

**DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration**

[I.D.022800B]

**Small Takes of Marine Mammals Incidental to Specified Activities; Marine Seismic-Reflection Data Collection in Southern California**

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

**ACTION:** Notice of issuance of an incidental harassment authorization.

**SUMMARY:** In accordance with provisions of the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that an Incidental Harassment Authorization (IHA) to take small numbers of marine mammals by harassment incidental to collecting marine seismic-reflection data in southern California waters has been issued to the U.S. Geological Survey (USGS).

**DATES:** This authorization is effective from June 5, 2000, through September 30, 2000.

**ADDRESSES:** A copy of the application may be obtained by writing to Donna Wieting, Chief, Marine Mammal Conservation Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Silver Spring, MD 20910-3225, or by telephoning one of the contacts listed here.

**FOR FURTHER INFORMATION CONTACT:** Kenneth R. Hollingshead, NMFS, (301) 713-2055, or Christina Fahy, NMFS, 562-960-4023.

**SUPPLEMENTARY INFORMATION:****Background**

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

Permission may be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses, and if permissible methods of taking

and requirements pertaining to the monitoring and reporting of such takings are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Subsection 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. The MMPA now defines "harassment" as:

\* \* \* any act of pursuit, torment, or annoyance which (a) has the potential to injure a marine mammal or marine mammal stock in the wild; or (b) 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.

Subsection 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

**Summary of Request**

On January 24, 2000, NMFS received a request from the USGS for authorization to take small numbers of several species of marine mammals by harassment incidental to collecting marine seismic-reflection data from waters off southern California. Seismic data will be collected during a 3-week period between May and July 2000, preferably June, to determine the source of the invasion of seawater into freshwater aquifers that are critical to the Los Angeles-San Pedro area water supply and to support studies of the regional landslide and earthquake hazards for people within the coastal cities between Santa Barbara and San Diego.

**Background**

The USGS proposes to conduct a high-resolution seismic survey offshore from Southern California. For a 3-week period between May and July 2000, preferably in June, the USGS would like to collect seismic-reflection data to investigate: (1) the intrusion of seawater into freshwater coastal aquifers that are critical to the water supply for people within the Los Angeles-San Pedro area and (2) the hazards posed by landslides,

tsunamis, and potential earthquake faults in the nearshore region from Santa Barbara to San Diego. Both of these tasks are multi-year efforts that require high-resolution, seismic-reflection data using a minisparker acoustic source.

Coastal Southern California is the most highly populated urban area along the U.S. Pacific coast with 30 percent of the California population (approximately 10 million people) living in Los Angeles County alone. The primary objectives of the USGS research are to provide information (1) to understand and help mitigate the intrusion of salt water into coastal aquifer systems resulting from ground-water overdraft, and (2) to help mitigate the earthquake threat to this area. Data collected to address the salt water intrusion objective will be used to develop a hydrogeologic model for the region. This model will assist water managers (Water Replenishment District of Southern California and the Los Angeles County Department of Public Works) in providing a safe and uncontaminated ground-water supply to the local population.

Important geologic information that the USGS will derive from this project's seismic-reflection data is how earthquake deformation is distributed offshore; that is, where the active faults are and what the history of movement along them has been. This should improve understanding of the shifting pattern of deformation that occurred over both the long term (approximately the last 100,000 years) and short term (the last few thousand years). The USGS seeks to identify actively deforming structures that may constitute significant earthquake threats. The USGS also proposes to locate offshore landslides that might affect coastal areas. Not only major subsea landslides might affect the footings of coastal buildings, but also very large slides can generate local tsunamis. These large sea waves can be generated by seafloor movement that is produced either by landslides or by earthquakes. Knowing where large slides have occurred offshore will help locate areas susceptible to wave inundation.

Some faults that have produced earthquakes lie entirely offshore or extend into offshore areas where they can be studied using high-resolution seismic-reflection techniques. An example is the Rose Canyon fault, which extends through the San Diego area, and is considered to be the primary earthquake threat. This fault extends northward from La Jolla, beneath the inner continental shelf, and appears again onshore in the Los

Angeles area. This fault and others like it near shore could generate moderate (M5-6) to large (M6-7) earthquakes.

Knowing the location and geometry of fault systems is critical to estimating the location and severity of ground shaking. Therefore, the results of this project will contribute to decisions involving land use, hazard zonation, insurance premiums, and building codes.

The USGS emphasizes that the goal is not to predict earthquakes but rather to help determine what steps might be taken to minimize the devastation should a large earthquake occur. The regional earthquake threat is known to be high, and a major earthquake could adversely affect the well-being of a large number of people. For example, earthquakes in the coastal ocean off southern California commonly result in large-scale submarine landslides, many of which could be capable of producing destructive tsunamis.

The proposed work is in collaboration with scientists at the Southern California Earthquake Center, which analyzes faults and earthquakes in onshore regions, and with scientists at the Scripps Institute of Oceanography, who measure strain (incremental movement) on offshore faults.

The USGS also wants to collect high-resolution seismic-reflection data to locate the sources and pathways of seawater that intrudes into freshwater aquifers below San Pedro. Ground water usage in the Los Angeles basin began in the mid-1800s. Today, more than 44,000 acre-feet of freshwater each year are extracted from the aquifers that underlie the West Coast Basin. Aggressive extraction of freshwater from coastal aquifers causes offshore salt water to flow toward areas of active pumping. To limit this salt-water intrusion, the Water Replenishment District and water purveyors in San Pedro are investing \$2.7 million per year at the Dominguez Gap Barrier Project to inject freshwater underground to establish a zone of high water pressure in the aquifers near San Pedro and Long Beach. The resulting zone of high pressure forms a barrier between the invasive saltwater and the productive coastal aquifers.

