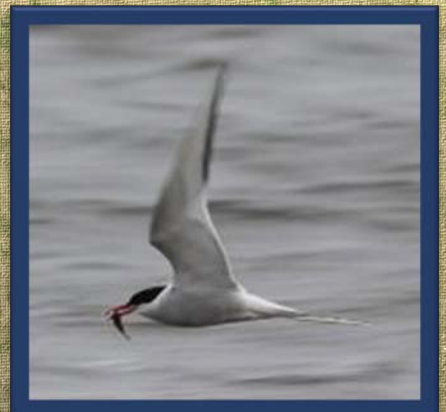


INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Navy Northern Alaska Sites:
Icy Cape, Barrow, and Point McIntyre

August 2021



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U.S. NAVY REGIONAL COMMANDER SIGNATURE

This Integrated Natural Resources Management Plan is a long-term planning document for the Navy's northern Alaska sites—Icy Cape, Barrow, and Point McIntyre—to guide the management of natural resources to support the Navy's mission, while protecting and enhancing natural resources for multiple uses, sustainable yield, and biological integrity. The primary purpose of the plan is to ensure natural resources management and military operations are integrated and consistent with legal and stewardship requirements. This plan and the use of the natural resources complies with the legal mandates and, to the extent practicable, is integrated with public ecosystem goals.

The Northern Alaska Sites Integrated Natural Resources Management Plan meets requirements of the Sikes Act (16 U.S.C. 670a *et seq.*), as amended; Department of Defense (DoD) Instruction 4715.03, *Natural Resource Conservation Program*; DoD Manual 4715.03, *Integrated Natural Resources Management Plan Implementation Manual*; Chief of Naval Operations (OPNAV) Instruction 5090.1E; and OPNAV Manual 5090.1, *Environmental Readiness Program Manual*.

Approved by:



22 SEP 21

B. J. Collins
Rear Admiral, U.S. Navy
Commander, Navy Region Northwest

Date

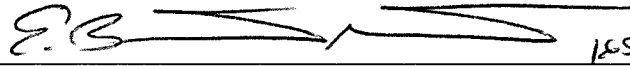
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COMMANDER, NAVY REGION NORTHWEST N4 CARETAKER

This Integrated Natural Resources Management Plan is a long-term planning document for the Navy's northern Alaska sites—Icy Cape, Barrow, and Point McIntyre—to guide the management of natural resources to support the Navy's mission, while protecting and enhancing natural resources for multiple uses, sustainable yield, and biological integrity. The primary purpose of the plan is to ensure natural resources management and military operations are integrated and consistent with legal and stewardship requirements. This plan and the use of the natural resources complies with the legal mandates and, to the extent practicable, is integrated with public ecosystem goals.

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Approved by:



16 Sep 2021

E. B. Miller
Captain, U.S. Navy
Regional Director for Facilities and Environmental (N4)
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Date

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NAVY REGION NORTHWEST ENVIRONMENTAL SIGNATURES

This Integrated Natural Resources Management Plan is a long-term planning document for the Navy's northern Alaska sites—Icy Cape, Barrow, and Point McIntyre—to guide the management of natural resources to support the Navy's mission, while protecting and enhancing natural resources for multiple uses, sustainable yield, and biological integrity. The primary purpose of the plan is to ensure natural resources management and military operations are integrated and consistent with legal requirements and stewardship. This plan and the use of the natural resources complies with the legal mandates and, to the extent practicable, is integrated with public ecosystem goals.

The Northern Alaska Sites Integrated Natural Resources Management Plan meets requirements of the Sikes Act (16 U.S.C. 670a *et seq.*), as amended; Department of Defense Instruction 4715.03, *Natural Resource Conservation Program*; DOD Manual 4715.03, *Integrated Natural Resources Management Plan Implementation Manual*; Chief of Naval Operations (OPNAV) Instruction 5090.1E; and OPNAV Manual 5090.1, *Environmental Readiness Program Manual*.

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U.S. FISH AND WILDLIFE SERVICE SIGNATURE

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 U.S.C. 670a *et seq.*, as amended) and supports U.S. Fish and Wildlife Service (USFWS) policies, management goals, and objectives. In addition, this document was developed in accordance with the June 2015 USFWS Guidelines for Coordination on Integrated Natural Resources Management Plans and the 2013 Memorandum of Understanding between the Department of Defense and the USFWS and the Association of Fish and Wildlife Agencies for a Cooperative Integrated Natural Resource Management Program on Military Installations.

Approved by:

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Fairbanks Fish and Wildlife Field Office
U.S. Fish and Wildlife Service

Date

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ALASKA DEPARTMENT OF FISH AND GAME SIGNATURE

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 U.S.C. 670a *et seq.*, as amended); and supports Alaska Department of Fish and Game policies, management goals, and objectives as described in the 2015 Alaska State Wildlife Action Plan. In addition, this document was developed in accordance with the 2013 Memorandum of Understanding between the Department of Defense and the USFWS and the Association of Fish and Wildlife Agencies for a Cooperative Integrated Natural Resource Management Program on Military Installations.

Approved by:



10/5/21

Doug Vincent-Lang
Commissioner
Alaska Department of Fish and Game

Date

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**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION,
NATIONAL MARINE FISHERIES SERVICE SIGNATURE**

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 U.S.C. 670a *et seq.*, as amended); and supports National Oceanic and Atmospheric Administration National Marine Fisheries Service policies, management goals, and objectives.

