

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

[I.D. 090903C]

**Small Takes of Marine Mammals Incidental to Specified Activities; Oceanographic Survey in the Northwest Atlantic Ocean Near Bermuda**

**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 conducting an oceanographic survey in the Northwest Atlantic Ocean near Bermuda has been issued to Lamont-Doherty Earth Observatory (LDEO).

**DATES:** Effective from November 14, 2003 through November 13, 2004.

**ADDRESSES:** The application, a list of references used in this document, and/or the IHA are available by writing to P. Michael Payne, Chief, Marine Mammal Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3225, or by telephoning the contact listed here.

**FOR FURTHER INFORMATION CONTACT:** Sarah C. Hagedorn, Office of Protected Resources, NMFS, (301) 713-2322, ext 117.

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

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of 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) and will not have an unmitigable adverse impact on the

availability of the species or stock(s) for subsistence uses and that the 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. Under Section 3(18)(A), 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; 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.

The term "Level A harassment" means harassment described in subparagraph (A)(i). The term "Level B harassment" means harassment described in subparagraph (A)(ii).

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 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 July 16, 2003, NMFS received an application from LDEO for the taking, by harassment, of several species of marine mammals incidental to conducting a seismic survey by the *R/V Maurice Ewing* within the Northwest Atlantic Ocean off the coast of Bermuda near the Bermuda Rise area, between 29° and 35° N and between 61° and 68° W, during mid- to late-November and early December 2003. These operations will take place within the Exclusive Economic Zone (EEZ) of Bermuda and adjacent international waters. Clearance to conduct the seismic survey in the foreign EEZ has been requested from Bermuda (U.K.). The purpose of this project is to determine what physical and chemical changes have been imparted to the tectonic plate as a result of the eruption of the Bermuda volcano. By understanding what portion of the uplift of the seafloor is caused by

thermal (temporary) versus chemical (permanent) changes to the plate, it will be possible to predict the rate that volcanoes in the middle of plates will sink beneath the waves.

**Description of the Activity**

The seismic survey will involve a single vessel, the *R/V Maurice Ewing*. The *Maurice Ewing* will deploy an array of 20 airguns as an energy source, and a receiving system consisting of Ocean Bottom Hydrophones (OBH's), 96 sonobuoys, and/or a 6-km (3.2-nm) towed hydrophone streamer. The energy to the airgun array is compressed air supplied by compressors on board the source vessel. As the airgun array is towed along the survey lines, the towed hydrophone streamer or OBH's will receive the returning acoustic signals and transfer the data to the on-board processing system. The OBH's and sonobuoys will be deployed by the *R/V Maurice Ewing*.

All planned geophysical data acquisition activities will be conducted by LDEO scientists, with on-board assistance from the scientists who have proposed the study. The survey will be conducted in the deep ocean depths (>1000 m or 3281 ft) of the Bermuda Rise. The survey program will consist of approximately 2400 km (1296 nm) of survey lines. There will be two intersecting seismic reflection and refraction lines, each approximately 600 km (324 nm) long. One line will be oriented north-south along a magnetic isochron, and the other line will be oriented east-west along the presumed track of the hotspot. The point of intersection of these two lines will be in close vicinity of Bermuda Island. Each of the two lines will be surveyed twice. Along each line, the upper crustal structure will be determined by acquiring multibeam sonar, multichannel seismic (MCS), and sonobuoy refraction data. Then, a linear array of OBH's will be deployed for refraction shooting. The specific configuration of the airgun array will differ between the MCS and OBH surveys (described later in this document). There will be additional operations associated with equipment testing, startup, line changes, and repeat coverage of any areas where initial data quality is sub-standard.

The procedures to be used for the 2003 seismic survey will be similar to those used during previous seismic surveys by LDEO, e.g., in the equatorial Pacific Ocean (Carbotte *et al.*, 1998, 2000). The proposed program will use conventional seismic methodology with a towed airgun array as the energy source and a towed streamer containing

hydrophones as the receiver system. In addition, sonobuoys and OBH's will also be used at times as the receiver system. In addition, a multi-beam bathymetric sonar will be operated from the source vessel continuously throughout the entire cruise, and a lower-energy sub-bottom profiler will also be operated during most of the survey. The Bermuda cruise will likely commence on November 14, 2003, and continue until the third week of December, 2003. Exact dates of the activity may vary by a few days due to weather conditions of the need to repeat some lines if data quality is substandard.

During seismic acquisition, the vessel will travel at 4–5 knots (7.4–9.3 km/hr). During the MCS survey, the airgun array to be used will consist of 20 2000–psi Bolt airguns. The standard 20–gun array will include airguns ranging in chamber volume from 80 to 850 in<sup>3</sup>, with a total volume of 8,575 in<sup>3</sup>. These airguns will be spaced in an approximate rectangle of dimensions of 35 m (115 ft)(across track) by 9 m (30 ft)(along track). Seismic pulses will be emitted at intervals of approximately 20 seconds. The 20–sec spacing corresponds to a shot interval of about 50 m (164 ft). After the lines have been surveyed using MCS, the hydrophone streamer will be retrieved and OBH's will be deployed. During OBH refraction, an augmented 20–gun array will be used and configured for a total volume of approximately 11,000 in<sup>3</sup> by changing smaller gun chambers for larger volume chambers (ranging from 145 to 875 in<sup>3</sup>). Seismic pulses will be emitted at intervals of 240 seconds during OBH acquisition. LDEO believes that even though the augmented 20–gun array will have a total air discharge volume of approximately 2400 in<sup>3</sup> more than the standard 20–gun array, this will not significantly increase the source output since the number of guns has a greater effect on source output than discharge volume.

