

**FINDING OF NO SIGNIFICANT IMPACT FOR THE ISSUANCE OF AN
INCIDENTAL HARASSMENT AUTHORIZATION TO THE U.S. NAVY'S OFFICE
OF NAVAL RESEARCH TO TAKE MARINE MAMMALS BY HARASSMENT
INCIDENTAL TO ARCTIC RESEARCH ACTIVITIES

AND ADOPTION OF THE NAVY'S FINAL OVERSEAS ENVIRONMENTAL
ASSESSMENT**

I. INTRODUCTION

The National Marine Fisheries Service (NMFS) received an application requesting incidental take of marine mammals from the U.S. Navy's Office of Naval Research (ONR) in connection with oceanographic experiments analyzed in their Final Overseas Environmental Assessment (OEA) for ONR Arctic Research Activities in the Beaufort Sea 2018-2021. NMFS is required to review applications and, if appropriate, issue Incidental Take Authorizations (ITAs) pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.). In addition, the National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) Parts 1500 - 1508, and National Oceanic and Atmospheric Administration (NOAA) policy and procedures¹ require all proposals for major federal actions be reviewed with respect to environmental consequences on the human environment. Therefore, the purposes of this document are twofold. First, this document explains NMFS's determination to adopt the Navy's Final OEA for the NEPA review that NMFS is required for its consideration of whether to issue an Incidental Harassment Authorization (IHA) to ONR. Second, this document explains NMFS rationale for its finding that issuance of this IHA will not significantly impact the quality of the human environment.

NMFS proposes to issue an IHA to ONR pursuant to Section 101(a)(5)(D) of the MMPA and 50 Code of Federal Regulations (CFR) Part 216². This IHA will be valid from 9/20/2018 through 9/19/2019 and authorizes takes, by Level B harassment, of small numbers of marine mammals incidental to oceanographic experiments in the Beaufort Sea. NMFS proposed action is a direct outcome of the Navy's request for an IHA, which involves underwater acoustic transmissions and icebreaking. Use of active towed, moored, and drifting acoustic sources, as well as sound from icebreaking, has the potential to cause marine mammal harassment in the form of behavioral disturbance and temporary hearing impairment and therefore, qualifies for an authorization from NMFS. An authorization for incidental takings shall be granted if NMFS finds that the taking 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 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.

¹ NOAA Administrative Order (NAO) 216-6A "Compliance with the National Environmental Policy Act, Executive Orders 12114, Environmental Effects Abroad of Major Federal Actions; 11988 and 13690, Floodplain Management; and 11990, Protection of Wetlands" issued April 22, 2016 and the Companion Manual for NAO 216-6A "Policy and Procedures for Implementing the National Environmental Policy Act and Related Authorities" issued January 13, 2017

NMFS's issuance of this IHA allowing the taking of marine mammals, consistent with provisions under the MMPA and incidental to an applicant's lawful activities, is considered a major federal action. Therefore, NMFS conducted an environmental review of the Navy's application and Final OEA and determined adopting this OEA and preparing a separate Finding of No Significant Impact (FONSI) is appropriate for NMFS's consideration to issue an IHA to ONR. This FONSI evaluates the context and intensity of the impacts on marine mammals associated with NMFS's consideration to issue this IHA to ONR and documents NMFS's determination to adopt the Navy's Final OEA pursuant to 40 CFR 1506.3.

II. BACKGROUND

ONR is proposing a three-year study of the effects of the changing Arctic environment on acoustic propagation. The Naval need for this research relates to environmental characterization in support of combat capable forces ready to deploy worldwide in accordance with Title 10 United States Code (U.S.C.) §§ 5062, and to support the aims of the Arctic Research and Policy Act (15 U.S.C. §§ 4101 *et seq.*). For the Arctic, this consists of potential submarine and surface ship operations with active sonar for anti-submarine warfare and submarine/surface ship force protection. The characterization of the potential Arctic battlespace, given the changes in water properties and ice cover, is critical to performance predictions for active and passive acoustic systems. The Navy's strategic objectives for the Arctic Region, according to the U.S. Navy Arctic Roadmap 2014-2030 (Chief of Naval Operations 2014) are to (1) ensure U.S. Arctic sovereignty and provide homeland defense, (2) provide naval forces ready to respond to crises and contingencies, (3) preserve freedom of the seas, and (4) promote partnerships within the U.S. Government and international allies. The Department of Defense specifically tasks the Navy with providing "Increased certainty and accuracy of sea ice forecasts and predictions, and by showing improved understanding of feedback processes driving sea ice variability." Predictive models of the Arctic environment are needed to understand how military equipment, sensors, training, and operation may be affected by changing conditions.

