

**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 IN THE
BEAUFORT SEA OCTOBER 2021 – OCTOBER 2022 (YEAR 4)
AND ADOPTION OF THE NAVY’S FINAL SUPPLEMENTAL OVERSEAS
ENVIRONMENTAL ASSESSMENT**

I. INTRODUCTION

The National Marine Fisheries Service (NMFS) received an application from the U.S. Navy’s Office of Naval Research (ONR) requesting authorization for the take of marine mammals incidental to their oceanographic experiments in the Beaufort Sea. This is the fourth year of these military research activities. The impacts of the previous years’ experiments were analyzed in their 2018 Overseas Environmental Assessment (OEA) and 2019 Supplemental Overseas Environmental Assessment (SOEA). A 2021 SOEA provided to NMFS, entitled *Supplemental Overseas Environmental Assessment For Office of Naval Research Arctic Research Activities in the Beaufort Sea October 2021 – October 2022*, updates and revises the 2018 OEA and the 2019 SOEA to reflect revised changes in the Arctic Research Activities (ARA), including scientific experiments for the October 2021 – October 2022 period. 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 -1508¹, and National Oceanic and Atmospheric Administration (NOAA) policy and procedures² 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’ determination to adopt ONR’s Final SOEA for the NEPA review that NMFS is otherwise required to develop 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 October 5, 2021 through October 4, 2022 and authorize take, by Level B harassment only, of small numbers of marine mammals incidental to oceanographic experiments in the Beaufort Sea and eastern Chukchi Sea. NMFS’ proposed action is a direct outcome of the ONR’s request for an IHA, which involves underwater acoustic transmissions that will occur during research cruises. Use of active moored and drifting acoustic sources has the potential to cause marine mammal harassment in the form of

¹ This FONSI is being prepared using the 2020 CEQ NEPA Regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020, and reviews begun after this date are required to apply the 2020 regulations unless there is a clear and fundamental conflict with an applicable statute. 85 Fed. Reg. at 43372-73 (§§ 1506.13, 1507.3(a)). The NEPA review began on August 4, 2021 and accordingly proceeds under the 2020 regulations.

² 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.

behavioral disturbance and therefore, requires an authorization from NMFS. An authorization for incidental take 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 take.

NMFS' issuance of this IHA allowing the take 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 ONR's application and 2021 Final SOEA and determined adoption of this 2021 Final SOEA and preparing a separate Finding of No Significant Impact (FONSI) is appropriate for NMFS' consideration to issue an IHA to ONR. This FONSI evaluates the context and intensity of the impacts on marine mammals associated with NMFS' consideration to issue an IHA to ONR and documents NMFS' determination to adopt the ONR's 2021 Final SOEA pursuant to 40 CFR 1506.3.

II. BACKGROUND

ONR is conducting a multi-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 U.S. 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 ready 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 U.S. Navy with providing increased certainty and accuracy of sea ice forecasts and predictions, and 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 fourth year of the proposed ARA. NMFS previously issued two IHAs (83 FR 48799, September 27, 2018; 84 FR 50007, September 24, 2019) and a renewal IHA (85 FR 53333, August 28, 2020), covering three prior years of similar work³.

The 2021 SOEA addresses changes from the 2019 SOEA in Arctic Research Activities (ARA) experiments which consist of two research cruises, aircraft operations used to deploy sources in the

³ 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 began in September 2018. Only activities likely to result in take are assessed in this document.

ice, and sources that are left behind. Below describes the changes in the Proposed Action from the previous analysis.

