximately 56 m (184 ft) long, and the hydrophone array is typically towed at depths of less than 20 m (66 ft).

Ideally, the PSAO will monitor the towed hydrophones 24 hr per day at the seismic survey area during airgun operations, and during most periods when the *Langseth* is underway while the airguns are not operating. However, PAM may not be possible if damage occurs to both the primary and back-up hydrophone arrays during operations. The primary PAM streamer on the *Langseth* is a digital hydrophone streamer. Should the digital streamer fail, back-up systems should include an analog spare streamer and a hull-mounted hydrophone. Every effort would be made to have a working PAM system during the cruise. In the unlikely event that all three of these systems were to fail, USGS would continue science acquisition with the visual-based observer program. The PAM system is a supplementary enhancement to the visual monitoring program. If weather conditions were to prevent the use of PAM then conditions would also likely prevent the use of the airgun array.

One PSAO will monitor the acoustic detection system at any one time, by listening to the signals from two channels via headphones and/or speakers and watching the real-time spectrographic display for frequency ranges produced by cetaceans. PSAOs monitoring the acoustical data will be on shift for one to six hours at a time. Besides the PSVO, an additional PSAO with primary responsibility for PAM will also be aboard the source vessel. All PSVOs are expected to rotate through the PAM position, although the most experienced with acoustics will be on PAM duty more frequently.

When a vocalization is detected while visual observations are in progress, the PSAO will contact the PSVO immediately, to alert him/her to the presence of cetaceans (if they have not already been seen), and to allow a power-down or shut-down to be initiated, if required. The information regarding the call will be entered into a database. Data entry will include an acoustic encounter identification number, whether it was linked with a visual sighting, date, time when first and last heard and whenever any additional information was recorded, position and water depth when first detected, bearing if determinable, species or species group (*e.g.,* unidentified dolphin, sperm whale), types and nature of sounds heard (*e.g.,* clicks, continuous, sporadic, whistles, creaks, burst pulses, strength of signal, *etc.*), and any other notable information. The acoustic detection can also be recorded for further analysis.

PSVO Data and Documentation

PSVOs will record data to estimate the numbers of marine mammals exposed to various received sound levels and to document apparent disturbance reactions or lack thereof. Data will be used to estimate numbers of animals potentially "taken" by harassment (as defined in the MMPA). They will also provide information needed to order a power-down or shut-down of the airguns when a marine mammal is within or near the EZ. Observations will also be made during daytime periods when the *Langseth* is underway without seismic operations. In addition to transits to, from, and through the study area, there will also be opportunities to collect baseline biological data during the deployment and recovery of OBSs.

When a sighting is made, the following information about the sighting will be recorded:

1. Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to the airguns or vessel (*e.g.,* none, avoidance,

approach, paralleling, *etc.*), and behavioral pace.

2. Time, location, heading, speed, activity of the vessel, sea state, visibility, and sun glare.

The data listed under (2) will also be recorded at the start and end of each observation watch, and during a watch whenever there is a change in one or more of the variables.

All observations and power-downs or shut-downs will be recorded in a standardized format. Data will be entered into an electronic database. The accuracy of the data entry will be verified by computerized data validity checks as the data are entered and by subsequent manual checking of the database. These procedures will allow initial summaries of data to be prepared during and shortly after the field program, and will facilitate transfer of the data to statistical, graphical, and other programs for further processing and archiving.

Results from the vessel-based observations will provide:

1. The basis for real-time mitigation (airgun power-down or shut-down).

2. Information needed to estimate the number of marine mammals potentially taken by harassment, which must be reported to NMFS.

3. Data on the occurrence, distribution, and activities of marine mammals in the area where the seismic study is conducted.

4. Information to compare the distance and distribution of marine mammals relative to the source vessel at times with and without seismic activity.