This is the first year of the proposed Arctic Research Activities and NMFS has not previously issued ITAs to ONR for any similar activities. However, NMFS has previously issued an IHA to the Navy for harassment of marine mammals incidental to Ice Exercises (ICEX) in the Arctic (83 FR 6522, February 14, 2018).

III. PROPOSED ACTION AND ALTERNATIVES SUMMARY

A. ONR Proposed Action

ONR is proposing to conduct scientific experiments in the Beaufort Sea from August 2018² to December 2021. The Proposed Action includes several scientific objectives which support the Navy's Arctic and Global Prediction Program as well as the Ocean Acoustics Program. Specifically, the Proposed Action would include the Stratified Ocean Dynamics of the Arctic (SODA) project, Arctic Mobile Observing System (AMOS) project, Ocean Acoustics field work, and Naval Research Laboratory (NRL) experiments. The Proposed Action would occur within the Study Area in Figure 1-1 on page 1-2 of the Navy's OEA. All activities, except for the transit of ships or

² ONR's activities began in August 2018, but the first phase of the project only included the use of autonomous underwater gliders that do not have the potential to result in take of marine mammals. Activities that may result in take of marine mammals are scheduled to begin in September 2018. Only activities likely to result in take are assessed in this document.

aircraft, would occur in either the U.S. Exclusive Economic Zone or the global commons (waters greater than 200 nautical miles (370 kilometers) from shore).

The SODA project would begin field work in August 2018 and continue to the summer/fall of 2020 consisting of research cruises and the deployment of autonomous measuring devices for year-round observation of water properties (e.g., temperature and salinity) and the associated stratification and circulation. The deployment of navigational sources would occur in the “deep water area” of the Study Area (depicted by 12 red dots in Figure 1-1 in the Navy’s OEA). Navigation sources transmit intermittently from multiple locations. Autonomous vehicles would be able to navigate by receiving the acoustic signals from multiple locations and triangulating. This is needed for vehicles that are under ice and cannot communicate with satellites. These physical processes are related to the ice cover and as the properties of the ice cover change, the water properties will change as well. Warm water feeding into the Arctic Ocean also plays an important role changing the environment. Observations of these phenomena require geographical sampling of areas of varying ice cover and temperature profile, and year-round temporal sampling to understand what happens during different parts of the year. Autonomous systems (*i.e.*, gliders, unmanned undersea vehicles, moored sources) are needed for this type of year-round observation of a representative sample of active waters. Geolocation of autonomous platforms requires the use of acoustic navigation signals, and therefore, year-long use of active acoustic signals.

AMOS is planning field work from the summer/fall of 2019 to the summer/fall of 2021. The purpose of AMOS is to advance the technology required to field and operate an autonomous network of mobile sensing platforms in the Arctic, providing the Navy with the potential for persistent, year-round maritime domain awareness capability in the Arctic for both ice-covered and ice-free conditions. AMOS would develop and test a mobile array of unmanned platforms in the surface, air, and undersea domains. The first generation of acoustic navigation beacons, deployed as part of SODA, would be usable (due to battery lifetime) through the summer of 2021, and while Arctic research may continue after that date, the nature of the platforms and the locations of deployments is expected to substantially change and be covered under future environmental planning documentations.

The ONR Ocean Acoustics Program also supports Arctic field work. The emphasis of the Ocean Acoustics field efforts is to understand how the changing environment affects acoustic propagation and the noise environment. These experiments are also spatially and temporally dependent, so observations in different locations on a year-round basis would be required. The potential for understanding the large-scale (range and depth) temperature structure of the ocean requires the use of long-range acoustic transmissions. The use of specialized waveforms and acoustic arrays allows signals to be received over a hundred kilometers from a source, while only requiring moderate source levels. The Ocean Acoustics program may perform these experiments in conjunction with the Arctic and Global Prediction Program by operating in the same location and with the same research vessels.