USGS scientists in San Diego are working with the Los Angeles County Department of Public Works and the Water Replenishment District to develop a ground-water simulation model to predict fluid flow below San Pedro and nearby parts of the Los Angeles Basin. This model will eventually be used in managing water resources. The accuracy of the present model, however, is compromised by a paucity of information about aquifer geometry and about other geologic

factors that might affect fluid flow. Data collected by the USGS will be used to improve three-dimensional, fluid-flow models to aid management of water resources.

#### *Proposed Field Work*

Fieldwork described here will be the fourth geophysical survey on the west coast that the USGS has conducted under close supervision by marine-mammal biologists. In March 1998, the USGS used a large (6,500 in<sup>3</sup>, 106 liters) airgun array in and around Puget Sound to study the regional earthquake hazard (see 63 FR 2213, January 14, 1998). The USGS employed 12 biologists, who worked on two ships continuously to oversee the seismic-reflection operations. On several occasions the USGS shut off the acoustic sources when marine mammals entered safety zones that had been stipulated by NMFS, and when mammals left these zones, the USGS gradually ramped-up the array as required in its permit to avoid harming wildlife. Marine-mammal biologists reported that during the survey, no overt distress was evident among the dense marine mammal population, and afterward no unexplained marine mammal strandings occurred.

In August 1998, the USGS surveyed offshore from southern California, using a small airgun (40 in<sup>3</sup>, 0.65 liters). Two marine-mammal biologists oversaw this activity. In June 1999, the USGS conducted the third survey to support study of aquifer contamination and earthquake hazards in southern California (see 64 FR 31548, June 11, 1999). Three marine-mammal biologists provided oversight for this operation. The survey described in this document is proposed to be conducted with similar oversight.

#### *Experimental Design*

Marine studies conducted by the USGS focus on areas where saltwater intrusion into coastal aquifers is an active concern and where other kinds of natural hazards have their greatest potential impact on society. In southern California, USGS studies will focus on five chief geographic areas. First is the San Pedro shelf, offshore of the Dominguez Gap barrier project. Collecting data as close to shore as feasible is critically important in order to merge onshore and offshore geology in a manner that allows modeling the hydrologic flow through the system. With respect to the seismic-hazard issues in the offshore, the USGS' main priority (and second geographic area) is the coastal zone and continental shelf between Long Beach and San Diego,

where much of the hazard appears to be associated with strike-slip faults such as the Newport-Inglewood and Palos Verdes faults. A critical component of the survey concerns the third geographic area, which lies farther offshore in the Santa Monica, San Pedro, and San Diego Trough deeps, where rapid sedimentation has left a more complete record, relative to shallow-water areas, that can be used to decipher earthquake history. The fourth area is the extension into the Santa Barbara Channel of major elements of onshore geology that cross the northern part of Santa Monica Bay and include several major known earthquake faults. The fifth area is the geologic boundary, marked generally by the Channel Islands, between the inner California Borderland (dominated by strike-slip faults) and the Santa Barbara Channel (dominated by compressional faults). This change in fault types is important to study because the degree of earthquake threat varies with fault type. The study proposed herein focuses on the three highest priority areas, which lie near shore between Los Angeles and San Diego.

The seismic-reflection survey is planned to last 21 days. Based on experience collecting seismic-reflection data in this general area during 1998 and 1999, the USGS would prefer to conduct the 2000 survey in June. Because it will have to contract for a vessel from which to conduct the geophysical survey, the targeted study time frame is sometime within the May through July window. The basis for this decision is the USGS' desire to avoid the gray whale migrations and the peak arrival of other mysticetes during the later summer. An important part of the effort this summer will be to fill in gaps caused by shutdowns and daylight-only operations during earlier surveys.

The USGS has not yet determined the exact tracklines for the survey, but it does know the areas where minisparker use will be concentrated (see Fig. 3 in the application). Within the overall work area, the objective is to collect seismic-reflection data along a grid of lines that are about 2 km (1.07 nmi) apart. Data collected during the 1998 and 1999 surveys will be used to guide the planning for the proposed survey in order to minimize the number of survey lines that are required to adequately define the aquifer geometries and location of potential earthquake faults.

The USGS proposes to use two seismic-reflection systems for data collection: (1) A 1.5 kilo-Joule (kJ) minisparker using a 200-m (656.2-ft) long multichannel streamer, and (2) a low-power, high resolution deep-tow

system. The potential effect on marine mammals is from the minisparker; mammals cannot become entangled in the streamer. The low-powered, high-resolution seismic-reflection system, manufactured by Hunttec, Ltd., will obtain detailed information about the very shallow geology. The seismic-reflection systems will be aboard a vessel owned by a private contractor or academic cooperator. Ship navigation will be accomplished using satellites of the Global Positioning System. The survey ship will be able to report accurate positions, which is important to mitigating the minisparker's effect on marine mammals and to analyzing what impact, if any, minisparker operation has on the environment.

#### *The Seismic Sound Sources*

The primary sound source to be used during this survey will be a 1.5 kJ "SQUID 2000" minisparker system manufactured by Applied Acoustic Engineering, Inc. This minisparker includes eight electrodes that are mounted on a small pontoon sled. The electrodes simultaneously discharge electric current through the seawater to an electrical ground. This discharge creates an acoustic signal. The pontoon sled that supports the minisparker is towed on the sea surface, approximately 20 meters (65.6 ft) behind the ship.