5. Data on the behavior and movement patterns of marine mammals seen at times with and without seismic activity.

USGS will submit a report to NMFS and NSF within 90 days after the end of the cruise. The report will describe the operations that were conducted and sightings of marine mammals near the operations. The report will provide full documentation of methods, results, and interpretation pertaining to all monitoring. The 90-day report will summarize the dates and locations of seismic operations, and all marine mammal sightings (dates, times, locations, activities, associated seismic survey activities). The report will also include estimates of the number and nature of exposures that could result in "takes" of marine mammals by harassment or in other ways.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury (Level A harassment), serious injury or mortality (*e.g.,* ship-strike, gear interaction, and/or entanglement), USGS will immediately cease the specified activities and immediately report the incident to the Chief of the Permits, Conservation, and Education Division, Office of Protected Resources, NMFS, at 301–713–2289 and/or by e-mail to *Michael.Payne@noaa.gov* and *Howard.Goldstein@noaa.gov,* and the Alaska Regional Stranding Coordinators (*Aleria.Jensen@noaa.gov* and *Barbara.Mahoney@noaa.gov*). The report must 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 will not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with USGS to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. USGS may not resume their activities until notified by NMFS via letter or e-mail, or telephone.

In the event that USGS 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), USGS will immediately report the incident to the Chief of the Permits, Conservation, and Education Division, Office of Protected Resources, NMFS, at 301–713–2289, and/or by e-mail to *Michael.Payne@noaa.gov* and *Howard.Goldstein@noaa.gov,* and the NMFS Alaska Stranding Hotline (1–877–925–7773) and/or by e-mail to the Alaska Regional Stranding Coordinators (*Aleria.Jensen@noaa.gov* and *Barbara.Mahoney@noaa.gov*). The report must include the same information identified in the paragraph above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with USGS to determine whether modifications in the activities are appropriate.

In the event that USGS 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), USGS will report the incident to the Chief of the Permits, Conservation, and Education Division, Office of Protected Resources, NMFS, at 301–713–2289, and/or by e-mail to *Michael.Payne@noaa.gov* and *Howard.Goldstein@noaa.gov,* and the NMFS Alaska Stranding Hotline (1–877–925–7773) and/or by e-mail to the Alaska Regional Stranding Coordinators (*Aleria.Jensen@noaa.gov* and *Barbara.Mahoney@noaa.gov*), within 24 hours of the discovery. USGS will 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 by Incidental Harassment

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 harassment is anticipated and authorized as a result of the marine seismic survey in the central GOA. Acoustic stimuli (*i.e.,* increased underwater sound) generated during the operation of the seismic airgun array may have the potential to cause marine mammals in the survey area to be exposed to sounds at or greater than 160 dB or cause temporary, short-term changes in behavior. There is no evidence that the planned activities could result in injury, serious injury, or mortality within the specified geographic area for which NMFS has issued the IHA. Take by injury, serious injury, or mortality is thus neither anticipated nor authorized. NMFS has determined that the required mitigation and monitoring measures will minimize any potential risk for injury, serious injury, or mortality.

The following sections describe USGS's methods to estimate take by incidental harassment and present the applicant's estimates of the numbers of marine mammals that could be affected during the seismic program. The

estimates are based on a consideration of the number of marine mammals that could be harassed by operations with the 36 airgun array to be used during approximately 3,300 km (1,782 nmi) of survey lines in the central GOA.

USGS assumes that, during simultaneous operations of the airgun array and the other sources, any marine mammals close enough to be affected by the MBES and SBP would already be affected by the airguns. However, whether or not the airguns are operating simultaneously with the other sources, marine mammals are expected to exhibit no more than short-term and inconsequential responses to the MBES and SBP given their characteristics (*e.g.,* narrow, downward-directed beam) and other considerations described previously. Such reactions are not considered to constitute "taking" (NMFS, 2001). Therefore, USGS provides no additional allowance for animals that could be affected by sound sources other than airguns.

