In accordance with 19 CFR 351.213(b), an interested party as defined by section 771(9) of the Act may request in writing that the Secretary conduct an administrative review. For both antidumping and countervailing duty reviews, the interested party must specify the individual producers or exporters covered by an antidumping finding or an antidumping or countervailing duty order or suspension agreement for which it is requesting a review. In addition, a domestic interested party or an interested party described in section 771(9)(B) of the Act must state why it desires the Secretary to review those particular producers or exporters. If the interested party intends for the Secretary to review sales of merchandise by an exporter (or a producer if that producer also exports merchandise from other suppliers) which was produced in more than one country of origin and each country of origin is subject to a separate order, then the interested party must state specifically, on an order-by-order basis, which exporter(s) the request is intended to cover.

Note that, for any party the Department was unable to locate in prior segments, the Department will not accept a request for an administrative review of that party absent new information as to the party's location. Moreover, if the interested party who files a request for review is unable to locate the producer or exporter for which it requested the review, the interested party must provide an explanation of the attempts it made to locate the producer or exporter at the same time it files its request for review, in order for the Secretary to determine if the interested party's attempts were reasonable, pursuant to 19 CFR 351.303(f)(3)(ii).

As explained in *Antidumping and Countervailing Duty Proceedings: Assessment of Antidumping Duties,* 68 FR 23954 (May 6, 2003), and *Non-Market Economy Antidumping Proceedings: Assessment of Antidumping Duties,* 76 FR 65694 (October 24, 2011) the Department clarified its practice with respect to the collection of final antidumping duties on imports of merchandise where intermediate firms are involved. The public should be aware of this clarification in determining whether to request an administrative review of merchandise subject to antidumping findings and orders.[3]

Further, as explained in *Antidumping Proceedings: Announcement of Change in Department Practice for Respondent Selection in Antidumping Duty Proceedings and Conditional Review of the Nonmarket Economy Entity in NME Antidumping Duty Proceedings,* 78 FR 65963 (November 4, 2013), the Department clarified its practice with regard to the conditional review of the non-market economy (NME) entity in administrative reviews of antidumping duty orders. The Department will no longer consider the NME entity as an exporter conditionally subject to administrative reviews. Accordingly, the NME entity will not be under review unless the Department specifically receives a request for, or self-initiates, a review of the NME entity.[4] In administrative reviews of antidumping duty orders on merchandise from NME countries where a review of the NME entity has not been initiated, but where an individual exporter for which a review was initiated does not qualify for a separate rate, the Department will issue a final decision indicating that the company in question is part of the NME entity. However, in that situation, because no review of the NME entity was conducted, the NME entity's entries were not subject to the review and the rate for the NME entity is not subject to change as a result of that review (although the rate for the individual exporter may change as a function of the finding that the exporter is part of the NME entity).

Following initiation of an antidumping administrative review when there is no review requested of the NME entity, the Department will instruct CBP to liquidate entries for all exporters not named in the initiation notice, including those that were suspended at the NME entity rate.

All requests must be filed electronically in Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (''ACCESS'') on Enforcement and Compliance's ACCESS Web site at *http://access.trade.gov*.[5] Further, in accordance with 19 CFR 351.303(f)(l)(i), a copy of each request must be served on the petitioner and each exporter or producer specified in the request.

The Department will publish in the **Federal Register** a notice of ''Initiation of Administrative Review of Antidumping or Countervailing Duty Order, Finding, or Suspended Investigation'' for requests received by the last day of November 2015. If the Department does not receive, by the last day of November 2015, a request for review of entries covered by an order, finding, or suspended investigation listed in this notice and for the period identified above, the Department will instruct CBP to assess antidumping or countervailing duties on those entries at a rate equal to the cash deposit of (or bond for) estimated antidumping or countervailing duties required on those entries at the time of entry, or withdrawal from warehouse, for consumption and to continue to collect the cash deposit previously ordered.

For the first administrative review of any order, there will be no assessment of antidumping or countervailing duties on entries of subject merchandise entered, or withdrawn from warehouse, for consumption during the relevant provisional-measures ''gap'' period of the order, if such a gap period is applicable to the period of review.

This notice is not required by statute but is published as a service to the international trading community.

Dated: October 28, 2015.

Edward Yang,

Senior Director, Office VII for Antidumping and Countervailing Duty Operations.

[FR Doc. 2015–28028 Filed 11–2–15; 8:45 am]

BILLING CODE 3510–DS–P

[3] *See also* the Enforcement and Compliance Web site at *http://trade.gov/enforcement/*.

[4] In accordance with 19 CFR 351.213(b)(1), parties should specify that they are requesting a review of entries from exporters comprising the entity, and to the extent possible, include the names of such exporters in their request.

[5] *See Antidumping and Countervailing Duty Proceedings: Electronic Filing Procedures; Administrative Protective Order Procedures,* 76 FR 39263 (July 6, 2011).

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XE125

Takes of Marine Mammals Incidental to Specified Activities; Marine Geophysical Survey in the Eastern Mediterranean Sea, Mid-November to December 2015

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

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the Marine Mammal Protection Act (MMPA) implementing regulations, we hereby give notice that we have issued an Incidental Harassment Authorization (Authorization) to Lamont-Doherty Earth Observatory (Lamont-Doherty), a component of Columbia University, in collaboration with the National Science Foundation (NSF), to take marine mammals, by harassment, in the eastern

Mediterranean Sea, mid-November through December 2015.

DATES: Effective November 19, 2015, through December 31, 2015.

ADDRESSES: A copy of the final Authorization and application and other supporting documents are available by writing to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910, by telephoning the contacts listed here, or by visiting the internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm.*

The NSF prepared a draft Environmental Analysis in accordance with Executive Order 12114, ''Environmental Effects Abroad of Major Federal Actions'' for their proposed federal action. The environmental analysis titled ''Environmental Analysis of a Marine Geophysical Survey by the R/V *Marcus G. Langseth* in the Eastern Mediterranean Sea, November–December 2015,'' prepared by LGL, Ltd. environmental research associates, on behalf of NSF and Lamont-Doherty is available at the same internet address.

NMFS prepared an Environmental Assessment (EA) titled, ''Proposed Issuance of an Incidental Harassment Authorization to Lamont-Doherty Earth Observatory to Take Marine Mammals by Harassment Incidental to a Marine Geophysical Survey in Eastern Mediterranean Sea, November–December 2015,'' in accordance with NEPA and NOAA Administrative Order 216–6. To obtain an electronic copy of these documents, write to the previously mentioned address, telephone the contact listed here (see **FOR FURTHER INFORMATION CONTACT**), or download the files at: *http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm.*

NMFS also issued a Biological Opinion under section 7 of the Endangered Species Act (ESA) to evaluate the effects of the survey and Authorization on marine species listed as threatened and endangered. The Biological Opinion is available online at: *http://www.nmfs.noaa.gov/pr/consultations/opinions.htm.*

FOR FURTHER INFORMATION CONTACT: Jeannine Cody, NMFS, Office of Protected Resources, NMFS (301) 427–8401.

SUPPLEMENTARY INFORMATION:

Background

Section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (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 of a species or population stock, by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if, after NMFS provides a notice of a proposed authorization to the public for review and comment: (1) NMFS makes certain findings; and (2) the taking is limited to harassment.

An Authorization shall be granted for the incidental taking of small numbers of marine mammals if NMFS finds that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). The Authorization must also set forth the permissible methods of taking; other means of effecting the least practicable adverse impact on the species or stock and its habitat (*i.e.,* mitigation); and requirements pertaining to the monitoring and reporting of such taking. 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.''

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

Summary of Request

On April 20, 2015, NMFS received an application from Lamont-Doherty requesting that NMFS issue an Authorization for the take of marine mammals, incidental to the University of Oregon conducting a seismic survey in the eastern Mediterranean Sea October through November 2015. Following the initial application submission, Lamont-Doherty submitted a revised application with new dates for the proposed survey (approximately mid-November through December, 2015). NMFS considered the revised application adequate and complete on August 25, 2015.

The proposed survey would take place partially within Greece's territorial seas (less than 6 nautical miles (nmi) [11 km; 7 mi] from the shore) and partially in the high seas. However, NMFS cannot authorize the incidental take of marine mammals in the territorial seas of foreign nations, as the MMPA does not apply in those waters. However, NMFS estimated the level of incidental take in the entire activity area (territorial seas and high seas) as part of the analysis supporting the agency's determination under the MMPA that the activity would have a negligible impact on the affected species.

Lamont-Doherty proposes to conduct a high-energy, seismic survey on the R/V *Marcus G. Langseth* (*Langseth*), a vessel owned by NSF and operated on its behalf by Columbia University's Lamont-Doherty in the eastern Mediterranean Sea for approximately 16 days from approximately mid-November 2015, through mid-December 2015. The following specific aspect of the proposed activity has the potential to take marine mammals: Increased underwater sound generated during the operation of the seismic airgun arrays. We anticipate that take, by Level B harassment, of 22 species of marine mammals could result from the specified activity. Although the unlikely, NMFS also anticipates that a small level of take by Level A harassment of four species of marine mammals could occur during the proposed survey.

Description of the Specified Activity

Overview

Lamont-Doherty plans to use one source vessel, the *Langseth,* an array of 36 airguns as the energy source, a receiving system of 93 ocean bottom seismometers (OBSs) for the northern portion of the proposed survey and a single 8-kilometer (km) hydrophone streamer for the southern portion of the proposed survey. In addition to the operations of the airguns, Lamont-Doherty intends to operate a multibeam echosounder and a sub-bottom profiler on the *Langseth* continuously throughout the proposed survey. However, Lamont-Doherty will not operate the multibeam echosounder and sub-bottom profiler during transits to and from the survey areas (*i.e.,* when the airguns are not operating).

The purpose of the survey is to collect and analyze seismic refraction data on and around the island of Santorini (Thira) to examine the crustal magma plumbing of the Santorini volcanic system. NMFS refers the public to Lamont-Doherty's application for more detailed information on the proposed research objectives which are purely

scientific in nature and not related to oil and natural gas exploration. The proposed survey's principal investigators are Drs. E. Hooft and D. Toomey (University of Oregon). The Santorini portion of the study also involves international collaboration with Dr. P. Nomikou (University of Athens) who would be onboard the *Langseth* during the entire seismic survey.

Dates and Duration

Lamont-Doherty proposes to conduct the seismic survey for approximately 30 days which includes approximately 16 days of seismic surveying, 11 days for OBS deployment/retrieval, and 1 day of hydrophone streamer deployment. The proposed study (*e.g.,* equipment testing, startup, line changes, repeat coverage of any areas, and equipment recovery) would include approximately 384 hours of airgun operations (*i.e.,* 16 days over 24 hours). Some minor deviation from Lamont-Doherty's requested dates of mid-November through December 2015 is possible, depending on logistics, weather conditions, and the need to repeat some lines if data quality is substandard. Thus, the proposed Authorization, if issued, would be effective from November 19 through December 31, 2015.

Specified Geographic Region

Lamont-Doherty proposes to conduct one portion of the proposed seismic survey in the Aegean Sea, located approximately between 36.1–36.8° N. and 24.7–26.1° .E in the eastern Mediterranean Sea. Water depths in the Aegean Sea survey area are approximately 20 to 500 meters (m) (66 to 1,640 feet (ft)). Lamont-Doherty would conduct the second portion of the proposed seismic survey over the Hellenic subduction zone which starts in the Aegean Sea at approximately 36.4° N., 23.9° E. and runs to the southwest, ending at approximately 34.9° N., 22.6° E. Water depths in that area range from 1,000 to 3,000 m (3,280 to 9,843 ft). Lamont-Doherty would conduct the proposed seismic survey within the Exclusive Economic Zone (EEZ) and territorial waters of Greece. Greece's territorial seas extend out to six nautical miles (nmi) (7 miles [mi]; 11 kilometers [km]).

Detailed Description of the Specified Activities

Transit Activities

The *Langseth* would depart from Piraieus, Greece in November 2015 and spend one day in transit to the proposed survey areas. At the conclusion of the survey, the *Langseth* would arrive at Iraklio, Crete. Some minor deviation from these dates is possible, depending on logistics and weather.

Vessel Specifications

NMFS outlined the vessel's specifications in the notice of proposed Authorization (80 FR 53623, September 4, 2015). NMFS does not repeat the information here as the vessel's specifications have not changed between the notice of proposed Authorization and this notice of an issued Authorization.

Data Acquisition Activities

NMFS outlined the details regarding Lamont-Doherty's data acquisition activities using the airguns, multibeam echosounder, and the sub-bottom profiler in the notice of proposed Authorization (80 FR 53623, September 4, 2015). NMFS does not repeat the information here as the data acquisition activities have not changed between the notice of proposed Authorization and this notice of an issued Authorization.

For a more detailed description of the authorized action, including vessel and acoustic source specifications, metrics, characteristics of airgun pulses, predicted sound levels of airguns, etc., please see the notice of proposed Authorization (80 FR 53623, September 4, 2015) and associated documents referenced above this section.

Comments and Responses

NMFS published a notice of receipt of Lamont-Doherty's application and proposed Authorization in the **Federal Register** on September 4, 2015 (80 FR 53623). During the 30-day public comment period, NMFS received comments from the following: Prof. Efthimios Lekkas, Department of Geology and Geo Environment, University of Athens; the Geological Society of Greece; the Earthquake Planning and Protection Organization (EPPO); Anastasios N. Zorzos, Mayor of the Island of Santorini (Thira); the Marcus Langseth Science Oversight Committee (MLSOC); the Marine Mammal Commission (Commission); OceanCare; Oceanomare Delphis Onlus (ODO); the Natural Resources Defense Council (NRDC) and Whale and Dolphin Conservation (WDC). OceanCare, ODO, NRDC, and WDC referenced several journal articles and documents within their comment letters. NMFS considered these articles and documents within the final analyses but does not intend to address each one specifically in this Response to Comments section. NMFS has posted the comments online at: *http://www.nmfs.noaa.gov/pr/permits/incidental/research.htm.*

NMFS addresses any comments specific to Lamont-Doherty's application related to the statutory and regulatory requirements or findings that NMFS must make under the MMPA in order to issue an Authorization. Following is a summary of the public comments and NMFS' responses.

Compliance With International Guidelines

Comment 1: NMFS received letters from two Greek organizations, one Greek citizen, and the mayor of Santorini requesting that NMFS issue the Authorization to Lamont-Doherty. The Geological Society of Greece stated that both the Ministry of Foreign Affairs of the Hellenic Republic and the Greek Committee for Granting Sea Research Licenses (EXAEO) had approved Lamont-Doherty's conduct of the survey within Greece's Exclusive Economic Zone (EEZ) and surrounding international waters. The commenters state that Lamont-Doherty's project, approved by the Greek government, would minimize impacts on marine life by following all standard monitoring and mitigation measures for seismic surveys as listed in the Greek Ministry of Foreign Affairs vessel clearance document and any additional requirements established by NMFS' Authorization.