The dominant frequency components for both airgun arrays is 0 - 188 Hz. The standard 20–airgun array (MCS survey) will have a peak sound source level of 255 dB re 1  $\mu$ Pa or 262 dB peak-to-peak (P-P), and will be towed at a depth of 7.5 m (24.5 ft). The augmented 20–airgun array (OBH survey) will have a peak sound source level of 256 dB re 1  $\mu$ Pa or 263 dB P-P, and will be towed at a depth of 9.0 m (29.5 ft). Because the actual source is a distributed sound source (20 guns) rather than a single point source, the highest sound levels measurable at any location in the water will be less than the nominal source level. Also, because of the directional

nature of the sound from the airgun array, the effective source level for sound propagating in near-horizontal directions will be substantially lower.

Along with the airgun operations, two additional acoustical data acquisition systems will be operated during most or all of the cruise. The ocean floor will be mapped with an Atlas Hydrosweep DS-2 multibeam 15.5–kHz bathymetric sonar, and a 3.5–kHz sub-bottom profiler will also be operated along with the multi-beam sonar. These mid-frequency sound sources are commonly operated from the *Maurice Ewing* simultaneous with the airgun array.

The Atlas Hydrosweep is mounted in the hull of the *R/V Maurice Ewing*, and it operates in three modes, depending on the water depth. The first is a shallow-water mode when water depth is <400 m (1312.3 ft). The source output is 210 dB re 1  $\mu$ Pa-m rms and a single 1–millisec pulse or “ping” per second is transmitted, with a beamwidth of 2.67 degrees fore-aft and 90 degrees in athwartship. The beamwidth is measured to the 3 dB point, as is usually quoted for sonars. The other two modes are deep-water modes. The Omni mode is identical to the shallow-water mode except that the source output is 220 dB rms. The Omni mode is normally used only during start up. The Rotational Directional Transmission (RDT) mode is normally used during deep-water operation and has a 237–dB rms source output. In the RDT mode, each “ping” consists of five successive transmissions, each ensonifying a beam that extends 2.67 degrees fore-aft and approximately 30 degrees in the cross-track direction. The five successive transmissions (segments) sweep from port to starboard with minor overlap, spanning an overall cross-track angular extent of about 140 degrees, with tiny (<1 millisec) gaps between the pulses for successive 30–degree segments. The total duration of the “ping”, including all 5 successive segments, varies with water depth but is 1 millisec in water depths <500 m (1640.5 ft) and 10 millisec in the deepest water. For each segment, ping duration, is 1/5th of these values or 2/5th for a receiver in the overlap area ensonified by two beam segments. The “ping” interval during RDT operations depends on water depth and varies from once per second in <500 m (1640.5 ft) water depth to once per 15 seconds in the deepest water.

The sub-bottom profiler is normally operated to provide information about the sedimentary features and bottom topography that is simultaneously being mapped by the Hydrosweep. The energy from the sub-bottom profiler is directed downward by a 3.5–kHz transducer

mounted in the hull of the *Maurice Ewing*. The output varies with water depth from 50 watts in shallow water to 800 watts in deep water. Pulse interval is 1 second but a common mode of operation is to broadcast five pulses at 1–s intervals followed by a 5–s pause. Most of the energy in the sound pulses emitted by this multi-beam sonar is at mid-frequencies, centered at 3.5 kHz. The beamwidth is approximately 30° and is directed downward. Maximum source output is 204 dB re 1  $\mu$ Pa, 800 watts, while nominal source output is 200 dB re 1  $\mu$ Pa, 500 watts. Pulse duration will be 4, 2, or 1 ms, and the bandwidth of pulses will be 1.0 kHz, 0.5 kHz, or 0.25 kHz, respectively.

Along the two selected seismic lines, data will first be acquired using multibeam sonar, multichannel seismic, and sonobuoys. A total of 96 sonobuoys will be available, and the *Ewing* system allows two sonobuoys to be recorded at any time. The sonobuoy profiles will be analyzed during the MCS shooting and streamer recovery on each line. The preliminary results from the sonobuoy refraction will be used to plan the OBH deployment pattern on the subsequent deep refraction survey. Twenty OBH's will be deployed for each line.

Additional information on the airgun arrays, Atlas Hydrosweep, and sub-bottom profiler specifications is contained in the application, which is available upon request (see ADDRESSES).

### Comments and Responses

A notice of receipt of LDEO's application for seismic work in the Northwest Atlantic Ocean near Bermuda and proposed IHA was published in the **Federal Register** on October 9, 2003 (68 FR 58308). That notice described in detail the proposed activity and the marine mammal species that may be affected by it. That information is not repeated here. During the 30–day public comment period, comments were received from the Marine Mammal Commission (Commission).

*Comment 1:* The Commission believes that NMFS' preliminary determinations are reasonable, provided NMFS is satisfied that the proposed mitigation and monitoring activities are adequate to detect marine mammals in the vicinity of the proposed operations and to ensure that marine mammals are not being taken in unanticipated ways or numbers. However, the Commission notes that the probability of detecting marine mammals about to enter or already inside the presumed safety limits is probably close to zero at night. Observers will generally not be on duty, and bridge personnel will have limited time to search for marine mammals. The