There are several sources of systematic data on the numbers and distributions of marine mammals in the coastal and nearshore areas of the GOA, but there are fewer data for offshore areas. Vessel-based surveys in the northern and western GOA from the Kenai Peninsula to the central Aleutian Islands during July to August, 2001 to 2003 (Zerbini *et al.,* 2003, 2006, 2007) and in the northern and western GOA from Prince William Sound to approximately 160° West off the Alaska Peninsula during June 26 to July 15, 2003 (Waite, 2003) were confined to waters less than 1,000 m deep, and most effort was in depths less than 100 m. Similarly, Dahlheim *et al.* (2000) conducted aerial surveys of the nearshore waters from Bristol Bay to Dixon Entrance for harbor porpoises during 1993, and Dahlheim and Towell (1994) conducted vessel-based surveys of Pacific white-sided dolphins in the inland waterways of southeast Alaska during April to May, June or July, and September to early October of 1991 to 1993.

Deeper water was included in several surveys. In a report on a seismic cruise in southeast Alaska from Dixon Entrance to Kodiak Island during August to September, 2004, MacLean and Koski (2005) included density estimates of cetaceans and pinnipeds for each of three depth ranges (less than 100 m, 100 to 1,000 m, and greater than 1,000 m) during non-seismic periods. Hauser and Holst (2009) reported density estimates during non-seismic periods for all marine mammals sighted during a September to early October seismic cruise in southeast Alaska for each of the same three depth ranges as MacLean and Koski (2005). Rone *et al.* (2010) conducted surveys of nearshore and offshore strata in the GOA during April, 2009, with much of their survey effort in water depths greater than 1,000 m. The Department of the Navy (DON, 2009) estimated densities of several species of marine mammals in the offshore GOA based on surveys by other researchers.

Table 2 (Table 3 of the IHA application) gives the estimated average (best) and maximum densities of marine mammals expected to occur in the deep, offshore waters of the survey area. USGS used the densities reported by MacLean and Koski (2005) and Hauser and Holst (2009) for greater than 1,000 m, which were corrected for both trackline detection probability and availability biases. USGS calculated density estimates from effort and sightings in water depths greater than 1,000 m in Rone *et al.* (2010) for humpback, fin, and killer whales and Dall's porpoise, and in 500 to 1,000 m depths of Waite (2003) for Cuvier's and Baird's beaked whales, using values for $f(0)$ and $g(0)$ from Barlow and Forney (2007). Finally, USGS used seasonal densities for pinnipeds from DON (2009), which were based on counts at haul-out sites and biological (mostly breeding) information to estimate in-water densities.

There is some uncertainty about the representativeness of the data and the assumptions used in the calculations below for two main reasons: (1) the surveys from which densities were derived were at different times of year: April (Rone *et al.,* 2010), June to July (Waite, 2003), August to September (MacLean and Koski, 2005), and September to October (Hauser and Holst, 2009); and (2) the MacLean and Koski (2005) and Hauser and Holst (2009) surveys were conducted primarily in southeast Alaska (east of the study area). However, the approach used here is believed to be the best available approach.

Also, to provide some allowance for these uncertainties, "maximum estimates" as well as "best estimates" of the densities present and numbers potentially affected have been derived. Best estimates of cetacean density are effort-weighted mean densities from the various surveys, whereas maximum estimates of density come from the individual survey that provided the highest density. For marine mammals where only one density estimate was available, the maximum is 1.5 times the best estimate.

For one species, the Dall's porpoise, density estimates in the original reports are much higher than densities expected during the survey, because this porpoise is attracted to vessels. USGS estimates for Dall's porpoises are from vessel-based surveys without seismic activity; they are overestimates possibly by a factor of 5 times, given the tendency of this species to approach vessels (Turnock and Quinn, 1991). Noise from the airgun array during the survey is expected to at least reduce and possibly eliminate the tendency of this porpoise to approach the vessel. Dall's porpoises are tolerant of small airgun sources (MacLean and Koski, 2005) and tolerated higher sound levels than other species during a large-array survey (Bain and Williams, 2006); however, they did respond to that and another large airgun array by moving away (Calambokidis and Osmek, 1998; Bain and Williams, 2006). Because of the probable overestimates, the best and maximum estimates for Dall's porpoises shown in Table 2 (Table 3 of the IHA application) are one-quarter of the reported densities. In fact, actual densities are probably slightly lower than that.