NRL would also conduct Arctic research in the same timeframe with the same general scientific purpose as the Arctic and Global Prediction and Ocean Acoustics programs. Up to ten ice-tethered acoustic buoys are expected to be deployed for real-time environmental sensing and mid-frequency sonar performance predictions in the deep water area. Real-time assimilation of acoustic data into an ocean model is also planned. The ice-tethered buoys are designed for long-range transmissions in the Arctic and can perform acoustic experiments in conjunction with other ongoing experiments.

NRL also plans to perform ice-characterization experiments with autonomous unmanned vehicles and aircraft. As ONR is a parent organization to NRL, ONR serves as action proponent for both ONR and NRL activities in the Navy's OEA.

B. NMFS's Proposed Action

Sections 101(a)(5)(A) and (D) of the MMPA give NMFS the authority to authorize the incidental but not intentional take of small numbers of marine mammals by harassment, provided certain determinations are made and statutory and regulatory procedures are met. To authorize the incidental take of marine mammals, NMFS evaluates the best available scientific information to determine whether the take would have a negligible impact³ on marine mammals or stocks, will be within small numbers of species or stock abundance and whether the activity would have an unmitigable impact on the availability of affected marine mammal species for subsistence use. NMFS cannot issue ITAs if it would result in more than a negligible impact on marine mammals or stocks or would result in an unmitigable impact on subsistence uses. NMFS must also prescribe the permissible methods of taking and other means of effecting the least practicable impact on the species or stocks of marine mammals and their habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance. Where applicable, NMFS must prescribe means of effecting the least practicable impact on the availability of the species or stocks of marine mammals for subsistence uses. ITAs will include additional requirements or conditions pertaining to monitoring and reporting.

Since NMFS's proposed action would authorize take of marine mammals incidental to a subset of the activities analyzed in the Navy's Final OEA, these components of the Navy's proposed action are the subject of NMFS's proposed action. Therefore, NMFS's proposed action is a direct outcome of the Navy's request for an IHA and would authorize take of marine mammals incidental to a subset of the activities analyzed in the Navy's Final OEA.

C. Alternatives Considered by the Navy

The Navy analyzed three alternatives in their Final OEA, the action alternatives (Alternatives 1 and 2) and the No Action Alternative.

Alternative 1 would be to conduct all the scientific research described in the Proposed Action (III. A above), including the use of permitted active acoustic sources in shallow and deep water. This meets the core scientific objectives of the research projects, particularly the measurement of acoustic oceanographic, and ice properties over a multi-year period and the use of acoustic sources as navigation aids to unmanned vehicles in the basin. It also meets secondary objectives of performing acoustic testing in a complex three directional bathymetric environment by including the use of permitted active acoustic sources in the shelf areas.

Alternative 2 (Preferred Alternative) would be to conduct only that scientific research that is directly related to the core scientific objectives laid out in Alternative 1. Under Alternative 2, only deep water area, permitted active acoustic sources and *de minimis* sources would be used.

³ NMFS defines "negligible impact" 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." (50 CFR § 216.103)

The No Action Alternative would not involve any ONR activity associated with the Proposed Action.

D. Alternatives Considered by NMFS

In accordance with NEPA and CEQ Regulations, NMFS is also required to consider a reasonable range of alternatives to a Proposed Action. Since NMFS is adopting the Navy's Final OEA, it reviewed this document to determine whether it met this requirement. NMFS determined the Navy's analysis of alternatives in their Final EA is adequate for purposes of NEPA and the CEQ regulations and therefore chose not to supplement this EA by developing and evaluating additional alternatives. However, based on the statutory framework explained in Section III, paragraph B above, NMFS considers two alternatives, a no action alternative in which NMFS denies the Navy's application and an action alternative in which it grants the application and issues an IHA to ONR. Thus, the alternatives analysis (Section 2.4) in the Navy's Final OEA support NMFS's alternatives described below.