Source characteristics of the SQUID 2000™ minisparker provided by the manufacturer show a sound-pressure level (SPL) of 209 dB re 1  $\mu$ Pa-m root-mean-square (RMS). The amplitude spectrum of this pulse indicates that most of the sound energy lies between 150 hertz (Hz) and 1700 Hz (1.7 kHz), and the peak amplitude is at 900 Hz. The output sound pulse of the minisparker has a duration of about 0.8 milli-seconds (ms). When operated at sea for the multichannel seismic-reflection survey proposed herein, the minisparker will be discharged every 4 to 6 seconds.

The second seismic source that will be used during this survey is a Hunttec™ system, which generates underwater sound at higher frequencies than does the minisparker. The Hunttec™ system uses electromagnetically driven plates to produce an acoustic pulse every 0.5 seconds, with a duration of about 0.3 ms. In water depths greater than 200 m (656.2 ft), the Hunttec™ source is towed behind the ship at a depth of approximately 100 m (328.1 ft). In shallow water, such as the inner shelf, the sound source is towed at a depth of about 5 m (16.4 ft) of the sea surface within about 5 m (16.4 ft) of the stern of the ship. The SPL for this source is

205 dB re 1  $\mu$ Pa<sub>rms</sub>. The frequencies of the main output sound are between 500 Hz and 8 kHz, with a peak amplitude at 4.5 kHz.

#### **Comments and Responses**

A notice of receipt of the application and proposed authorization was published on March 28, 2000 (65 FR 1374), and a 30-day public comment period was provided on the application and proposed authorization. Comments were received from the Marine Mammal Commission (MMC).

*Comment 1:* The MMC notes that the description of the two sound sources contained in the **Federal Register** document appears somewhat different than the description contained in the application. For example, the description of the minisparker does not mention a 200-m (656.2-ft) streamer, that the Hunttec™ system is towed approximately 100 m (328.1 ft) behind the ship in water depths greater than 200 m (656.2 ft), and that only the minisparker will be towed at night.

*Response:* The description of the acoustic sources is more clearly described in this document. The streamer is only used as a receiver and is not a sound source. The streamer will be deployed during any operation involving the minisparker sound source. In shallow water, which will be the major part of the survey this year, because of the approval to work within the 3-mile (5.6 km) limit using the minisparker sound source, the Hunttec™ system will be towed just below or at the sea surface and typically will be within 5 m (16.4 ft) of the minisparker sound source. Thus, during night operations in shallow water, both systems will be in the same illuminated safety zone.

*Comment 2:* The MMC notes that the area of the planned survey, while not likely to encounter California sea otters as noted in the application, may encounter Guadalupe fur seals. If California sea otters may be encountered, the applicant should apply to the U.S. Fish and Wildlife Service for an incidental harassment authorization. If Guadalupe fur seals could be encountered, this species should be included in any incidental harassment authorization issued by NMFS.

*Response:* California sea otters, which are typically found north of Point Conception, are not expected to be observed within the limits of the proposed survey. The USGS has reviewed the reports of the marine mammal observers from Cascadia Research Collective in Olympia, WA (Cascadia) for its surveys in 1998 and 1999 and noted that sea otters were not

sighted during either operation. Also for those same years, there are no reported sightings of Guadalupe fur seals. While the Guadalupe fur seal population has been increasing on Guadalupe Island, Mexico, their only breeding location, from below 1000 in the late 1970s to the current estimate of 7500, their breeding season is from May-July, so it is very likely that most Guadalupe fur seals will be found further south, and not off southern California. However, there was a recent report of a mother-pup on San Miguel Island, from June-September, 1997. Melin & DeLong (1999) speculate that it may have been due to El Nino conditions, as there are more strandings of Guadalupe fur seals along the California coast during El Nino years. Therefore, although the numbers of Guadalupe fur seals are increasing, and they seem to be extending their range at least during warmer years, because the seismic-reflection surveys are going to be taking place during the breeding season, the likelihood of a Guadalupe fur seal being in the area is extremely low.

*Comment 3:* The MMC questions whether the planned nighttime observations would be capable of assuring that the surveys have the least practicable adverse impact on marine mammals if the Hunttec™ system is used at night, or if the 200-m (656.2-ft) streamer is part of the minisparker sound source. Concerned that nighttime lighting for marine mammal observations could attract fish and squid, which in turn may attract and increase the likelihood of attracting marine mammals, the MMC recommends that NMFS consult with the applicant to assure that any marine mammals approaching or entering the designated safety zone around the sound source(s) can be detected in time to stop operations so the animals are not adversely affected.

*Response:* In order for seismic reflection surveys to incidentally take marine mammals at night, the nighttime lighting must be capable of making the entire safety zone visible. If lighting attracts marine mammals, then the USGS would incur more shutdowns and a longer period of time would be needed to complete the surveys. NMFS is unaware of ship lighting attracting fish and squid to the extent that marine mammals would likewise be attracted to the vessel. The mitigation plan for the USGS survey is being designed by Cascadia in order to ensure that shutdowns are conducted when marine mammals are about to enter the safety zone. The IHA requires the USGS to have a minimum of 3 observers available at all times, with two on watch

at all times that seismic operations are starting up or underway.

NMFS notes that the recent precautionary application of a 180-dB safety zone for protecting marine mammals does not necessarily mean that animals entering that zone will be adversely affected. It simply means that animals have the potential to incur a temporary elevation in hearing threshold (termed temporary threshold shift (TTS)), lasting, at worst, for a few minutes at the 180 dB sound pressure level. Also, based upon California Coastal Commission (CCC) determinations, the USGS has implemented, and NMFS has adopted for this action, a safety zone for pinnipeds based on the 180 dB isopleth. However, current scientific consensus indicates that a safe level for impulse sounds for pinnipeds from incurring TTS is higher than the level indicated for cetaceans (e.g., 180 dB). As a result, although scientists have preliminarily established an SPL of 190 dB re 1  $\mu$ Pa- $r_{rms}$  as a safe level for pinnipeds underwater, and while NMFS adopts this information as the best scientific information available, the USGS must abide by the conditions contained in its CCC consistency determination. Therefore, NMFS believes that the potential for adversely affecting pinnipeds is even less likely as they would need to be significantly closer to the source than provided by the safety zone.