- The retrieval of the CAATEX source in 2020, which completed that project.
- Preliminary testing of a navigation system with the incorporation of a VLF source into a multi-frequency navigation system designed for navigating UUVs and gliders under the ice. The combination of a VLF (34 Hz) and previously used LF (900 Hz) and MF (8-14 kHz) sources is being investigated as a means of performing navigation on different length scales (lower frequencies allowing navigation control further from the source). VLF sources, as described below, would also be advantageous in mitigating effects on ringed seals. For the Proposed Action, a single ship-deployed VLF source would be used during the cruise.
- A geographic shift of the Study Area farther north, given that a previously planned mooring location closer to shore will not be utilized.
- The omission of previously-planned Spiral Wave Beacon source testing, which was included in the 2018 and 2019 documents. It did not occur and is no longer planned.
- Additional, limited source testing of the LF and MF sources on buoys and a UUV while the ship is still on site.
- The inclusion of a project (UpTempO) with two passive drifting buoys.
- The use of the R/V Sikuliaq, which is not an icebreaking ship, in the 2021 cruise. This is in contrast with previous cruises which required icebreaking.
- A research cruise is planned for October 2022, and would probably involve the USGS Healy. This could be used to end the research process by recovering all equipment, but is more likely that the research will continue in some form. Ship availability also may require that the cruise take place in September 2022 or November 2022. Appropriate environmental planning and regulatory documents will be created depending on when the 2022 cruise occurs and what activities will take place during it.
- Additionally, the Kaschner habitat based density data previously used for the 2018 OEA and 2019 Supplement acoustic effects modeling has been supplemented with new density information from Duke University, the result of Navy-funded effort.

In contrast to the ONR ARA activities in the 2018 OEA and the 2019 SOEA, icebreaking will not occur as part of this action.

Only those resources potentially impacted by these changes were assessed in the 2021 SOEA. The 2021 SOEA analyzed acoustic impacts only to marine mammals due to their being the only resource with potential to be impacted by the proposed changes to ARA.

III. PROPOSED ACTION AND ALTERNATIVES SUMMARY

A. ONR's Proposed Action

ONR is proposing to conduct scientific experiments (ARA) in the Beaufort Sea and eastern Chukchi Sea from October 2021 to October 2022. The proposed action includes several scientific objectives which support ONR's Arctic and Global Prediction Program and Naval Research Laboratory (NRL) Acoustics Division. Specifically, the proposed action includes the Arctic Mobile Observing System (AMOS) project, Ocean Acoustics field work, and NRL experiments. This research comprises

cruises that will occur in October 2021 and during the time frame of August-October 2022; acoustic testing will take place during the cruises, and a multi-frequency navigation system concept test will employ sources left behind during the first cruise. The 2021 cruise will begin on October 3, 2021. A research cruise is planned for October 2022. This could be used to end the research process by recovering all equipment, but is more likely that the research will continue in some form. Ship availability also may require that the cruise take place in September 2022 or November 2022. Appropriate environmental planning and regulatory documents will be created depending on when the 2022 cruise occurs and what activities will take place during it. The proposed action will occur within the Study Area in Figure 1-1 on page 1-3 of the 2021 Final SOEA. All activities will occur entirely in the U.S. Exclusive Economic Zone (EEZ), the Global Commons (waters greater than 200 nautical miles [370 kilometers] from shore), and within parts of the Canadian EEZ.

The ONR Arctic and Global Prediction Program supports two major projects: Stratified Ocean Dynamics of the Arctic (SODA) and AMOS. The SODA and AMOS projects have been previously analyzed in association with previously issued IHAs (see 83 FR 40234, August 14, 2018; 84 FR 37240, July 31, 2019). However, only activities relating to the AMOS project will occur during the period covered by this proposed action. The activities discussed below are expected to produce sound at levels that have the potential to adversely effect marine mammals.

The AMOS project constitutes the development of a new system involving very low (35 hertz [Hz]), low (900 Hz), and mid-frequency transmissions (10 kilohertz [kHz]). The AMOS project will utilize acoustic sources and receivers to provide a means of performing under-ice navigation for gliders and underwater vehicles (UUVs). This will allow for the possibility of year-round scientific observations of the environment in the Arctic. As an environment that is particularly affected by climate change, year-round observations under a variety of ice conditions are required to fully understand the effects of this changing environment on military readiness, as well as understanding the implications of these environmental changes on humans and animals.