USGS's estimates of exposures to various sound levels assume that the surveys will be fully completed including the contingency line; in fact, the ensonified areas calculated using the planned number of line-km have been increased by 25% to accommodate lines that may need to be repeated, equipment testing, *etc.* As is typical during offshore ship surveys, inclement weather and equipment malfunctions are likely to cause delays and may limit the number of useful line-kilometers of seismic operations that can be undertaken. Furthermore, any marine mammal sightings within or near the designated EZs will result in the power-down or shut-down of seismic operations as a mitigation measure. Thus, the following estimates of the numbers of marine mammals potentially exposed to sound levels of 160 dB re 1 μPa (rms) are precautionary and probably overestimate the actual numbers of marine mammals that might be involved. These estimates also assume that there will be no weather, equipment, or mitigation delays, which is highly unlikely.

USGS estimated the number of different individuals that may be exposed to airgun sounds with received levels greater than or equal to 160 dB re 1 μPa (rms) on one or more occasions by considering the total marine area that would be within the 160 dB radius around the operating airgun array on at least one occasion and the expected density of marine mammals. The number of possible exposures (including repeated exposures of the

same individuals) can be estimated by considering the total marine area that would be within the 160 dB radius around the operating airguns, including areas of overlap. In the survey, the seismic lines are widely spaced in the survey area, so few individual marine mammals would be exposed more than once during the survey. The area including overlap is only 1.13 times the area excluding overlap. Moreover, it is unlikely that a particular animal would stay in the area during the entire survey. The number of different individuals potentially exposed to received levels greater than or equal to 160 re 1 μPa was calculated by multiplying:

(1) The expected species density, either "mean" (*i.e.,* best estimate) or "maximum", times

(2) The anticipated area to be ensonified to that level during airgun operations excluding overlap.

The area expected to be ensonified was determined by entering the planned survey lines into a MapInfo GIS, using the GIS to identify the relevant areas by "drawing" the applicable 160 dB buffer (see Table 1 of the IHA application) around each seismic line, and then calculating the total area within the buffers. Areas of overlap (because of lines being closer together than the 160 dB radius) were limited and included only once when estimating the number of individuals exposed. Before calculating numbers of individuals exposed, the areas were increased by 25% as a precautionary measure.

Table 2 (Table 4 of the IHA application) shows the best and maximum estimates of the number of different individual marine mammals that potentially could be exposed to greater than or equal to 160 dB re 1 μPa (rms) during the seismic survey if no animals moved away from the survey vessel. The requested take authorization, given in Table 3 (the far right column of Table 4 of the IHA application), is based on the maximum estimates rather than the best estimates of the numbers of individuals exposed, because of uncertainties about the representativeness of the density data discussed previously. For cetacean species not listed under the ESA that could occur in the study area but were not sighted in the surveys from which density estimates were calculated—Pacific white-sided dolphins, Risso's dolphins, short-finned pilot whales, and Stejneger's beaked whales—the average group size has been used to request take authorization. For ESA-listed cetacean species unlikely to be encountered during the study (*i.e.,* North Pacific right, sei, and blue whales), the requested takes are zero.

Applying the approach described above, approximately 20,933 km^2 (6,103.1 nmi^2) (approximately 26,166 km^2 [7,628.8 nmi^2] including the 25% contingency) would be within the 160 dB isopleths on one or more occasions during the survey, assuming that the contingency line is completed. Because this approach does not allow for turnover in the marine mammal populations in the study area during the course of the survey, the actual number of individuals exposed could be underestimated in some cases. However, the approach assumes that no cetaceans will move away from or toward the trackline as the *Langseth* approaches in response to increasing sound levels prior to the time the levels reach 160 dB, which will result in overestimates for those species known to avoid seismic vessels.