*Comment 4:* The MMC notes that the USGS application did not indicate the species or numbers of marine mammals that approached or entered the designated safety zones during the 1998 and 1999 surveys. The MMC recommends, as it did on the USGS' 1999 application, that the USGS be required to (1) report at the end of each 24-hour period the species and number of marine mammals observed approaching and entering the designated safety zone during the day and during the night; and (2) suspend night-time operations if the species or number of animals observed approaching and entering the designated safety zone at night are significantly different than those observed during the day, suggesting that nighttime observations were failing to detect significant numbers of animals that enter the safety zones and could be killed or injured.

*Response:* There are several issues involved in this recommendation that need to be addressed separately. First, marine mammals are very unlikely to be seriously injured, let alone killed, by the relatively low-intensity acoustic sources proposed by the USGS for this survey.

Although at different frequencies, the seismic equipment proposed for use by USGS are less powerful than fish-finding sonars commonly used in U.S. waters (including California), and there is no evidence to date that commercially available sonars are adversely affecting marine mammals.

Second, it may not be possible for the USGS to make daily reports. The USGS' leased vessel does not have satellite communication facilities and the only communication method available would be cell phone, but only when the vessel is within range of an onshore repeater.

NMFS doesn't believe daily reports are necessary for this authorization because, based on the Cascadia observations during the previous surveys, the number of mammals that enter the safety zone is small; there were only 11 occurrences in 1998 and 21 in 1999. It is also important to note that the designated safety zones were significantly larger (as much as 200 m (656.2 ft), depending upon the species in question) during those earlier surveys. The number of occurrences for the proposed survey this year is expected to be lower given the 30 m (98.4 ft) safety zone for the much less powerful sound source that will be employed. Cascadia will report all marine mammal observations. This report will be available upon completion of the survey (see Reporting).

The second part of the recommendation from the MMC is difficult to evaluate. First, merely comparing numbers of occurrences between night and day has the built-in assumption that the density of marine mammals is uniform throughout the survey area. A review of the area of the shutdowns required by the Cascadia observers during the previous surveys shows that the shutdowns are commonly grouped in a few geographic areas, probably reflecting such factors as feeding success by the mammals. In 1999, when there were 21 shutdowns for mammals moving within the designated safety zone, six occurred on one day but there were no shutdowns during several of the survey days.

In this regard, it should also be noted that Cascadia reported for the 1999 survey that eight of the 21 occurrences that required shutdown of the sound sources involved common dolphins (*Delphinus delphis*) approaching the seismic boat to bowride. More specifically, the report stated that: "Marine mammal movements and behaviors observed during the seismic-reflection operations, revealed no apparent patterns of avoidance and none could be interpreted as

harassment." Again, given the 30-m (98.4-ft) safety zone for the much less powerful sound source that will be used this year, the number of occurrences of shutdowns for the proposed survey should be significantly less.

Finally, the CCC did not approve night operations for the 1999 survey, so the USGS does not have data concerning day vs. night operations from that year. In 1998, when there were night operations, Cascadia observers required 11 shutdowns. Three of these shutdowns were due to pinnipeds, and these occurrences were in mid-day. Of the remaining eight shutdowns, three occurred at night. Because the hours of daylight were about double the hours of darkness during the time of the survey, there did not appear to be any significant difference between night and day operational shutdowns during the 1998 survey.

*Comment 5:* Noting that the work proposed by the USGS is a multi-year effort, the MMC recommends that NMFS consult with the applicant to determine whether it would be more appropriate to obtain an authorization under section 101(a)(5)(A) of the MMPA for the full range of studies proposed rather than annual authorizations under section 101(a)(5)(D) of the MMPA.

*Response:* NMFS believes that a multi-year authorization under section 101(a)(5)(A) of the MMPA warrants the extensive time and effort to implement regulations and annual Letters of Authorization thereunder only when the activity does not have the potential to vary significantly on an annual basis and/or when the impacts are fairly uniform. For example, activities such as construction and production of an oil production facility at Northstar (64 FR 57010, October 22, 1999) or the taking of seals at Seabrook Nuclear Power Station (64 FR 28114, May 25, 1999) meet these two criteria. On the other hand, whenever an activity is likely to require its authorization issued under section 101(a)(5)(A) to be publically reviewed annually (such as occurred with seismic oil and gas exploration in the Beaufort Sea prior to 1994), little would be gained by delaying an authorization for several months while regulations are issued prior to an authorization under section 101(a)(5)(A) of the MMPA. This lengthy delay in issuing incidental take authorizations due to the inordinate length of time necessary for rulemaking actions was the primary reason Congress implemented MMPA section 101(a)(5)(D) authorizations when the takings were limited to incidental harassment. Since the CCC has instructed the USGS that each operation

must be considered separately because of the different geographic areas and different times of the year that the surveys may be conducted, no benefit would be gained by issuing regulations governing this activity's incidental take.

**Comment 6:** The MMC notes statements made in the application and **Federal Register** document (65 FR 1374, March 28, 2000), that pinnipeds will come from great distances to scrutinize seismic operations, and that as a result, NMFS will not require the minisparker to be shut down if pinnipeds approach the safety zone. The MMC states that there is no indication whether the referenced observations are anecdotal or the product of peer-reviewed science. If not peer-reviewed, the MMC suggests that research should be conducted under section 104 of the MMPA.