Approved by:



September 24, 2021

for

James W. Balsiger, Ph.D.
Regional Administrator, Alaska Region
NOAA National Marine Fisheries Service

Date

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ANNUAL REVIEW AND UPDATES

This Integrated Natural Resources Management Plan will be reviewed annually by the Navy and updated as needed. During the annual review, the Navy and its Sikes Act partners will evaluate the plan for operation and effect. This annual review will take place during the annual Conservation Metrics meeting. A formal review for operation and effect will be conducted in cooperation with U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, and National Oceanic and Atmospheric Administration at least once every five years. The cooperating parties must document mutual agreement in writing on the plan’s operation and effect in the form of a new signature page for the INRMP. The new signature pages shall be appended to the INRMP and uploaded to the Navy Conservation website.

The table below shall document annual reviews and any changes to the plan between five-year reviews that will improve natural resources management.

| <i>Date of Annual Review</i> | <i>Date of Annual Report</i> | <i>Name and Title of Reviewer</i> | <i>Summary of Updates</i> |
|------------------------------|------------------------------|-----------------------------------|---------------------------|
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EXECUTIVE SUMMARY

The Department of Navy (Navy) manages three sites on the North Slope of Alaska abutting the Arctic Ocean: Former Distant Early Warning (DEW) Line Station Icy Cape; Former Naval Arctic Research Laboratory (NARL) Barrow; and Former DEW Line Station Point McIntyre (Figure ES-1). The only active mission on these sites is environmental remediation for past contamination. The Navy has not actively used these sites since approximately 1980. Commander, Navy Region Northwest (CNRNW) Director for Facilities and Environmental (N4) is designated as the caretaker of these sites (CNRNW Instruction 11011.1, 2020). As a tenant command, Naval Facilities Engineering Systems Command Northwest (NAVFAC NW) core staff administer these sites.

This Integrated Natural Resources Management Plan (INRMP) is authorized under the Conservation Programs on Military Installations Act (Sikes Act), as amended (16 U.S.C. 670a *et seq.*). An INRMP is warranted for these sites because 1) the sites meet the threshold for having significant natural resources and 2) the Navy administers these sites and expects to conduct restoration activities on these sites for the foreseeable future, with the possible exception of the Barrow antenna field.

This INRMP is a long-term planning document to guide the adaptive management of natural resources in support of the Navy's mission, while protecting and enhancing natural resources for multiple uses, sustainable yield, and biological integrity. During the review, all signatories review the plan for operation and effect, ensuring that natural resources conservation measures and military operations on the installation are integrated and compliant with stewardship and legal requirements. Secondly, the INRMP serves as a reference for documents prepared during the environmental planning and permitting processes.

Icy Cape covers 156 acres along the Chukchi Sea coast; Barrow, made up of two properties still owned by the Navy, includes 685 acres at the confluence of the Chukchi and Beaufort seas; and Point McIntyre covers 70 acres along the Beaufort Sea coastline (Figure ES-1). Unlike other coastal Navy installations, the Navy does not manage marine nearshore habitats at these sites given the limited mission presence in the marine environment. Natural resources at these sites that have the highest mission impact include the following: 1) Three federally threatened species periodically occur onsite: Steller's eider, spectacled eider, and polar bears; and 2) Approximately 74 percent of these sites is considered marine, lacustrine, or palustrine wetland habitat. The top potential natural resources-related impacts to the mission relate to declines in sea ice, unpredictable weather, thawing permafrost, unpredictable wildlife occurrence, and additional regulatory burden.

The Navy's mission statement for managing natural resources at the northern Alaska sites is as follows: *Support the environmental restoration program and enhance readiness by providing restoration program managers with best available information on species and ecosystem occurrence onsite, while serving as stewards of public lands and cooperating with management partners to maintain and improve ecosystem integrity.*

Managers for the sites have identified the following natural resources management goals and objectives to best support the Navy's mission at these sites:

Goal 1. Support restoration program managers by providing accurate information of fauna occurrence on the Navy's northern Alaska sites, which would minimize wildlife disturbance and feed into the regional body of knowledge of the wildlife of the Arctic Coastal Plain.

Objective 1.1. Minimize and avoid human-wildlife conflict to the maximum extent practicable, while ensuring the Navy can complete its mission.

Objective 1.2. Better define what species are present on or near Navy sites, when or how frequently they are present, and where they occur onsite.

Goal 2. Ensure no net loss of wetlands on the Navy's northern Alaska sites over the next 20 years, either in extent or in functionality, given adequate climate conditions.

Objective 2.1. Minimize adverse impacts to wetland habitats due to Navy activities.

Objective 2.2. Increase the areal extent of tundra habitat on Navy property by five percent by 2030.

Objective 2.3. Identify potential impacts to Navy sites due to projected climate change, using scientifically robust models.

These goals and objectives inform management strategies, which ultimately provide the following benefits to threatened and endangered species: data from surveys and monitoring actions; and habitat improvement.



Figure ES-1. Vicinity map for the Navy’s northern Alaska sites: Icy Cape, Barrow, and Point McIntyre.