Response: NMFS acknowledges the comments from Prof. Lekkas, the Geological Society of Greece, the EPPO, and Mayor Zorzos and thanks them for their comments. NMFS confirmed through the U.S. State Department that Lamont-Doherty sought approval from the Ministry of Foreign Affairs of the Hellenic Republic to conduct the proposed seismic survey. Greece's foreign vessel clearance process required Lamont-Doherty to submit an environmental analysis which evaluated the potential effects of the proposed activity on marine species and described the monitoring and mitigation measures for lessening impacts on marine mammals. On June 2, 2015, Greece granted permission to Lamont-Doherty to conduct the proposed seismic survey in areas of Greek jurisdiction provided that Lamont-Doherty complies with the specific terms and conditions of the issued vessel clearance including ''compliance with Greek national legislation (in particular Greek Law Nos. 2971/2001 and 3028/2002) and all international regulations, including the ACCOBAMS (Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous

Atlantic Area) international guidelines on the protection of marine mammals''.

Lamont-Doherty is not only following mitigation and monitoring measures for marine mammals required under international regulations but must also implement mitigation measures as required by NMFS' issued Authorization in the waters outside the Greek territorial sea per the MMPA. NMFS analyzed the proposed seismic survey in accordance with the MMPA, the Endangered Species Act (ESA), and National Environmental Policy Act (NEPA). Under those statutes, NMFS analyzed the impacts to marine mammals (including those listed as threatened or endangered under the ESA), their habitat, and to the availability of marine mammals for taking for subsistence uses. The MMPA analyses concluded that the activities would have a negligible impact on affected marine mammal species or stocks and would not have an unmitigable adverse impact on the availability of marine mammals for taking for subsistence uses (which is not applicable in this case). The ESA analysis concluded that the activities likely would not jeopardize the continued existence of ESA-listed species or destroy or adversely modify designated critical habitat. The NEPA analysis concluded that there would not be a significant impact on the human environment. Moreover, NMFS does not expect this activity to result in the death of any marine mammal species and has not authorized take by serious injury or mortality.

Comment 2: The MSLOC requested that NMFS issue the Authorization to Lamont-Doherty in a timely manner; described Lamont-Doherty's monitoring and mitigation measures for marine mammals; and stated that those measures were reasonable and consistent with, or more conservative than, internationally-accepted standards and guidelines implemented by the United Kingdom, Canada, Brazil, Australia, New Zealand, Denmark, and Norway.

Response: NMFS acknowledges the MSLOC's comments and agrees that many of the mitigation measures proposed by Lamont-Doherty are consistent with many international standards and guidelines. NMFS issued this Authorization in accordance with the MMPA and the ESA. After careful evaluation of all comments and the data and information available regarding potential impacts to marine mammals and their habitat and to the availability of marine mammals for subsistence uses, NMFS has issued the final authorization to Lamont-Doherty to take marine mammals incidental to conducting a seismic survey in the eastern Mediterranean Sea for the period November 19 through December 31, 2015. As required by the MMPA, the Authorization sets forth the permissible methods of taking; other means of effecting the least practicable adverse impact on the species or stock and its habitat (*i.e.,* mitigation); and requirements pertaining to the monitoring and reporting of such taking.

Comment 3: The NRDC, WDC, OceanCare, and Oceanomare Delphis Onlus submitted statements of concern that NMFS' proposed Authorization and NSF's draft environmental analysis did not consider the ACCOBAMS Resolutions 4.17, *Guidelines to Address the Impact of Anthropogenic Noise on Cetaceans in the ACCOBAMS Area* and 5.15, *Addressing the impact of Anthropogenic Noise.* Specifically, NRDC stated that the proposed Authorization and draft environmental analysis did not follow the guidelines for extra mitigation for beaked whales in deep water areas.

Response: See NMFS' response to Comment 1. Under the MMPA, NMFS does not have the jurisdiction to require an applicant to comply with ACCOBAMS resolutions because the U.S. is not party to that particular convention. However, NMFS notes that ACCOBAMS Resolution 4.17 based their guidelines for seismic surveys and airgun uses on ''. . . guidelines for mitigating the effects of seismic surveys . . . in the context of academic seismic surveys conducted under NMFS' permits.''

NMFS described Lamont-Doherty's proposed mitigation and monitoring measures in the notice of proposed authorization (80 FR 53623, September 4, 2015) as well as additional mitigation measure required by NMFS to effect the least practicable adverse impact on marine mammals. Despite some minor differences between implementation of NMFS' requirements under the MMPA and ESA for seismic surveys and those listed under ACCOBAMS Resolution 4.17, the overall guidelines required for seismic surveys are nearly identical. For example, Resolution 4.17 lists 19 guidelines (a–s) for seismic surveys and airgun uses. One guideline (r) is not applicable to this action as it covers multiple seismic survey operations and NMFS' requirements under the MMPA and ESA closely track to the additional 16 guidelines (a, b, c, d, f, g, h, i, j, k, l, m, n, o, p, q, and s) for marine mammals.

As stated previously in Comment 1, the Ministry of Foreign Affairs of the Hellenic Republic granted Lamont-Doherty permission to conduct the proposed seismic survey in areas of Greek jurisdiction provided that they comply with all international regulations, including ACCOBAMS Resolution 4.17 (m), *Guidelines for Seismic Surveys and Airgun Uses* which requires vessels to monitor for beaked whales for a duration of 120 minutes and initiate a ramp up of the airgun array 120 minutes after a beaked whale sighting within Greek jurisdictional waters. NSF plans to abide by this requirement within Greek territorial seas. NMFS' mitigation measure of initiating a ramp-up of the airgun array 30 minutes after a large odontocete sighting would apply in the high seas. NMFS expects that our normal requirement of waiting 30 minutes to initiate a ramp-up is sufficient to effect the least practicable adverse impact on marine mammals. The *Langseth's* observers are continually monitoring the exclusion zone. On average, observers can observe to the horizon (10 km; 6.2 mi) from the height of the *Langseth's* observation deck and should be able to say with a reasonable degree of confidence whether a marine mammal would be encountered within this distance before resuming airgun operations at full power. Last, as standard practice, the MMPA Authorization and the ESA Biological Opinion require Lamont-Doherty to cooperate with the Greek authorities in monitoring the impacts of the proposed activity on marine mammals.

Comment 4: NRDC/WDC state that the proposed survey occurs within two proposed Ecologically or Biologically Significant Areas (EBSAs) under the Convention on Biological Diversity (CBD) and state that the proposed Authorization contradicts the CBD's conservation priorities. OceanCare and ODO also submitted background information on EBSAs in their comments, stated that the Central Aegean Sea and Hellenic Trench were critical habitat for Mediterranean monk seals, and indicated that the proposed activities were unacceptable.

Response: NMFS acknowledges the commenters' concerns and refers them to NSF's draft environmental analysis (see pages 17–19) which presents information on marine protected areas within the proposed action area. However, the submitted comments did not provide any specific recommendations or criticisms regarding the sufficiency of NSF's analysis.

The CBD aims to address conservation of open-ocean and deep-sea ecosystems using the concept of EBSAs (Clark *et al.,* 2014). The Parties to the CBD approved

the adoption of seven criteria: Uniqueness or rarity, special importance for life history stages of species; importance for threatened, endangered or declining species and/or habitats; vulnerability, fragility, sensitivity, or slow recovery; biological productivity; biological diversity; and naturalness for identifying EBSAs (CBD, 2008). Although EBSAs do not necessarily imply that a management response is required (Clark *et al.,* 2014), the CBD intended them to provide an initial basis for a network of protected areas (CBD, 2008) that would undergo review by the United Nations General Assembly for future stewardship recommendations (WWF, 2012).

The U.S. is not a party to the Convention, and NMFS does not have the authority to require an applicant for an MMPA Authorization to comply with the CBD. Again, NMFS' mitigation measures are sufficient to effect the least practicable adverse impact on marine mammals in the two EBSAs. Further, as a condition of vessel clearance from the Greek government, Lamont-Doherty would also comply with Greek legislation, in particular Greek Law Nos. 2971/2001 and 3028/2002, which regulate the protection of coastal ecosystems.

Modeling Exclusion and Buffer Zones

Comment 5: The Commission expressed concerns regarding Lamont-Doherty's method to estimate exclusion and buffer zones using a ray trace-based model. They stated that the model is not conservative because it assumes spherical spreading, a constant sound speed, and no bottom interactions instead of collecting empirical sound source and sound propagation measurements and incorporating site-specific environmental characteristics (*e.g.,* sound speed profiles, refraction, bathymetry/water depth, sediment properties/bottom loss, or absorption coefficients) into their model. In light of their concerns, the Commission recommended that NMFS require Lamont-Doherty to re-estimate the proposed exclusion and buffer zones using site-specific environmental and operational parameters.

Response: NMFS acknowledges the Commission's concerns about Lamont-Doherty's current modeling approach for estimating exclusion and buffer zones and also acknowledge that Lamont-Doherty did not incorporate site-specific sound speed profiles, bathymetry, and sediment characteristics of the research area in the current approach to estimate those zones for this proposed seismic survey.

Lamont-Doherty's application (LGL, 2015) and the NSF's draft environmental analyses (NSF, 2015) describe the approach to establishing mitigation exclusion and buffer zones. In summary, Lamont-Doherty acquired field measurements for several array configurations at shallow- and deep-water depths during acoustic verification studies conducted in the northern Gulf of Mexico in 2003 (Tolstoy *et al.,* 2004) and in 2007 and 2008 (Tolstoy *et al.,* 2009). Based on the empirical data from those studies, Lamont-Doherty developed a sound propagation modeling approach that conservatively predicts received sound levels as a function of distance from a particular airgun array configuration in deep water. For this proposed survey, Lamont-Doherty developed the exclusion and buffer zones for the airgun array based on the empirically-derived measurements from the Gulf of Mexico calibration survey (Fig. 5a in Appendix H of the NSF's 2011 PEIS). Based upon the best available information (*i.e.,* the three data points, two of which are peer-reviewed, discussed in this response), NMFS finds that the exclusion and buffer zone calculations are appropriate for use in this particular survey.

In 2015, Lamont-Doherty explored solutions to this issue by conducting a retrospective sound power analysis of one of the lines acquired during Lamont-Doherty's seismic survey offshore New Jersey in 2014 (Crone, 2015). NMFS presented a comparison of the predicted radii (*i.e.,* modeled exclusion zones) with radii based on in situ measurements (*i.e.,* the upper bound [95th percentile] of the cross-line prediction) in a previous notice of issued Authorization (see Table 1, 80 FR 27635, May 14, 2015) for Lamont-Doherty.

Briefly, Crone's (2015) preliminary analysis, specific to the proposed survey site offshore New Jersey, confirmed that in-situ, site specific measurements and estimates of the 160- and 180-decibel (dB) isopleths collected by the *Langseth's* hydrophone streamer in shallow water were smaller than the modeled (*i.e.,* predicted) exclusion and buffer zones proposed for use in two seismic surveys conducted offshore New Jersey in shallow water in 2014 and 2015. In that particular case, Crone's (2015) results show that Lamont-Doherty's modeled exclusion (180-dB) and buffer (160-dB) zones were approximately 28 and 33 percent smaller than the in situ, site-specific measurements confirming that Lamont-Doherty's model was conservative, as emphasized by Lamont-Doherty in its application and in supporting environmental documentation. Following is a summary of two additional analyses of in-situ data that support Lamont-Doherty's use of the modeled exclusion and buffer zones in this particular case.

In 2010, Lamont-Doherty assessed the accuracy of their modeling approach by comparing the sound levels of the field measurements acquired in the Gulf of Mexico study to their model predictions (Diebold *et al.,* 2010). They reported that the observed sound levels from the field measurements fell almost entirely below the predicted mitigation radii curve for deep water (greater than 1,000 meters [m]; 3280.8 feet [ft]) (Diebold *et al.,* 2010).

In 2012, Lamont-Doherty used a similar process to model exclusion and buffer zones for a shallow-water seismic survey in the northeast Pacific Ocean offshore Washington in 2012. Lamont-Doherty conducted the shallow-water survey using the same airgun configuration proposed for this seismic survey (*i.e.,* 6,600 cubic inches [in^3]) and recorded the received sound levels on the shelf and slope off Washington State using the *Langseth's* 8-kilometer (km) hydrophone streamer. Crone *et al.* (2014) analyzed those received sound levels from the 2012 survey and confirmed that in-situ, site specific measurements and estimates of the 160- and 180-dB isopleths collected by the *Langseth's* hydrophone streamer in shallow water were two to three times smaller than what Lamont-Doherty's modeling approach predicted. While the results confirm bathymetry's role in sound propagation, Crone *et al.* (2014) were able to confirm that the empirical measurements from the Gulf of Mexico calibration survey (the same measurements used to inform Lamont-Doherty's modeling approach for this seismic survey in the Mediterranean Sea) overestimated the size of the exclusion and buffer zones for the shallow-water 2012 survey off Washington and were thus precautionary, in that particular case.

At present, Lamont-Doherty cannot adjust their modeling methodology to add the environmental and site-specific parameters as requested by the Commission. NMFS continues to work with Lamont-Doherty and the NSF to address the issue of incorporating site-specific information to further inform the analysis and development of mitigation measures in oceanic and coastal areas for future seismic surveys with Lamont-Doherty. Also, NMFS will continue to work with Lamont-Doherty, the NSF, and the Commission on continuing to verify the accuracy of

their modeling approach. However, Lamont-Doherty's current modeling approach (supported by the three data points discussed previously) represents the best available information for NMFS to reach determinations for the Authorization. As described earlier, the comparisons of Lamont-Doherty's model results and the field data collected in the Gulf of Mexico, offshore Washington, and offshore New Jersey illustrate a degree of conservativeness built into Lamont-Doherty's model for deep water, which NMFS expects to offset some of the limitations of the model to capture the variability resulting from site-specific factors.

Lamont-Doherty has conveyed to NMFS that additional modeling efforts to refine the process and conduct comparative analysis may be possible with the availability of research funds and other resources. Obtaining research funds is typically through a competitive process, including those submitted to U.S. Federal agencies. The use of models for calculating buffer and exclusion zone radii and for developing take estimates is not a requirement of the MMPA incidental take authorization process. Furthermore, NMFS does not provide specific guidance on model parameters nor prescribes a specific model for applicants as part of the MMPA incidental take authorization process at this time. There is a level of variability not only with parameters in the models, but also the uncertainty associated with data used in models, and therefore, the quality of the model results submitted by applicants. NMFS considers this variability when evaluating applications. Applicants use models as a tool to evaluate potential impacts, estimate the number of, and type of takes of marine mammals, and for designing mitigation. NMFS takes into consideration the model used and its results in determining the potential impacts to marine mammals; however, it is just one component of the analysis during the MMPA consultation process as NMFS also takes into consideration other factors associated with the proposed action, (*e.g.,* geographic location, duration of activities, context, intensity, etc.).

Comment 6: NRDC/WDC commented that Lamont-Doherty should have considered local propagation features to predict sound propagation characteristics and used that information to estimate the proposed exclusion zones. The commenters noted that a recent reviews presented information on behavioral disruption of marine mammals occurring below the 160-dB Level B threshold (Nowacek *et al.,* 2015; DeRuiter *et al.,* 2013; and Kastelein *et al.,* 2012) and stated that the exclusion zone and take estimates were not accurate and not conservative. NRDC/WDC also stated that NMFS should modify the current thresholds and base them on the best available science (*i.e.,* centering the behavioral risk function at 140 dB (RMS) instead of 160 dB).

Response: Please see NMFS' response to Comment 4 with respect to Lamont-Doherty modeling proposed exclusion zones.