Additional leave-behind sources will be deployed by aircraft and will support the NRL project for rapid environmental characterization. This project will use groups of drifting buoys with sources and receivers communicating oceanographic information to a satellite in near real time. These sources will employ low-frequency transmissions only (900 Hz). NRL currently has four buoys that were previously covered under the 2020 IHA that expired on September 13, 2021 (85 FR 53333; August 28, 2020). The proposed action described will allow ONR to re-activate these buoys for observation in the far north from October to December 2021, and deploy additional sources, which will be active from March to August 2022.

The Research Vessel (R/V) *Sikuliaq* will perform the research cruise in October 2021, and conduct testing of acoustic sources during the cruise, as well as leave sources behind to operate as a year-round navigation system observation. The ship to be used in the fall of 2022 is yet to be determined. The most probable option will be the Coast Guard Cutter (CGC) HEALY.

ONR also proposed to use additional sensors and equipment that do not include active acoustics but whose effects to marine mammals are considered *de minimis*. Meaning they produce acoustic signals below the known hearing range of marine mammals. Many of these devices operate at frequencies >200 kHz or very low source levels. While not explicitly described here, these can be reviewed in the *Federal Register* notice for the proposed IHA.

The Proposed Action is to modify the experimental design of the ARA defined in the 2019 SOEA to add a VLF source. The VLF source discussed for this proposed action is different from the one that was previously used in the CAATEX project and will fall under the AMOS project. The inclusion of the VLF has the potential to increase the geographical coverage of the navigation system and also mitigate against effects on marine mammals, as the VLF source produces sounds outside the known hearing range of marine mammals. This will ensure that the scientific experiments are successful and can be used to understand the whole geographic area.

B. NMFS’ Proposed Action

Sections 101(a)(5)(A) and (D) of the MMPA allow NMFS 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 and commercial information to determine whether the take will have a negligible impact⁴ on marine mammal species or stocks, will be of small numbers of individuals, and whether the activity will have an unmitigable impact on the availability of affected marine mammal species for subsistence use. NMFS cannot issue an ITA if it will result in more than a negligible impact on marine mammals or stocks or will 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 include additional requirements or conditions pertaining to monitoring and reporting.

Overview of the IHA parameters

On June 4, 2021, NMFS received a request from ONR for an IHA to take marine mammals incidental to Arctic Research Activities in the Beaufort and eastern Chukchi Seas. ONR's 2021-2022 IHA application was deemed adequate and complete on August 4, 2021. ONR's request is for take of beluga whales (*Delphinapterus leucas*; two stocks) and ringed seals (*Pusa hispida hispida*; one stock) by Level B harassment only. Species information is available in Table 1 below.

Table 1. Species Expected to Occur in the Project Area

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR	Annual M/SI ³
Order Cetartiodactyla – Cetacean – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						

⁴ 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)

Family Monodontidae						
Beluga whale	<i>Delphinapterus leucas</i>	Beaufort Sea ⁴	-, -; N	39,258 (0.229, N/A, 1992)	UND ⁴	102
Beluga whale	<i>Delphinapterus leucas</i>	Eastern Chukchi	-, -; N	13,305 (0.51, 8,875, 2012)	178	55
Order Carnivora – Superfamily Pinnipedia						
Family Phocidae (earless seals)						
Ringed seal ⁵	<i>Pusa hispida hispida</i>	Arctic	T, D; Y	171,418	5,100	6,459

¹ - Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

² - NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

³ - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (e.g., commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

⁴ - The 2016 guidelines for preparing SARs state that abundance estimates older than 8 years should not be used to calculate PBR due to a decline in the reliability of an aged estimate. Therefore, the PBR for this stock is considered undetermined.

⁵ - Abundance and associated values for ringed seals are for the U.S. population in the Bering Sea only.