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 ITA requests and to prescribe mitigation, monitoring, and reporting with any authorizations. Under NMFS's No Action Alternative, NMFS would not issue the IHA to ONR, and NMFS assumes ONR would not conduct their Arctic Research Activities.

Action Alternative: NMFS issues the IHA to ONR authorizing take of marine mammals incidental to the subset of activities described under the Navy's Preferred Alternative (Alternative 2 in Section 2.4.3) in the Final OEA, with the mitigation, monitoring and reporting measures in Section 5 in the Final OEA and in NMFS's proposed IHA under "Summary of Requests" and "Description of Specified Activities".

IV. ENVIRONMENTAL REVIEW

NMFS independently reviewed the Navy's Final OEA and concludes the impacts evaluated by the Navy are substantially the same as the impacts of NMFS' proposed action to issue an IHA for the take of marine mammals incidental to the Arctic Research Activities. In particular, the Final OEA contains an adequate evaluation of the direct, indirect and cumulative impacts on marine mammals, including species listed under the Endangered Species Act (ESA) and the marine environment. The Final OEA also addresses NOAA's required components for adoption because it meets the requirements for an adequate EA under the CEQ regulations and NOAA policy and procedures. For example, the Final OEA includes:

- a discussion of the Navy's proposed action and purpose and need for the action and a discussion of the MMPA authorization process necessary to support implementation of the action
- evaluation of a reasonable range of alternatives to the proposed action, including a no action alternative, and alternatives to mitigate adverse effects to marine mammals
- a description of the affected environment including the status of all marine mammals species likely to be affected

- a description of the environmental impacts of the proposed action and alternatives, including direct, indirect and cumulative impacts on marine mammals and projected estimate of incidental take
- identification and evaluation of reasonable mitigation measures to avoid or minimize adverse impacts to marine mammals
- a listing of agencies consulted

V. PUBLIC INVOLVEMENT

NMFS did not participate as a cooperating agency during the development of the Navy's OEA. Regarding the current IHA under consideration, NMFS relied substantially on the public process pursuant to the MMPA to develop and evaluate environmental information relevant to an analysis under NEPA. NMFS made the IHA application available for public review and comment and, separately, published the proposed IHA in the Federal Register (FR) on August 14, 2018 (83 FR 40234). There, NMFS alerted the public it intended to use the MMPA public review process for the proposed IHA to solicit relevant environmental information and provide the public an opportunity to submit comments. In addition, we indicated that we believed it was appropriate to adopt the Navy's Final OEA and posted their OEA online with the publication of the proposed IHA.

During the public comment period, NMFS only received comments from the Marine Mammal Commission (MMC). The MMC concurred with NMFS' preliminary findings in the proposed IHA Federal Register notice, and recommended that NMFS issue the IHA subject to the inclusion of the proposed mitigation, monitoring, and reporting measures identified in that notice. We considered the MMC's comments in response to the publication of the proposed IHA and used these comments to inform our analysis under the MMPA and to develop mitigation, monitoring and other conditions for the final IHA. NMFS's responses to specific comments in the Final IHA is available for review on NMFS's website: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>.

VI. ANALYSIS SUMMARY

The environmental consequences to the marine environment and protected resources are important to the evaluation leading to the decision to issue any given ITA. In particular, because NMFS's action is specific to authorizing incidental take of marine mammals, the key factors relevant to, and considered in a decision to issue any given ITA, are related to NMFS's statutory mission under the MMPA. The information in the following subsections discusses key factors considered in the analysis in the EA along with the evaluation and reasons why the impacts of our proposed action will not significantly impact the quality of the human environment.

A. Environmental Consequences

In the Final OEA, the Navy presented the baseline environmental conditions and impacts for affected resources in the Beaufort Sea. The affected environment and environmental consequences are described in Section 4 of the Navy's Final OEA. Since the anticipated impacts of NMFS's proposed action is predominantly to marine mammals, which, if affected, would be through the introduction of sound into the marine environment during the Arctic Research Activities, the analysis in the Navy's Final OEA specifically describes and addresses the following key issues and environmental concerns:

- Impacts of acoustic stressors such as non-impulsive acoustic sources, aircraft noise, icebreaking noise, and vessel noise on Essential Fish Habitat, marine mammals, invertebrates, and marine birds including species listed as threatened or endangered under the Endangered Species Act (ESA)
- Impacts of physical stressors (including risk of strikes from aircraft and vessels, and icebreaking) on marine mammals, marine birds, invertebrates, and fish
- Impacts of seafloor bottom disturbance on the physical environment and invertebrates
- Impacts of expended material, including risk of entanglement, on invertebrates, marine mammals, and fish

The Non-Impulsive Acoustic Sources section 4.3.2.5.1, Aircraft Noise section 4.3.2.5.2, the Icebreaking Noise section 4.3.2.5.3, and the Icebreaking (Physical Impacts) section 4.3.2.5.6 in the Navy's OEA contain the majority of the analysis that relates to NMFS's action of issuing the IHA for Arctic Research Activities. This includes the assessment by the Navy to provide a qualitative evaluation of potential impacts to marine mammals, including descriptions of the potential acoustic impacts used to indicate at what received sound levels marine mammals will experience certain effects (equivalent to regulatory definitions of harassment pursuant to the MMPA). Other subsections contain analyses related to potential impacts on marine mammal habitat and prey along with the potential for cumulatively significant impacts to marine mammals, all of which supports this analysis for issuance of the IHA to ONR. The principle types of impacts from the non-impulsive acoustic sources and icebreaking noise are limited to underwater noise (and its effects on marine biota). The principle impact from icebreaking (physical impacts) is temporary behavioral changes. The Navy's Preferred Alternative is expected to result in pressure and noise levels that may affect marine mammals; these effects are expected to be limited to temporary auditory threshold shifts (TTS) and behavioral harassment (Level B harassment).

The anticipated impacts of the Navy's research activities associated with the proposed action are primarily from increased levels of underwater sound resulting from non-impulsive acoustic sources and icebreaking. The analysis in the OEA indicated these impacts would be highly localized and short term in nature. Underwater sound associated with the research activities could have an effect on the wildlife in the Study Area in the Beaufort and Chukchi Seas. As such, the OEA analyzed the impacts to wildlife as well as impacts to fish, marine birds, invertebrates, and Essential Fish Habitat. The OEA concludes the impacts associated with the proposed action are minor, temporary, and result in no significant impacts, including impacts on species listed under the Endangered Species Act (ESA). No marine mammals are anticipated to be exposed to sound levels resulting in injury or mortality during the conduct of the research activities.

B. Significance Evaluation

The CEQ Regulations state that the significance of an action be analyzed in terms of both "context" and "intensity" and lists ten criteria for intensity. The Companion Manual for NAO 216-6A requires consideration of CEQs context and intensity criteria (40 CFR 1508.27(a) and 40 CFR 1508.27(b)) along with six additional factors for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to NMFS proposed action and is considered individually as well as in combination with the others. In addition, NMFS relied on the analysis in the Navy's Final OEA, incorporating certain material by reference per 40 CFR 1502.21

in the evaluation discussed below. The Navy's Final OEA and other information and documentation are available on NOAA Fisheries web site: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

NMFS's proposed action is not expected to cause either beneficial or adverse impacts resulting in any significant effects. NMFS is proposing to authorize take incidental to Arctic Research Activities for marine mammal species expected to occur in the Study Area. Therefore, impacts from NMFS's proposed action are expected to be predominantly to marine mammals, which, if affected, would be through the introduction of sound into the marine environment from icebreaking and acoustic sources. The acoustic sources used by ONR emit low- and mid-frequency noise into the water column, which has the potential to behaviorally disturb marine mammals and, for some species, cause temporary hearing impairment. In addition, noise can mask the detection or interpretation of important sounds. Given their reliance on sound for basic biological functioning (e.g., foraging, mating), marine mammals are the species most vulnerable to increased noise in the marine environment, although marine mammal prey (e.g., fish and squid) may be impacted in some of the same ways. However, NMFS expects its action to have only intermittent, localized impacts on marine mammals and their habitat, due to the fact that the acoustic sources operate independently of each other in a large geographic area and no permanent hearing impairment in marine mammals is expected or authorized. Icebreaking may physically disrupt habitat but the proportion of ice disturbed is small relative to the overall amount of available ice habitat. While NMFS predicts direct adverse effects to individuals it does not anticipate population-level effects that would rise to the level of significance. Effects to marine mammal populations are expected to be negligible for all species.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

The issuance of this IHA to ONR to authorize take of marine mammals is not likely to have the potential for this kind of effect because the proposed Arctic Research Activities will take place in offshore areas and is unlikely to overlap with activities conducted by the public. NMFS only authorizes the take of marine mammal species associated with this research, which does not involve the public or expose the public directly (e.g., chemicals, diseases) or indirectly (e.g., food sources) to hazardous or toxic materials in a way that would be linked to the quality of the environment and well-being of humans..