NMFS considered Nowacek *et al.'*s (2015) review in making our final determinations. Their review presents several recommendations including the establishment of a uniform set of international standards to manage ocean noise; the recognition of ocean noise as a pollutant; and the management of ocean noise through a revision to the existing International Convention on the Prevention of Pollution from Ships. NMFS notes that Nowacek *et al.'*s (2015) review primarily focused on simultaneous seismic surveys for oil and gas exploration conducted over large spatial and temporal scales and did not particularly focus on the conduct of smaller, one-time, academic research seismic surveys such as the one proposed by Lamont-Doherty in the eastern Mediterranean Sea. Nowacek *et al.* (2015) also discussed the use of appropriate impact thresholds and the need for regulatory agencies to accept a new paradigm for assessing acoustic impacts and move beyond the use of acute impact thresholds.

NMFS is constantly evaluating new science and how to best incorporate it into our decisions. This process involves careful consideration of new data and how it is best interpreted within the context of a given management framework. These papers and the studies discussed in our notice of proposed authorization (80 FR 53623, September 4, 2015) emphasize the importance of context (*e.g.,* behavioral state of the animals, distance from the sound source, etc.) in evaluating behavioral responses of marine mammals to acoustic sources and note that there is variability in the behavioral responses of marine mammals to noise exposure. However, it is important to consider the context in predicting and observing the level and type of behavioral response to anthropogenic signals (Ellison *et al.,* 2012). There is potential for responses to occur below 140 dB and NMFS considered papers and studies in the notice of proposed authorization (80 FR 53623, September 4, 2015) that note that there is variability in the behavioral responses of marine mammals to sound exposure. On the other hand, there are many studies showing that marine mammals do not show behavioral responses when exposed to multiple pulses at received levels at or above 160 dB re: 1 µPa (*e.g.,* Malme *et al.,* 1983; Malme *et al.,* 1984; Richardson *et al.,* 1986; Akamatsu *et al.,* 1993; Madsen and Mohl, 2000; Harris *et al.,* 2001; Miller *et al.,* 2005; and Wier, 2008). And other studies show that whales continue important behaviors in the presence of seismic pulses (*e.g.,* Richardson *et al.,* 1986; McDonald *et al.,* 1995; Greene *et al.,* 1999a, 1999b; Nieukirk *et al.,* 2004; Smultea *et al.,* 2004; Holst *et al.,* 2005, 2006; Dunn and Hernandez, 2009).

With respect to the use of current thresholds, NMFS' practice has been to apply the 160 dB re: 1 µPa received level threshold for underwater impulse sound levels to determine whether take by Level B harassment occurs. Specifically, NMFS derived the 160 dB threshold data from mother-calf pairs of migrating gray whales (Malme *et al.,* 1983, 1984) and bowhead whales (Richardson *et al.,* 1985, 1986) responding to seismic airguns.

NMFS discusses the science on this issue qualitatively in our analysis of potential effects to marine mammals (80 FR 53623, September 4, 2015). Accordingly, it is not a matter of merely replacing the existing threshold with a new one. NMFS is currently developing revised acoustic guidelines for assessing the effects of anthropogenic sound on marine mammals. Until NMFS finalizes these guidelines (a process that includes public notice and comment and peer review), NMFS will continue to rely on the existing criteria for Level A and Level B harassment shown in Table 4 of the notice for the proposed authorization (80 FR 53623, September 4, 2015).

As mentioned in the **Federal Register** notice for the proposed authorization (80 FR 53623, September 4, 2015), we expect that the onset for behavioral harassment is largely context dependent (*e.g.,* behavioral state of the animals, distance from the sound source, etc.) when evaluating behavioral responses of marine mammals to acoustic sources. Although using a single sound pressure level of 160-dB re: 1 µPa for the onset of behavioral harassment for impulse noises may not capture all of the nuances of different marine mammal reactions to sound, it is an appropriate way to manage and regulate anthropogenic noise impacts on marine mammals until NMFS implements its acoustic guidelines.

With regards to the information presented in DeRuiter *et al.* (2013) for beaked whales and in Kastelein *et al.*

(2012) for harbor porpoises. NMFS considered the significance of these articles within the environmental assessment for this proposed survey (NMFS, 2015) and in previous notices of issued authorizations for Lamont-Doherty (79 FR 38496 and 80 FR 27635, May 14, 2015).

DeRuiter *et al.* (2013) observed that beaked whales (considered a particularly sensitive species) exposed to playbacks (*i.e.,* simulated) of U.S. Navy tactical mid-frequency active sonar from 89 to 127 dB re: 1 μPa at close distances responded notably by altering their dive patterns. In contrast, individuals showed no behavioral responses when exposed to similar received levels from actual U.S. Navy tactical mid-frequency active sonar operated at much further distances (DeRuiter, *et al.,* 2013). As noted earlier, one must consider the importance of context (*e.g.,* the distance of a sound source from the animal) in predicting behavioral responses.

With regards to Kasetlein *et al.* (2012), NMFS recognizes that behavioral responses for a harbor porpoise occurs at lower levels than for other cetacean species empirically tested (Finneran & Schlundt, 2010; Finneran *et al.,* 2002; Kastelein & Jennings, 2012, Kastelein *et al.,* 2012; Kastelein *et al.,* 2013). However, Kastelein *et al.,* (2014) stated that for the harbor porpoise, after small reductions in hearing sensitivity (threshold shifts less than 15 dB), recovery was relatively quick (within 60 minutes) and in most cases, reduced hearing for such a short time period (if it does not occur many times per day) may have little effect on the ecology of a harbor porpoise (Kastelein *et al.,* 2014).

Limited available data suggest that harbor porpoises show avoidance of seismic operations. Based on data collected by observers on seismic vessels off the United Kingdom from 1994 to 2010, detection rates of harbor porpoises were significantly higher when airguns were silent versus when large or small arrays were operating; in addition, observers noted that harbor porpoises were farther away from an active array versus when it was silent and were most often seen traveling away from the airgun array when it was in operation (Stone, 2015). Thompson *et al.* (2013) reported decreased densities and reduced acoustic detections of harbor porpoise in response to a seismic survey in Moray Firth, Scotland at ranges of 5 to 10 km (165–172 dB (SPL); 145–151 dB (SEL). For the same survey, Pirotta *et al.* (2014) reported that the probability of recording harbor porpoise buzzes decreased by 15 percent in the ensonified area. Taking this into consideration, NMFS expects that harbor porpoises would avoid the area around the proposed survey operations effectively reducing the likelihood of auditory injury and the potential of Level A harassment to the airgun array (Hermannsen *et al.,* 2015; Touggard *et al.,* 2012). Thus, NMFS would expect all of the effects to harbor porpoises to result in short-term changes in behavior, falling within the MMPA definition of ''Level B harassment.''

NMFS acknowledges that there is more recent information available bearing on the relevant exposure levels for assessing temporary and permanent hearing impacts. (See **Federal Register** notice 80 FR 45642, July 31, 2015: Draft Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing-Acoustic Threshold Levels for Onset of Permanent and Temporary Threshold Shifts). Again, NOAA will be issuing new acoustic guidelines, but that process is not complete (*i.e.,* NOAA expects the guidance to be finalized until late 2015), so NMFS did not use it to assign new thresholds for calculating take estimates for hearing impacts. Moreover, the required mitigation measures ensure there are no exposures at levels thought to cause permanent hearing impairment, and, for several of the marine mammal species in the project area, mitigation measures would reduce exposure to current Level B harassment thresholds.

Effects Analysis

Comment 7: NRDC/WDC commented that NSF's draft environmental analysis did not adequately evaluate the cumulative actions and effects from past and present sources with respect to ACCOBAMS Resolution 4.17 which ''encourages Parties to address fully the issue of anthropogenic noise in the marine environment, including cumulative effects, in the light of the best scientific information available and taking into consideration the applicable legislation of the Parties, particularly as regards the need for thorough environmental impact assessments being undertaken before granting approval to proposed noise-producing activities.''

Response: Lamont-Doherty and the NSF submitted an environmental analysis (NSF, 2015) on the proposed survey to the Ministry of Foreign Affairs of the Hellenic Republic through the U.S. State Department in May, 2015. The draft environmental analysis evaluated the potential effects of the proposed activity on marine species and included information about potential cumulative effects (see Chapter IV, pages 63 through 67) including past and future academic seismic research, vessel traffic, fisheries, military activities, and oil and gas activities in the action area. The Hellenic Republic (Greece), a party to ACCOBAMS, granted approval to Lamont-Doherty to conduct the proposed seismic survey in areas of Greek jurisdiction on June 2, 2015. Again, Greece granted this authority to Lamont-Doherty provided that they comply with the specific terms and conditions of the issued vessel clearance including compliance with Greek national legislation (in particular Greek Law Nos. 2971/2001 and 3028/2002) and all international regulations, including the ACCOBAMS (Agreement on the Conservation of Cetaceans in the Black Sea Mediterranean Sea and Contiguous Atlantic Area) international guidelines on the protection of marine mammals.

Comment 8: NRDC/WDC stated that NMFS did not consider the cumulative effects of the use of the multibeam echosounder, sub-bottom profiler, and the ocean-bottom seismometer acoustic release system and did not consider take estimates for these sources. Commenters also provided statements on mass stranding events associated or potentially linked with use of a multi-beam echosounder during seismic exploration activities off the coast of Madagascar in 2008 and in the Gulf of California in 2002.

Response: NMFS disagrees with the commenters' statements. NMFS assessed the potential for the operation of the multi-beam echosounder and sub-bottom profiler to impact marine mammals in notice for the proposed authorization (80 FR 53623, September 4, 2015). NMFS assumes that during simultaneous operations of the airgun array and the other sources, the airguns would be the primary source of acoustic harassment given the characteristics of the multi-beam echosounder and sub-bottom profiler (*e.g.,* narrow, downward-directed beam) and the proximity of marine mammals to those sources. NMFS does not expect the sound levels produced by the echosounder and sub-bottom profiler to exceed the sound levels produced by the airguns. However, whether or not the airguns are operating simultaneously with the other sources, marine mammals are expected to exhibit no more than short-term and inconsequential responses to the multi-beam echosounder and sub-bottom profiler given their characteristics. Therefore, NMFS has not authorized take from the multi-beam echosounder and sub-bottom profiler. NMFS' notice for the proposed authorization (80 FR

53623, September 4, 2015) states that the multi-beam echosounder and sub-bottom profiler will not operate during transits at the beginning and end of the planned seismic survey.

As for ocean bottom seismometers, NMFS considered the brief (8 milliseconds) acoustic signals emanating from the devices at the time of retrieval to be so brief as to not risk masking other acoustic information relevant to marine mammals. Therefore, NMFS has not authorized take from the acoustic release signals from ocean bottom seismometers.

NMFS considered the potential for behavioral responses such as the Madagascar stranding and indirect injury or mortality from Lamont-Doherty's use of the multibeam echosounder in the notice for the proposed authorization (80 FR 53623, September 4, 2015, see Potential Effects of Other Acoustic Devices, pages 53636–53637). NMFS does not repeat that information here, but notes that the International Scientific Review Panel tasked to investigate the stranding stated that the risk of using multi-beam echosounders may be very low given the extensive use of these systems worldwide on a daily basis and the lack of direct evidence of such responses previously reported (Southall, *et al.,* 2013; Lurton, 2015, 2016).

NMFS notes that the multi-beam in use on this seismic survey is not operating in the same way as it was in Madagascar. The Authorization requires Lamont-Doherty to plan to conduct the seismic surveys (especially when near land) from the coast (inshore) and proceed towards the sea (offshore) in order to avoid the potential herding ''herding of sensitive species'' into canyons and other similar areas.

Regarding the 2002 stranding event in the Gulf of California, the multi-beam echosounder system was on a different vessel, the R/V *Maurice Ewing* (*Ewing*), which is a vessel no longer operated by Lamont-Doherty. Although NRDC/WDC suggest that the multi-beam echosounder system or other acoustic sources on the *Ewing* may have been associated with the 2002 stranding of two beaked whales, as noted in Cox *et al.* (2006), ''whether or not this survey caused the beaked whales to strand has been a matter of debate because of the small number of animals involved and a lack of knowledge regarding the temporal and spatial correlation between the animals and the sound source.'' As noted by Yoder (2002), there was no scientific linkage to the event with the *Ewing's* activities and the acoustic sources used.

Comment 9: OceanCare and ODO state that NMFS did not consider the ''impacts of reduced prey availability forcing animals to cease feeding or harassment forcing the abandonment of pups.''

Response: NMFS considered the effects of the survey on marine mammal prey (*i.e.,* fish and invertebrates), as a component of marine mammal habitat in the notice for the proposed authorization (80 FR 53623, September 4, 2015, see Anticipated Impacts on Marine Mammal Habitat, pages 53639–53641). The comment does not provide any specific recommendations or criticisms regarding the sufficiency of those analyses. Moreover, the NSF also addressed the potential effects of this action in the draft environmental analysis (NSF, 2015) which NMFS incorporates by reference in this notice.

In addition to the information presented in the notice for the proposed authorization (80 FR 53623, September 4, 2015), NMFS also considered recent studies that assessed foraging energetics (Melcon *et al.,* 2012; Goldbogen *et al.,* 2013; New *et al.,* 2013, 2014) in marine mammals. The most relevant New *et al.* (2014) study used a simulation model to assess how behavioral disruptions (*e.g.,* significant disruption of foraging behavior) and the exclusion of maternal southern elephant seals (*Mirounga leonine*) foraging habitat could affect health, offspring survival, individual fitness, and population growth rate. The authors suggested their model can determine the population consequences of disturbance from short-term changes in individual animals. Their model assumed that disturbance affected behavior by reducing the number of drift dives in which the animals were feeding and increasing the time they spent in transit. For example, they suggested a disturbance lasting 50 percent of an average annual foraging trip would reduce pup survival by 0.4 percent. If this level of disturbance continued over 30 years and the population did not adapt, the authors found that the population size would decrease by approximately 10 percent.

The findings of New *et al.* (2014) are not applicable to the temporary behavioral disruptions that could potentially result from a proposed 16-day seismic survey versus the study's assessments of effects over one year and a persistent disruption of a 30-year period. First, the model assumed that individuals would be unable to compensate for lost foraging opportunities. Available empirical data does not confirm this would be the case. For example, elephant seals are unlikely to be affected by short-term variations in prey availability because they take long foraging trips, allowing for some margin of error in prey availability ((Costa, 1993), as cited in New *et al.,* 2014). Similarly, female Mediterranean monk seals also have the ability to take foraging trips up to 70 km (43 miles) (Adamantopoulou *et al.,* 2011) which NMFS expects would buffer foraging mothers from short-term variations in prey availability within the action area ((Costa, 1993), as cited in New *et al.,* 2014). NMFS has no information to suggest that an animal eliciting a behavioral response (*e.g.,* temporary disruption of feeding) to the proposed seismic survey would be unable to compensate for this temporary disruption in feeding activity by either immediately feeding at another location, by feeding shortly after cessation of acoustic exposure, or by feeding at a later time. Additionally, the behavioral disruption marine mammals reasonably expected to occur due to Lamont-Doherty's proposed activities would not have as long of a duration as the two scenarios considered in the New *et al.,* (2014) study.