**Response:** The proposed mitigation measure noted in the **Federal Register** document (65 FR 1374, March 28, 2000), states that for pinnipeds, if the research vessel towing the minisparker approaches a pinniped, a safety radius of 30 m (98 ft) around the seismic source when operating in deep water and 15 m (49.2 ft) when in shallow water will be maintained. However, if a pinniped approaches the towed minisparker source, NMFS proposes to not require the USGS to shutdown the minisparker, but to require the USGS to monitor the interaction to ensure the animal does not show signs of distress. If the pinniped(s) show obvious distress, the USGS will terminate minisparker operations and will continue to conduct observations on effects the minisparker may have on the animals. Reviewers should note that these seals and sea lions need to be actively approaching the vessel (itself moving forward at about 3–5 knots) from the side of the vessel or the stern, meaning that the animal is voluntarily approaching a noise source that is increasing in strength as the animal gets closer.

It is NMFS' responsibility to ensure that the incidental taking is reduced to the lowest level practicable. In reviewing the information available, NMFS has determined that it is not practicable to require applicants to delay seismic surveys in order to provide additional protection for curious seals. These delays lengthen the time necessary for completing surveys, requiring additional survey time and resulting in a potential increase in impacts on more sensitive marine mammal species, and raise the potential for increased costs for conducting surveys. As mentioned in this document and in prior **Federal Register** notices, seals and sea lions are believed to be less likely to be harmed by underwater

noise than cetaceans, and have even been observed swimming in the bubbles of seismic airguns, a source significantly more powerful than the proposed instruments.

While, to our knowledge, the information provided has not been peer-reviewed or scientifically verified under a section 104 scientific research permit, these observations were, for the most part, obtained as a result of monitoring seismic activities. As a result, NMFS does not consider them anecdotal. NMFS has chosen to adopt observations made to date, some of which were conducted under previous MMPA section 101(a)(5)(D) authorizations, as the best scientific information available.

#### **Description of Habitat and Marine Mammals Affected by the Activity**

The Southern California Bight supports a diverse assemblage of 29 species of cetaceans (whales, dolphins and porpoises) and 6 species of pinnipeds (seals and sea lions). The species of marine mammals that are likely to be present in the seismic research area include the bottlenose dolphin (*Tursiops truncatus*), common dolphin, killer whale (*Orcinus orca*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), northern right whale dolphin (*Lissodelphis borealis*), Risso's dolphin (*Grampus griseus*), pilot whales (*Globicephala macrorhynchus*), Dall's porpoise (*Phocoenoides dalli*), sperm whale (*Physeter macrocephalus*), humpback whale (*Megaptera novaengliae*), gray whale (*Eschrichtius robustus*), blue whale (*Balaenoptera musculus*), minke whale (*Balaenoptera acutorostrata*), fin whales (*Balaenoptera physalus*), harbor seal (*Phoca vitulina*), elephant seal (*Mirounga angustirostris*), northern sea lion (*Eumetopias jubatus*), and California sea lion (*Zalophus californianus*), northern fur seal (*Callorhinus ursinus*) and sea otters (*Enhydra lutris*). General information on these latter species can be found in the USGS application and in Forney *et al.* (1999) and Barlow *et al.* (1998, 1997). Please refer to these documents for information on the biology, distribution, and abundance of these species in southern California waters.

#### **Potential Effects of Seismic Surveys on Marine Mammals**

##### *Discussion*

Seismic surveys are used to obtain data about stratigraphic sequences and rock formations up to several thousands of feet deep. These surveys are accomplished by transmitting sound waves into the earth, which are reflected

off subsurface formations and recorded with detectors in the water column.

Disturbance by seismic noise is the principal means of taking by this activity. Vessel noise may provide a secondary source. Also, the physical presence of vessel(s) could lead to some non-acoustic effects involving visual or other cues.

Depending upon ambient conditions and the sensitivity of the receptor, underwater sounds produced by open-water seismic operations may be detectable some distance away from the activity. Any sound that is detectable is (at least in theory) capable of eliciting a disturbance reaction by a marine mammal or of masking a signal of comparable frequency. An incidental harassment take is presumed to occur when marine mammals in the vicinity of the seismic source (or vessel) react to the generated sounds or to visual cues.

Seismic pulses are known to cause some species of whales, including gray whales, to behaviorally respond within a distance of several kilometers (Richardson *et al.*, 1995). Although some limited masking of low-frequency sounds is a possibility for those species of whales using low frequencies for communication, the intermittent nature of seismic source pulses limits the extent of masking. Bowhead whales in Arctic waters, for example, are known to continue calling in the presence of seismic survey sounds, and their calls can be heard between seismic pulses (Richardson *et al.*, 1986).

When the received levels of noise exceed some behavioral reaction threshold, cetaceans will show disturbance reactions. The levels, frequencies, and types of noise that will elicit a response vary between and within species, individuals, locations and seasons. Behavioral changes may be subtle alterations in surface-dive-respiration cycles. More conspicuous responses include changes in activity or aerial displays, movement away from the sound source, or complete avoidance of the area. The reaction threshold and degree of response are related to the activity of the animal at the time of the disturbance. Whales engaged in active behaviors, such as feeding, socializing, or mating are less likely than resting animals to show overt behavioral reactions, unless the disturbance is directly threatening.

Hearing damage is not expected to occur during the project. While it is not known whether a marine mammal co-located or very close to an intense seismic source would be at risk of permanent hearing impairment, TTS is a theoretical possibility for animals close to the seismic-reflection sources.

However, planned monitoring and mitigation measures (described later in this document) are designed to detect marine mammals occurring near the seismic-reflection source(s) and to avoid, to the greatest extent practicable, exposing them to sound pulses that have any possibility of causing TTS in hearing.