The "best estimate" of the number of individual cetaceans that could be exposed to seismic sounds with greater than or equal to 160 dB re 1 μPa (rms) during the survey is 973 (see Table 4 of the IHA application). That total includes 68 humpback, 76 fin, 10 sperm, 37 Cuvier's beaked, 11 Baird's beaked, and 99 killer whales, which would represent 0.3%, 0.5%, less than 0.1%, 0.2%, 0.2%, and 1.2% of the regional populations, respectively. Dall's porpoises are expected to be the most common species in the study area; the best estimate of the number of Dall's porpoises that could be exposed is 672 or less than 0.1% of the regional population. This may be a slight overestimate because the estimated densities are slight overestimates. Estimates for other species are lower. The "maximum estimates" total 2,539 cetaceans. "Best estimates" of 256 Steller sea lions and 2,771 northern fur seals could be exposed to airgun sounds with received levels greater than or equal to 160 dB re 1 μPa (rms). These estimates represent 0.6% of the Steller sea lion regional population and less than 0.1% of the northern fur seal regional population. The estimated numbers of pinnipeds that could be exposed to received levels greater than or equal to 160 dB re 1 μPa (rms) are probably overestimates of the actual numbers that will be affected. During the June survey period, the Steller sea lion is in its breeding season, with males staying on land and females with pups generally staying close to the rookeries in shallow water. Male northern fur seals are at their rookeries in June, and adult females are either there or migrating there, possibly through the survey area. No take has been requested for North Pacific right, minke, sei, and blue whales, beluga whales, harbor porpoises, Northern elephant and harbor seals, and California sea lions.

TABLE 3—ESTIMATES OF THE POSSIBLE NUMBERS OF MARINE MAMMALS EXPOSED TO DIFFERENT SOUND LEVELS ≥160 dB DURING USGS'S SEISMIC SURVEY IN THE CENTRAL GOA DURING JUNE, 2011

Species	Estimated No. of individuals exposed to sound levels		Take authorized	Approximate percent of regional population [2] (Best)
	≥160 dB re 1 μPa (Best [1])	≥160 dB re 1 μPa (Maximum [1])		
Mysticetes:				
North Pacific right whale	0	0	0	0
Gray whale	NA	NA	NA	NA
Humpback whale	68	171	68	0.3
Minke whale	0	0	0	0
Sei whale	0	0	0	0
Fin whale	76	272	76	0.47
Blue whale	0	0	0	0
Physeteridae:				
Sperm whale	10	44	10	<0.1
Ziphidae:				
Cuvier's beaked whale	37	47	37	0.2
Baird's beaked whale	11	16	11	0.2
Stejneger's beaked whale	0	0	15	0

TABLE 3—ESTIMATES OF THE POSSIBLE NUMBERS OF MARINE MAMMALS EXPOSED TO DIFFERENT SOUND LEVELS ≥160 dB DURING USGS'S SEISMIC SURVEY IN THE CENTRAL GOA DURING JUNE, 2011—Continued

Species	Estimated No. of individuals exposed to sound levels		Take authorized	Approximate percent of regional population [2] (Best)
	≥160 dB re 1 μPa (Best [1])	≥160 dB re 1 μPa (Maximum [1])		
Delphinidae:				
Beluga whale	NA	NA	NA	NA
Pacific white-sided dolphin	0	0	90	NA
Risso's dolphin	0	0	33	NA
Killer whale	99	354	99	1.17
Short-finned pilot whale	0	0	50	NA
Phocoenidae:				
Harbor porpoise	NA	NA	NA	NA
Dall's porpoise	672	1,635	672	<0.1
Pinnipeds:				
Northern fur seal	2,771	4,157	2,771	<0.1
Steller sea lion	256	385	256	0.6
California sea lion	NA	NA	NA	NA
Harbor seal	NA	NA	NA	NA
Northern elephant seal	0	0	0	0

[1] Best and maximum estimates are based on densities from Table 3 and ensonified areas (including 25% contingency) of 26,166.25 km[2] for 160 dB.