Comment 10: The Commission states that NMFS based the number of Mediterranean monk seal instances of exposure (shown in Tables 5 and Table 6 in the notice of proposed authorization) on the maximum estimated number of individual monk seals that could be present within the action area rather than accounting for the extent of the ensonified area and the number of days of activities—an approach the Commission supports for NMFS' negligible impact determination for Mediterranean monk seals. OceanCare and ODO also state that the assumptions of impacts to Mediterranean monk seals could be higher.

Response: NMFS agrees with the Commission's comments. Tables 5 and 6 in this notice will show the theoretical maximum number of exposures that could occur over 16 days (13 days in the Aegean Sea plus 25 percent contingency) which is 560 instances of exposures in the absence of mitigation. NMFS bases this estimate on 25 individuals from the Anafi, two individuals from the Santorini, and eight individuals from the Kimolos-Polyaigos subpopulations.

NMFS acknowledges uncertainties in estimating take in the notice for the proposed authorization (80 FR 53623, September 4, 2015). Given the many uncertainties in predicting the quantity and types of impacts of sound on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular

distance of a given activity, or exposed to a particular level of sound and to use that information to predict instances of take of individuals. In practice, depending on the amount of information available to characterize daily and seasonal movement and distribution of affected marine mammals, distinguishing between the numbers of individuals harassed and the instances of harassment can be difficult to parse. Moreover, when one considers the duration of the activity, in the absence of information to predict the degree to which individual animals could be re-exposed subsequent days, the simple assumption that up to 560 instances of exposure could occur is an overestimate because it does not account for a percentage of animals remaining with caves during active operations or individuals avoiding the ensonified area all together which would lower the estimates of instances of exposure.

Use of Alternate Technologies

Comment 11: NRDC/WDC state that NMFS should require use of an alternative multi-beam echosounder to the one presently proposed and associated with a mass stranding of melon-headed whales offshore Madagascar in 2008.

Response: NMFS disagrees with the commenters' recommendation as NMFS does not have the authority to require an applicant or action proponent to choose a different multi-beam echosounder system for the proposed seismic survey. The multi-beam echosounder system currently installed on the *Langseth* is capable of mapping the seafloor in deep water and the characteristics of the system are well suited for meeting the scientists' research goals. It would not be practicable for Lamont-Doherty or the NSF to install a different multi-beam echosounder (such as the Konegsburg EM 302 or EM 710 MKII suggested by the commenters) for the proposed survey. Lamont-Doherty has used the currently-installed multi-beam echosounder on the *Langseth* (evaluated in the 2011 NSF/USGS PEIS and in the 2015 draft environmental analysis) on over 25 research seismic surveys since 2008 without association to any marine mammal strandings.

Monitoring and Reporting

Comment 12: The Commission has indicated that monitoring and reporting requirements should provide a reasonably accurate assessment of the types of taking and the numbers of animals taken by the proposed activity. They recommend that NMFS and Lamont-Doherty incorporate an accounting for animals at the surface but not detected [*i.e.,* g(0) values] and for animals present but underwater and not available for sighting [*i.e.,* f(0) values] into monitoring efforts. In light of the Commission previous comments, they recommend that NMFS consult with the funding agency (*i.e.,* the NSF) and individual applicants (*e.g.,* Lamont-Doherty and other related entities) to develop, validate, and implement a monitoring program that provides a scientifically sound, reasonably accurate assessment of the types of marine mammal takes and the actual numbers of marine mammals taken, accounting for applicable g(0) and f(0) values. They also recommend that Lamont-Doherty and other relevant entities to continue to collect appropriate sightings data in the field which NMFS can then pool to determine g(0) and f(0) values relevant to the various geophysical survey types.

Response: NMFS' implementing regulations require that applicants include monitoring that will result in ''an increased knowledge of the species, the level of taking or impacts on populations of marine mammals that are expected to be present while conducting activities.'' This increased knowledge of the level of taking could be qualitative or relative in nature, or it could be more directly quantitative. Scientists use g(0) and f(0) values in systematic marine mammal surveys to account for the undetected animals indicated above; however, these values are not simply established and the g(0) value varies across every observer based on their sighting acumen. While we want to be clear that we do not generally believe that post-activity take estimates using f(0) and g(0) are required to meet the monitoring requirement of the MMPA, in the context of the NSF and Lamont-Doherty's monitoring plan, we agree that developing and incorporating a way to better interpret the results of their monitoring (perhaps a simplified or generalized version of g(0) and f(0)) is desirable. We are continuing to examine this issue with the NSF to develop ways to improve their post-survey take estimates. We will continue to consult with the Commission and NMFS scientists prior to finalizing any future recommendations.

Description of Marine Mammals in the Area of the Specified Activity

Table 1 in this notice provides the following: All marine mammal species with possible or confirmed occurrence in the proposed activity area; information on those species' regulatory status under the MMPA and the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*); abundance; occurrence and seasonality in the proposed activity area.

Lamont-Doherty presented species information in Table 2 of their application but excluded information for certain pinniped and cetacean species because they anticipated that these species would have a low likelihood of occurring in the survey area. Based on the best available information, NMFS expects that there may be a potential for certain cetacean and pinniped species to occur within the survey area (*i.e.,* potentially be taken) and have included additional information for these species in Table 1 of this notice. NMFS will carry forward analyses on the species listed in Table 1 later in this document.

TABLE 1—GENERAL INFORMATION ON MARINE MAMMALS THAT COULD POTENTIALLY OCCUR IN THE PROPOSED SURVEY AREAS WITHIN THE EASTERN MEDITERRANEAN SEA

[November through December, 2015]

Species	Stock name	Regulatory status [1 2]	Stock/ species abundance [3]	Local occurrence and range [4]	Season [5]
Gray whale (*Eschrichtius robustus*).	Eastern North Pacific	MMPA—NC ESA—EN	[6] 19,126	Visitor Extralimital	Spring. [7]
Humpback whale (*Megaptera novaeangliae*).	North Atlantic	MMPA—D ESA—EN	[8] 11,570	Visitor Extralimital	NA.
Common minke whale (*Balaenoptera acutorostrata*).	Canadian East Coast	MMPA—D ESA—NL	20,741	Visitor Extralimital	NA.
Sei whale (*Balaenoptera borealis*).	Nova Scotia	MMPA—D ESA—EN	357	Vagrant Pelagic	NA.

TABLE 1—GENERAL INFORMATION ON MARINE MAMMALS THAT COULD POTENTIALLY OCCUR IN THE PROPOSED SURVEY AREAS WITHIN THE EASTERN MEDITERRANEAN SEA—Continued

[November through December, 2015]

Species	Stock name	Regulatory status [1] [2]	Stock/ species abundance [3]	Local occurrence and range [4]	Season [5]
Fin whale (*Balaenoptera physalus*).	Mediterranean	MMPA—D ESA—EN	[9] 5,000	Present Pelagic	Summer.
Sperm whale (*Physeter macrocephalus*).	Mediterranean	MMPA—D ESA—EN	[10] 2,500	Regular Pelagic/ Slope.	Year-round.
Dwarf sperm whale (*Kogia sima*).	Western North Atlantic	MMPA—NC ESA—NL	3,785	Vagrant Shelf	NA.
Pygmy sperm whale (*K. breviceps*).	Western North Atlantic	MMPA—NC ESA—NL	3,785	Vagrant Shelf	NA.
Cuvier's beaked whale (*Ziphius cavirostris*).	Western North Atlantic	MMPA—NC ESA—NL	6,532	Regular/Present Slope.	Year-round.
Blainville's beaked whale (*Mesoplodon densirostris*).	Western North Atlantic	MMPA—NC ESA—NL	[11] 7,092	Vagrant Slope	NA.
Gervais' beaked whale (*M. europaeus*).	Western North Atlantic	MMPA—NC ESA—NL	[11] 7,092	Vagrant Extralimital	NA.
Sowerby's beaked whale (*M. bidens*).	Western North Atlantic	MMPA—NC ESA—NL	[11] 7,092	Vagrant Extralimital	NA.
Bottlenose dolphin (*Tursiops truncatus*).	Western North Atlantic	MMPA—NC ESA—NL	77,532	Regular/Present Coastal.	Year-Round.
Rough-toothed dolphin (*Steno bredanensis*).	Western North Atlantic	MMPA—NC ESA—NL	271	Visitor Pelagic	NA.
Striped dolphin (*S. coeruleoalba*).	Mediterranean	MMPA—NC ESA—NL	[12] 233,584	Regular Pelagic	Year-round.
Short-beaked common dolphin (*Delphinus delphis*).	Western North Atlantic	MMPA—NC ESA—NL	173,486	Present Coastal/Pelagic.	Spring Summer.
Risso's dolphin (*Grampus griseus*).	Western North Atlantic	MMPA—NC ESA—NL	18,250	Present Pelagic/ Slope.	NA.
False killer whale (*Pseudorca crassidens*).	Western North Atlantic	MMPA—NC ESA—NL	442	Visitor Pelagic	NA.
Long-finned pilot whale (*Globicephala melas*).	Western Mediterranean	MMPA—NC ESA—NL	[13] 240–270	Rare or Absent Pelagic.	NA.
Harbor porpoise (*Phocoena phocoena*).	Gulf of Maine/B Bay of Fundy	MMPA—NC ESA—NL	79,883	Vagrant Coastal	NA.
Hooded seal (*Cystophora cristata*).	Western North Atlantic	MMPA—NC ESA—NL	Unknown	Vagrant Pelagic/ Pack Ice.	NA.
Monk seal (*Monachus Monachus*).	Mediterranean	MMPA—D ESA—EN	[14] 341	Present Coastal	Year-round.

[1] MMPA: D = Depleted, S = Strategic, NC = Not Classified.
[2] ESA: EN = Endangered, T = Threatened, DL = Delisted, NL = Not listed.
[3] Except where noted abundance information obtained from NOAA Technical Memorandum NMFS–NE–228, U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2013 (Waring *et al.,* 2014) and the Draft 2014 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments (*in review,* 2015).
[4] For most species, occurrence and range information based on *The Status and Distribution of Cetaceans in the Black Sea and Mediterranean Sea* (Reeves and Notarbartolo di Sciara, 2006). Gray whale and hooded seal presence based on sighting reports.
[5] NA = Not available. Seasonality is not available due to limited information on that species' rare or unlikely occurrence in proposed survey area.
[6] NOAA Technical Memorandum NMFS–SWFSC–532, U.S. Pacific Marine Mammal Stock Assessments—2013 (Carretta *et al.,* 2014).
[7] Scheinin *et. al.,* 2011.
[8] Stevick *et al.,* 2003.
[9] Panigada *et al.* (2012). IUCN—*Balaenoptera physalus* (Mediterranean subpopulation).
[10] Notarbartolo di Sciara, *et al.* (2012). IUCN—*Physeter macrocephalus* (Mediterranean subpopulation).
[11] Undifferentiated beaked whales abundance estimate for the Atlantic Ocean (Waring *et al.,* 2014).
[12] Forcada and Hammond (1998) for the western Mediterranean plus Gómez de Segura *et al.* (2006) for the central Spanish Mediterranean.
[13] Estimate for the western Mediterranean Sea (Reeves and Notarbartolo di Sciara, 2006).
[14] Rapid Assessment Survey of the Mediterranean monk seal *Monachus monachus* population in Anafi island, Cyclades (MOm, 2014) and UNEP. (2013) Draft Regional Strategy for the Conservation of Monk Seals in the Mediterranean (2014–2019) for Greece, Turkey, and Cyprus breeding areas.

NMFS refers the public to Lamont-Doherty's application, NSF's draft environmental analysis (see **ADDRESSES**), NOAA Technical Memorandum NMFS–NE–228, U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments—2013 (Waring *et al.,* 2014); and the Draft 2014 U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments (*in review,* 2015) available online at: *http://www.nmfs.noaa.gov/pr/sars/species.htm* for further information on the biology and local distribution of these species.

Potential Effects of the Specified Activities on Marine Mammals

NMFS provided a summary and discussion of the ways that the types of stressors associated with the specified activity (*e.g.,* seismic airgun operations, vessel movement, and entanglement) impact marine mammals (via observations or scientific studies) in the

notice for the proposed authorization (80 FR 53623, September 4, 2015).

The ''Estimated Take by Incidental Harassment'' section later in this document will include a quantitative discussion of the number of marine mammals anticipated to be taken by this activity. The ''Negligible Impact Analysis'' section will include a discussion of how this specific activity will impact marine mammals. The Negligible Impact analysis considers the anticipated level of take and the effectiveness of mitigation measures to draw conclusions regarding the likely impacts of this activity on the reproductive success or survivorship of individuals and from that on the affected marine mammal populations or stocks.

Operating active acoustic sources, such as airgun arrays, has the potential for adverse effects on marine mammals. The majority of anticipated impacts would be from the use of acoustic sources. The effects of sounds from airgun pulses might include one or more of the following: Tolerance, masking of natural sounds, behavioral disturbance, and temporary or permanent hearing impairment or non-auditory effects (Richardson *et al.,* 1995). However, for reasons discussed in the proposed Authorization, it is very unlikely that there would be any cases of temporary or permanent hearing impairment resulting from Lamont-Doherty's activities. As outlined in previous NMFS documents, the effects of noise on marine mammals are highly variable, often depending on species and contextual factors (based on Richardson *et al.,* 1995).

In the ''Potential Effects of the Specified Activity on Marine Mammals'' section in the notice for the proposed authorization (80 FR 53623, September 4, 2015), NMFS included a qualitative discussion of the different ways that Lamont-Doherty's seismic survey may potentially affect marine mammals. Marine mammals may behaviorally react to sound when exposed to anthropogenic noise. These behavioral reactions are often shown as: Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where noise sources are located; and/or flight responses (*e.g.,* pinnipeds flushing into water from haulouts or rookeries).

Masking is the obscuring of sounds of interest by other sounds, often at similar frequencies. Marine mammals use acoustic signals for a variety of purposes, which differ among species, but include communication between individuals, navigation, foraging, reproduction, avoiding predators, and learning about their environment (Erbe and Farmer, 2000; Tyack, 2000). Masking, or auditory interference, generally occurs when sounds in the environment are louder than, and of a similar frequency as, auditory signals an animal is trying to receive. Masking is a phenomenon that affects animals that are trying to receive acoustic information about their environment, including sounds from other members of their species, predators, prey, and sounds that allow them to orient in their environment. Masking these acoustic signals can disturb the behavior of individual animals, groups of animals, or entire populations. For the airgun sound generated from Lamont-Doherty's seismic survey, sound will consist of low frequency (under 500 Hz) pulses with extremely short durations (less than one second). Masking from airguns is more likely in low-frequency marine mammals like mysticetes. There is little concern that masking would occur near the sound source due to the brief duration of these pulses and relative silence between air gun shots (approximately 22 to 170 seconds). Masking is less likely for mid- to high-frequency cetaceans and pinnipeds.

Hearing impairment (either temporary or permanent) is also unlikely. Given the higher level of sound necessary to cause permanent threshold shift as compared with temporary threshold shift, it is considerably less likely that permanent threshold shift would occur during the seismic survey. Cetaceans generally avoid the immediate area around operating seismic vessels, as do some other marine mammals. Some pinnipeds show avoidance reactions to airguns.

The *Langseth* will operate at a relatively slow speed (typically 4.6 knots [8.5 km/h; 5.3 mph]) when conducting the survey. Protected species observers would monitor for marine mammals, which would trigger mitigation measures, including vessel avoidance where safe. Therefore, NMFS does not anticipate nor do we authorize takes of marine mammals from vessel strike.