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

Authorizing the harassment of marine mammals through this IHA has no foreseeable impact to unique areas, such as historic or cultural resources, parkland, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. To the extent the harassment authorized under the IHA impacts ecologically critical areas, this impact is not substantial. NMFS only anticipates marine mammals might be displaced temporarily and will not permanently

vacate any areas, due to the harassment authorized in this IHA. We expect natural processes and the environment to recover from any such displacement.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The effects of issuing an IHA to ONR 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 or the effects to marine mammals. NMFS has assessed and authorized incidental take for similar acoustic sources and activities conducted by the Navy and developed relatively standard mitigation and monitoring measures, all of which have been vetted during past public comment periods. Additionally, other agencies and the public had the opportunity to review and comment on this action, when the notice of the Proposed IHA published in the Federal Register on August 14, 2018 (83 FR 40234). In response to the notice of the Proposed IHA, NMFS received comments from the Marine Mammal Commission, and none of the comments indicated that the proposed activities or the effects of the activities on the quality of the human environment were likely to be highly controversial. We determined, based on the best available scientific literature, the limited duration of the project, and the low-level effects to marine mammals, that the issuance of an IHA would have a negligible impact on the affected species or stocks of marine mammals.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The potential risks associated with the issuance of the IHA is not unique or unknown, nor is there significant uncertainty about impacts. NMFS has previously issued authorizations for use of similar acoustic sources to the Navy and to several applicants conducting icebreaking in the Arctic and conducted NEPA analysis on those projects. Each authorization required marine mammal monitoring, and monitoring reports have been reviewed by NMFS to ensure that activities have a negligible impact on marine mammals. In no case have impacts to marine mammals, as determined from monitoring reports, exceeded NMFS's analysis under the MMPA and NEPA. Therefore, the effects on the human environment are not likely to be highly uncertain or involve unique or unknown risks.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The issuance of this IHA to ONR 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' 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 and 50 CFR Part 216 on a case-by-case basis. The Navy's Arctic Research activities has no unique aspects that would suggest it would be a precedent for any future actions.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

The Navy considered cumulative impacts from its proposed action and other past, present, and reasonably foreseeable projects in the Study Area and found that they were not significant because of the relative scale of the projects and the nature and magnitude of specific impacts. The acoustic sources deployed will remain in use for at least one year but produce sound only intermittently. Icebreaking would occur on only a few days per year, if required. The numbers of marine mammals authorized to be taken represent less than two percent of their relative stock abundance. As stated in the proposed IHA, due to the nature of ONR's research activities, and implementation of mitigation and monitoring measures, NMFS anticipates impacts to marine mammals to be limited to short term lower-level behavioral harassment, such as alteration of dive or foraging behavior or avoidance. Although animals may modify their behavior as a result of exposure to elevated sound levels, these changes would be within the normal range of behaviors for the animal (*e.g.*, using a different breathing hole). Thus, even repeated harassment to some small subset of the overall stock is unlikely to result in any significant decrease in fitness for the affected individual, and would not result in any adverse impact to the stock as a whole. Any future authorizations would have to undergo the same process and would take ONR's proposed activities into consideration when addressing cumulative effects.