[2] Regional population size estimates are from Table 2 (see Table 2 of the IHA application); NA means not available.

Encouraging and Coordinating Research

USGS will coordinate the planned marine mammal monitoring program associated with the seismic survey in the central GOA with other parties that may have an interest in the area and/or be conducting marine mammal studies in the same region during the seismic survey. USGS will coordinate with applicable U.S. agencies (*e.g.,* NMFS), and will comply with their requirements.

Negligible Impact and Small Numbers Analysis and Determination

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 evaluated factors such as:

(1) The number of anticipated injuries, serious injuries, or mortalities;

(2) The number, nature, intensity, and duration of Level B harassment (all relatively limited); and

(3) The context in which the takes occur (*i.e.,* impacts to areas of significance, impacts to local populations, and cumulative impacts when taking into account successive/contemporaneous actions when added to baseline data);

(4) The status of stock or species of marine mammals (*i.e.,* depleted, not depleted, decreasing, increasing, stable, and impact relative to the size of the population);

(5) Impacts on habitat affecting rates of recruitment or survival; and

(6) The effectiveness of monitoring and mitigation measures (*i.e.,* the manner and degree in which the measure is likely to reduce adverse impacts to marine mammals, the likely effectiveness of measures, and the practicability of implementation).

For reasons stated previously in this document, and in the proposed notice of an IHA (76 FR 18167, April 1, 2011), the specified activities associated with the marine seismic survey are not likely to cause PTS, or other non-auditory injury, serious injury, or death because:

(1) The likelihood that, given sufficient notice through relatively slow ship speed, marine mammals are expected to move away from a noise source that is annoying prior to its becoming potentially injurious;

(2) The potential for temporary or permanent hearing impairment is very low and would likely be avoided through the incorporation of the monitoring and mitigation measures;

(3) The fact that pinnipeds and cetaceans would have to be closer than 400 m (1,312.3 ft) and 940 m (3,084 ft) in deep water when the 36 airgun array and 12 m (39.4 ft) and 40 m (131.2 ft) when the single airgun is in use at 9 m (29.5 ft) tow depth from the vessel to be exposed to levels of sound believed to have even a minimal chance of causing permanent threshold shift; and

(4) The likelihood that marine mammal detection ability by trained PSOs is high at close proximity to the vessel.

No injuries, serious injuries, or mortalities are anticipated to occur as a result of the USGS's planned marine seismic survey, and none are authorized. Only short-term behavioral disturbance is anticipated to occur due to the brief and sporadic duration of the survey activities. Due to the nature, degree, and context of behavioral harassment anticipated, the activity is not expected to impact rates of recruitment or survival for any affected species or stock.

As mentioned previously, NMFS estimates that nine species of marine mammals under its jurisdiction could be potentially affected by Level B harassment over the course of the IHA. For each species, these numbers are small (each, one percent or less) relative to the population size. NMFS has determined, provided that the aforementioned mitigation and monitoring measures are implemented, that the impact of conducting a marine seismic survey in the central GOA, June 2011, may result, at worst, in a temporary modification in behavior and/or low-level physiological effects (Level B harassment) of small numbers of certain species of marine mammals.

While behavioral modifications, including temporarily vacating the area during the operation of the airgun(s), may be made by these species to avoid the resultant acoustic disturbance, the availability of alternate areas within these areas and the short and sporadic duration of the research activities, have led NMFS to determine that this action

will have a negligible impact on the species in the specified geographic region.

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 finds that USGS's planned research activities will result in the incidental take of small numbers of marine mammals, by Level B harassment only, and that the total taking from the marine seismic survey will have a negligible impact on the affected species or stocks of marine mammals; and that impacts to affected species or stocks of marine mammals have been mitigated to the lowest level practicable.