#### *Maximum Sound-Exposure Levels for Marine Mammals*

The adverse effects of underwater sound on mammals have been documented for exposure times that last for tens of seconds or minutes, but adverse effects have not been documented for the brief pulses typical of the minisparker (0.8 ms) and the Hunttec™ system (typically 0.3 ms). While NMFS in the past considered that the maximum SPLs, from impulse sounds, to which marine mammals could safely be exposed were 180 dB re 1  $\mu\text{Pa-m}_{\text{rms}}$  for mysticetes (baleen whales) and sperm whales, and 190 dB re 1  $\mu\text{Pa-m}_{\text{rms}}$  for odontocetes (toothed whales, dolphins and porpoises) and pinnipeds (seals and sea lions), recent workshops have recommended a more precautionary approach be taken and, accordingly, NMFS now recommends that odontocetes also be limited to an SPL no greater than 180 dB re 1  $\mu\text{Pa-m}_{\text{rms}}$ . However, based on statements and recommendations made at NMFS' Acoustic Criteria Workshop in 1998, NMFS has not increased its recommended safety zone for pinnipeds to this same level. In 1999 and 2000, the CCC has limited the maximum sound-exposure level to 180 dB re 1  $\mu\text{Pa-m}$  for all species of marine mammals.

In its application, the USGS has provided two estimates of how close marine mammals can approach the Hunttec™ and minisparker sources before they need to be powered down. The first estimate follows the procedure required by the CCC in 1999, where underwater sound is assumed to attenuate with distance according to the equation  $20\log(\text{Radius}(R))$ , and the maximum SPL to which marine mammals can be exposed is 180 dB re 1  $\mu\text{Pa-m}_{\text{RMS}}$ . The alternative estimate of safe distance is proposed for operations limited to shallow water. In shallow water, sound from both the Hunttec™ and minisparker sources will decay (attenuate) with distance more sharply than  $20\log(R)$  because some of the sound energy will exit the water and penetrate the sea floor when the source is physically close to the sea floor.

In the deeper water (greater than 50 m (164 ft)) areas of the proposed survey, the safety zone for the Hunttec™ and minisparker is a circle whose radius is

the distance from the source to where the SPL is reduced to 180 dB re 1  $\mu\text{Pa-m}_{\text{RMS}}$ . For a  $20\log(R)$  sound attenuation, the safety zone for a 209 dB re 1  $\mu\text{Pa-m}_{\text{RMS}}$  source has a radius of about 30 m (98 ft).

Much of that part of the proposed 2000 survey that focuses on saltwater intrusion of coastal aquifers will be conducted close to shore, where water is shallow. In 1999, the USGS measured a sound attenuation of  $27\log(R)$  in shallow water off southern California. Therefore, the USGS proposes that for inshore areas, underwater sound will attenuate to approximately  $25\log(R)$ , which for inshore areas would yield a safety zone with a radius of 15 m (49.2 ft).

Because observers would be able to monitor this short radius of a 15 m (49.2 ft) or 30 m (98 ft) safety zone, the USGS also proposed that the Hunttec™ and minisparker can be used at night, using spotlights to illuminate the safety zone around the tow sled.

#### *Estimated Number of Potential Harassments of Marine Mammals*

Based on estimated marine mammal populations within the survey area (Calambokidis and Francis, 1994) and on the number of individuals that were observed during the 1998 and 1999 seismic surveys, the USGS estimates that up to 50 blue whales, 5 killer whales, 10 minke whales, 10 sea otters, 50 humpback whales, 50 northern sea lions, 100 northern fur seals, 100 northern elephant seals, 100 Dall's porpoise, 100 Risso's dolphins, 100 northern right-whale dolphins, 100–200 Pacific white-sided dolphins, 100 bottlenosed dolphins, 200 California sea lions, 200 Pacific harbor seals, and 10,000–12,000 common dolphins may be harassed incidental to the USGS survey. No marine mammals will be seriously injured or killed as a result of the survey. However, NMFS has subsequently reviewed the information and has determined that the large mysticete whales, northern sea lions, and sea otters are unlikely to be affected by either acoustic source planned to be used this year in this area by the USGS. The large whales are expected to remain in offshore waters outside the Channel Islands at the time of the year that the activity will take place; northern sea lions, which are expected to be in more northerly waters during the summer, are not known to be affected by low frequency seismic sources unless close to the source; and California sea otters will be north of Point Conception.

#### *Mitigation of Potential Environmental Impact*

To avoid potential Level A harassment (*i.e.*, injury) of marine mammals, safety zones will be established and monitored continuously by biologists, and the USGS will shut off any operating seismic source whenever the ship and a marine mammal converge closer than the previously mentioned safety distances.

For all cetaceans (whales, dolphins, and porpoises), NMFS is requiring USGS to immediately cease operations of the minisparker when members of these species approach within 30 m (98 ft) of the sound source when operating in deep water, and 15 m (49.2 ft) for both the minisparker and the Hunttec™ source when operating in shallow water. (The Hunttec™ source in deep water will be in waters significantly deeper than the radius of the safety zone and therefore is not practical to monitor). NMFS understands that the CCC has not accepted the scientific data that in shallow water, underwater sound commonly attenuates more sharply than  $20\log(R)$ , for reasons mentioned previously in this document. However, NMFS is required to use the best scientific information available when making determinations and implementing appropriate mitigation measures, and as such, has concluded that the more restrictive conditions placed on the USGS by the CCC are not supportable and therefore cannot be adopted by NMFS. This however, in no way relieves the USGS from complying with the conditions imposed by the CCC in its determination of coastal consistency.