Ringed seals lack a reliable population estimate for the entire stock. Conn *et al.*, (2014) calculated an abundance estimate of 171,418 ringed seals (95 percent CI: 141,588-201,090) using a sub-sample of data collected from the U.S. portion of the Bering Sea in 2012. Researchers plan to combine these results with those from spring surveys of the Chukchi and Beaufort Seas once complete. During the summer months, ringed seals forage along ice edges or in open water areas of high productivity and have been observed in the northern Beaufort Sea during summer months (Harwood and Stirling, 1992; Freitas *et al.*, 2008; Kelly *et al.*, 2010a; Harwood *et al.*, 2015). This open water movement becomes limited with the onset of ice in the fall forcing the seals to move west and south as ice packs advance, dispersing the animals throughout the Chukchi and Bering Seas, with only a portion remaining in the Beaufort Sea (Frost and Lowry, 1984; Crawford *et al.*, 2012; Harwood *et al.*, 2012). In a telemetry study, ringed seals tagged showed preference for Continental Shelf waters over 96 percent of tracking days, where near-continuous foraging activities were noted (Von Duyke *et al.*, 2020).

The Navy has utilized Kelly *et al.*, (2010a) in their IHA application to determine the abundance estimate for ringed seals, which is based on surveys conducted by Bengtson *et al.*, (2005) and Frost *et al.*, (2004) in the 1990s and 2000 (300,000 ringed seals). NMFS 2013 Alaska SAR (Allen & Angliss, 2013) has noted that this value is likely an underestimate as it is based on surveys that are older than eight years and that make up a portion of the known range of the ringed seal. Conn *et al.*, (2014) determined a different abundance estimate from Kelly *et al.*, 2010a (171,418), which is noted in NMFS's 2020 Alaska SAR (Muto *et al.*, 2021) to also be inaccurate due to the lack of accounting for availability bias for seals that were in the water at the time of the surveys as well as

not including seals located within the shorefast ice zone. Muto *et al.*, (2021) notes that an accurate population estimate is likely larger by a factor of two or more. However, no accepted population estimate is present for Arctic ringed seals. Therefore, in the interest in making conservative decisions, NMFS will adopt the Conn *et al.*, (2014) abundance estimate (171,418) for further analyses and discussions on this proposed action by ONR.

ONR has requested Level B harassment take (behavioral only) of 6,050 ringed seals of the Arctic stock, 375 beluga whales of the Beaufort Sea stock, and 125 beluga whales of the Chukchi Sea stock. Neither ONR nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate

Since NMFS' proposed action authorizes the take of marine mammals incidental to a subset of the activities analyzed in the 2021 Final SOEA, these components of ONR's proposed action are the subject of NMFS' proposed action. Therefore, NMFS' proposed action is a direct outcome of ONR's request for an IHA and will authorize take of marine mammals incidental to a subset of the activities analyzed in the 2021 Final SOEA.

C. Alternatives Considered by the Navy

ONR analyzed three alternatives in their 2021 Final SOEA, the action alternatives (Alternatives 1 and 2) and the No Action Alternative.

Alternative 1 (Preferred Alternative) will be to conduct all the scientific research described in the Proposed Action (III. A above), including the use of a very low frequency (VLF) source as part of the UUV and gliders' navigation systems. This is the VLF source described as part of the AMOS project in the ONR's IHA application and above in the Proposed Action (III. A above). The use of the VLF technology allows ONR to meet 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 would be to conduct only that scientific research that is directly related to the core scientific objectives laid out in Alternative 1. The only difference between Alternative 1 and 2 is the removal of use of the VLF source as part of the UUV and glider's navigation systems.

The No Action Alternative would be limited to a cruise for the retrieval of active acoustic sources that were previously deployed under the past IHA. Under the No Action Alternative, the science experiments could continue through December 2021 under the 2018 OEA, unchanged. The No Action Alternative is carried forward for analysis in this SOEA and provides a baseline for measuring the environmental consequences of the Proposed Action.

In their Final SOEA, ONR analyzed a No Action Alternative and two action alternatives (the Proposed Action [Alternative 1; the Preferred Alternative] and Alternative 2). Alternatives that were considered, but did not meet screening criteria, and therefore were not carried forward, are discussed in the 2018 OEA and 2021 Final SOEA.