NMFS refers the reader to Lamont-Doherty's application, the NSF's environmental analysis for additional information on the behavioral reactions (or lack thereof) by all types of marine mammals to seismic vessels. NMFS has reviewed these data along with new information submitted during the public comment period and based our decision on the relevant information.

Anticipated Effects on Marine Mammal Habitat

NMFS included a detailed discussion of the potential effects of this action on marine mammal habitat, including physiological and behavioral effects on marine mammal prey items (*e.g.,* fish and invertebrates) in the notice for the proposed authorization (80 FR 53623, September 4, 2015). While NMFS anticipates that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, the impact to habitat is temporary and reversible. Further, NMFS also considered these impacts to marine mammals in detail in the notice of proposed Authorization as behavioral modification. The main impact associated with the activity would be temporarily elevated noise levels and the associated direct effects on marine mammals.

Mitigation

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

Lamont-Doherty has reviewed the following source documents and has incorporated a suite of proposed mitigation measures into their project description.

(1) Protocols used during previous Lamont-Doherty and Foundation-funded seismic research cruises as approved by us and detailed in the Foundation's 2011 PEIS and 2015 draft environmental analysis;

(2) Previous incidental harassment authorizations applications and authorizations that NMFS has approved and authorized; and

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

To reduce the potential for disturbance from acoustic stimuli associated with the activities, Lamont-Doherty, and/or its designees have proposed to implement the following mitigation measures for marine mammals:

(1) Vessel-based visual mitigation monitoring;
(2) Proposed exclusion zones;
(3) Power down procedures;
(4) Shutdown procedures;
(5) Ramp-up procedures; and
(6) Speed and course alterations.

NMFS reviewed Lamont-Doherty's proposed mitigation measures and has proposed additional measures to effect the least practicable adverse impact on marine mammals. They are:

(1) Expanded shutdown procedures for all pinnipeds, including Mediterranean monk seals;

(2) Expanded power down procedures for concentrations of six or more whales that do not appear to be traveling (*e.g.,* feeding, socializing, *etc.*);

(3) Delayed conduct of the three tracklines nearest to Anafi Island as late as possible (*i.e.,* late November to early December) during the proposed survey;

(4) Expanded exclusion zone of 100 m (328 ft) for the mitigation airgun in shallow water depths for pinnipeds and cetaceans; and

(5) Modified transit patterns to conduct acquisition activities from the coast in a seaward direction to the maximum extent practicable.

Vessel-Based Visual Mitigation Monitoring

Lamont-Doherty would position observers aboard the seismic source vessel to watch for marine mammals near the vessel during daytime airgun operations and during any start-ups at night. Observers would also watch for marine mammals near the seismic vessel for at least 30 minutes prior to the start of airgun operations after an extended shutdown (*i.e.,* greater than approximately eight minutes for this proposed cruise). When feasible, the observers would conduct observations during daytime periods when the seismic system is not operating for comparison of sighting rates and behavior with and without airgun operations and between acquisition periods. Based on the observations, the *Langseth* would power down or shutdown the airguns when marine mammals are observed within or about to enter a designated exclusion zone for cetaceans or pinnipeds.

During seismic operations, at least four protected species observers would be aboard the *Langseth.* Lamont-Doherty would appoint the observers with NMFS concurrence and they would conduct observations during ongoing daytime operations and nighttime ramp-ups of the airgun array. During the majority of seismic operations, two observers would be on duty from the observation tower to monitor marine mammals near the seismic vessel. Using two observers would increase the effectiveness of detecting animals near the source vessel. However, during mealtimes and bathroom breaks, it is sometimes difficult to have two observers on effort, but at least one observer would be on watch during bathroom breaks and mealtimes. Observers would be on duty in shifts of no longer than four hours in duration.

Two observers on the *Langseth* would also be on visual watch during all nighttime ramp-ups of the seismic airguns. A third observer would monitor the passive acoustic monitoring equipment 24 hours a day to detect vocalizing marine mammals present in the action area. In summary, a typical daytime cruise would have scheduled two observers (visual) on duty from the observation tower, and an observer (acoustic) on the passive acoustic monitoring system. Before the start of the seismic survey, Lamont-Doherty would instruct the vessel's crew to assist in detecting marine mammals and implementing mitigation requirements.

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

Lamont-Doherty would immediately power down or shutdown the airguns when observers see marine mammals within or about to enter the designated exclusion zone. The observer(s) would continue to maintain watch to determine when the animal(s) are outside the exclusion zone by visual confirmation. Airgun operations would not resume until the observer has confirmed that the animal has left the zone, or if not observed after 15 minutes for species with shorter dive durations (small odontocetes and pinnipeds) or 30 minutes for species with longer dive durations (mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, killer, and beaked whales).

Mitigation Exclusion Zones

Lamont-Doherty would use safety radii to designate exclusion zones and to estimate take for marine mammals. Table 3 shows the distances at which one would expect to receive sound levels (160–, 180–, and 190–dB,) from the airgun array and a single airgun. If the protected species visual observer detects marine mammal(s) within or about to enter the appropriate exclusion zone, the *Langseth* crew would immediately power down the airgun array, or perform a shutdown if necessary (see Shut-down Procedures).

TABLE 3—PREDICTED DISTANCES TO WHICH SOUND LEVELS GREATER THAN OR EQUAL TO 160 RE: 1 μPA COULD BE RECEIVED DURING THE PROPOSED SURVEY AREAS WITHIN THE EASTERN MEDITERRANEAN SEA

[November through December, 2015]

Source and volume (in^3)	Tow depth (m)	Water depth (m)	Predicted RMS Distances[1] (m)		
			190 dB	180 dB	160 dB
Single Bolt airgun (40 in^3)	9 or 12	<100	100[2]	100[2]	1,041
		100 to 1,000	100	100	647
		>1,000	100	100	431
36-Airgun Array (6,600 in^3)	9	<100	591	2,060	22,580
		100 to 1,000	429	1,391	8,670
		>1,000	286	927	5,780

TABLE 3—PREDICTED DISTANCES TO WHICH SOUND LEVELS GREATER THAN OR EQUAL TO 160 RE: 1 μPA COULD BE RECEIVED DURING THE PROPOSED SURVEY AREAS WITHIN THE EASTERN MEDITERRANEAN SEA—Continued

[November through December, 2015]

Source and volume (in^3)	Tow depth (m)	Water depth (m)	Predicted RMS Distances[1] (m)		
			190 dB	180 dB	160 dB
36-Airgun Array (6,600 in^3)	12	<100	710	2,480	27,130
		100 to 1,000	522	1,674	10,362
		>1,000	348	1,116	6,908

[1] Predicted distances based on information presented in Lamont-Doherty's application.
[2] NMFS required NSF to expand the exclusion zone for the mitigation airgun to 100 m (328 ft) in shallow water.

The 180– or 190–dB level shutdown criteria are applicable to cetaceans as specified by NMFS (2000). Lamont-Doherty used these levels to establish the exclusion zones as presented in their application.

Power Down Procedures

A power down involves decreasing the number of airguns in use such that the radius of the 180–dB or 190–dB exclusion zone is smaller to the extent that marine mammals are no longer within or about to enter the exclusion zone. A power down of the airgun array can also occur when the vessel is moving from one seismic line to another. During a power down for mitigation, the *Langseth* would operate one airgun (40 in^3). The continued operation of one airgun would alert marine mammals to the presence of the seismic vessel in the area. A shutdown occurs when the *Langseth* suspends all airgun activity.

If the observer detects a marine mammal outside the exclusion zone and the animal is likely to enter the zone, the crew would power down the airguns to reduce the size of the 180–dB or 190–dB exclusion zone before the animal enters that zone. Likewise, if a mammal is already within the zone after detection, the crew would power-down the airguns immediately. During a power down of the airgun array, the crew would operate a single 40-in^3 airgun which has a smaller exclusion zone. If the observer detects a marine mammal within or near the smaller exclusion zone around the airgun (Table 3), the crew would shut down the single airgun (see next section).

Resuming Airgun Operations after a Power Down: Following a power-down, the *Langseth* crew would not resume full airgun activity until the marine mammal has cleared the 180–dB or 190–dB exclusion zone. The observers would consider the animal to have cleared the exclusion zone if:

- The observer has visually observed the animal leave the exclusion zone; or
- An observer has not sighted the animal within the exclusion zone for 15 minutes for species with shorter dive durations (*i.e.,* small odontocetes or pinnipeds), or 30 minutes for species with longer dive durations (*i.e.,* mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, and beaked whales); or

The *Langseth* crew would resume operating the airguns at full power after 15 minutes of sighting any species with short dive durations (*i.e.,* small odontocetes or pinnipeds). Likewise, the crew would resume airgun operations at full power after 30 minutes of sighting any species with longer dive durations (*i.e.,* mysticetes and large odontocetes, including sperm, pygmy sperm, and dwarf sperm whales).

NMFS estimates that the *Langseth* would transit outside the original 180–dB or 190–dB exclusion zone after an 8-minute wait period. Lamont-Doherty bases this period on the average speed of the *Langseth* while operating the airguns (8.5 km/h; 5.3 mph). Because the vessel has transited away from the vicinity of the original sighting during the 8-minute period, implementing ramp-up procedures for the full array after an extended power down (*i.e.,* transiting for an additional 35 minutes from the location of initial sighting) would not meaningfully increase the effectiveness of observing marine mammals approaching or entering the exclusion zone for the full source level and would not further minimize the potential for take. The *Langseth's* observers are continually monitoring the exclusion zone for the full source level while the mitigation airgun is firing. On average, observers can observe to the horizon (10 km; 6.2 mi) from the height of the *Langseth's* observation deck and should be able to say with a reasonable degree of confidence whether a marine mammal would be encountered within this distance before resuming airgun operations at full power.

Shutdown Procedures

The *Langseth* crew would shut down the operating airgun(s) if they see a marine mammal within or approaching the exclusion zone for the single airgun. The crew would implement a shutdown:

(1) If an animal enters the exclusion zone of the single airgun after the crew has initiated a power down; or

(2) If an observer sees the animal is initially within the exclusion zone of the single airgun when more than one airgun (typically the full airgun array) is operating.

Resuming Airgun Operations after a Shutdown: Following a shutdown in excess of eight minutes, the *Langseth* crew would initiate a ramp-up with the smallest airgun in the array (40-in^3). The crew would turn on additional airguns in a sequence such that the source level of the array would increase in steps not exceeding 6 dB per five-minute period over a total duration of approximately 30 minutes. During ramp-up, the observers would monitor the exclusion zone, and if he/she sees a marine mammal, the *Langseth* crew would implement a power down or shutdown as though the full airgun array were operational.

During periods of active seismic operations, there are occasions when the *Langseth* crew would need to temporarily shut down the airguns due to equipment failure or for maintenance. In this case, if the airguns are inactive longer than eight minutes, the crew would follow ramp-up procedures for a shutdown described earlier and the observers would monitor the full exclusion zone and would implement a power down or shutdown if necessary.

If the full exclusion zone is not visible to the observer for at least 30 minutes prior to the start of operations in either daylight or nighttime, the *Langseth* crew would not commence ramp-up unless at least one airgun (40-in^3 or similar) has been operating during the interruption of seismic survey operations. Given these provisions, it is likely that the

vessel's crew would not ramp up the airgun array from a complete shutdown at night or in thick fog, because the outer part of the zone for that array would not be visible during those conditions.

If one airgun has operated during a power down period, ramp-up to full power would be permissible at night or in poor visibility, on the assumption that marine mammals would be alerted to the approaching seismic vessel by the sounds from the single airgun and could move away. The vessel's crew would not initiate a ramp-up of the airguns if an observer sees the marine mammal within or near the applicable exclusion zones during the day or close to the vessel at night.

Ramp-up Procedures

Ramp-up of an airgun array provides a gradual increase in sound levels, and involves a step-wise increase in the number and total volume of airguns firing until the full volume of the airgun array is achieved. The purpose of a ramp-up is to ''warn'' marine mammals in the vicinity of the airguns, and to provide the time for them to leave the area and thus avoid any potential injury or impairment of their hearing abilities. Lamont-Doherty would follow a ramp-up procedure when the airgun array begins operating after an 8 minute period without airgun operations or when shut down has exceeded that period. Lamont-Doherty has used similar waiting periods (approximately eight to 10 minutes) during previous seismic surveys.

Ramp-up would begin with the smallest airgun in the array (40 in^3). The crew would add airguns in a sequence such that the source level of the array would increase in steps not exceeding six dB per five minute period over a total duration of approximately 30 to 35 minutes. During ramp-up, the observers would monitor the exclusion zone, and if marine mammals are sighted, Lamont-Doherty would implement a power-down or shut-down as though the full airgun array were operational.

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

Special Procedures for Situations or Species of Concern

Considering the highly endangered status of Mediterranean monk seals, the *Langseth* crew would shut down the airgun(s) immediately in the unlikely event that observers detect any pinniped species within any visible distance of the vessel. The *Langseth* would only begin ramp-up if observers have not seen the Mediterranean monk seal for 30 minutes.

To further reduce impacts to Mediterranean monk seals during the peak of the pupping season (September through November), NMFS is requiring Lamont-Doherty to conduct the three proposed tracklines nearest to Anafi Island as late as possible (*i.e.,* late November to early December) during the proposed survey.

Last, the *Langseth* would avoid exposing concentrations of large whales to sounds greater than 160 dB and would power down the array, if necessary. For purposes of this proposed survey, a concentration or group of whales would consist of six or more individuals visually sighted that do not appear to be traveling (*e.g.,* feeding, socializing, etc.).

Speed and Course Alterations

If during seismic data collection, Lamont-Doherty detects marine mammals outside the exclusion zone and, based on the animal's position and direction of travel, is likely to enter the exclusion zone, the *Langseth* would change speed and/or direction if this does not compromise operational safety. Due to the limited maneuverability of the primary survey vessel, altering speed, and/or course can result in an extended period of time to realign the *Langseth* to the transect line. However, if the animal(s) appear likely to enter the exclusion zone, the *Langseth* would undertake further mitigation actions, including a power down or shut down of the airguns.

To the maximum extent practicable, the *Langseth* would conduct the seismic survey (especially when near land) from the coast (inshore) and proceed towards the sea (offshore) in order to avoid trapping marine mammals in shallow water.

Mitigation Conclusions

NMFS has carefully evaluated Lamont-Doherty's proposed mitigation measures in the context of ensuring that we prescribe the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

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

Any mitigation measure(s) prescribed by NMFS should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed here:

1. Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).