For pinnipeds (seals and sea lions), if the research vessel approaches a pinniped, the USGS originally requested, and, for the reasons cited in the previous paragraph, NMFS has accepted, that a safety radius of 30 m (98 ft) around the minisparker seismic source when operating in deep water and 15 m (49.2 ft) for both acoustic sources when in shallow water will be maintained. NMFS believes the 180 dB re 1  $\mu\text{Pa-m}_{\text{RMS}}$  safety zone is more conservative than is necessary for the reasons stated previously in this document, however, because this level was requested initially by the applicant, NMFS has accepted this condition for the USGS' IHA.

However, if a pinniped approaches the towed acoustic source, NMFS will not require the USGS to shutdown the source, but will require the USGS to monitor the interaction to ensure the animal does not show signs of distress. Experience indicates that pinnipeds will

come from great distances to inspect seismic operations. Seals have been observed swimming within airgun bubbles, 10 m (33 ft) away from active arrays, apparently unaffected. Although seismic-reflection operations will be terminated if the pinnipeds show obvious distress, the USGS is required to conduct observations on effects the acoustic sources may have on the animals.

The USGS will have marine biologists aboard the ship who will have the authority to stop the seismic-reflection operations when a marine mammal enters the safety zone or indicates obvious distress anywhere within the vicinity of the ship. Although NMFS believes it is very unlikely to occur, if observations are made that one or more marine mammals of any species are attempting to beach themselves when the source is operating in the vicinity of the shore, the seismic-reflection sources will be immediately shut off and NMFS contacted.

During seismic-reflection surveying, the ship's speed will only be 4 to 5 knots, so that when the acoustic source is being discharged, nearby marine mammals, if they hear the low- to mid-frequency noise, will have gradual warning of the vessel's approach and can move away if disturbed. Finally, NMFS will coordinate with the local stranding network to determine whether any strandings which occur during, or near the time of the survey, can be related to the seismic-reflection operation. If NMFS determines, based upon a necropsy of the animal(s), that the death was likely due to exposure to the USGS acoustic source(s), the survey will cease until procedures are altered to eliminate the potential for future mortality.

Operating less than 24 hours each day incurs substantially increased cost for the leased ship, which the USGS states that it cannot afford. The ship schedule provides a narrow time window for this project; other non-related experiments are already scheduled to precede and follow this survey and for that reason, the USGS cannot arbitrarily extend the survey time. Thus, the USGS does not propose as a mitigation measure shutting down in dark or during periods of poor visibility. The 2000 survey will require only 3 weeks, and it will be spread out geographically from Los Angeles to San Diego, so no single area will experience long-term activity. In the view of the USGS, the best course is to complete the survey as expeditiously as possible. For these reasons, the USGS has requested that the acoustic survey be conducted 24 hours/day and the IHA allow 24-hour

operations, specifically at night and with the understanding that the USGS will survey during this time in shallow water. Both NMFS and the CCC concur, and the IHA provides for 24-hour operations surveys while in shallow water.

#### **Possible Modifications or Alternatives to the Proposed Survey**

Options to change the activity are limited. In order to reduce the probability for the incidental harassment of marine mammals and to be able to operate within nearshore areas, the USGS has changed from using a seismic airgun source, as used in prior surveys, to a minisparker for the proposed survey. The seismic-source strength cannot be reduced further in an attempt to limit the potential environmental impact. The minisparker is already smaller than any source the USGS has previously used for these kinds of geophysical surveys, and the problem with this option is that the USGS cannot significantly reduce the source strength without jeopardizing the success of this survey. This judgment is based not only on USGS' decades-long experience with seismic-reflection surveys, but especially on the 1998 survey that was conducted in the same general area as outlined here. If the USGS were to reduce the sound-source size and then fail to obtain the required information, another survey would need to be conducted, and this would have the potential to increase impact on marine mammals.

To abandon this study altogether is a poor option. The USGS has described the societal relevance of this project as it would improve understanding of fluid movement in coastal aquifers and how to stem the intrusion of salt water into them. Another facet of this study is to help scientists understand the regional earthquake hazard that, in turn, will aid city planners in establishing building codes. If the project was canceled, such information would be unavailable.

This project could be carried out at some other time of year. The USGS talked with biologists to find out the best time for the project to be conducted. The USGS wants to avoid the gray whale migrations and the mid-summer arrival of other mysticete species because, while these species remain mostly in the area of the Channel Islands, some individuals venture closer to the mainland. An important consideration in deciding the most appropriate time of the year is that biologists can best prevent harm to mammals when daylight is long, that is, near the solstice.

#### **Monitoring**

Monitoring marine mammals while the acoustic sources are active will be conducted 24 hours each day. Trained marine mammal observers will be aboard the seismic vessel to mitigate the potential environmental impact from using these acoustic sources and to gather data on the species, number, and reaction of marine mammals to the sources. During daylight, observers will use 7x50 binoculars with internal compasses and reticules to record the horizontal and vertical angle to sighted mammals. Night-time operations will be conducted with a spotlight to illuminate the safety zone around the minisparker tow sled. Monitoring data to be recorded during seismic-reflection operations include the name of the observer on duty, and weather conditions (such as Beaufort sea state, wind speed, cloud cover, swell height, precipitation, and visibility). For each mammal sighting, the observer will record the time, bearing and reticule readings, species, group size, and the animal's surface behavior and orientation. Observers will instruct geologists to shut off the acoustic source(s) whenever a marine mammal enters the safety zone.

#### **Reporting**

The USGS will contract with Cascadia to provide an initial report to NMFS within 160 days of the completion of the 2000 phase of the marine seismic project. This report will provide dates and locations of seismic operations, details of marine mammal sightings, and estimates of the amount and nature of all takes by harassment. A final technical report will be provided by USGS within 270 days of completion of the 2000 phase of the marine seismic project. The final technical report will contain a description of the methods, results, and interpretation of all monitoring tasks.