D. Alternatives Considered by NMFS

In accordance with NEPA and the 2020 CEQ Regulations, NMFS is also required to consider a reasonable range of alternatives to a proposed action. Since NMFS is adopting the 2021 Final SOEA, it reviewed this document to determine whether it met this requirement. NMFS determined the Navy's analysis of alternatives in their Final SOEA 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 ONR'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 2021 Final SOEA supports NMFS' 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' No Action Alternative, NMFS will not issue the IHA to ONR, and NMFS assumes ONR will not conduct their Arctic Research Activities.

Action Alternative: NMFS issues the IHA to ONR authorizing take of marine mammals incidental to the preferred alternative and all proposed changes to the scientific plan incorporated therein, including a VLF source and part of the UUV and glider's navigation systems, as described under the Navy's Preferred Alternative (Proposed Action in Section 2.4.2) in the 2021 Final SOEA, and the mitigation, monitoring, and reporting measures in Section 5 of the 2021 Final SOEA and in NMFS' proposed IHA under "Summary of Requests" and "Description of Specified Activities".

IV. ENVIRONMENTAL REVIEW

NMFS independently reviewed the 2021 Final SOEA 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 ARA. NMFS has determined that the 2021 Final SOEA 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. This includes consideration of analyses performed in the 2018 OEA. The 2021 Final SOEA also addresses NOAA's required components for adoption because it meets the requirements for an adequate Environmental Assessment under the CEQ regulations and NOAA policy and procedures.

V. PUBLIC INVOLVEMENT

NMFS did not participate as a cooperating agency during the development of the Navy's 2021 Final SOEA. 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 23, 2021 (86 FR 47065). There, NMFS notified the public of its intent 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, NMFS indicated that it was appropriate to adopt the 2021 Final SOEA and posted the document online with the publication of the proposed IHA.

During the public comment period, NMFS received two non-substantive public comments.

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' 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' statutory mission under the MMPA. The information in the following subsections discusses key factors considered in the analysis in the SOEA 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 2021 Final SOEA, the Navy presented the baseline environmental conditions and impacts for affected resources in the Beaufort Sea and eastern Chukchi Sea. The affected environment and environmental consequences are described in Sections 3 and 4 of the 2021 Final SOEA. Since the anticipated impacts of NMFS' proposed action is predominantly to marine mammals, which, if affected, will be through the introduction of sound into the marine environment during the Arctic Research Activities, the analysis in the 2021 Final SOEA specifically describes and addresses the impacts of acoustic stressors such as non-impulsive acoustic sources, aircraft noise, and vessel noise on marine mammals, including ESA listed spp. The 2018 OEA analyzed the effects on Physical resources (atmospheric temperature, bathymetry, current, circulation and water masses), water quality, sea ice, biological resources (invertebrates, marine birds, fish, and essential fish habitat. Between the two documents, the following key issues and environmental concerns are addressed:

- The manner of deployment (by ships, buoys, UUVs, or other related methods) as well as the transit of the vessels is not expected to contribute to take. ONR's action will only utilize non-impulsive acoustic sources, although not all sources will cause take of marine mammals. Furthermore, any marine mammal takes would only arise from the operation of non-impulsive active sources;
- Impacts of acoustic stressors such as non-impulsive acoustic sources, aircraft noise, and vessel noise on marine mammals;
- 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) on marine mammals;
- Impacts of seafloor bottom disturbance on the physical environment and invertebrates; and
- Impacts of expended material, including risk of entanglement, on marine mammals.

The Non-Impulsive Acoustic Sources section (4.1.1.1) and the marine mammal section on aircraft noise (4.3.2.5.2) in the Navy's 2018 OEA contain the majority of the analysis that relates to NMFS' action of issuing the IHA for ARA. This includes an assessment by the Navy that included 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 are limited to underwater noise (and its effects on marine biota). The Navy's Preferred Alternative is expected to result in sound levels that may affect marine mammals; these effects are expected to be limited to behavioral harassment (Level B harassment).

