

**FINDING OF NO SIGNIFICANT IMPACT
FOR THE ISSUANCE OF AN INCIDENTAL HARASSMENT AUTHORIZATION
TO LAMONT-DOHERTY EARTH OBSERVATORY TO TAKE MARINE MAMMALS INCIDENTAL
TO CONDUCTING A MARINE GEOPHYSICAL SURVEY
IN THE SOUTHEAST PACIFIC OCEAN, AUGUST 2016 – JULY 2017**

NATIONAL MARINE FISHERIES SERVICE

BACKGROUND

The National Oceanic Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) is proposing to issue an Incidental Harassment Authorization (IHA) to Lamont-Doherty Earth Observatory of Columbia University (Lamont-Doherty) pursuant to section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. §§ 1631 *et seq.*), and the regulations governing the taking and importing of marine mammals (50 Code of Federal Regulations (CFR) Part 216). This IHA will be valid from August 1, 2016, through July 31, 2017, and authorizes takes, by Level A and by Level B harassment, of marine mammals incidental to conducting a marine geophysical (seismic) survey in the southeast Pacific Ocean off the coast of Chile.

NMFS's proposed action is a direct outcome of Lamont-Doherty's request which involves three two-dimensional seismic surveys on the R/V *Marcus G. Langseth* (*Langseth*), a vessel owned by the National Science Foundation (NSF) and operated on its behalf by Lamont-Doherty, primarily in international waters of the southeast Pacific Ocean, with a small portion of the surveys occurring within the territorial waters of Chile. Acoustic stimuli associated with the seismic surveys have the potential to cause marine mammals in the vicinity of the project area to be behaviorally disturbed, and therefore, the survey activities warrant an authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. §§ 1631 *et seq.*). NMFS's criteria for an IHA requires that the taking of marine mammals authorized by an IHA will have a negligible impact on the species or stock(s), and, where relevant, will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. In addition, the IHA must set forth, where applicable, the permissible methods of taking, other means of effecting the least practicable adverse impact on the species or stock and its habitat, and requirements pertaining to the monitoring and reporting of such takings.

The issuance of an IHA to Lamont-Doherty allows the taking of marine mammals, consistent with provisions under MMPA, and is considered a major federal action under the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*). This Finding of No Significant Impact (FONSI) evaluates the significance of the impacts of the selected alternative – Alternative 1 (Preferred Alternative) – in the Final Environmental Assessment (EA) prepared by NMFS titled, “*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 Southeast Pacific Ocean, 2016-2017.*” The preparation of the Final EA and this FONSI were completed in accordance with NEPA and the Council on Environmental Quality (CEQ) regulations in 40 CFR §§ 1500-1508. The EA addresses the potential environmental impacts of two alternatives to meet NMFS's purpose and need under section 101(a)(5)(D) of the MMPA:

- Alternative 1 (Preferred Alternative): Issue an IHA to Lamont-Doherty for take, by harassment, of marine mammals during the seismic survey, taking into account the prescribed means of take, mitigation measures, and monitoring requirements
- Alternative 2 (No Action Alternative): For NMFS, denial of an MMPA authorization constitutes the NMFS No Action Alternative, which is consistent with our statutory obligation under the MMPA to grant or deny permit applications and to prescribe mitigation, monitoring and reporting with any authorizations. Under NMFS's No Action Alternative, there are two potential outcome scenarios. One is that Lamont-Doherty's activities occur in the absence of an MMPA authorization. In that case, (1) Lamont-Doherty would be in violation of the MMPA if takes occur and (2) mitigation, monitoring and reporting would not be prescribed by NMFS. The second potential outcome is Lamont-Doherty would not to proceed with their proposed activities.

ANALYSIS

The CEQ regulations at 40 CFR §1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below this section is relevant to making a finding of no significant impact. We have considered each criterion individually, as well as in combination with the others. We analyzed the significance of this action based on CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans (FMP)?

Response: We do not expect our proposed action of issuing an IHA for the take of marine mammals incidental to the conduct of seismic survey activities or Lamont-Doherty's proposed activities would cause substantial damage to the ocean and coastal habitats and/or essential fish habitat because our IHA is limited to the take of marine mammals incidental to seismic survey activities and does not authorize the activity itself, thus it is limited to activities that do not have an effect on ocean and coastal habitats or essential fish habitat. Similarly, the mitigation and monitoring measures required by the IHA for Lamont-Doherty's proposed activities are limited to actions that minimize take of marine mammals and improve monitoring of marine mammals, and do not alter any aspect of the activity itself.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: We do not expect our proposed action of issuing an IHA for the take of marine mammals incidental to the conduct of seismic survey activities to have a substantial impact on biodiversity or ecosystem function within the affected environment. Our proposed action of authorizing incidental harassment for Lamont-Doherty's seismic survey would be limited to temporary behavioral responses (such as brief masking of natural sounds) in marine mammals and temporary changes in animal distribution. These effects would be short-term and localized.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: We do not expect our proposed action (i.e., issuing an IHA to Lamont-Doherty) to have a substantial adverse impact on public health or safety, as the taking, by harassment, of marine mammals would pose no risk to humans.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: We have determined that our issuance of an IHA would likely result in limited adverse effects to 44 species of marine mammals. The EA evaluates the affected environment and potential effects of our proposed action, indicating that Lamont-Doherty's seismic survey has the potential to affect marine mammals in a way that requires authorization under the MMPA. The activities and required mitigation measures would not affect physical habitat features, such as substrates and water quality.