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. There are no relevant subsistence uses of marine mammals in the study area (deep, offshore waters of the central GOA) that implicate MMPA section 101(a)(5)(D).

Endangered Species Act

Of the species of marine mammals that may occur in the survey area, several are listed as endangered under the ESA, including the North Pacific right, humpback, sei, fin, blue, and sperm whales, as well as the Cook Inlet DPS of beluga whales and the western stock of Steller sea lions. The eastern stock of Steller sea lions is listed as threatened, as is the southwest Alaska DPS of the sea otter. Under section 7 of the ESA, USGS initiated formal consultation with the NMFS, Office of Protected Resources, Endangered Species Division, on this seismic survey. NMFS's Office of Protected Resources, Permits, Conservation and Education Division, also initiated formal consultation under section 7 of the ESA with NMFS's Office of Protected Resources, Endangered Species Division, to obtain a Biological Opinion (BiOp) evaluating the effects of issuing the IHA on threatened and endangered marine mammals and, if appropriate, authorizing incidental take. In June 2011, NMFS issued a BiOp and concluded that the action and issuance of the IHA are not likely to jeopardize the continued existence of the North Pacific right, humpback, sei, fin, blue, and sperm whales, Cook Inlet DPS of beluga whales, and Steller sea lions. The BiOp also concluded that designated critical habitat for these species does not occur in the action area and would not be affected by the survey. USGS must comply with the Relevant Terms and Conditions of the Incidental Take Statement (ITS) corresponding to NMFS's BiOp issued to both USGS and NMFS's Office of Protected Resources. USGS must also comply with the mitigation and monitoring requirements included in the IHA in order to be exempt under the ITS in the BiOp from the prohibition on take of listed endangered marine mammal species otherwise prohibited by section 9 of the ESA.

NEPA

With its complete application, USGS provided NMFS an EA analyzing the direct, indirect, and cumulative environmental impacts of the specified activities on marine mammals including those listed as threatened or endangered under the ESA. The EA, prepared by LGL on behalf of USGS, is entitled "Environmental Assessment of a Marine Geophysical Survey by the R/V *Marcus G. Langseth* in the central Gulf of Alaska, June 2011." After NMFS reviewed and evaluated the USGS EA for consistency with the regulations published by the Council of Environmental Quality (CEQ) and NOAA Administrative Order 216–6, Environmental Review Procedures for Implementing the National Environmental Policy Act, NMFS adopted the USGS EA and issued a Finding of No Significant Impact (FONSI).

Authorization

NMFS has issued an IHA to USGS for the take, by Level B harassment, of small numbers of marine mammals incidental to conducting a marine geophysical survey in the central GOA, June 2011, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: June 3, 2011.

Helen M. Golde,

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

[FR Doc. 2011–14331 Filed 6–8–11; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XA449

Takes of Marine Mammals Incidental to Specified Activities; Harbor Activities Related to the Delta IV/Evolved Expendable Launch Vehicle at Vandenberg Air Force Base, CA

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA) regulations, notification is hereby given that NMFS has issued an Incidental Harassment Authorization (IHA) to United Launch Alliance (ULA), to take marine mammals, by Level B harassment, incidental to conducting *Delta Mariner* operations, cargo unloading activities, and harbor maintenance activities related to the Delta IV/Evolved Expendable Launch Vehicle (Delta IV/EELV) at south Vandenberg Air Force Base, CA (VAFB).

DATES: Effective June 7, 2011, through June 6, 2012.

ADDRESSES: A copy of the authorization, application, and associated Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) may be obtained by writing to P. Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East West Highway, Silver Spring, MD 20910, telephoning the contact listed below (see **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications.*

Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Jeannine Cody, NMFS, Office of Protected Resources, NMFS (301) 713–2289.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the MMPA (16 U.S.C. 1371 (a)(5)(D)) directs the Secretary of Commerce to authorize, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by U.S. citizens who