The anticipated impacts of the Navy's ARA associated with the proposed action are primarily from increased levels of underwater sound resulting from non-impulsive acoustic sources. The analysis in the 2021 Final SOEA indicated these impacts will be highly localized and of short duration. Underwater sound associated with the ARA could have an effect on the wildlife in the Study Area. As such, the 2021 Final SOEA analyzed the impacts to marine mammals with other impacts on wildlife including fish, marine birds, invertebrates, and EFH addressed in the 2018 OEA. The 2021 Final SOEA concludes the impacts associated with the proposed action are minor, temporary, and result in no significant impacts, including impacts on species listed under the ESA. We expect 6,050 Level B harassment takes (behavioral only) of ringed seals and 500 Level B harassment takes (behavioral only) of beluga whales. No marine mammals are anticipated to be exposed to sound levels resulting in injury or mortality during the conduct of the ARA.

B. Significance Evaluation

The National Environmental Policy Act (NEPA) requires the preparation of an Environmental Impact Statement (EIS) for any proposal for a major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(C). The 2020 CEQ Regulations direct agencies to prepare a Finding of No Significant Impact (FONSI) when an action not otherwise excluded will not have a significant impact on the human environment. 40 CFR §§ 1500.4(b) & 1500.5(b). To evaluate whether a significant impact on the human environment is likely, the CEQ regulations direct agencies to analyze the potentially affected environment and the degree of the effects of the proposed action. 40 CFR § 1501.3(b). In doing so, agencies should consider the geographic extent of the affected area (i.e., national, regional or local), the resources located in the affected area (40 CFR § 1501.3(b)(1)), and whether the project is considered minor or small-scale (NAO 216-6A CM, Appendix A-2). In considering the degree of effect on these resources, agencies should examine both short- and long-term effects (40 CFR § 1501.3(b)(2)(i); NAO 216-6A CM Appendix A-2 - A-3), and the magnitude of the effect (e.g., negligible, minor, moderate, major). CEQ identifies specific criteria for consideration. 40 CFR § 1501.3(b)(2)(ii)-(iv). Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

In preparing this FONSI, NMFS reviewed the *Supplemental Overseas Environmental Assessment For Office of Naval Research Arctic Research Activities in the Beaufort Sea October 2021 – October 2022* which evaluates the affected area, the scale and geographic extent of the proposed action, and the degree of effects on those resources (including the duration of impact, and whether the impacts were adverse and/or beneficial and their magnitude). The SOEA is hereby incorporated by reference 40 CFR § 1501.6(b) and is available on NMFS' web site:

<https://www.fisheries.noaa.gov/action/incidental-take-authorization-office-naval-research-arctic-research-activities-beaufort-1>.

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' 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 ARA for marine mammal species expected to occur in the Study Area. Therefore, impacts from NMFS' proposed action are expected to predominantly affect marine mammals, which, if affected, will be through the introduction of sound into the marine environment from 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. 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. While NMFS predicts direct adverse effects to individuals it does not anticipate population-level effects that will rise to the level of significant. 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 affect public health or safety because the proposed ARA will take place in offshore areas and are unlikely to overlap with activities conducted by the public. NMFS is only authorizing 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 will 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 that the harassment authorized under the IHA impacts ecologically critical areas, this impact is negligible. NMFS only anticipates that marine mammals might be displaced temporarily, and will not permanently vacate any areas, due to the harassment authorized in this IHA. NMFS expects 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 NMFS' 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 23, 2021 (86 FR 47065). In response to the notice of the Proposed IHA, NMFS received two non-substantive comments during the public comment period. 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. More detail can be reviewed in Public Involvement (Section V above). NMFS 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 will 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 are 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 in the Arctic and conducted NEPA analyses 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' 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 ITAs will 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. ONR's ARA have no unique aspects that would suggest they 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?

In the 2018 OEA, 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. The numbers of marine mammals authorized to be taken represent less than four percent of their relative stock abundance. As stated in the proposed IHA, due to the nature of ONR's ARA, 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 will 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 will not result in any adverse impact to the stock as a whole. Any future authorizations would have to undergo the same analytical 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), part of the Canadian 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?