We have determined that the proposed activities may result in some harassment (primarily in the form of short-term and localized changes in behavior and displacement) of small numbers, relative to the population sizes, of 44 species of marine mammals. The impacts of the seismic survey on marine mammals relate to acoustic activities, and we expect these to be temporary in nature and not result in a substantial impact to marine mammals or to their role in the ecosystem.

The proposed seismic survey may have the potential to adversely affect the following marine mammal species listed as threatened or endangered under the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*): blue, fin, humpback, sei, Southern right, and sperm whales. A July 2016 Biological Opinion issued under section 7 of the ESA concluded that Lamont-Doherty's project was not likely to jeopardize the continued existence of any ESA-listed species and would not affect critical habitat.

To reduce the potential for disturbance from the activities, Lamont-Doherty would implement several monitoring and mitigation measures for marine mammals, which are outlined in the EA. Taking these measures into consideration, we expect that the responses of marine mammals from the Preferred Alternative would primarily be in the form of temporary displacement from the area and/or short-term behavioral changes, falling within the MMPA definition of "Level A or Level B harassment." We do not anticipate that take by serious injury or mortality would occur, nor have we authorized take by serious injury or mortality. NMFS's predicted estimates for Level A harassment take for some species are likely overestimates of the injury that will occur, as NMFS expects that successful implementation of the required visual and acoustic mitigation measures would avoid Level A take in some instances. Also, NMFS expects that some individuals would avoid the source at levels expected to result in injury. We anticipate that any permanent threshold shift (PTS) incurred would be in the form of only a small degree of PTS, and not total deafness. Thus, we expect that impacts would be at the lowest level practicable due to the incorporation of the proposed mitigation measures.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: We expect that the primary impacts to the natural and physical environment would be temporary in nature and not interrelated with significant social or economic impacts. Issuance of an IHA would not result in inequitable distributions of environmental burdens or access to environmental goods as the action is confined to university personnel and contractors.

We have determined that issuance of the IHA would not adversely affect low-income or a minority population, as our action only affects marine mammals. Further, there would be no impact of the activity on the availability of the species or stocks of marine mammals for subsistence uses. Therefore, we expect that no significant social or economic effects would result from our proposed issuance of an IHA or from Lamont-Doherty's proposed activities.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: The effects of issuing an IHA to Lamont-Doherty on the quality of the human environment are not likely to be highly controversial. Although there is some lack of agreement within the scientific and stakeholder communities about the potential effects of noise on marine mammals, there is not a substantial dispute about the size, nature, or effect of our proposed action. For several years, we have assessed and authorized incidental take for multiple geophysical surveys conducted within the same year and have developed relatively standard mitigation and monitoring measures, all of which have been vetted during past public comment periods. The scope of this action is no different than past geophysical surveys, is not unusually large or substantial, and would include the same or similar mitigation and monitoring measures required in past surveys. Previous projects of this type required marine mammal monitoring and monitoring reports, which we have reviewed to ensure that the authorized activities have a negligible impact on marine mammals.

To allow other agencies and the public the opportunity to review and comment on the action, NMFS published a notice of the Proposed IHA in the *Federal Register* on April 19, 2016 (81 FR 23117). NMFS received comments from the Marine Mammal Commission and Marcus Langseth Science Oversight Committee, and we fully considered all of their comments in preparing the IHA and the EA. We have determined, based on the best available scientific literature, the limited duration of the project, and the low-level effects to marine mammals, that our proposed IHA would have a negligible impact on the affected species or stocks of marine mammals.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

Response: The proposed action cannot reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas because none of these are found in the project area. Similarly, as described in the response to question 1 above, our IHA is limited to the take of marine mammals incidental to seismic survey activities, and does not authorize the activity itself, thus it is limited to activities that do not have an effect on cultural

resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas. The natural processes in the environment are expected to fully recover from any impacts resulting from the activities.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: The potential risks associated with research seismic surveys are neither unique nor unknown nor is there significant uncertainty about impacts. We have issued Authorizations for similar activities or activities with similar types of marine mammal harassment in the Atlantic, Pacific, and Southern Oceans, and the Mediterranean Sea, and conducted NEPA analyses on those projects. Therefore, we expect any potential effects from the issuance of our IHA to be similar to prior activities which are not likely to be highly uncertain or involve unique or unknown risks.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: The EA and the documents it references analyzed the impacts of the issuance of an IHA for the take of marine mammals incidental to the conduct of a seismic survey in light of other human activities within the study area. We expect the following combination to result in no more than minor and short-term impacts to marine mammals in the survey area in terms of overall disturbance effects: (a) our issuance of an IHA with prescribed mitigation and monitoring measures for the seismic survey; (b) past, present, and reasonably foreseeable future seismic surveys in the southeast Pacific Ocean; and (c) climate change.