**Federal Register** notice for the proposed IHA states that “[a]n image-intensifier night-vision device (NVD) will be available for use at night,” but previous **Federal Register** notices have stated that “past experience has shown that NVDs are of limited value for this purpose.” There is no discussion of why nighttime operations are considered necessary, why experienced marine mammal observers will not be on duty during nighttime hours, or how effective the observation efforts are expected to be. The efficacy of visual monitoring during some of the times that airguns would be in use and under some of the conditions likely to be encountered (e.g., during night time operations or in heavy sea states) is highly questionable. The Commission notes that NMFS has previously estimated in a **Federal Register** notice dated March 19, 2001, that visual observation efforts were expected to detect about 5 percent of animals inside safety limits (66 FR 15380). Although the effectiveness of visual observations will depend on several factors, it appears likely that many, if not most, marine mammals will go undetected under the proposed monitoring scheme. If additional information is available regarding the efficacy of visual monitoring from the vessel to be used, then that information should be provided to justify NMFS’ confidence that the proposed monitoring program will be adequate. If no such information is available, then NMFS should seek alternative means of ensuring that the required monitoring program is likely to detect most marine mammals in or near the safety zones. In addition, the Commission notes that it is unclear whether vessel-based passive acoustic monitoring will be conducted as an adjunct to visual monitoring during the daytime and particularly at night to detect, locate, and identify marine mammals and, if not, why not.

*Response:* Nighttime operations are necessary due to cost considerations. The daily cost to the federal government to operate vessels such as the *Ewing* is approximately \$33,000 to \$35,000/day (Ljunngren, pers. comm. May 28, 2003). If the vessel is prohibited from operating during nighttime, it is possible that the trip would require an additional three to five days, or up to \$105,000 to \$175,000 more, depending on average daylight at the time of work.

Taking into consideration the additional costs of prohibiting nighttime operations and the likely impact of the activity (including mitigation and monitoring), NMFS has determined that the mitigation required by the IHA ensures that the activity will have the least practicable adverse impact on the

affected species or stocks. In summary, marine mammals will have sufficient notice of a vessel approaching with operating seismic airguns (at least one hour in advance), thereby giving them an opportunity to avoid the approaching array; if ramp-up is required after an extended power-down, two marine mammal observers will be required to monitor the safety radii using night vision devices for 30 minutes before ramp-up begins and verify that no marine mammals are in or approaching the safety radii; ramp-up may not begin unless the entire safety radii are visible; and ramp-up may occur at night only if one airgun with a sound pressure level of at least 180 dB has been maintained during interruption of seismic activity. Therefore, it is likely that the 20-gun array will not be ramped-up from a shut-down at night. See Mitigation and Monitoring for more details.

It is also noted that at times, pinnipeds and even some small cetaceans will approach a vessel during transmissions (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. Experience indicates that pinnipeds will come from great distances to scrutinize seismic-reflection operations. Seals have been observed swimming within airgun bubbles only 10 m (33 ft) away from active arrays. Also, Canadian scientists, who were using a high-frequency seismic system that produced sound frequencies closer to pinniped hearing than those used by the *Ewing*, describe how seals frequently approached close to the seismic source, presumably out of curiosity. Therefore, NMFS has concluded that this mitigation requirement is reasonable because the bridge-watch will be concentrating on marine mammals approaching the vessel from the bow. Also, the night-vision ability of the trained bridge-watch staff will be better than observers elsewhere on the vessel where normal ship-board lighting is more likely. Finally, an observer is still required to be on standby, meaning he or she will be in the vicinity of the bridge and is not precluded from conducting observations during night-time.

The methodology for visual observations was changed since the 5 percent estimate (noted by the Commission above), resulting in a revised estimate of 9 percent efficacy (67 FR 46712, July 16, 2002). That figure includes both daytime and nighttime periods of observation. The rate increases to 18 percent based only on

daytime monitoring. However, NMFS shipboard marine mammal assessment surveys estimate a higher rate of efficacy. It should be understood that these efficacy ratings were based on most difficult marine mammals to sight, such as harbor porpoise and Cuvier’s beaked whales, and not those more easily sighted.

Passive acoustic means of monitoring was found to be 25 percent effective. However, shipboard passive acoustics do not allow scientists to determine a marine mammal’s distance from the vessel through triangulation; the vessel operator could determine only that a marine mammal is some unknown distance from the vessel. In order to triangulate on the animal, a system similar to that used in the Gulf of Mexico (GOM) Sperm Whale Seismic Study (SWSS) in May, 2003 would be needed. The passive acoustical monitoring equipment that was used onboard the *Ewing* during the GOM SWSS is not the property of LDEO or the *Ewing*, and therefore is not available for the Bermuda cruise. LDEO is presently evaluating the scientific results of the passive sonar from the SWSS trip to determine whether it is practical to incorporate it into future seismic research cruises. NMFS expects a report on this analysis shortly.

Finally, NMFS notes that the monitoring methods employed on the *Ewing* are standard methods used onboard vessels for conducting marine mammal abundance surveys and under IHA’s. NMFS would welcome the Commission’s participation in its annual workshop in Seattle, WA to discuss similar monitoring methodology used in oil exploration and production, including vessel seismic operations, in Arctic waters or in another venue. NMFS is especially interested in exploring with the Commission the potential for alternative, practical, monitoring methodology for use in waters too far from shore-side facilities to make aircraft surveillance practical. Recently, LDEO submitted its required monitoring report for the IHAs issued for the *Ewing*’s seismic work in the Gulf of Mexico (68 FR 32460, May 30, 2003) and Hess Deep (68 FR 41314, July 11, 2003). Copies of those documents are available upon request (see **ADDRESSES**).

*Comment 2:* Several species of cetaceans for which LDEO is seeking incidental take authority stay submerged on most dives for more than 30 minutes. The Commission questions whether conducting monitoring “for at least 30 minutes prior to the planned start of airgun operations” during the day and at night is sufficient to detect those species.