2. A reduction in the numbers of marine mammals (total number or number at biologically important time or location) exposed to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

3. A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to 1, above, or to reducing harassment takes only).

4. A reduction in the intensity of exposures (either total number or number at biologically important time or location) to airgun operations that we expect to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

5. Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

6. For monitoring directly related to mitigation—an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

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

Monitoring

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

Lamont-Doherty submitted a marine mammal monitoring plan in section XIII of the Authorization application. NMFS, NSF, or Lamont-Doherty may modify or supplement the plan based on comments or new information received from the public during the public comment period.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

1. An increase in the probability of detecting marine mammals, both within the mitigation zone (thus allowing for more effective implementation of the mitigation) and during other times and locations, in order to generate more data to contribute to the analyses mentioned later;

2. An increase in our understanding of how many marine mammals would be affected by seismic airguns and other active acoustic sources and the likelihood of associating those exposures with specific adverse effects, such as behavioral harassment, temporary or permanent threshold shift;

3. An increase in our understanding of how marine mammals respond to stimuli that we expect to result in take and how those anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

a. Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (*i.e.,* to be able to accurately predict received level, distance from source, and other pertinent information);

b. Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (*i.e.,* to be able to accurately predict received level, distance from source, and other pertinent information);

c. Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

4. An increased knowledge of the affected species; and

5. An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

Monitoring Measures

Lamont-Doherty proposes to sponsor marine mammal monitoring during the present project to supplement the mitigation measures that require real-time monitoring, and to satisfy the monitoring requirements of the Authorization. Lamont-Doherty understands that NMFS would review the monitoring plan and may require refinements to the plan. Lamont-Doherty planned the monitoring work as a self-contained project independent of any other related monitoring projects that may occur in the same regions at the same time. Further, Lamont-Doherty is prepared to discuss coordination of its monitoring program with any other related work that might be conducted by other groups working insofar as it is practical for Lamont-Doherty.

Vessel-Based Passive Acoustic Monitoring

Passive acoustic monitoring would complement the visual mitigation monitoring program, when practicable. Visual monitoring typically is not effective during periods of poor visibility or at night, and even with good visibility, is unable to detect marine mammals when they are below the surface or beyond visual range. Passive acoustical monitoring can improve detection, identification, and localization of cetaceans when used in conjunction with visual observations. The passive acoustic monitoring would serve to alert visual observers (if on duty) when vocalizing cetaceans are detected. It is only useful when marine mammals call, but it can be effective either by day or by night, and does not depend on good visibility. The acoustic observer would monitor the system in real time so that he/she can advise the visual observers if they acoustically detect cetaceans.

The passive acoustic monitoring system consists of hardware (*i.e.,* hydrophones) and software. The ''wet end'' of the system consists of a towed hydrophone array connected to the vessel by a tow cable. The tow cable is 250 m (820.2 ft) long and the hydrophones are fitted in the last 10 m (32.8 ft) of cable. A depth gauge, attached to the free end of the cable, typically towed at depths less than 20 m (65.6 ft). The *Langseth* crew would deploy the array from a winch located on the back deck. A deck cable would connect the tow cable to the electronics unit in the main computer lab where the acoustic station, signal conditioning, and processing system would be located. The Pamguard software amplifies, digitizes, and then processes the acoustic signals received by the hydrophones. The system can detect marine mammal vocalizations at frequencies up to 250 kHz.

One acoustic observer, an expert bioacoustician with primary responsibility for the passive acoustic monitoring system would be aboard the *Langseth* in addition to the four visual observers. The acoustic observer would monitor the towed hydrophones 24 hours per day during airgun operations and during most periods when the *Langseth* is underway while the airguns are not operating. However, passive acoustic monitoring may not be possible if damage occurs to both the primary and back-up hydrophone arrays during operations. The primary passive acoustic monitoring streamer on the *Langseth* is a digital hydrophone streamer. Should the digital streamer fail, back-up systems should include an analog spare streamer and a hull-mounted hydrophone.

One acoustic observer would monitor the acoustic detection system by listening to the signals from two channels via headphones and/or speakers and watching the real-time spectrographic display for frequency ranges produced by cetaceans. The observer monitoring the acoustical data would be on shift for one to six hours at a time. The other observers would rotate as an acoustic observer, although the expert acoustician would be on passive acoustic monitoring duty more frequently.

When the acoustic observer detects a vocalization while visual observations are in progress, the acoustic observer on duty would contact the visual observer immediately, to alert him/her to the presence of cetaceans (if they have not

already been seen), so that the vessel's crew can initiate a power down or shutdown, if required. The observer would enter the information regarding the call into a database. Data entry would include an acoustic encounter identification number, whether it was linked with a visual sighting, date, time when first and last heard and whenever any additional information was recorded, position and water depth when first detected, bearing if determinable, species or species group (*e.g.,* unidentified dolphin, sperm whale), types and nature of sounds heard (*e.g.,* clicks, continuous, sporadic, whistles, creaks, burst pulses, strength of signal, etc.), and any other notable information. Acousticians record the acoustic detection for further analysis.

Observer Data and Documentation

Observers would record data to estimate the numbers of marine mammals exposed to various received sound levels and to document apparent disturbance reactions or lack thereof. They would use the data to help better understand the impacts of the activity on marine mammals and to estimate numbers of animals potentially 'taken' by harassment (as defined in the MMPA). They will also provide information needed to order a power down or shut down of the airguns when a marine mammal is within or near the exclusion zone.

When an observer makes a sighting, they will record the following information:

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

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

The observer will record the data listed under (2) 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.

Observers will record all observations and power downs or shutdowns in a standardized format and will enter data into an electronic database. The observers will verify the accuracy of the data entry by computerized data validity checks during data entry and by subsequent manual checking of the database. These procedures will allow the preparation of initial summaries of data during and shortly after the field program, and will facilitate transfer of the data to statistical, graphical, and other programs for further processing and archiving.

Results from the vessel-based observations will provide:

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

2. Information needed to estimate the number of marine mammals potentially taken by harassment, which Lamont-Doherty must report to the Office of Protected Resources.

3. Data on the occurrence, distribution, and activities of marine mammals and turtles in the area where Lamont-Doherty would conduct the seismic study.

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

5. Data on the behavior and movement patterns of marine mammals detected during non-active and active seismic operations.

Reporting

Lamont-Doherty would submit a report to us and to NSF within 90 days after the end of the cruise. The report would describe the operations conducted and sightings of marine mammals near the operations. The report would provide full documentation of methods, results, and interpretation pertaining to all monitoring. The 90-day report would summarize the dates and locations of seismic operations, and all marine mammal sightings (dates, times, locations, activities, associated seismic survey activities). The report would also include estimates of the number and nature of exposures that occurred above the harassment threshold based on the observations.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner not permitted by the authorization (if issued), such as serious injury or mortality (*e.g.,* ship-strike, gear interaction, and/or entanglement), Lamont-Doherty shall immediately cease the specified activities and immediately report the take to the Chief Permits and Conservation Division, Office of Protected Resources, NMFS. Lamont-Doherty must also contact the ARION Cetacean Rescue and Rehabilitation Centre, Greece at +030–6945–531850.

The report must include the following information:

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

Lamont-Doherty shall not resume its activities until we are able to review the circumstances of the prohibited take. NMFS shall work with Lamont-Doherty to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. Lamont-Doherty may not resume their activities until notified by us via letter, email, or telephone.

In the event that Lamont-Doherty discovers an injured or dead marine mammal, and the lead visual observer determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.,* in less than a moderate state of decomposition as we describe in the next paragraph), Lamont-Doherty will immediately report the incident to the Chief Permits and Conservation Division, Office of Protected Resources, NMFS. Lamont-Doherty must also contact the ARION Cetacean Rescue and Rehabilitation Centre, Greece at +030–6945–531850.

The report must include the same information identified in the paragraph above this section. Activities may continue while NMFS reviews the circumstances of the incident. NMFS would work with Lamont-Doherty to determine whether modifications in the activities are appropriate.

In the event that Lamont-Doherty discovers an injured or dead marine mammal, and the lead visual observer determines that the injury or death is not associated with or related to the authorized activities (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Lamont-Doherty would report the incident to the Chief Permits and Conservation Division, Office of Protected Resources, NMFS, within 24 hours of the discovery. Lamont-Doherty would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS. Lamont-Doherty must also contact the ARION Cetacean Rescue and

Rehabilitation Centre, Greece at +030–6945–531850.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, section 3(18) the MMPA defines ''harassment'' as: Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering [Level B harassment].

Acoustic stimuli (*i.e.,* increased underwater sound) generated during the operation of the airgun array may have the potential to result in the behavioral disturbance of some marine mammals and may have an even smaller potential to result in permanent threshold shift (non-lethal injury) of some marine mammals. NMFS expects that the proposed mitigation and monitoring measures would minimize the possibility of injurious or lethal takes. However, NMFS cannot discount the possibility (albeit small) that exposure to energy from the proposed survey could result in non-lethal injury (Level A harassment). Thus, NMFS proposes to authorize take by Level B harassment and Level A harassment resulting from the operation of the sound sources for the proposed seismic survey based upon the current acoustic exposure criteria shown in Table 4.

TABLE 4—NMFS' CURRENT ACOUSTIC EXPOSURE CRITERIA

Criterion	Criterion Definition	Threshold
Level A Harassment (Injury)	Permanent Threshold Shift (PTS) (Any level above that which is known to cause TTS).	180 dB re 1 microPa-m (cetaceans)/190 dB re 1 microPa-m (pinnipeds) root mean square (rms).
Level B Harassment	Behavioral Disruption (for impulse noises)	160 dB re 1 microPa-m (rms).

NMFS' practice is to apply the 160 dB re: 1 μPa received level threshold for underwater impulse sound levels to predict whether behavioral disturbance that rises to the level of Level B harassment is likely to occur. NMFS' practice is to apply the 180 dB re: 1 μPa received level threshold for underwater impulse sound levels to predict whether permanent threshold shift (auditory injury), which is considered Level A harassment, is likely to occur.

Acknowledging Uncertainties in Estimating Take

Given the many uncertainties in predicting the quantity and types of impacts of sound on marine mammals, it is common practice to estimate how many animals are likely to be present within a particular distance of a given activity, or exposed to a particular level of sound and use that information to predict how many animals are taken. In practice, depending on the amount of information available to characterize daily and seasonal movement and distribution of affected marine mammals, distinguishing between the numbers of individuals harassed and the instances of harassment can be difficult to parse. Moreover, when one considers the duration of the activity, in the absence of information to predict the degree to which individual animals are likely exposed repeatedly on subsequent days, the simple assumption is that entirely new animals are exposed in every day, which results in a take estimate that in some circumstances overestimates the number of individuals harassed.

The following sections describe NMFS' methods to estimate take by incidental harassment. We base these estimates on the number of marine mammals that could be harassed by seismic operations with the airgun array during approximately 2,140 km (1,330 mi) of transect lines in the eastern Mediterranean Sea.

Modeled Number of Instances of Exposures in Territorial Waters and High Seas: Lamont-Doherty would conduct the proposed seismic survey within the EEZ and territorial waters of Greece. Greece's territorial seas to extend out to 6 nmi (7 mi; 11 km). The proposed survey would take place partially within Greece's territorial seas (less than 6 nmi [11 km; 7 mi] from the shore) and partially in the high seas. However, NMFS has no authority to authorize the incidental take of marine mammals in the territorial seas of foreign nations, because the MMPA does not apply in those waters. However, NMFS still needs to calculate the level of incidental take in the entire activity area (territorial seas and high seas) as part of the analysis supporting our preliminary determination under the MMPA that the activity will have a negligible impact on the affected species (Table 5). Therefore, NMFS presents estimates of the anticipated numbers of instances that marine mammals would be exposed to sound levels greater than or equal to 160, 180, and 190 dB re: 1 μPa during the proposed seismic survey, both for within the entire action area (*i.e.,* within Greece's territorial seas [less than 6 nmi] and outside of Greece's territorial seas [greater than 6 nmi]—Table 5. Table 6 represents the numbers of instances of take that NMFS proposes to authorize for this survey within the high seas portion of the survey (*i.e.,* the area beyond Greek territorial seas which is outside 6 nmi; 7 mi; 11 km).

NMFS' Take Estimate Method for Species with Density Information: For the proposed Authorization, NMFS reviewed Lamont-Doherty's take estimates presented in Table 3 of their application and propose a more appropriate methodology to estimate take. Lamont-Doherty's approach is to multiply the ensonified area by marine mammal densities (if available) to estimate take. This ''snapshot approach'' (*i.e.,* area times density) proposed by Lamont-Doherty, assumes a uniform distribution of marine mammals present within the proposed survey area and does not account for the survey occurring over a 16-day period and the overlap of areas across days in that 16-day period.

NMFS has developed an alternate approach that appropriately includes a time component to calculate the take estimates for the proposed survey. In order to estimate the potential number of instances that marine mammals could be exposed to airgun sounds above the 160-dB Level B harassment threshold and the 180–dB Level A harassment thresholds, NMFS used the following approach for species with density estimates:

(1) Calculate the total area that the *Langseth* would ensonify above the 160-dB Level B harassment threshold and above the 180-dB Level A harassment threshold for cetaceans within a 24-hour period. This calculation includes a daily ensonified area of approximately 1,211

square kilometers (km^2) [468 square miles (mi^2)] based on the *Langseth* traveling approximately 200 km [124 mi] in one day). Generally, the *Langseth* travels approximately 137 km in one day while conducting a seismic survey, thus, NMFS' estimate of a daily ensonified area based on 200 km is an estimation of the theoretical maximum that the *Langseth* could travel within 24 hours.

(2) Multiply the daily ensonified area above the 160-dB Level B harassment threshold by the species' density to derive the predicted number of instances of exposures to received levels greater than or equal to 160-dB re: 1 μPa on a given day;

(3) Multiply that product (*i.e.,* the expected number of instances of exposures within a day) by the number of survey days that includes a 25 percent contingency (*i.e.,* a total of 20 days) to derive the predicted number of instances of exposures over the duration of the survey;

(4) Multiply the daily ensonified area by each species-specific density to derive the predicted number of instances of exposures to received levels greater than or equal to 180-dB re: 1 μPa for cetaceans on a given day; and (*i.e.,* Level A takes).

(5) Multiply that product by the number of survey days that includes a 25 percent contingency (*i.e.,* a total of 20 days). Subtract that product from the predicted number of instances of exposures to received levels greater than or equal to 160-dB re: 1 μPa on a given day to derive the number of instances of exposures estimated to occur between 160 and 180-dB threshold (*i.e.,* Level B takes).

In many cases, this estimate of instances of exposures is likely an overestimate of the number of individuals that are taken, because it assumes 100 percent turnover in the area every day, (*i.e.,* that each new day results in takes of entirely new individuals with no repeat takes of the same individuals over the 20-day period). However, it is difficult to quantify to what degree NMFS has overestimated the number of individuals potentially affected. Except as described later for a few specific species, NMFS uses this number of instances as the estimate of individuals (and authorized take) even though NMFS is aware that the number is high. This method is a way to help understand the instances of exposure above the Level B and Level A thresholds, however, NMFS notes that method would overestimate the number of individual marine mammals exposed above the 160- or 180-dB threshold.

Take Estimates for Species with No Density Information: Density information for many species of marine mammals in the eastern Mediterranean Sea is data poor or non-existent. When density estimates were not available, NMFS used data based on dedicated survey sighting information from the Atlantic Marine Assessment Program for Protected Species (AMAPPS) surveys in 2010, 2011, and 2013 (AMAPPS, 2010, 2011, 2013) and Boisseau *et al.* (2010) to estimate take for certain species with no density information. NMFS assumed that Lamont-Doherty could potentially encounter one group of each species during the seismic survey. NMFS believes it is reasonable to use the average (mean) group size (weighted by effort and rounded up) from the AMMAPS surveys to estimate the take from these potential encounters. Those species include the following: Dwarf sperm and pygmy sperm whale (2 each), Gervais', Sowerby's, and Blainville's beaked whales (3 each).