NMFS has 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, which are listed as threatened under the ESA. PR1 initiated a Section 7 consultation with the NMFS Alaska Regional office (AKR) on August 19, 2021. AKR plans to issue a Biological Opinion by September 29, 2021, concluding that the issuance of an IHA to ONR for ARA is not likely to jeopardize the continued existence of Arctic ringed seals. However, as the issuance of a Biological Opinion is not a prerequisite for the finalization of the FONSI, PR1 has pushed to finalize the NEPA process for this proposed action. No critical habitat has been established for this species.

NMFS expects that the responses of marine mammals from the Preferred Alternative will primarily be in the form of temporary displacement from the area and/or short-term

behavioral changes, falling within the MMPA definition of “Level B harassment.” NMFS believes that take by serious injury or mortality will not occur. NMFS has not 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 will not violate any Federal, state, or local laws for environmental protection. NMFS’ compliance with environmental laws and regulations is based on NMFS’ 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 will 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 will 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. NMFS 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’ 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 estimated number of 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 numbers of marine mammals that NMFS proposes for authorized take will be considered small relative to the relevant populations (less than four 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 will also be temporary and spatially limited. No mortality is anticipated or authorized. Furthermore, alternate areas of similar habitat value for affected marine mammals will 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 will 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' action is the authorization of the taking of marine mammals incidental to the ARA project in the Beaufort and eastern Chukchi Seas, north of Alaska. Issuance of the IHA will not result in impacts to the managed fish species, as it will only authorize harassment to marine mammals.

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?

NMFS' action, of issuing an IHA to ONR for the Arctic Research Activities, will not cause substantial damage to the EFH. The only fish species for which EFH has been designated within the Study Area is the Arctic cod. Elevated sound levels from non-impulsive acoustic sources have the potential to impact Arctic cod EFH. The Navy concluded in their 2018 OEA that the effects from the research activities may result in the reduction of quantity or quality of EFH and therefore initiated consultation with the 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 Navy described the EFH for Arctic cod (*Boreogadus saida*) within the Study Area in the 2018 OEA, specifically in Section 3.2.2.4, in Section 4.3.2.3 for impacts to fish species and fisheries, and in Section 4.3.2.4 for impacts to EFH. 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. The Navy concluded however that these low instances of mortality and adverse effects on individual fish would not rise to the level of having a significant impact on the Arctic cod population.

The mitigation and monitoring measures required by the IHA will not affect habitat or EFH. Therefore, NMFS, Office of Protected Resources, Permits and Conservation Division (PR1) has determined that the issuance of an IHA for the taking of marine mammals incidental to the proposed ARA will 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' action is the authorization of the taking of marine mammals incidental to ONR's ARA in the Beaufort and Chukchi Seas, north of Alaska. Issuance of the IHA will not result in impacts to the vulnerable marine or coastal ecosystems, as it will only authorize harassment to marine mammals.

NMFS does not expect the issuance of an IHA for the take of marine mammals incidental to ONR's ARA will cause substantial damage to marine or coastal habitats. The acoustic sources used by ONR will be deployed using standard wagon wheel anchors. All navigation

sources will be recovered. No damage to marine habitats is expected from the ARA. 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 vulnerable marine or coastal ecosystems. Mitigation and monitoring measures required by the IHA for ONR'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.)?

NMFS does not expect that the action of issuing an IHA to ONR will 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. Any impacts are expected to be limited to behavioral reactions (e.g., avoidance), and only during times when acoustic sources are active. Marine mammals may forage in the vicinity of the acoustic sources, and this behavior may be affected, but no substantial predator-prey relationships will be substantially changed. Any impacts will be temporary and localized in nature and not result in substantial impacts to marine mammals or to their role in the ecosystem. The IHA will authorize the Level B harassment of beluga whales and ringed seals, and neither serious injury nor mortality will 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 ARA, 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' 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 2021 Final SOEA 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 ONR's ARA project will maintain a vigilant watch while in transit and while towing and deploying acoustic sources. 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 occurring during this project or 60 days before any subsequent IHA issuance.

VIII. DETERMINATION

Based on the information presented herein along with the application and analysis in the 2021 Final SOEA prepared by the Navy, it is hereby determined that 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.

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