*Response:* NMFS believes that a 30-minute pre-ramp-up monitoring period is sufficient considering that the ramp-up period will increase Sound Pressure Level (SPL) at a rate no greater than 6 dB per 5-minutes for a ramp-up duration of approximately 25 min for the 20-gun array and a total monitoring period of approximately 55 minutes. Also, while some whale species may dive for up to 45 minutes, it is unlikely that the ship's bridge watch would miss a large whale surfacing from its previous dive if it is within a mile or two of the vessel.

*Comment 3:* The **Federal Register** notice for the proposed IHA and the applicant's request notes that there are several species of beaked whales in the proposed survey area, but the notice does not indicate that additional caution with respect to these species may be necessary or propose any post-survey monitoring of the sort that would be needed to detect animals that may have been taken other than by harassment.

*Response:* NMFS shares the Commission's concern regarding the possible relationship between low-frequency seismic survey transmissions and the beaked whale strandings in the Gulf of California. However, beaked whales in the Gulf of Mexico have been exposed to seismic noise for several decades, yet mass stranding events do not appear in the stranding record. Therefore, NMFS believes that additional factors probably also influence whether beaked whales will be affected in ways other than the expected reaction of vacating the immediate vicinity of the noise, similar to the reactions of other marine mammal species. For LDEO's survey near Bermuda, NMFS has decided to include additional monitoring requirements within the IHA (see Monitoring below).

### Mitigation

For the seismic operations in the Bermuda Rise area in 2003, LDEO will use two different configurations of a 20-airgun array. The airguns comprising these arrays will be spread out horizontally, so that the energy from the arrays will be directed mostly downward.

The sound pressure fields were modeled by LDEO in relation to distance and direction from the standard and augmented 20-gun arrays as shown in Figures 5 and 6 of the application, respectively (LDEO Bermuda 2003). Since the sound pressure fields around both configurations of the 20-gun array are similar, the marine mammal safety radii for the augmented 20-gun array will be used for the duration of the cruise. The

radius around the augmented 20-gun array where the received level would be 180 dB re 1  $\mu$ Pa (rms) (the current level established for onset of Level A harassment of cetaceans) is estimated as 925 m (3035 ft). The radius around the augmented 20-gun array where the received level would be 190 dB re 1  $\mu$ Pa (rms), (the current level established for onset of Level A harassment of pinnipeds), is estimated as 300 m (984 ft). A calibration study was conducted prior to these surveys to determine the actual radii corresponding to each sound level. These actual radii will be used to define the safety radii to be used for this study. Until then, or if those measurements appear defective, LDEO will use a precautionary 1.5 times the modeled 180- (cetaceans) and 190- (pinnipeds) dB radii as the safety radii.

The directional nature of the airgun array to be used in this project is an important mitigating factor, resulting in lower sound levels at any given horizontal distance than would be expected at that distance if the source were omnidirectional with the stated nominal source level. Because the actual seismic source is a distributed sound source rather than a single point source, the highest sound levels measurable at any location in the water will be less than the nominal source level.

The following mitigation measures, as well as marine mammal monitoring, will be adopted during the Bermuda seismic survey program, provided that doing so will not compromise operational safety requirements: (1) Speed or course alteration; (2) power-down procedures; (3) shut-down procedures; and (4) ramp-up procedures.

### Course Alteration

If a marine mammal is detected outside the appropriate safety radius and, based on its position and the relative bearing, is likely to enter the safety radius, the vessel's speed and/or direct course will be changed in a manner that also minimizes the effect to the planned science objectives. The marine mammal activities and movements relative to the seismic vessel will be closely monitored to ensure that the marine mammal does not approach or enter the safety radius. If the mammal appears likely to enter the safety radius, further mitigative actions will be taken, i.e., either further course alterations or power- or shut-down of the airguns.

### Power-down and Shut-down Procedures

Airgun operations will be powered- or shut-down immediately when cetaceans or pinnipeds are seen within or about to enter the appropriate 180-dB (rms) or

190-dB (rms) safety radius. If a marine mammal is detected outside the safety radius but is likely to enter it, and if the vessel's course and/or speed cannot be changed to avoid having the marine mammal enter the safety radius, the airguns will be powered-down before the mammal is within the safety radius. If a mammal is already within the safety radius when first detected, the airguns will be powered-down immediately. If a marine mammal is seen within the appropriate safety radius of the array while the guns are powered-down, airgun operations will be shut-down. A power-down involves decreasing the number of airguns in use such that the radius of the 180-dB zone is decreased to the extent that marine mammals are not in the safety radii. A power-down may also occur when the vessel is moving from one seismic line to another. For the power-down procedure, one airgun (either 80 or 145 in<sup>3</sup>) will be operated during the interruption of seismic survey. Airgun activity (after both power-down and shut-down procedures) will not resume until the marine mammal has cleared the safety radius. The animal has cleared the safety radius if it is visually observed to have left the safety radius, or if it has not been seen within the radius for 15 min (small odontocetes and pinnipeds) or 30 min (mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm and beaked whales).

If a cetacean is detected close to the airgun array during a power-down, modeled safety radii for a single gun will be maintained. If the standard 20-gun array is used, the single gun that will be firing is 80 in<sup>3</sup>, and for the augmented array, it is 145 in<sup>3</sup>. The safety radii for the larger 145 in<sup>3</sup> gun will be used for mitigation purposes. Since no calibrations have been done to confirm the modeled safety radii for this single gun, conservative (1.5 times the safety radius) radii will be used: 48 m or 158 ft (the conservative radius is 72 m or 236 ft) for cetaceans, and 17 m or 56 ft (the conservative radius is 26 m or 85 ft) for pinnipeds.