TABLE OF CONTENTS

| | |
|--|------------|
| U.S. Navy Leadership Signatures | i |
| Navy Region Northwest Environmental Signatures | v |
| U.S. Fish and Wildlife Service Signature..... | vii |
| Alaska Department of Fish and Game Signature | ix |
| National Oceanic and Atmospheric Administration, National Marine Fisheries Service Signature | xi |
| Annual Review and Updates..... | xiii |
| Executive Summary | xv |
| Table of Contents | xviii |
| 1 Overview | 1-1 |
| 1.1 Purpose | 1-1 |
| 1.2 Scope..... | 1-1 |
| 1.3 Goals and Objectives..... | 1-1 |
| 1.4 Roles and Responsibilities..... | 1-2 |
| 1.4.1 Navy Responsibilities..... | 1-2 |
| 1.4.2 Internal Navy Stakeholders | 1-6 |
| 1.4.3 External Stakeholders..... | 1-7 |
| 1.5 Authority..... | 1-8 |
| 1.6 Stewardship and Compliance Statement..... | 1-9 |
| 1.7 Review and Revision Process | 1-9 |
| 1.8 Management Strategy..... | 1-9 |
| 1.9 Mission Integration..... | 1-10 |
| 2 Current Conditions and Use | 2-1 |
| 2.1 Installation Information..... | 2-1 |
| 2.1.1 General Description | 2-1 |
| 2.1.2 Regional Land Use..... | 2-5 |
| 2.1.3 Abbreviated History and Pre-Military Land Use | 2-5 |
| 2.1.4 Military Mission | 2-6 |
| 2.1.5 Operations and Activities – Potential Mission Impacts to Natural Resources | 2-14 |
| 2.1.6 Constraints Map | 2-15 |
| 2.1.7 Opportunities Map | 2-15 |
| 2.2 General Physical Environment and Ecosystems | 2-19 |
| 2.2.1 Ecosystem Types..... | 2-21 |
| 2.2.2 Topography | 2-23 |
| 2.2.3 Climate Trends | 2-23 |
| 2.3 General Biotic Environment..... | 2-25 |
| 2.3.1 Threatened and Endangered Species and Species of Concern..... | 2-25 |
| 2.3.2 Wetlands and Deep Water Habitats | 2-27 |
| 2.3.3 Fauna..... | 2-28 |
| 2.3.4 Flora | 2-32 |
| 3 Environmental Management Strategy and Mission Sustainability | 3-1 |
| 3.1 Supporting Sustainability of the Mission and the Natural Environment | 3-1 |
| 3.1.1 Integrate Mission and Sustainable Land Use | 3-1 |

| | | |
|----------|--|------------|
| 3.1.2 | Define Impact to the Mission – Natural Resources Constraints to Mission | 3-1 |
| 3.1.3 | Relationship to Environmental Restoration Program | 3-2 |
| 3.2 | Natural Resources Consultation Requirements..... | 3-2 |
| 3.3 | NEPA Compliance | 3-4 |
| 3.4 | Beneficial Partnerships and Collaborative Resource Planning | 3-4 |
| 3.5 | Public Access and Outreach | 3-4 |
| 3.5.1 | Public Access and Outdoor Recreation..... | 3-4 |
| 3.5.2 | Public Outreach | 3-5 |
| 3.6 | Encroachment Partnering | 3-5 |
| 3.7 | State Wildlife Action Plan | 3-5 |
| 4 | Natural Resources Management..... | 4-1 |
| 4.1 | General Organization | 4-1 |
| 4.2 | Fauna Management | 4-2 |
| 4.2.1 | Natural History, Status, and Trends of Focus Fauna | 4-2 |
| 4.2.2 | Goal 1: Objectives, and Strategies | 4-12 |
| 4.3 | Land Management..... | 4-16 |
| 4.3.1 | Status and Trends of Terrestrial Environment | 4-16 |
| 4.3.2 | Goal 2: Objectives and Strategies | 4-17 |
| 4.4 | Benefit to Species | 4-19 |
| 4.5 | Data and Personnel Management | 4-21 |
| 4.5.1 | Geographical Information Systems, Data Integration, Access, and Reporting..... | 4-21 |
| 4.5.2 | Training of Natural Resource Personnel | 4-22 |
| 4.6 | Reduced Programs at the Navy’s Northern Alaska Sites | 4-22 |
| 4.6.1 | Outdoor Recreation | 4-22 |
| 4.6.2 | Invasive Species..... | 4-23 |
| 4.7 | Absent Programs at the Navy’s Northern Alaska Sites..... | 4-23 |
| 4.7.1 | Agricultural Outleasing..... | 4-23 |
| 4.7.2 | Forestry Management..... | 4-23 |
| 4.7.3 | Wildland Fire Management | 4-24 |
| 4.7.4 | Bird/Animal Aircraft Strike Hazard..... | 4-24 |
| 4.7.5 | Pest Management..... | 4-24 |
| 4.7.6 | Law Enforcement of Natural Resources Laws and Regulations..... | 4-24 |
| 4.7.7 | Other Leases | 4-24 |
| 5 | Implementation..... | 5-1 |
| 5.1 | Project Development Process | 5-1 |
| 5.2 | Achieving No Net Loss | 5-2 |
| 5.3 | Use of Cooperative Agreements..... | 5-2 |
| 5.4 | Funding..... | 5-2 |
| 6 | References..... | 6-1 |