#### **Consultation**

Under section 7 of the Endangered Species Act, NMFS has completed consultation on the issuance of an IHA. NMFS finds this action to be unlikely to adversely affect listed marine mammals because the endangered whales are expected to be more prevalent in offshore waters outside the Channel Islands at the time of the year that the activity will take place; northern sea lions, which are expected to be in more northerly waters during the summer, are not known to be affected by low frequency seismic sources unless close to the source; and the Guadalupe fur seal is expected to be on or near



Guadalupe Island, Mexico, during this time.

### Conclusions

NMFS has determined that the short-term impact of conducting marine seismic-reflection data in offshore southern California may result, at worst, in a temporary modification in behavior by certain species of pinnipeds and cetaceans. While behavioral modifications may be made by certain species of marine mammals to avoid the resultant noise from the seismic sources, this behavioral change is expected to have no more than a negligible impact on the animals.

In addition, no take by serious injury or death is anticipated, and takes will be at the lowest level practicable due to the incorporation of the mitigation measures previously mentioned. No known rookeries, mating grounds, areas of concentrated feeding, or other areas of special significance for marine mammals occur within or near the planned area of operations during the season of operations.

Since NMFS is assured that the taking would not result in more than the incidental harassment (as defined by the MMPA) of small numbers of certain species of marine mammals, would have only a negligible impact on these stocks, and would result in the least practicable impact on the stocks, NMFS has determined that the requirements of section 101(a)(5)(D) of the MMPA have been met and the authorization can be issued.

### Authorization

Accordingly, NMFS has issued an IHA to the USGS for the possible harassment of small numbers of several species of marine mammals incidental to collecting marine seismic-reflection data off southern California between June 5 and September 30, provided the mitigation, monitoring and reporting requirements described in the authorization are undertaken.

Dated: June 21, 2000.

### Art Jeffers,

*Deputy Director, Office of Protected Resources, National Marine Fisheries Service.*  
[FR Doc. 00-16228 Filed 6-27-00; 8:45 am]

BILLING CODE 3510-22-F

## DEPARTMENT OF COMMERCE

### National Oceanic and Atmospheric Administration

[I.D. 053100C]

### Marine Mammals; File No. 358-1564-00

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

**ACTION:** Issuance of permit.

**SUMMARY:** Notice is hereby given that the Alaska Department of Fish and Game, 1255 W. 8th Street, P.O. Box 25526, Juneau, Alaska 99802-5526 [P.I. Kenneth W. Pitcher] has been issued a permit to take Steller sea lions (*Eumetopias jubatus*) for purposes of scientific research.

**ADDRESSES:** The permit and related documents are available for review upon written request or by appointment in the following office(s):

Permits and Documentation Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Room 13705, Silver Spring, MD 20910 (301/713-2289); and

Alaska Region, NMFS, P.O. 21668, Juneau, AK 99802-1668 (907/586-7248).

**FOR FURTHER INFORMATION CONTACT:** Simona Roberts or Ruth Johnson, 301/713-2289.

**SUPPLEMENTARY INFORMATION:** On February 11, 2000, notice was published in the *Federal Register* (65 FR 6997) that a request for a scientific research permit to take Steller sea lions had been submitted by the above-named organization. The requested permit has been issued under the authority of the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*), the Regulations Governing the Taking and Importing of Marine Mammals (50 CFR part 216), the Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 *et seq.*), and the regulations governing the taking, importing, and exporting of endangered and threatened species (50 CFR parts 222-226).

Issuance of this permit, as required by the ESA, was based on a finding that such permit (1) was applied for in good faith, (2) will not operate to the disadvantage of the endangered species which is the subject of this permit, and (3) is consistent with the purposes and policies set forth in section 2 of the ESA.

Dated: June 22, 2000.

### Ann Terbush,

*Chief, Permits and Documentation Division, Office of Protected Resources, National Marine Fisheries Service.*

[FR Doc. 00-16351 Filed 6-27-00; 8:45 am]

BILLING CODE 3510-22-F

## COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS

### Adjustment of Import Limits for Certain Cotton, Man-Made Fiber, Silk Blend and Other Vegetable Fiber Textiles and Textile Products Produced or Manufactured in Bangladesh

June 22, 2000.

**AGENCY:** Committee for the Implementation of Textile Agreements (CITA).

**ACTION:** Issuing a directive to the Commissioner of Customs adjusting limits.

**EFFECTIVE DATE:** June 28, 2000.

**FOR FURTHER INFORMATION CONTACT:** Ross Arnold, International Trade Specialist, Office of Textiles and Apparel, U.S. Department of Commerce, (202) 482-4212. For information on the quota status of these limits, refer to the Quota Status Reports posted on the bulletin boards of each Customs port, call (202) 927-5850, or refer to the U.S. Customs website at <http://www.customs.gov>. For information on embargoes and quota re-openings, call (202) 482-3715.

### SUPPLEMENTARY INFORMATION:

**Authority:** Section 204 of the Agricultural Act of 1956, as amended (7 U.S.C. 1854); Executive Order 11651 of March 3, 1972, as amended.

The current limits for certain categories are being adjusted for swing, special shift and carryforward.

A description of the textile and apparel categories in terms of HTS numbers is available in the CORRELATION: Textile and Apparel Categories with the Harmonized Tariff Schedule of the United States (see *Federal Register* notice 64 FR 71982, published on December 22, 1999). Also see 64 FR 68333, published on December 7, 1999.

### D. Michael Hutchinson,

*Acting Chairman, Committee for the Implementation of Textile Agreements.*

### Committee for the Implementation of Textile Agreements

June 22, 2000.

Commissioner of Customs,  
*Department of the Treasury, Washington, DC 20229.*