### Ramp-up Procedure

LDEO will employ a ramp-up procedure when commencing operations using the 20-gun array. Ramp-up will begin with the smallest gun in the array (80 in<sup>3</sup> for the standard array and 145 in<sup>3</sup> for the augmented array), and guns will be added in a sequence such that the source level of the array will increase at a rate no greater than 6 dB per 5-minute period over a total duration of about 25 minutes. This ramp-up procedure will

be followed when the airgun array begins operating after a specified-duration period without airgun operations. Under normal operational conditions (vessel speed of about 4 knots or 7.4 km/hr), the *Maurice Ewing* would travel 900 m (2953 ft) in about 7 minutes and a ramp-up will be required after a power-down or shut-down period lasting 7 minutes or longer if the *Ewing* tows a 20-airgun array. If the towing speed is reduced to 3 knots or less, a ramp-up will be required after a "no shooting" period lasting 10 minutes or longer. Based on the same calculation, a ramp-up procedure will be required after a 6 minute period if the speed of the source vessel was 5 knots. During the ramp-up procedures, the safety zone for the full-gun array will be maintained.

Ramp-up will not occur if the safety radius has not been visible for at least 30 min prior to the start of operations in either daylight or nighttime. If the airguns are started up at night, two marine mammal observers will monitor for marine mammals near the source vessel for 30 minutes prior to start up of airgun operations and during the subsequent ramp-up procedures. If the safety radius has not been visible for that 30 minute period (e.g., during darkness or fog), ramp-up will not commence unless one airgun with an SPL of at least 180 dB has been maintained during the interruption of seismic activity. Therefore, it is likely that the 20-gun array will not be ramped up from a shut-down at night or in thick fog, since the safety radii for this array will not be visible during those conditions.

### Monitoring and Reporting

LDEO will conduct marine mammal monitoring of its seismic survey near Bermuda in order to verify that the taking of marine mammals, by harassment, incidental to conducting the seismic survey will have a negligible impact on marine mammal stocks and to ensure that these harassment takings are at the lowest level practicable.

#### Marine Mammal Monitoring

At least two vessel-based observers dedicated to marine mammal observations within the vicinity of the array will be stationed aboard LDEO's seismic survey vessel for the seismic survey near Bermuda. One or two marine mammal observers aboard the seismic vessel will search for and observe marine mammals whenever seismic operations are in progress during daylight hours, and if feasible, during periods without seismic activity. Airgun operations will be suspended

when marine mammals are observed within, or about to enter, designated safety radii, where there is a possibility of Level A harassment. The observers will watch for marine mammals from the highest practical vantagepoint on the vessel, which is either the bridge or the flying bridge. On the *R/V Maurice Ewing*, the observer's eye level will be approximately 11 m (36 ft) above sea level when stationed on the bridge, allowing for good visibility within a 210° arc for each observer. If observers are stationed on the flying bridge, the eye level will be 14.4 m (47.2 ft) above sea level.

The observer(s) will systematically scan the area around the vessel with 7 X 50 Fujinon reticle binoculars or with the naked eye during the daytime. At night, night vision equipment will be available (ITT F500 Series Generation 3 binocular image intensifier or equivalent). Laser rangefinding binoculars (Leica LRF 1200 laser rangefinder or equivalent) will be available to assist with distance estimation. At least two observers will be based aboard the vessel, and at least one will be an experienced marine mammal observer. Observers will be appointed by LDEO with NMFS concurrence. Observers will be on duty in shifts of duration no longer than 4 hours.

Two vessel-based observers will monitor for marine mammals near and in the safety radii for at least 30 minutes prior to and during all daylight airgun operations including ramp-ups, after an extended shut-down, and during any nighttime startups of the airguns. Use of two simultaneous observers will increase the proportion of the marine mammals present near the source vessel that are detected. Observers will not be required to be on duty during ongoing seismic operations at night; bridge personnel will watch for marine mammals during this period and will call for the airguns to be powered-down if marine mammals are observed in or about to enter the safety radii. LDEO bridge personnel will also assist in detecting marine mammals and implementing mitigation requirements whenever possible (they will be given instruction on how to do so), especially during ongoing operations at night. At least one marine mammal observer will be on "standby" at night, in case bridge personnel see a marine mammal. An image-intensifier night-vision device (NVD) will be available for use at night. As discussed earlier, ramp-up will not occur if the safety radius has not been visible for at least 30 min prior to the start of operations in either daylight or nighttime. If the airguns are started up

at night, two marine mammal observers will monitor for marine mammals near the source vessel for 30 minutes prior to start up using NVDS. The 30-minute observation period is only required prior to commencing seismic operations following a shut-down of the 20-gun array for more than 1 hour. After 30 minutes of observation, the ramp-up procedure will be followed.

In addition to the vessel-based visual monitoring of marine mammals, LDEO will implement a monitoring program, with approval from NMFS, to detect, to the greatest extent practicable, any marine mammal/sea turtle stranding that may result from this activity. The monitoring program will contain the following elements: (1) aerial or terrestrial monitoring of all beaches shoreward to the *Ewing's* trackline; (2) the availability on a 24-hour basis of at least one veterinarian trained in conducting necropsies; (3) establishment of a communications network with one or more marine mammal veterinarians, beach monitors and the Bermuda Biological Station; and (4) an established protocol for conducting necropsies and securing labs for proper analysis, ensuring site security and the preservation, storage and transport of biological samples.

#### Reporting

When a marine mammal sighting occurs, 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 seismic vessel (e.g., none, avoidance, approach, paralleling, etc.), and behavioral pace; and (2) time, location, heading, speed, activity of the vessel (shooting or not), sea state, visibility, cloud cover, 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 mammal observations and airgun shutdowns will be recorded in a standardized format. Data will be entered into a custom database using a laptop computer when observers are off-duty. The accuracy of the data entry will be verified by computerized validity data 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 or other

programs for further processing and archiving.