8. Can the proposed action reasonably be expected 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?

NMFS' proposed action is limited to the authorization to harass marine mammals consistent with the MMPA definition of "Level B harassment." Therefore, there is no potential to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural, or historical resources. In addition, the Study Area lies outside of U.S. territorial waters, in the U.S. Exclusive Economic Zone (EEZ) and high seas. No significant scientific, cultural, or historical resources exist in the Study Area.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

We have determined that the proposed activities may result in some Level B harassment, in the form of short-term and localized changes in behavior and/or temporary displacement, of beluga whales, which are not listed under the ESA, and Arctic ringed seals and Beringia DPA bearded seals, which are both listed as threatened under the ESA. NMFS Alaska Regional office (AKR) issued a Biological Opinion on September 7, 2018, concluding that the issuance of an IHA to ONR for Arctic Research Activities is not likely to jeopardize the

continued existence of Arctic ringed seals or Beringia DPS bearded seals. No critical habitat has been established for either species.

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, with limited potential for temporary threshold shift, falling within the MMPA definition of “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. Therefore, the issuance of the IHA to ONR will not have a significant impact on endangered or threatened species or critical habitat.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The issuance of this IHA to ONR would not violate any federal, state, or local laws for environmental protection. NMFS compliance with environmental laws and regulations is based on NMFS’s action and the nature of the applicant’s activities. NMFS complied with the MMPA’s requirements in issuing this IHA. NMFS also consulted under Section 7 of the ESA to determine if the issuance of this IHA would likely jeopardize the continued existence of listed species or result in an adverse modification of critical habitat. The consultation concluded that issuance of an IHA would not jeopardize any listed species or destroy or adversely modify critical habitat. ONR fulfilled its responsibilities under the MMPA for this action and will be required to obtain any additional federal, state and local permits necessary to carry out the proposed geophysical survey activities.

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considered other factors, such as the likely nature of any responses (e.g., intensity, duration), the context of any responses (e.g., critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assessed the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’s implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (e.g., as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

ONR calculated the number animals that will be taken by Level B harassment from the acoustic sources using the Navy Acoustic Effects Model (NAEMO) and behavioral response function. The takes from icebreaking were calculated using the Level B harassment threshold for continuous sound sources (120 dB) alongside NAEMO. The numbers of marine mammals that we propose for authorized take would be considered small relative to the relevant populations (less than two percent for all stocks) for the species for which abundance estimates are available.

Additionally, the proposed activity is temporary and of relatively short duration. Potential adverse effects on prey species would also be temporary and spatially limited. No mortality is anticipated or authorized. Furthermore, alternate areas of similar habitat value for affected marine mammals would be available allowing animals to temporarily vacate the affected areas to avoid exposure to sound.

For these reasons, impacts resulting from this activity are not expected to adversely affect the marine mammal species or stocks as defined in the MMPA. Accordingly, NMFS determined that the specified activity would have a negligible impact on the affected species and stocks of marine mammals.

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

NMFS's action is the authorization of the taking of marine mammals incidental to the Arctic Research Activities project in the Beaufort and Chukchi Seas, north of Alaska. Issuance of the IHA would not result in impacts to the managed fish species, as it would only authorize harassment to marine mammals.

The Navy described the EFH for Arctic cod within the Study Area in Section 3.2.2.4 as well as impacts to fish species and fisheries in Section 4.3.2.3 and impacts to EFH in Section 4.3.2.4. The Navy concluded that there could be changes in behavior and other non-lethal, short-term, temporary impacts, and injurious or mortal impacts on a small number of individuals in isolated cases of vessel strike or entanglement, but that there would be no significant impacts on fish populations..

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

Our action of issuing an IHA to ONR to incidentally take marine mammals due to research activities would not cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH). The only fish species for which EFH has been designated within the Study Area is Arctic cod. Elevated sound levels from non-impulsive acoustic sources and icebreaking, as well as physical impacts from icebreaking, have the potential to impact Arctic cod EFH. The Navy concluded in their OEA that the effects from the research activities may result in the reduction of quantity or quality of EFH and therefore initiated consultation with NMFS Office of Habitat Conservation under the Magnuson-Stevens Fishery Conservation and Management Act on February 22, 2018. NMFs concurred with the Navy on March 22, 2018.

The mitigation and monitoring measures required by the IHA would not affect habitat or EFH. Therefore, NMFS, Office of Protected Resources, Permits and Conservation Division has determined that the issuance of an IHA for the taking of marine mammals incidental to the proposed research activities would not have an adverse impact on EFH, and an EFH consultation is not required.