For humpback whale and minke whale, the applicant requested 116 and 1,052 Level B takes for those species, respectively to account for uncertainty in the likelihood of encountering those species during the proposed survey. For these two species which are considered as visitor and vagrant respectively, NMFS believes that it is reasonable to use the average (mean) group size (weighted by effort and rounded up) from the AMMAPS surveys for humpback whale (3) and minke whale (2) and multiply those estimates by 20 days to derive a more reasonable estimate of take. Thus, NMFS proposes a take estimate of 60 humpback whales and 40 minke whales to account for the unlikely possibility of an eruptive occurrence of these species within the proposed action area.

NMFS based the take estimates for rough-toothed dolphins (8), false killer whales (3), long-finned pilot whales (33) and harbor porpoise (1) on mean group size reported from encounter rates observed during visual and acoustic surveys in the Mediterranean Sea, 2003–2007 (Boisseau *et al.,* 2010).

For rarely sighted species such as the gray and Sei whale, NMFS used the mean group size reported in (Boisseau *et al.,* 2010) for Sei whales (1) as a proxy for a take estimate for gray whales (1).

NMFS based the take estimates for hooded seals (1) on stranding and sighting records for the western Mediterranean Sea (Bellido *et al.,* 2008). Based on the best available information, there are no reports of strandings or sightings of hooded seals east of the Gata Cape, Almeria, Spain. Researchers suggest the Alboran Sea is the present limit of the sporadic incursion of this species in the Mediterranean Sea (Bellido *et al.,* 2008).

Take Estimates for Mediterranean Monk Seals: Density information for Mediterranean monk seals in the eastern Mediterranean Sea is also data poor or non-existent. NMFS used data based on sighting information from the Rapid Assessment Survey of the Mediterranean monk seal *Monachus monachus* population in Anafi Island, Cyclades Greece (MOm, 2014). Based on the spatial extent of the survey (three tracklines are approximately 4 km west of Anafi Island). NMFS estimates that the proposed survey could affect approximately 100 percent (25 out of approximately 25 individuals) of the monk seal subpopulation from Anafi Island (Mom, 2014) location within the proposed survey area.

Because adult female Mediterranean monk seals can travel up to 70 km (43 mi) (Adamantopoulou *et al.,* 2011) and based on the spatial extent of the survey in relation to the islands, NMFS conservatively estimates that the proposed survey could affect up to 8 adult females of the monk seal subpopulation from the Kimolos—Polyaigos Island complex in the Cyclades Islands (Politikos *et al.,* 2009) located approximately 60 km (37 mi) northwest of the outer perimeter of the 160-dB ensonified area. NMFS bases the estimate of 8 females on the estimated mean annual pup production count (7.9) for the island complex (UNEP, 2013).

To date, data is unavailable from any systematic survey on the presence of monk seal caves on Santorini Island (Pers. Comm. MOm, 2015). However, based on recent stranding information for one pup on Santorini Island, NMFS estimates that up to two individuals could be present on Santorini Island.

TABLE 5—DENSITIES, GROUP SIZE, AND ESTIMATES OF THE POSSIBLE NUMBER OF INSTANCES OF EXPOSURES OF MARINE MAMMALS EXPOSED TO SOUND LEVELS GREATER THAN OR EQUAL TO 160 DB RE: 1 μPA OVER 20 DAYS DURING THE PROPOSED SEISMIC SURVEY FOR THE ENTIRE ACTION AREA (WITHIN TERRITORIAL WATERS AND THE HIGH SEAS) IN THE EASTERN MEDITERRANEAN SEA (NOVEMBER THROUGH DECEMBER, 2015)

Species	Density estimate[1]	Modeled number of instances of exposures to sound levels ≥ 160, 180, and 190 dB[2]	Total number of instances of exposures[3]	Percent of regional population[4]	Population trend[5]
Gray whale	NA	1, 0, -	1	0.01	Unknown.
Humpback whale	NA	60, 0, -	60	0.52	Increasing.
Minke whale	NA	40, 0, -	40	0.19	Unknown.
Sei whale	NA	1, 0, -	1	0.28	Unknown.
Fin whale	0.00168[6]	100, 20, -	120	2.40	Unknown.
Sperm whale	0.00052[7]	40, 0, -	40	1.60	Unknown.
Dwarf sperm whale	NA	2, 0, -	2	0.05	Unknown.
Pygmy sperm whale	NA	2, 0, -	2	0.05	Unknown.
Cuvier's beaked whale	0.00156[8]	100, 20, -	120	1.84	Unknown.
Blainville's beaked whale	NA	27, 0, -	3	0.04	Unknown.
Gervais' beaked whale	NA	27, 0, -	3	0.04	Unknown.
Sowerby's beaked whale	NA	27, 0, -	3	0.04	Unknown.
Bottlenose dolphin	0.043[9]	2,940, 340, -	3,280	4.23	Unknown.
Rough-toothed dolphin	NA	8, 0, -	8	2.95	Unknown.
Striped dolphin	0.22[10]	15,060, 1,700, -	16,760	7.18	Unknown.
Short-beaked common dolphin	0.03[11]	2,060, 240, -	2,300	11.84	Decreasing.
Risso's dolphin	0.015[12]	1,020, 120, -	1,140	6.25	Unknown.
False killer whale	NA	3, 0, -	3	0.68	Unknown.
Long-finned pilot whale	NA	33, 0 -	33	13.75	Unknown.
Harbor porpoise	NA	1, 0, -	1	0.001	Unknown.
Hooded seal	NA	1, -, 0	1	Unknown	Unknown.
Monk seal	NA	560, -, 0	35	10.26	In Review.

[1] Densities (where available) are expressed as number of individuals per km^2. NA = Not available.
[2] See preceding text for information on NMFS' take estimate calculations. NA = Not applicable.
[3] Modeled instances of exposures includes adjustments for species with no density information.
[4] Table 2 in this notice lists the stock species abundance estimates used in calculating the percentage of species/stock.
[5] Population trend information from Waring *et al.,* 2014. Population trend information for Mediterranean monk seals from MOm (Pers. Comm., 2015). Unknown = Insufficient data to determine population trend.
[6] Panigada *et al.,* 2011.
[7] Laran *et al.,* 2010.
[8] Density based on density for sperm whales (Laran *et al.,* 2010) and adjusted for proportional difference in sighting rates and mean group sizes between sperm and Cuvier's beaked whales in the Mediterranean Sea (Boisseau *et al.,* 2010).
[9] Fortuna *et al.,* 2011.
[10] Panigada *et al.,* 2011.
[11] Density based Laran *et al.* (2010) striped dolphin winter density adjusted for the proportional difference in striped dolphin to common dolphin sightings as indicated by surveys of the Ionian Sea (Notarbartolo di Sciara *et al.* 1993).
[12] Gomez de Segura *et al.,* 2006. Fortuna *et al.,* 2011 reported 0.007 in the Adriatic, but noted that the estimate was not suitable for management purposes.

TABLE 6—DENSITIES, MEAN GROUP SIZE, AND ESTIMATES OF THE POSSIBLE NUMBERS OF MARINE MAMMALS AND POPULATION PERCENTAGES EXPOSED TO SOUND LEVELS GREATER THAN OR EQUAL TO 160 DB RE: 1 μPA OVER 20 DAYS DURING THE PROPOSED SEISMIC SURVEY OUTSIDE OF TERRITORIAL WATERS AND THE HIGH SEAS IN THE EASTERN MEDITERRANEAN SEA (NOVEMBER THROUGH DECEMBER, 2015)

Species	Density estimate[1]	Modeled number of instances of exposures to sound levels ≥ 160, 180, and 190 dB[2] (Outside territorial sea)	Authorized level A take[3]	Authorized level B take[3]	Percent of regional population[4]	Population trend[5]
Gray whale	NA	1, 0, -	0	1	0.01	Unknown.
Humpback whale	NA	60, 0, -	0	60	0.52	Increasing.
Minke whale	NA	40, 0, -	0	40	0.193	Unknown.
Sei whale	NA	1, 0, -	0	1	0.28	Unknown.
Fin whale	0.00168	40, 0, -	0	40	0.80	Unknown.
Sperm whale	0.00052	20, 0, -	0	20	0.80	Unknown.
Dwarf sperm whale	NA	2, 0, -	0	2	0.05	Unknown.
Pygmy sperm whale	NA	2, 0, -	0	2	0.05	Unknown.
Cuvier's beaked whale	0.00156	40, 0, -	0	40	0.61	Unknown.
Blainville's beaked whale	NA	27, 0, -	0	3	0.04	Unknown.
Gervais' beaked whale	NA	27, 0, -	0	3	0.04	Unknown.
Sowerby's beaked whale	NA	27, 0, -	0	3	0.04	Unknown.
Bottlenose dolphin	0.043	900, 160, -	160	900	1.37	Unknown.

TABLE 6—DENSITIES, MEAN GROUP SIZE, AND ESTIMATES OF THE POSSIBLE NUMBERS OF MARINE MAMMALS AND POPULATION PERCENTAGES EXPOSED TO SOUND LEVELS GREATER THAN OR EQUAL TO 160 dB RE: 1 μPa OVER 20 DAYS DURING THE PROPOSED SEISMIC SURVEY OUTSIDE OF TERRITORIAL WATERS AND THE HIGH SEAS IN THE EASTERN MEDITERRANEAN SEA (NOVEMBER THROUGH DECEMBER, 2015)—Continued

Species	Density estimate [1]	Modeled number of instances of exposures to sound levels ≥ 160, 180, and 190 dB [2] (Outside territorial sea)	Authorized level A take [3]	Authorized level B take [3]	Percent of regional population [4]	Population trend [5]
Rough-toothed dolphin	NA	8, 0, -	0	8	2.95	Unknown.
Striped dolphin	0.22	4,560, 780, -	780	4,560	2.29	Unknown.
Short-beaked common dolphin	0.03	620, 100, -	100	620	3.71	Decreasing.
Risso's dolphin	0.015	320, 60, -	60	320	2.08	Unknown.
False killer whale	NA	3, 0, -	0	3	0.68	Unknown.
Long-finned pilot whale	NA	33, 0, -	0	33	13.75	Unknown.
Harbor porpoise	NA	1, 0, -	0	1	0.001	Unknown.
Hooded seal	NA	1, -, 0	0	1	Unknown	Unknown.
Monk seal	NA	560, -, 0	0	35	10.26	In Review.

[1] Densities (where available) are expressed as number of individuals per km^2. NA = Not available.
[2] See preceding text for information on NMFS' take estimate calculations. NA = Not applicable.
[3] Modeled instances of exposures includes adjustments for species with no density information. The Level A estimates are overestimates of predicted impacts to marine mammals as the estimates do not take into consideration the required mitigation measures for shutdowns or power downs if a marine mammal is likely to enter the 180 dB exclusion zone while the airguns are active.
[4] Table 2 in this notice lists the stock species abundance estimates used in calculating the percentage of species/stock or regional population.
[5] Population trend information from Waring *et al.,* 2014. Population trend information for Mediterranean monk seals from MOm (Pers. Comm., 2015). Unknown = Insufficient data to determine population trend.

Lamont-Doherty did not estimate any additional take from sound sources other than airguns. NMFS does not expect the sound levels produced by the echosounder or sub-bottom profiler to exceed the sound levels produced by the airguns. Lamont-Doherty will not operate the multibeam echosounder and sub-bottom profiler during transits to and from the survey area, (*i.e.,* when the airguns are not operating), and, therefore, NMFS does not anticipate additional takes from these sources or acoustic release signals from the ocean bottom seismometers in this particular case.

NMFS considers the probability for entanglement of marine mammals as low because of the vessel speed and the monitoring efforts onboard the survey vessel. Therefore, NMFS does not believe it is necessary to authorize additional takes for entanglement at this time.

The *Langseth* will operate at a relatively slow speed (typically 4.6 knots [8.5 km/h; 5.3 mph]) when conducting the survey. Protected species observers would monitor for marine mammals, which would trigger mitigation measures, including vessel avoidance where safe. Therefore, NMFS does not anticipate nor do we authorize takes of marine mammals from vessel strike.

There is no evidence that planned activities could result in serious injury or mortality within the specified geographic area for the requested proposed Authorization. The required mitigation and monitoring measures would minimize any potential risk for serious injury or mortality.

Analysis and Determinations

Negligible Impact

Negligible impact is ''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'' (50 CFR 216.103). The lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population level effects) forms the basis of a negligible impact finding. Thus, an estimate of the number of takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, *etc.*), the context of any responses (critical reproductive time or location, migration, etc.), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, effects on habitat, and the status of the species.

In making a negligible impact determination, NMFS considers:

- The number of anticipated injuries, serious injuries, or mortalities;
- The number, nature, and intensity, and duration of harassment; and
- The context in which the takes occur (*e.g.,* impacts to areas of significance, impacts to local populations, and cumulative impacts when taking into account successive/contemporaneous actions when added to baseline data);
- The status of stock or species of marine mammals (*i.e.,* depleted, not depleted, decreasing, increasing, stable, impact relative to the size of the population);
- Impacts on habitat affecting rates of recruitment/survival; and
- The effectiveness of monitoring and mitigation measures to reduce the number or severity of incidental take.

To avoid repetition, our analysis applies to all the species listed in Table 6, given that NMFS expects the anticipated effects of the seismic airguns to be similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat (*e.g.* Mediterranean monk seals), NMFS has identified species-specific factors to inform the analysis.

Given the required mitigation and related monitoring, NMFS does not anticipate that serious injury or mortality would occur as a result of Lamont-Doherty's proposed seismic survey in the eastern Mediterranean

Sea. Thus the Authorization does not authorize any mortality.

NMFS' predicted estimates for Level A harassment take for bottlenose, striped, short-beaked common, and Risso's dolphins are overestimates of likely injury because NMFS has not quantitatively adjusted the estimate to account for either avoidance or effective mitigation. NMFS expects that the required visual and acoustic mitigation measures would minimize Level A take in those instances. Also, NMFS expects that some individuals would avoid the source at levels expected to result in injury. NMFS expects that Level A harassment is unlikely but includes the modeled information in this notice. Taking into account that interactions at the modeled level of take for Level A harassment are unlikely or minimal due to Lamont-Doherty implementing required mitigation and monitoring measures, the likely avoidance of animals to the sound source, and Lamont-Doherty's previous history of successfully implementing required mitigation measures, the quantified potential injuries in Table 6, if incurred, would be in the form of some lesser degree of permanent threshold shift and not total deafness or mortality.

Given that the Hellenic Republic Ministry of Environment, Energy and Climate Change conducted a larger scale seismic survey in the eastern Mediterranean Sea from mid-November 2012 to end of January 2013, the addition of the increased sound due to the *Langseth's* operations associated with the proposed seismic survey during a shorter time-frame (approximately 20 days from mid-November to mid-December) is not outside the present experience of marine mammals in the eastern Mediterranean Sea, although levels may increase locally. NMFS does not expect that Lamont-Doherty's 20-day proposed survey would have effects that could cause significant or long-term consequences for individual marine mammals or their populations.

Of the marine mammal species under our jurisdiction that are known to occur or likely to occur in the study area, five of these species are listed as endangered under the ESA including: The fin, humpback, sei, and sperm whales and the Mediterranean monk seal. Population trends for the Mediterranean monk seal globally are variable with some sub populations decreasing and others remaining stable or even indicating slight increases. The western north Atlantic population of humpback whales is known to be increasing. The other marine mammal species that may be taken by harassment during Lamont-Doherty's seismic survey program are not listed as threatened or endangered under the ESA.