A draft report will be submitted to NMFS within 90 days after the end of the seismic program in the Bermuda Rise area. The report will describe the operations that were conducted and the marine mammals that were detected. The report will be submitted to NMFS, providing full documentation of methods, results, and interpretation pertaining to all monitoring tasks. The draft report will summarize the dates and locations of seismic operations, marine mammal sightings (dates, times, locations, activities, associated seismic survey activities), and estimates of the amount and nature of potential take of marine mammals by harassment or in other ways. The draft report will be considered the final report unless comments and suggestions are provided by NMFS within 60 days of its receipt of the draft report.

#### Estimates of Take by Harassment for the Bermuda Cruise

As described previously (68 FR 17909, April 14, 2003) and in the LDEO application, animals subjected to sound levels  $\leq 160$  dB may alter their behavior or distribution, and therefore might be considered taken by Level B harassment under NMFS' current criteria.

The estimates of takes by harassment are based on the number of marine mammals that might be exposed to seismic sounds  $\geq 160$  dB re 1  $\mu$ Pa (rms) by operations with the 20-airgun array planned for the project. Taken from year-round marine mammal density aerial survey data that has been summarized by geographic location and calendar season (CETAP 1982), LDEO used densities for the "Entire Atlantic Stratum" during the autumn period to estimate the numbers of marine mammals that are likely to be present in the proposed survey area near Bermuda. These densities are probably overestimates of the numbers that are likely to be present, because much of the proposed seismic survey area is farther from shore, in greater water depths, and in generally much less productive waters. Because the CETAP (1982) surveys were conducted from an airplane, few beaked whales were seen or identified, and densities of beaked whales were estimated to be zero during the autumn surveys. More than likely there are small numbers of beaked whales in the proposed survey area throughout the year, so LDEO used the mean density for the entire year to estimate the densities of beaked whales that might be present.

Except for beaked whales, LDEO used its best estimate of density to compute

a best estimate of the number of marine mammals that may be exposed to seismic sounds  $\geq 160$  dB re 1  $\mu$ Pa (rms). The best density estimates were multiplied by the linear extent of the proposed survey (1200 km or 648 n.mi. for each of the 8575 and approximately 11,000 in<sup>3</sup> arrays) and by twice the 160-dB safety radius around the applicable 20-airgun arrays to estimate the "best estimate" of the numbers of animals of each species that might be exposed to sound levels  $\geq 160$  dB re 1  $\mu$ Pa (rms) during the proposed seismic survey program.

Based on this method, table 3 in the LDEO application gives the best estimates, as well as maximum estimates, of densities for each species or species group of marine mammal that might be exposed to received levels  $\geq 160$  dB re 1  $\mu$ Pa (rms), and thus potentially taken by Level B harassment during seismic surveys in the proposed study area of the Northwest Atlantic Ocean near Bermuda. It is assumed that the 20-airgun array would be used for all surveys but that air volume would be 8575 in<sup>3</sup> for half of the survey and approximately 11,000 in<sup>3</sup> for half of the survey. Delphinidae would account for 94 percent of the overall estimate for potential taking by harassment (i.e., 10,292 of 10,910), with short-beaked common dolphins (3941) and pilot whales (3345) believed to account for about 71 percent of all delphinids in the area of the proposed seismic survey, and with smaller numbers of bottlenose dolphins (1871), Risso's dolphins (858), and striped dolphins (277) accounting for most of the remaining 29 percent. While there is no agreement regarding any alternative "take" criterion for dolphins exposed to airgun pulses, if only those dolphins exposed to  $\geq 170$  dB re 1  $\mu$ Pa (rms) were to be affected sufficiently to be considered taken by Level B harassment, then the best estimate for common dolphins would be 1191 rather than 3941 during the Bermuda Rise cruise, and for pilot whales it would be 1011 instead of 3345. These are based on the predicted 170-dB radius around the 20-airgun arrays (2600 m or 8530 ft for the 8575 in<sup>3</sup> array and 2900 m or 9514 ft for the approximately 11,000 in<sup>3</sup> array), and are considered to be more realistic estimates of the number of these species that may be harassed. Therefore, the total number of animals likely to be harassed is considerably lower than the 10,910 animals that LDEO has estimated.

## Conclusions

### *Effects on Cetaceans*

The proposed airgun array configurations are larger than those used in many seismic projects; however, shot intervals are longer than during many surveys and so marine mammals will be exposed to fewer seismic pulses than during many other similar seismic surveys. The pulse interval for the 8575 in<sup>3</sup> gun array is 20 seconds and is 240 seconds for the approximately 11,000 in<sup>3</sup> array.

Strong avoidance reactions by several species of mysticetes to seismic vessels have been observed at ranges up to 6 to 8 km (3.2 to 4.3 nm) and occasionally as far as 20–30 km (10.8–16.2 nm) from the source vessel. Some bowhead whales in Arctic waters avoided waters within 30 km (16.2 nm) of the seismic operation. However, reactions at such long distances appear to be atypical of other species of mysticetes, and even for bowheads may only apply during migration.

Odontocete reactions to seismic pulses, or at least those of dolphins, are expected to extend to lesser distances than are those of mysticetes. Odontocete low-frequency hearing is less sensitive than that of mysticetes, and dolphins are often seen from seismic vessels. There are documented instances of dolphins approaching active seismic vessels. However, dolphins as well as some other types of odontocetes sometimes show avoidance and/or other changes in behavior when near operating seismic vessels.