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

NMFS's action is the authorization of the taking of marine mammals incidental to ONR's Arctic Research Activities in the Beaufort and Chukchi Seas north of Alaska. Issuance of the IHA would not result in impacts to the vulnerable marine or coastal ecosystems, as it would only authorize harassment to marine mammals.

We do not expect the issuance of an IHA for the take of marine mammals incidental to Navy's Arctic Research Activities would cause substantial damage to marine habitats or coastal habitats. The acoustic sources used by ONR would be deployed for up to three years using standard wagon wheel anchors. All moored and drifting sources would be recovered at the end of the project. Icebreaking may modify the sea ice habitat in the Study Area but the effects will be localized and temporary. No damage to marine habitats is expected from the Arctic Research Activities. No damage is expected for coastal habitats because the Study Area is in deep waters of the Arctic, well offshore of any coastal habitat. No deep sea corals or coral reefs are present in the Study Area. Furthermore, the IHA is limited to the take of marine mammals incidental to survey activities and does not authorize the activity itself, thus it is limited to activities that do not have an effect on ocean and these habitat types. Mitigation and monitoring measures required by the IHA for Navy's proposed research 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.

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

We do not expect that our action of issuing an IHA to ONR would have a substantial impact on biodiversity and/or ecosystem function within the Study Area. The impacts of the proposed action on marine mammals are specifically related to the sound produced by non-impulsive acoustic sources and icebreaking. Any impacts are expected to be limited to behavioral reactions (e.g., avoidance), and temporary auditory disruption (TTS), and only during times when acoustic sources are active. Marine mammals may forage in the vicinity of the acoustic sources and in the path of the icebreaking vessel, and this behavior may be affected, but no substantial predator-prey relationships would be substantially changed. Any impacts would be temporary and localized in nature and not result in substantial impacts to marine mammals or to their role in the ecosystem. The IHA would authorize the Level B harassment of beluga whales, ringed seals, and bearded seals, and neither serious injury nor mortality would be authorized.

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

The issuance of an IHA to ONR will not result in the introduction or spread of a non-indigenous species into the human environment, as equipment that could cause such effects is not proposed for use. Moreover, the IHA does not mandate marine transits outside of the local area or have any relation to bilge water or other potential causes of the introduction or spread of a non-indigenous species.

VII. CONDITIONS – MITIGATION, MONITORING AND REPORTING

NMFS does not authorize ONR's Arctic Research Activities, however, NMFS does authorize the incidental take of marine mammals under its jurisdiction in connection with these activities and prescribes, where applicable, the methods of taking and other means of effecting the least practicable impact on the species and stocks and their habitats. NMFS's issuance of this IHA is thus conditioned upon reporting requirements and the implementation of mitigation and monitoring designed to reduce impacts to marine mammals to the level of least practicable impact. These conditions are summarized below and are described in detail in Section 5 of the Navy's OEA as well as the final IHA, available on NMFS's website at <https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-military-readiness-activities>.

All vessels associated with the Arctic Research Activities project will maintain a vigilant watch while in transit, while towing and deploying acoustic sources, and while icebreaking. Towed acoustic sources will be turned off if marine mammals are observed within 200 yards (ya; 183 meters (m)) from the source. During mooring deployment, visual observation will begin 30 minutes prior to deployment and continue through 30 minutes following deployment. Deployment will halt if a marine mammal is observed within 60 yd (55 m) of the deployment. Deployed sources will remain in place and will operate at the specified pulse lengths and duty cycles until they are turned off the following year or the battery fails. Ships will maintain a separation distance of 500 yd (457 m) from observed whales, and 200 yd (183 m) from observed pinnipeds, provided it is safe to do so in ice-free waters. Researchers conducting on-ice experiments and all aircraft will maintain a separation distance of 1,000 feet (305 m) from any sighted pinniped. ONR is required to submit a draft monitoring report to NMFS within 90 days of the conclusion of visual monitoring.

VIII. DETERMINATION

Based on the information presented herein along with the application and analysis in the Final OEA prepared by the Navy, it is hereby determined the issuance of the IHA to ONR 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.



AW

Donna S. Wieting
Director, Office of Protected Resources

9/20/18

Date