FIGURES

| | |
|---|------|
| Figure ES-1. Vicinity map for the Navy’s northern Alaska sites: Icy Cape, Barrow, and Point McIntyre..... | xvii |
| Figure 2-1. Aerial views of the Navy’s northern Alaska sites. a) Icy Cape b) Barrow antenna field, ground view c) Barrow airfield site, in foreground (arrow), d) Pt. McIntyre. | 2-1 |
| Figure 2-2. Icy Cape, satellite imagery, 156 acres..... | 2-2 |
| Figure 2-3. Barrow, satellite imagery. Airstrip site, 150 acres and Antenna Field, 535 acres | 2-3 |
| Figure 2-4. Pt. McIntyre, satellite imagery, 70 acres..... | 2-4 |
| Figure 2-5. a) Field crews have historically accessed Icy Cape by helicopter, sling loading field gear onsite. b) Navy contractors lay down tundra mats over vegetated areas to avoid unnecessary vegetation and ground disturbance when heavy machinery is used to complete remedial actions on the tundra; all disturbed areas are reseeded. c) Crews set up a field camp during fieldwork at the more remote sites (Icy Cape and Pt. McIntyre) in the case they are stranded onsite overnight..... | 2-13 |
| Figure 2-6. Ruts observed on antenna field property, 2019, responsible party unknown. | 2-14 |
| Figure 2-7. Icy Cape, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Icy Cape (white areas) are either human-constructed gravel pads or bluff habitat. | 2-16 |
| Figure 2-8. Barrow, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Barrow (white areas) are typically developed, gravel-covered areas. The airstrip site is primarily covered by imported gravel and Marsten matting..... | 2-17 |
| Figure 2-9. Point McIntyre, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Pt. McIntyre (white areas) are gravel-covered, manmade areas – former airstrips, building platforms, roads, or landfills. | 2-18 |
| Figure 2-10. Alaska North Slope subregions, based on USGS geographic designations (Wahrhaftig, 1965). Figure from Cater, 2010..... | 2-19 |
| Figure 2-11. a) Dried mud on antenna field property. b) Aerial view of polygonal tundra, Arctic Coastal Plain. | 2-20 |
| Figure 2-12. a) Alaska arctic polygonal ground wet sedge tundra, Barrow antenna field. b) Kasegalik Lagoon shoreline; marine beach meadow habitat at Icy Cape. | 2-21 |
| Figure 2-13. 30-year median, interdecile range, and interquartile range of sea ice extent in the Arctic Ocean between 1981-2010. Also illustrated is the 2011-2018 average extent. Area of sea ice coverage is defined as that area of ocean with at least 15 percent sea ice. Figure from the National Snow and Ice Data Center (2019). | 2-24 |
| Figure 2-14. Pinniped and walrus occurrence near Icy Cape, Alaska. Figure prepared by Janet Clarke, Bureau of Ocean Energy Management, in 2017. All data are from the Aerial Surveys of Arctic Marine Mammal monitoring program, unless otherwise noted. “Small unid pinn” is shorthand for small unidentified pinniped. | 2-27 |
| Figure 2-15. Percentage of each ecological group that comprise the 91 common North Slope avian species (Appendix C; NSB, 2019a). | 2-30 |
| Figure 2-16. Caribou pictured off in distance during fieldwork at Icy Cape. Caribou were observed regularly onsite between 24 JUL and 07 AUG 2019..... | 2-31 |
| Figure 2-17. Arctic fox observed using a structure as shelter in Utqiagvik. | 2-32 |
| Figure 2-18. Graminoid communities dominate the Navy's antenna field property (a), while dwarf shrubs co-occur onsite (b). a) <i>Eriophorum angustifolium</i> (cottongrass) and <i>Carex</i> spp. (sedge) predominantly. b) <i>Salix rotundifolia</i> (dwarf willow) and moss..... | 2-33 |

Figure 4-1. Designated critical habitat for spectacled eiders and polar bears and proposed critical habitat for bearded and arctic ringed seals in relation to the Navy’s northern Alaska sites. Steller’s eider critical habitat is designated southwest of the North Slope.4-2

Figure 4-2. Polar bear observed by Navy contractors at the boat launch near Deadhorse, AK, 2019.4-3

Figure 4-3. Polar bear barrier island critical habitat and associated “no disturbance zone” as well as denning critical habitat with necessary macrohabitat features as identified by USFWS at a) Icy Cape, b) Barrow, and c) Pt. McIntyre.4-5

Figure 4-4. Polar bear locations from 62 tagged individuals between 1986 and 2015 (Durner, 2019) in relation to the Navy’s northern Alaska sites. a) Locations from tagged individuals around the Navy's typical field work window in northern Alaska (01JUL-15OCT). b) Tagged polar bear locations during 16OCT-30JUN, which covers mating and denning life stages.....4-6

Figure 4-5. Spectacled eiders, male and female (photo from USFWS, 2020a).4-7

Figure 4-6. Distribution of spectacled eiders in Alaska and Russia (figure from USFWS, 2003).4-7

Figure 4-7. Steller's eider male and female (photo from USFWS, 2020b)4-8

Figure 4-8. a) Range distribution of the Pacific population of the Steller’s eider (figure from USFWS, 2002); b) Observations of Steller’s eider males, pairs, and flocks from the June ACP aerial survey 1999-2018 (figure from USFWS, 2019a)4-9

Figure 4-9. Annual range of the Western Arctic stock of bowhead whales by season from satellite tracking data, 2006-2017 (figure from Muto et al., 2018).4-10

Figure 4-10. Ringed seal (above) and bearded seal (below), images from NOAA Fisheries.....4-10

Figure 4-11. a) Local residents access Imikpuk Lake, pictured here, from the Navy's runway to hunt waterfowl during the summer. b) Marston matting, or sheets of perforated steel, still cover the Navy's former runway..4-22