Taking account of the mitigation measures that are planned, effects on cetaceans are generally expected to be limited to avoidance of the area around the seismic operation and short-term changes in behavior, falling within the MMPA definition of "Level B harassment." Reactions by mysticetes are expected to involve small numbers of individual cetaceans because few mysticetes occur in the area where seismic surveys are proposed. Reactions by mysticetes are expected to involve small numbers of individual cetaceans. For fin whales, LDEO's best estimate is that 501 fin whales, or 1.1 percent of the estimated North Atlantic population for this species (IWC 2003) will be exposed to sound levels  $\geq 160$  dB re 1  $\mu$ Pa (rms) during the proposed cruise near Bermuda. Therefore, based on the relatively low numbers of marine mammals that will be exposed at levels  $\geq 160$  dB and the expected impacts at these levels, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

Larger numbers of odontocetes may be affected by the proposed activities, but the population sizes of most of the species are large and the numbers potentially affected are small relative to the population sizes. 38 sperm whales, or 0.3 percent of the estimated North Atlantic sperm whale population, would receive seismic sounds  $\geq 160$  dB. Similarly, 78 beaked whales from the 5 beaked whale species may be affected by the proposed activities. This is 2.4 % of the estimated total of all 5 species of beaked whales (3196) that occur along the northeast coast of the U.S. Because the CETAP (1982) surveys were conducted from an airplane, few beaked whales were seen, or at least identified, and densities of beaked whales were estimated to be zero during the autumn surveys. However, LDEO believes there are probably small numbers of beaked whales in the proposed survey area throughout the year, so LDEO used the mean density for the entire year to estimate the densities of beaked whales that might be present during autumn. Most of the proposed seismic survey area is outside of the area for which this estimate was made, and only a very small part of beaked whale habitat in the North Atlantic was included in the estimate. Thus the actual population estimate is more than likely much larger than 3196, and the percentage of animals that might receive seismic sounds  $\geq 160$  dB during the proposed cruise is believed to be less than 1 percent of the 3196 estimated North Atlantic population of the 5 species of beaked whales.

The best estimate of the total number of common dolphins, pilot whales, bottlenose dolphins, Risso's dolphins and striped dolphins that might be exposed to  $\geq 160$  dB re  $1 \mu\text{Pa}$  (rms) in the proposed survey area near Bermuda are 3941, 3345, 1871, 858 and 277, respectively. Of these, about 1191, 1011, 565, 259 and 84, respectively might be exposed to  $\geq 170$  dB. These figures are  $<0.1$  to  $<1.1$  percent of the North Atlantic population. Based on the relatively low numbers of marine mammals that will be exposed at levels  $\leq 160$  dB and the expected impacts at these levels, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

Altogether, the mitigation measures explained in this document (See Mitigation) will reduce short-term reactions to disturbance, and minimize any effects on hearing sensitivity.

#### *Effects on Pinnipeds*

Very few if any pinnipeds are expected to be encountered during the seismic survey near Bermuda. However,

a few stray hooded and grey seals could be encountered. The best estimate of the numbers of each of the more common (but unlikely) species that might be taken by Level B harassment is no more than two and is most likely zero. It is estimated that a maximum of 10 pinnipeds (five for each species) may be affected by the seismic survey. None of the pinniped species is considered endangered or depleted.

No pinnipeds regularly occur in the survey area and thus none are expected to be encountered. If pinnipeds are encountered, the seismic activities would have, at most, a short-term effect on their behavior and no long-term impacts on individual seals or their populations. Responses of pinnipeds to acoustic disturbance are variable, but usually quite limited. Effects are expected to be limited to short-term and localized behavioral changes falling within the MMPA definition of Level B harassment. Therefore, based on these effects and the relatively low numbers of pinniped species that may be exposed, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

#### **Endangered Species Act (ESA)**

NMFS has concluded consultation under section 7 of the ESA on NMFS' issuance of an IHA to take small numbers of marine mammals, by harassment, incidental to conducting an oceanographic seismic survey in the Northwest Atlantic Ocean near Bermuda by LDEO. The consultation concluded with a biological opinion that this action is not likely to jeopardize the continued existence of marine species listed as threatened or endangered under the ESA. No critical habitat has been designated for these species in the area of the survey; therefore, none will be affected. A copy of the Biological Opinion is available upon request (see ADDRESSES).

#### **National Environmental Policy Act (NEPA)**

On August 7, 2003, the NSF made a determination, based on information contained within its Environmental Assessment (EA), that implementation of the subject action is not a major Federal action having significant effects on the environment within the meaning of Executive Order 12114. NSF determined therefore, that an environmental impact statement would not be prepared. On October 9, 2003 (68 FR 58308), NMFS noted that the NSF had prepared an EA for this activity and made it available upon request. In accordance with NOAA Administrative Order 216-6 (Environmental Review

Procedures for Implementing the National Environmental Policy Act, May 20, 1999), NMFS has reviewed the information contained in NSF's EA and determined that the NSF EA accurately and completely describes the proposed action alternative, reasonable additional alternatives, and the potential impacts on marine mammals, endangered species, and other marine life that could be impacted by the preferred alternative and the other alternatives. Therefore, based on this review and analysis, NMFS is adopting the NSF EA under 40 CFR 1506.3 and has issued its own Finding of No Significant Impact. As a result, NMFS has determined that it is not necessary to issue either a new EA, supplemental EA or an environmental impact statement for the issuance of an IHA to LDEO for this activity. A copy of the NSF EA for this activity is available upon request (see ADDRESSES).