The proposed action of Lamont-Doherty conducting the seismic survey over the southeast Pacific Ocean and our proposed action of issuing an IHA to Lamont-Doherty for the incidental take of a small number of marine mammals are interrelated. The survey conducted pursuant to the requirements of an IHA that authorizes harassment of marine mammals is not expected to result in cumulatively significant impacts when considered in relation to other separate actions with individually insignificant effects.

We have issued incidental take authorizations for other research surveys that may have resulted in the harassment of marine mammals, but these research seismic surveys are dispersed both geographically (throughout the world) and temporally, are short-term in nature, and use mitigation and monitoring measures to minimize impacts to marine mammals and to minimize other potential adverse environmental impacts in the activity area.

We are unaware of any other research seismic surveys scheduled for the southeast Pacific Ocean. Also, we are unaware of any synergistic impacts to marine resources associated with reasonably foreseeable future actions that may be planned to occur within the same region. The Cumulative Effects section of the EA and the material incorporated by reference go into more detail regarding other past, present, and reasonably foreseeable future actions, but concludes that the impacts of Lamont-Doherty's proposed survey in the southeast Pacific Ocean are expected to be no more than minor and short-term with no potential to contribute to cumulatively significant impacts.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: We have determined that our proposed action is not an undertaking with the potential to affect historic resources because our proposed action is limited to the issuance of an IHA to incidentally harass marine mammals. The issuance of an IHA is not expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural or historical resources either because such resources do not exist within the project area or are not expected to be adversely affected.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: Our proposed action does not have the potential to introduce or spread non-indigenous species because it does not encourage or require the *Langseth* to conduct long-range vessel transit that would lead to the introduction or spread of non-indigenous species. The *Langseth* complies with all international and U.S. national ballast water requirements to prevent the spread of a non-indigenous species.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or does it represent a decision in principle about a future consideration?

Response: The issuance of an IHA is not expected to set a precedent for future actions with significant effects nor represent a decision in principle regarding future considerations. The issuance of an IHA to take marine mammals incidental to the proposed activities is a routine process under the MMPA. To ensure compliance with statutory and regulatory standards, NMFS's actions under section 101(a)(5)(D) of the MMPA must be considered individually and be based on the best available information, which is continuously evolving. Issuance of an IHA to a specific individual or organization for a given activity does not guarantee or imply that NMFS will authorize others to conduct similar activities. Subsequent requests for incidental take authorizations would be evaluated upon their own merits relative to the criteria established in the MMPA, ESA, and NMFS implementing regulations on a case-by-case basis. The project has no unique aspects that would suggest it would be a precedent for any future actions. For these reasons, the issuance of an IHA to Lamont-Doherty to conduct the proposed action would not be precedent setting.

13) Can the proposed action reasonably be expected to threaten a violation of any Federal, State, or local law or requirements imposed for the protection of the environment?

Response: The issuance of an IHA would not violate any federal, state, or local laws for environmental protection. Lamont-Doherty has fulfilled its responsibilities under MMPA for this action and the IHA currently contains language stating that the applicant is required to obtain any state and local permits necessary to carry out the action which would remain in effect upon issuance of the proposed amendment.

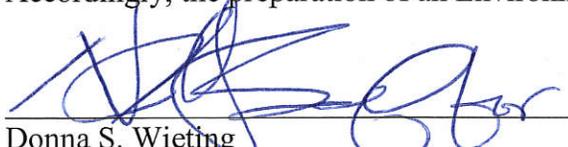
14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: The proposed action would not result in any significant cumulative adverse effects on target or non-target species incidentally taken by harassment due to seismic survey activities. We have determined that marine mammals may exhibit behavioral changes such as avoidance of or changes in movement within the action area. However, we do not expect the authorized harassment to result in significant cumulative adverse effects on the affected species or stocks.

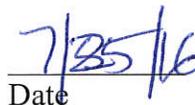
We have issued incidental take authorizations for other seismic research surveys (to Lamont-Doherty and other entities) that may have resulted in the harassment of marine mammals, but they are dispersed both geographically (throughout the world) and temporally, are short-term in nature, and all use mitigation and monitoring measures to minimize impacts to marine mammals. Because of the relatively short time that the project area would be ensonified, the action would not result in synergistic, or cumulative adverse effects that could have a substantial effect on any species.

DETERMINATION

In view of the information presented in this document, Lamont-Doherty's application and the analysis contained in the Final EA prepared by NMFS, it is hereby determined the issuance of an IHA to Lamont-Doherty for the take, by harassment, of small numbers of marine mammals incidental to the conduct of seismic surveys in accordance with Alternative 1 (Preferred Alternative) will not significantly impact the quality of the human environment. In addition, we have addressed all beneficial and adverse impacts of the action to reach the conclusion of no significant impacts. Accordingly, the preparation of an Environmental Impact Statement for this action is not necessary.



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Date