TABLES

| | |
|--|------|
| Table 2-1. Remediation status for each of the Navy's northern Alaska sites | 2-8 |
| Table 2-2. Summary of past restoration actions at the Navy's northern Alaska sites..... | 2-10 |
| Table 2-3. Planned restoration activities at the Navy's northern Alaska sites, 2021-2025..... | 2-11 |
| Table 2-4. Ecosystem types presumed to occur on the Navy's northern Alaska sites | 2-22 |
| Table 2-5. Federally threatened and endangered species occasionally present on the Navy's northern Alaska sites... | 2-25 |
| Table 2-6. Species proposed and determined not warranted for listing under the ESA, found in the vicinity of the Navy's northern Alaska sites | 2-26 |
| Table 2-7. Wetland acreage on the Navy's northern Alaska sites | 2-28 |
| Table 2-8. Plant-community types on the Navy's northern Alaska sites and dominant species in those communities | 2-34 |
| Table 4-1. Natural resource constraints and mission impacts at the Navy's northern Alaska sites..... | 4-12 |
| Table 4-2. Direct benefits of strategies to sensitive species on or near the Navy's northern Alaska sites | 4-21 |

APPENDICES

| | |
|---|-----|
| Appendix A. List of Acronyms | A-1 |
| Appendix B. Project Implementation Table..... | B-1 |
| Appendix C. Species List..... | C-1 |
| Appendix D. Research Requirements | D-1 |
| Appendix E. Critical Habitat Issues..... | E-1 |
| Appendix F. Natural Resources Manager Designation Letter..... | F-1 |
| Appendix G. Preparers and Reviewers..... | G-1 |
| Appendix H. Relevant Laws, Regulations, and Instructions..... | H-1 |
| Appendix I. National Environmental Policy Act Documentation | I-1 |

1 OVERVIEW

1.1 Purpose

The Department of Navy (Navy) manages three sites on the North Slope of Alaska abutting the Arctic Ocean: Icy Cape; Former Naval Arctic Research Laboratory (NARL) Barrow; and Point (Pt.) McIntyre (Figure ES-1). The Navy has prepared an Integrated Natural Resources Management Plan (INRMP) to first, identify natural resources at these sites and second, develop a management plan for these resources. This INRMP is authorized under the Conservation Programs on Military Installations Act (Sikes Act), as amended (16 United States Code [U.S.C] 670a *et seq.*). This is the first INRMP prepared for these sites.

This INRMP is a long-term planning document to guide the adaptive management of natural resources in support of the Navy's mission, while protecting and enhancing natural resources for multiple uses, sustainable yield, and biological integrity. During the review, all signatories ensure that natural resources conservation measures and military operations on the installation are integrated and compliant with stewardship and legal requirements. Secondly, the INRMP serves as a reference for documents prepared during the environmental planning and permitting processes.

1.2 Scope

This INRMP covers the terrestrial natural resources of the Navy's three northern Alaska sites and those marine resources that may be affected by the Navy's activities. The Navy does not administer marine nearshore areas as it does for other coastal installations. The Naval facilities were closed in the 1980s, but the Navy remains responsible for environmental restoration efforts under the legal authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA; 42 U.S.C. 9601 *et seq.*). The Navy has conducted environmental restoration activities at these sites throughout the last three decades, and continues to do so. The Navy has no active mission at these sites with the exception of its environmental restoration efforts. The Navy expects to conduct management and/or monitoring activities on these sites for the foreseeable future, with the possible exception of the Barrow antenna field, discussed further in the mission description, Section 2.1.4.

1.3 Goals and Objectives

The Navy's mission statement for managing natural resources at the northern Alaska sites is as follows:

Support the environmental restoration program and enhance mission readiness by providing restoration program managers with best available information on species and ecosystem occurrence onsite, while serving as stewards of public lands and cooperating with management partners to maintain and improve ecosystem integrity.

Natural resources managers have identified the following goals and objectives for managing the natural resources of the Navy's northern Alaska sites:

Goal 1. Support restoration program managers by providing accurate information of fauna occurrence on the Navy's northern Alaska sites, which would minimize wildlife disturbance and feed into the regional body of knowledge of the wildlife of the Arctic Coastal Plain.

Objective 1.1. Minimize and avoid human-wildlife conflict to the maximum extent practicable, while ensuring the Navy can complete its mission.

Objective 1.2. Better define what species are present on or near Navy sites, when or how frequently they are present, and where they occur onsite.

Goal 2. Work in cooperation with the Environmental Restoration Program to facilitate restoration of Navy lands to conditions as close as feasible to nearby undisturbed landscapes.

Objective 2.1. Minimize adverse impacts to wetland habitats due to Navy activities.

Objective 2.2. Increase the areal extent of tundra habitat on Navy property by five percent by 2030.

Objective 2.3. Identify potential impacts to Navy sites due to projected climate change, using scientifically robust models.

The goals, objectives, and associated strategies detailed in this document are directly aligned with the Navy's overarching goals for its natural resources programs, outlined in Chief of Naval Operations Instruction (OPNAVINST) 5090.1E and OPNAV Manual (OPNAV-M) 5090.1:

Military Readiness. Ensure no net loss of the capability of installation lands to support the Department of Defense (DoD) mission. At the northern Alaska sites, the Environmental Restoration program is the mission.

Stewardship. Manage natural resources to assure good stewardship of public lands entrusted to the Navy.