Cetaceans. Odontocete reactions to seismic energy pulses are usually thought to be limited to shorter distances from the airgun(s) than are those of mysticetes, in part because odontocete low-frequency hearing is assumed to be less sensitive than that of mysticetes. Given sufficient notice through relatively slow ship speed, NMFS expects marine mammals to move away from a noise source that is annoying prior to becoming potentially injurious.

Potential impacts to marine mammal habitat were discussed previously in this document (see the ''Anticipated Effects on Habitat'' and Responses to Comments sections). Although some disturbance is possible to food sources of marine mammals, the impacts are anticipated to be minor enough as to not affect annual rates of recruitment or survival of marine mammals in the area. Based on the size of the eastern Mediterranean Sea where feeding by marine mammals occurs versus the localized area of the marine survey activities, any missed feeding opportunities in the direct project area will be minor based on the fact that other feeding areas exist elsewhere (Costa, 1993; New *et al.,* 2014). Taking into account the planned mitigation measures, effects on cetaceans are generally expected to be restricted to avoidance of a limited area around the survey operation and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment.'' Animals are not expected to permanently abandon any area that is surveyed, and any behaviors that are interrupted during the activity are expected to resume once the activity ceases. Only a small portion of marine mammal habitat will be affected at any time, and other areas within the Mediterranean Sea will be available for necessary biological functions.

Mediterranean Monk Seal. The Mediterranean monk seal is non-migratory and has a very limited home range (Gucu *et al.,* 2004; Dendrinos *et al.,* 2007a; Adamantopoulou *et al.,* 2011). It historically occupied open beaches, rocky shorelines, and spacious arching caves, but now almost exclusively uses secluded coastal caves for hauling out and breeding. Available data from Greece indicate that Mediterranean monk seals appear to have fairly restricted ranges (from about 100 to 1,000 km^2) (Adamantopoulou *et al.,* 2011). Although primary habitat seems to be nearshore shallow waters, movement over deep oceanic waters does occur (Adamantopoulou *et al.,* 2011; Dendrinos *et al.,* 2007a; Sergeant *et al.,* 1978). Unlike most other seal species, Mediterranean monk seals are known to haul-out in grottos or caves frequently accessible only by underwater entrances, (Bareham and Furreddu, 1975; Bayed *et al.* 2005; CMS, 2005; Dendrinos *et al.,* 2007b) and movement into and out of these locations is not clearly tied to sea or tide state, day or night, or sea/air temperature in some cases (Bareham and Furreddu, 1975; Dendrinos *et al.,* 2001; Marchessaux and Duguy, 1977; Sergeant *et al.,* 1978).

Monk seals are more particular when selecting caves for breeding versus caves for resting (Gücü *et al.,* 2004; Karamanlidis *et al.,* 2004; Dendrinos *et al.* 2007b). In Greece, the pupping season lasts from August to December with a peak in births during September through November (MOm, 2009). Suitable pupping sites tend to have multiple entrances with soft substrate beaches in their interior which lowers the risk of pup washout (Dendrinos *et al.,* 2007). There are several caves suitable for pupping and/or resting occur near the action area (Dendrinos *et al.,* 2008) including caves for resting and reproduction on Anafi Island located within the eastern perimeter of the proposed action area and on the Kimolos-Polyaigos Island complex located approximately 60 km (37 mi) northwest of the outer perimeter of the proposed action area (Mom, 2014). NMFS does not expect that the proposed survey would ensonify the caves with pups because the cave's long entrance corridors which act as wave breakers (Dendrinos *et al.,* 2007) could also offer additional protection for lactating pups from sound generated during the proposed survey.

During parturition, lactating females leave the maternity caves as soon as possible after birth in search of food. Based upon a few tagged individuals, lactating female Mediterranean monk seals generally dive in waters 40–60 m deep and have a maximum known dive depth of 180 m (CMS, 2005). Monk seals may focus on areas shallower (2–25 m deep) while foraging (CMS, 2005). Pups tend to remain in shallow, nearshore waters and gradually distribute further from natal caves into waters up to 40 m deep (CMS, 2005; Gazo, 1997; Gazo *et al.,* 2006). In Greek waters, seals may generally stay even closer to their haul-out locations (within a few miles) (Marchessaux and Duguy, 1977). Female Mediterranean monk seals also have the ability to take foraging trips up to 70 km (43 miles) (Adamantopoulou *et al.,* 2011) which NMFS expects would

buffer foraging mothers from short-term variations in prey availability within the action area ((Costa, 1993), as cited in New *et al.,* 2014). NMFS has no information to suggest that an animal eliciting a behavioral response (*e.g.,* temporary disruption of feeding) to the proposed seismic survey would be unable to compensate for this temporary disruption in feeding activity by either immediately feeding at another location, by feeding shortly after cessation of acoustic exposure, or by feeding at a later time.

NMFS expects that it is unlikely that mothers would remain within the cave because of their need to forage and feed their pups. The closest approach of the *Langseth* to Anafi Island is approximately four km (2.5 mi) away from the northwest portion of the Island. During foraging, Mediterranean monk seal mothers may not react at all to the sound from the proposed survey or may alert, ignore the stimulus, change their behavior, or avoid the immediate area by swimming away or diving. Behavioral responses can range from a mild orienting response, or a shifting of attention, to flight and panic. Research and observations show that pinnipeds in the water are generally tolerant of anthropogenic noise and activity. They may react in a number of ways depending on their experience with the sound source and what activity they are engaged in at the time of the exposure.

Taking into account the required mitigation measures to delay the conduct of survey lines acquired around Anafi Island to avoid the densest part of the pupping season and the required mitigation measure to shut down the airguns any time a pinniped is detected by observers around the vessel, effects on Mediterranean monk seals are generally expected to be restricted to avoidance of a limited area around the survey operation and short-term changes in behavior, falling within the MMPA definition of ''Level B harassment.'' NMFS does not expect the animals to permanently abandon their caves, and any behaviors interrupted during the activity are expected to resume once the short-term activity ceases or moves away.

For reasons stated previously in this document and based on the following factors, Lamont-Doherty's specified activities are not likely to cause long-term behavioral disturbance, permanent threshold shift, or other non-auditory injury, serious injury, or death. They include:

- The anticipated impacts of Lamont-Doherty's survey activities on marine mammals are temporary behavioral changes due to avoidance of the area;
- The likelihood that, given sufficient notice through relatively slow ship speed, NMFS expects marine mammals to move away from a noise source that is annoying prior to its becoming potentially injurious;
- The availability of alternate areas of similar habitat value for marine mammals to temporarily vacate the survey area during the operation of the airgun(s) to avoid acoustic harassment;
- NMFS also expects that the seismic survey would have no more than a temporary and minimal adverse effect on any fish or invertebrate species that serve as prey species for marine mammals, and therefore consider the potential impacts to marine mammal habitat minimal;
- The high likelihood that trained visual protected species observers would detect marine mammals at close proximity to the vessel.

Table 6 in this document outlines the number of requested Level A and Level B harassment takes that we anticipate as a result of these activities. NMFS anticipates that 22 marine mammal species could occur in the proposed action area.

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (*i.e.,* 24 hour cycle). Behavioral reactions to noise exposure (such as disruption of critical life functions, displacement, or avoidance of important habitat) are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.,* 2007). While NMFS anticipates that the seismic operations would occur on consecutive days, the estimated duration of the survey would last no more than 20 days but would increase sound levels in the marine environment in a relatively small area surrounding the vessel (compared to the range of most of the marine mammals within the proposed survey area), which is constantly travelling over distances, and some animals may only be exposed to and harassed by sound for less than a day.

Required mitigation measures, such as shutdowns for pinnipeds, vessel speed, course alteration, and visual monitoring would be implemented to help reduce impacts to marine mammals. Therefore, the exposure of pinnipeds to sounds produced by this phase of Lamont-Doherty's seismic survey is not anticipated to have an adverse effect on annual rates of recruitment or survival on the Mediterranean monk seal population (see New *et al.,* 2014), and therefore would have a negligible impact.

Based on the analysis herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS finds that Lamont-Doherty's proposed seismic survey would have a negligible impact on the affected marine mammal species or stocks.

Small Numbers

As mentioned previously, NMFS estimates that Lamont-Doherty's activities could potentially affect, by Level B harassment, 22 species of marine mammals under our jurisdiction. NMFS estimates that Lamont-Doherty's activities could potentially affect, by Level A harassment, up to four species of marine mammals under our jurisdiction.

For each species, the numbers of take being proposed for authorization are small numbers relative to the population sizes: less than 14 percent for long-finned pilot whales, less than 11 percent of the regional population estimates of Mediterranean monk seals, and less than four percent or less for all other species. NMFS has provided the regional population and take estimates for the marine mammal species that may be taken by Level A and Level B harassment in Table 2 and Table 6 in this notice.

NMFS finds that the incidental take authorized in Table 6 for the activity would be small relative to the affected species or stocks. In addition, NMFS also considered the seasonal distribution and habitat use patterns of Mediterranean monk seals, which suggest that for much of the time only a small portion of the population will be accessible to impacts from Lamont-Doherty's activity. Therefore, NMFS determined that the numbers of animals likely to be taken are small.

For two species, when considering take that would occur in the entire action area (including the part within the territorial seas, in which the MMPA does not apply) the number of instances is 11.84 for short-beaked common dolphins and 13.75 percent for short-beaked common dolphins, respectively (Table 5). While these additional takes were not evaluated under the ''small number'' standard because we are not authorizing them, these total takes (which are overestimates because NMFS' take estimate methodology assumes new exposures every day), were still considered in in our negligible impact determination, which considered all of the effects of the

action, even those that occur outside of the jurisdiction of the MMPA.

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

There are no relevant subsistence uses of marine mammals implicated by this action.

Endangered Species Act (ESA)

There are six marine mammal species listed as endangered under the Endangered Species Act that may occur in the proposed survey area. Under section 7 of the ESA, NSF initiated formal consultation with NMFS on the proposed seismic survey. NMFS (*i.e.,* National Marine Fisheries Service, Office of Protected Resources, Permits and Conservation Division) also consulted internally with NMFS on the proposed issuance of an Authorization under section 101(a)(5)(D) of the MMPA.

In October, 2015, the Endangered Species Act Interagency Cooperation Division issued a Biological Opinion with an Incidental Take Statement to us and to the NSF which concluded that the issuance of the Authorization and the conduct of the seismic survey were not likely to jeopardize the continued existence of fin, humpback, sei, and sperm whales and the Mediterranean monk seal. The Biological Opinion also concluded that the issuance of the Authorization and the conduct of the seismic survey would not affect designated critical habitat for these species.

National Environmental Policy Act (NEPA)

NSF has prepared an environmental analysis titled ''*Environmental Analysis of a Marine Geophysical Survey by the R/V Marcus G. Langseth in the Eastern Mediterranean Sea, November–December, 2015.''* NMFS has also prepared an environmental assessment (EA) titled, ''Proposed Issuance of an Incidental Harassment Authorization to Lamont Doherty Earth Observatory to Take Marine Mammals by Harassment Incidental to a Marine Geophysical Survey in the Eastern Mediterranean Sea, November—December 2015,'' which tiers off of NSF's environmental analysis. NMFS and NSF provided relevant environmental information to the public through the notice for the proposed authorization (80 FR 53623, September 4, 2015) and considered public comments received prior to finalizing our EA and deciding whether or not to issue a Finding of No Significant Impact (FONSI). NMFS concluded that issuance of an Incidental Harassment Authorization to Lamont-Doherty would not significantly affect the quality of the human environment and prepared and issued FONSI in accordance with NEPA and NOAA Administrative Order 216–6. NMFS' EA and FONSI for this activity are available upon request (see **ADDRESSES**).

Authorization

NMFS has issued an Incidental Harassment Authorization to Lamont-Doherty for the take of marine mammals, incidental to conducting a marine seismic survey in the Mediterranean Sea November 19 through December 31, 2015.

Dated: October 29, 2015.

Perry F. Gayaldo,

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

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Availability of Seats for National Marine Sanctuary Advisory Councils

AGENCY: Office of National Marine Sanctuaries (ONMS), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce (DOC).

ACTION: Notice and request for applications.

SUMMARY: ONMS is seeking applications for vacant seats for five of its 13 national marine sanctuary advisory councils (advisory councils). Vacant seats, including positions (*i.e.,* primary member and alternate), for each of the advisory councils are listed in this notice under **SUPPLEMENTARY INFORMATION**. Applicants are chosen based upon their particular expertise and experience in relation to the seat for which they are applying; community and professional affiliations; views regarding the protection and management of marine or Great Lake resources; and possibly the length of residence in the area affected by the sanctuary. Applicants who are chosen as members or alternates should expect to serve two- or three year terms, pursuant to the charter of the specific national marine sanctuary advisory council.

DATES: Applications are due by November 30, 2015.

ADDRESSES: Application kits are specific to each advisory council. As such, application kits must be obtained from and returned to the council-specific addresses noted below.

- Greater Farallones National Marine Sanctuary Advisory Council: Carolyn Gibson, Greater Farallones National Marine Sanctuary, 991 Marine Drive, The Presidio, San Francisco, CA 94129; (415) 561–6622 extension 306; email *Carolyn.Gibson@noaa.gov;* or download application from *http://farallones.noaa.gov/manage/sac.html.*
- Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council: Inouye Regional Center, ATTN: NOS/ONMS/Shannon Lyday, 1845 Wasp Blvd., Building 176, Honolulu, HI 96818; (808) 725–5905; email *Shannon.Lyday@noaa.gov;* or download application from *http://hawaiihumpbackwhale.noaa.gov/council/council_app_accepting.html.*
- Monterey Bay National Marine Sanctuary Advisory Council: Nichole Rodriguez, Monterey Bay National Marine Sanctuary, 99 Pacific St. Building 455A, Monterey, CA; (831) 647–4206; email *Nichole.Rodriguez@noaa.gov;* or download application from *http://montereybay.noaa.gov/sac/2015/recruit15v2/151102covlet.html.*
- National Marine Sanctuary of American Samoa Advisory Council: Joseph Paulin, National Marine Sanctuary of American Samoa, Tauese P.F. Sunia Ocean Center, P.O. Box 4318, Pago Pago, AS 96799 (Utulei, American Samoa); (684) 633–6500; email *Joseph.Paulin@noaa.gov;* or download application from *http://americansamoa.noaa.gov/about/samoa.html.*
- Olympic Coast National Marine Sanctuary Advisory Council: Karlyn Langjahr, Olympic Coast National Marine Sanctuary, 115 East Railroad Ave., Suite 101, Port Angeles, WA 98362; (360) 457–6622 extension 31; email *Karlyn.Langjahr@noaa.gov;* or download application from *http://olympiccoast.noaa.gov/involved/sac/sac_welcome.html.*

FOR FURTHER INFORMATION CONTACT: For further information on a particular national marine sanctuary advisory council, please contact the individual identified in the Addresses section of this notice.

SUPPLEMENTARY INFORMATION: ONMS serves as the trustee for 14 marine protected areas encompassing more than 170,000 square miles of ocean and Great Lakes waters from the Hawaiian Islands to the Florida Keys, and from Lake Huron to American Samoa. National marine sanctuaries protect our Nation's most vital coastal and marine natural and cultural resources, and through active research, management, and public engagement, sustains healthy