#### **Determinations**

Based on the information contained in the LDEO application, the NSF EA, the October 9, 2003, proposed authorization notice (68 FR 58308) and this document, NMFS has determined that conducting a marine seismic survey by the *R/V Maurice Ewing* in the Northwest Atlantic Ocean near Bermuda by LDEO would result in the harassment of small numbers of marine mammals; would have no more than a negligible impact on the affected marine mammal species or stocks; and would not have an unmitigable adverse impact on the availability of stocks for subsistence uses. This activity will result, at worst, in a temporary modification in behavior by affected species of marine mammals. While behavioral modifications may be made by these species as a result of seismic survey activities, this behavioral change is expected to result in no more than a negligible impact on the affected species. Also, while the number of actual incidental harassment takes will depend on the distribution and abundance of marine mammals in the vicinity of the survey activity, the number of potential harassment takings is estimated to be small. In addition, no take by injury and/or death is anticipated, and the potential for temporary or permanent hearing impairment is low and will be avoided through the incorporation of the mitigation measures mentioned in this document and required under the IHA. For these reasons therefore, 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**

NMFS has issued an IHA to take small numbers of marine mammals, by harassment, incidental to conducting a marine seismic survey by the *R/V Maurice Ewing* in the Northwest Atlantic Ocean near Bermuda to LDEO for a 1-year period, provided the mitigation, monitoring, and reporting requirements described in this document and the IHA are undertaken.

Dated: November 13, 2003.

**Donna Wieting,**

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

[FR Doc. 03-29037 Filed 11-19-03; 8:45 am]

**BILLING CODE 3510-22-S**

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

[I.D. 111303A]

**Marine Fisheries Advisory Committee; Public Meetings**

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

**ACTION:** Notice of public meetings.

**SUMMARY:** Notice is hereby given of meetings of the Marine Fisheries Advisory Committee (MAFAC) from December 9 through 11, 2003.

**DATES:** The meetings are scheduled as follows:

December 9, 2003, 8:30 a.m. - 4:30 p.m.

December 10, 2003, 9:00 a.m. - 4:30 p.m.

December 11, 2003, 10:45 a.m. - 4:30 p.m.

**ADDRESSES:** The meetings will be held at Holiday Inn Martinique on Broadway, 49 West 32nd Street, New York, New York. Requests for special accommodations may be directed to MAFAC, Office of Constituent Services, NMFS, 1315 East-West Highway, Silver Spring, MD 20910.

**FOR FURTHER INFORMATION CONTACT:** Laurel Bryant, Designated Federal Official; telephone: (301) 713-2379 ext. 171.

**SUPPLEMENTARY INFORMATION:** As required by section 10(a) (2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1982), notice is hereby given of meetings of MAFAC. MAFAC was established by the Secretary of Commerce (Secretary) on February 17, 1972, to advise the Secretary on all living marine resource matters that are

the responsibility of the Department of Commerce. This Committee ensures that the living marine resource policies and programs of the Nation are adequate to meet the needs of commercial and recreational fisheries and of environmental, state, consumer, academic, tribal, and other national interests.

**Matters to Be Considered**

*December 9, 2003*

Review Ocean Commission status, summarize and discuss Constituent sessions 2003; and review National Standards 1 Guidelines and the Implementation of the Endangered Species Act and Essential Fish Habitat.

*December 10, 2003*

Report and discuss NOAA Fisheries' Bycatch Implementation Plan.

*December 11, 2003*

Review Budget Planning, wrap up reports and discuss schedule for next meeting and charter renewal.

*December 12, 2003*

Committee will make final reports to NOAA Fisheries and adjourn.

**Special Accommodations**

These meetings are physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to MAFAC (see **ADDRESSES**).

Dated: November 14, 2003.

**John Oliver,**

*Deputy Assistant Administrator for Operations, National Marine Fisheries Service*

[FR Doc. 03-29035 Filed 11-19-03; 8:45 am]

**BILLING CODE 3510-22-S**

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

[I.D. 102903B]

**Marine Mammals; File No. 732-1487**

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

**ACTION:** Issuance of permit amendment.

**SUMMARY:** Notice is hereby given that Paul Ponganis, Ph.D. has been issued an amendment to scientific research Permit No. 732-1487-03.

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

Permits, Conservation and Education Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Room

13705, Silver Spring, MD 20910; phone (301)713-2289; fax (301)713-0376; and Southwest Region, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213; phone (562)980-4001; fax (562)980-4018.

**FOR FURTHER INFORMATION CONTACT:**

Amy Sloan or Ruth Johnson, (301)713-2289.

**SUPPLEMENTARY INFORMATION:** The requested amendment has been granted under the authority of the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*), and the Regulations Governing the Taking and Importing of Marine Mammals (50 CFR part 216).

This minor amendment extends the expiration date of the permit from June 30, 2004 to June 30, 2005.

Dated: November 14, 2003.

**Stephen L. Leathery,**

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

[FR Doc. 03-29036 Filed 11-19-03; 8:45 am]

**BILLING CODE 3510-22-S**

**COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS****Announcement of Import Limits for Certain Cotton, Wool, Man-Made Fiber, Silk Blend and Other Vegetable Fiber Textiles and Textile Products Produced or Manufactured in the People's Republic of China**

November 14, 2003.

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

**ACTION:** Issuing a directive to the Commissioner, Bureau of Customs and Border Protection announcing limits.

**EFFECTIVE DATE:** January 1, 2004.

**FOR FURTHER INFORMATION CONTACT:** Roy Unger, 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 Bureau of Customs and Border Protection website at <http://www.customs.gov>. For information on embargoes and quota re-openings, refer to the Office of Textiles and Apparel website at <http://otexa.ita.doc.gov>.

**SUPPLEMENTARY INFORMATION:**

**Authority:** Section 204 of the Agricultural Act of 1956, as amended (7 U.S.C. 1854);