Compliance. Comply with laws and instructions that pertain to the management of the Navy's sites and associated natural resources.

In the past, the Navy has met its compliance responsibilities related to natural resources. However, with the development and implementation of this INRMP, the natural resources program will better support the Navy's military readiness and stewardship goals at its northern Alaska sites.

1.4 Roles and Responsibilities

1.4.1 Navy Responsibilities

Successfully implementing an INRMP requires the support of natural resources personnel, other installation staff, and command personnel. The following section outlines the responsibilities for INRMP development, updates, and implementation within the Navy.

1.4.1.1 Chief of Naval Operations, Environmental Readiness Division

Chief of Naval Operations (CNO) serves as the principal leader and overall Navy program manager for the development, revision, and implementation of INRMPs and:

- 1) Provides policy, guidance, and resources for the development, revision, and implementation of INRMPs and associated National Environmental Policy Act (NEPA) documents.
- 2) Represents the Navy on issues regarding development and implementation of INRMPs and delegates responsibility in writing.
- 3) Resolves high-level conflicts associated with development and implementation of INRMPs.
- 4) Approves all INRMP projects before INRMPs are submitted to regulatory agencies for signature.

1.4.1.2 Commander, Navy Installations Command

The Commander, Navy Installations Command (CNIC):

- 1) Ensures that installations under its command develop, revise, and implement INRMPs if required, and:
 - a) Evaluates the need for an INRMP at all installations that currently do not have an INRMP.
 - b) Following the initial evaluation, reevaluates all remaining installations that do not have an INRMP every five years.
- 2) Ensures that installations comply with DoD, Navy, and CNO policy on INRMPs and associated NEPA document preparation, revision, and implementation.
- 3) Ensures the programming of resources necessary to maintain and implement INRMPs, which involves:
 - a) The review of and endorsement of projects recommended for INRMP implementation prior to submittal for signature. These projects are identified in Appendix B.
 - b) The evaluation and validation of project proposals entered into the Environmental Readiness Program Requirements website (EPR web).
- 4) Participates in the development and revisions of INRMPs, which involves the maintenance of a close liaison with the CNO Environmental Readiness Division, N45; Naval Facilities Engineering Systems Command (NAVFAC); and other budget submitting offices (BSOs).
- 5) Provides overall program management oversight for all natural resources program elements.

1.4.1.3 Regional Commander

The Regional Commander ensures that the INRMPs are developed, implemented, and fully supported and ensures coordination, consistency, and direct support for INRMP implementation. The northern Alaska sites are also under the direct authority of the Navy Region Northwest Regional Commander.

The Regional Commander has the following responsibilities:

- 1) Ensures installations comply with DoD, Navy, and Director, Environmental Readiness Division (CNO) policy on INRMPs and associated NEPA document preparation, revision, and implementation.

- 2) Ensures INRMPs undergo annual informal reviews as well as formal five-year evaluations. Ensure installations complete the annual INRMP metric review and endorse the results prior to submittal to CNIC via the chain of command.
- 3) Ensures the programming of resources necessary to maintain and implement INRMPs, which involves the evaluation and validation of EPR web project proposals.
- 4) Establishes positive, productive relationships with local and regional authorities responsible for natural resource conservation for the benefit of subordinate command functions and INRMP development and implementation.

1.4.1.4 CNRNW N4 Director

Because CNRNW Facilities and Environmental (N4) is designated as Caretaker for the northern Alaska sites (CNRNW Instruction 11011.1, 2020), the N4 Director performs Installation Commanding Officer (CO) role and responsibilities for these sites. The N4 Regional Director is dual-hatted and is also designated as the NAVFAC NW CO. The N4 Regional Director is responsible for the preparation, completion, and implementation of the INRMP and associated NEPA documentation for these sites. The CNRNW N4 Director should systematically apply the conservation practices set forth in the INRMP.

The CNRNW N4 Director's role is as follows:

- 1) Acts as steward of the natural resources under their jurisdiction and integrates natural resources requirements into the day-to-day decision-making process.
- 2) Ensures natural resources management and the INRMP comply with all natural resources-related legislation, to include Executive Orders (EO) and Executive Memoranda, as well as DoD, Secretary of the Navy (SECNAV), and Department of the Navy (DON) directives, instructions, and policies.
- 3) Involves appropriate tenant, operational, training, or Research, Development, Testing, and Evaluation (RDT&E) commands in the INRMP review process to ensure no net loss of military mission.
- 4) Designates, by letter, one or more Natural Resources Manager(s) (NRM) responsible for the management efforts related to preparing, revising, implementing, and funding the INRMP (Appendix F).
- 5) Involves appropriate Navy Judge Advocate General (JAG) or Office of the General Counsel (OGC) Legal Counsel to provide advice on legal matters related to natural resources management and INRMPs.
- 6) Endorses INRMP, documented via signature.
- 7) Participates in annual natural resources metrics process:
 - a) Completes Focus Area #7: Mission Support, which is included in the Navy's Annual Report to Congress.
 - b) Sends a written report to the United States Fish and Wildlife Service (USFWS) and Alaska Department of Fish and Game (ADF&G) no later than 31 January of each year, summarizing INRMP implementation over the past fiscal year and the status of any prior mutually agreed upon goals and updates.
- 8) Facilitates the implementation of the INRMP:

- a) Provides top-down support of the natural resources program.
 - b) Ensures that a process is established for early coordination between the NRMs and key installation staff.
 - c) Ensures that natural resources management is integrated with other installation management functions, military operations, security, and RDT&E activities.
- 9) Ensures funding for the implementation of the INRMP.

1.4.1.5 Region Program Director for Environmental (N45)

N45 provides a Senior Regional Natural Resources Specialist. The specialist has the following responsibilities:

- 1) Ensures execution of natural resources conservation responsibilities in support of the Regional Commander.
- 2) Reviews and signs INRMPs for technical sufficiency, consistency within the region, and compliance with Navy and DoD policy.

1.4.1.6 Site Natural Resources Manager

The NRM is responsible for natural resources management at the Navy's three northern Alaska sites. The NRM is a member of the NAVFAC NW Core natural resources team and is administratively a NAVFAC employee. The NRM is designated in writing by the NAVFAC NW CO (Appendix F). NRM responsibilities include the following:

- 1) Ensures the CO is informed of natural resource conditions and issues.
- 2) Implements strategies to achieve goals and objectives of the INRMP.
- 3) Avoids and mitigates potential or actual conflicts between mission requirements and natural resource mandates.
- 4) Prepares, revises, and implements the INRMP.
- 5) Coordinates with other personnel, as necessary, to implement the INRMP and accomplish the goals and objectives.
- 6) Ensures the INRMP is reviewed, current, and compliant in coordination with the USFWS, ADF&G, and the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS).
- 7) Annually compiles, tracks, and maintains the INRMP metrics on the Navy Conservation website.

1.4.1.7 Naval Facilities Engineering Systems Command Northwest

NAVFAC NW provides oversight and support for the development, maintenance, and implementation of CNRNW installation INRMPs and the natural resource program. NAVFAC NW's natural resources staff are a compilation of professionally qualified foresters, botanists, fisheries specialists, marine mammal experts, avian specialists, and knowledgeable biologists for invasive species management. These natural resources subject matter experts are available to support and assist the Navy's northern Alaska natural resources program and associated consultations pertaining to natural resources legislation.

NAVFAC Northwest responsibilities are as follows:

- 1) Provides technical and contractual support for the preparation, development, and implementation of INRMPs and associated NEPA documents.
- 2) Facilitates and coordinates the issuance of INRMP-related NEPA documents.
- 3) Assists in obtaining the Regional Commander's endorsement signature of this INRMP.
- 4) Evaluates and disseminates information to installations concerning new technology, methods, policies, and procedures for use in the development and implementation of INRMPs or that may impact naval readiness and sustainability at northern Alaska (e.g., proposed listings of threatened and endangered species, proposed critical habitat restrictions, biological opinions, NEPA mitigation measures).
- 5) Assists with the development of the INRMP Project Implementation Table, EPR web, and Legacy project proposals.
- 6) Provides technical and administrative guidance for the development and execution of contracts and cooperative agreements to develop and implement INRMPs.
- 7) Facilitates the acquisition of INRMP mutual agreement between the Navy, USFWS, and ADF&G, as necessary.
- 8) Facilitates conflict resolution between the Navy, USFWS, ADF&G, and other stakeholders, as necessary.
- 9) Coordinates an ecosystems approach between the installation and geographically proximate landholders to include other federal agencies, state agencies, or private entities.
- 10) Provides technical oversight and resources for forest management and assists in implementing forest habitat management actions.
- 11) Provides support and resources to installation fish and wildlife program and assists with hunting and fishing fee and permit collections and distributions.
- 12) Assists with compiling, tracking, and maintaining INRMP metrics on the Navy's Conservation website.

1.4.2 Internal Navy Stakeholders

1.4.2.1 Public Affairs Officer

The Public Affairs Officer (PAO) may facilitate communication with nearby communities regarding the Navy's environmental management initiatives.

1.4.2.2 Environmental Restoration Program

The DON Environmental Restoration Program (ERP) is the Navy's major action proponent at the northern Alaska sites and implementation of this INRMP will support ERP activities. The environmental restoration and natural resources programs are closely coordinated at these sites. The ERP ensures all proposed actions are compliant with relevant natural resources guidance and legislation. The ERP is discussed in further detail in Section 2.1.4 and NR program support of the ERP is discussed throughout the document.

1.4.3 External Stakeholders

1.4.3.1 U.S. Fish and Wildlife Service and National Marine Fisheries Service

The Sikes Act directs DoD to seek mutual agreement with USFWS in the management of natural resources on DoD installations. As a signatory, USFWS provides concurrence that the plan is compliant with the requirements of the Sikes Act and is aligned with the agency's management policies, goals, and objectives. Navy Region Northwest has invited NMFS to collaborate with installations in the management of NMFS-regulated species located in the northern Alaska nearshore environment. Although it is not required by the Sikes Act, the Navy has invited NMFS to review this INRMP. The Navy may request the expertise of USFWS and NMFS biologists in the agencies' respective program areas. As stipulated in the Sikes Act, the Navy may also work with other federal agencies to implement the INRMP through interagency agreements. No element of the Sikes Act is intended to either enlarge or diminish the existing responsibility and authority of USFWS or NMFS, concerning fish and wildlife management on military lands.

1.4.3.2 Alaska Department of Fish and Game

The Sikes Act also directs the DoD to coordinate with appropriate state fish and wildlife agencies in the management of natural resources on DoD installations. As a signatory, ADF&G provides concurrence that the plan is compliant with the requirements of the Sikes Act and is aligned with the agency's management policies, goals, and objectives. The Navy may request the expertise of ADF&G biologists in the development and implementation of this INRMP. As stated above, no element of the Sikes Act is intended to either enlarge or diminish the existing responsibility and authority of ADF&G.

1.4.3.3 Alaska Native Governments

Alaska Native groups are represented by Regional Corporations established in 1971 under the Alaska Native Claims Settlement Act (ANCSA; 43 U.S.C. 1601 *et seq.*). ANCSA settled land and financial claims made by Alaska Natives and provided for the establishment of Regional Corporations to administer those claims and foster economic development. The Arctic Slope Regional Corporation is the designated corporation for this area. In addition, distinct from the Regional Corporation, there are eight federally recognized Alaska Native entities in the North Slope region: the Village of Anaktuvuk Pass; the Native Village of Atkasuk; the Native Village of Barrow (Iñupiat Community of the Arctic Slope); the Native Village of Kaktovik (Barter Island); the Native Village of Nuiqsut (Nooiksut); the Native Village of Point Hope; the Native Village of Point Lay; and the Wainwright Traditional Council. The Navy sent the INRMP to the Arctic Slope Regional Corporation, each of the eight villages, and village corporations for review and comment.

ANCSA extinguished aboriginal claims to land and hunting and fishing rights, but Alaska Native Tribes have use of state fisheries for commercial, subsistence, and ceremonial activities. Co-management agreements exist between Alaska Natives and NMFS on the harvest of marine mammals (NOAA, 2020; USFWS, 2020d). Alaska state law directs the Board of Game and Board of Fisheries to provide a reasonable opportunity for subsistence uses first, before providing for other uses of any harvestable surplus of a fish or game population. Natives regularly use the Barrow properties and Icy Cape for subsistence purposes. The Alaska Native entities will be consulted and will be invited to participate in

government-to-government consultation should proposed INRMP actions have the potential to significantly affect cultural traditions or natural or cultural resources of tribal importance as outlined in COMNAVREGNWINST 11011.14 and the DoD Alaska Native Implementation Guidance (2020).

1.4.3.4 North Slope Borough

The North Slope Borough (NSB) is the county equivalent for the North Slope. The borough encompasses nearly 95,000 square miles across northern Alaska, and has a robust Department of Wildlife Management. The NSB Department of Wildlife Management facilitates harvest and monitors populations of fish and wildlife species through scientific research, indigenous ecological knowledge, leadership, and advocacy from local to international levels. As a natural resources management partner in the region and an invaluable resource for information on North Slope flora and fauna and subsistence practices, the Navy has invited the NSB to review the INRMP.

1.4.3.5 Neighboring land owners

The Navy's northern Alaska sites abut several property owners. The Navy will collaborate with these neighboring landowners and participate in regional management efforts and studies, when feasible and appropriate.

- 1) U.S. Air Force
- 2) Bureau of Land Management (BLM)
- 3) Ukpeaġvik Iñupiat Corporation (UIC)
- 4) Alaska Department of Natural Resources (ADNR)

1.5 Authority

This INRMP is authorized under the Sikes Act, which requires the Secretary of Defense to "...carry out a program to provide for the conservation and rehabilitation of natural resources on military installations." The Act requires each military installation to develop an INRMP to facilitate this order "...unless the Secretary [of Defense] determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate." The Navy has determined that these northern Alaska sites meet the threshold of "significant natural resources" and has therefore developed this INRMP in coordination with USFWS and ADF&G.

This INRMP was also prepared pursuant to the following DoD and Navy guidance documents. Further information on these guidance documents is summarized in Appendix H.

- 1) **DoDI 4715.03**, *Natural Resources Conservation Program*; March 18, 2011, as amended August 31, 2018
- 2) **DoD Manual (DoDM) 4715.03**, *INRMP Implementation Manual*; November 25, 2013, as amended August 31, 2018
- 3) **OPNAVINST 5090.1E**, *Environmental Readiness Program*; September 3, 2019
- 4) **OPNAV-M 5090.1**, *Environmental Readiness Program Manual*; September 3, 2019
- 5) **SECNAV Instruction (SECNAVINST) 5090.8B**, *Policy for Environmental Protection, Natural Resources, and Cultural Resources Programs*; October 18, 2018

- 6) **DoD Memorandum**, *Integrated Natural Resource Management Plan (INRMP) Template*; August 14, 2006
- 7) **Navy Guidance**, *Integrated Natural Resources Management Program Guidance*; April 10, 2006

1.6 Stewardship and Compliance Statement

Pursuant to policy outlined in DoDI 4715.03, the “DoD shall demonstrate stewardship of natural resources in its trust by protecting and enhancing those resources for mission support, biodiversity conservation, and maintenance of ecosystem services.” The goals and objectives outlined within this INRMP, as summarized in Section 1.3, and those strategies detailed in Chapter 4 are in line with this DoD policy.

1.7 Review and Revision Process

Pursuant to Section 101(b)(2) of the Sikes Act, the Navy, USFWS, and ADF&G shall review this plan as to operation and effect “...on a regular basis, but not less often than every five years.” The review is intended to determine whether the INRMP is being implemented, and whether it is effective in contributing to the conservation and rehabilitation of natural resources on military installations.

Per DoDI 4715.03 and OPNAV-M 5090.1, conservation metrics must be completed annually by each Navy installation with natural resources. During this annual metrics process, the Navy and its Sikes Act partners evaluate the effectiveness of the INRMP and whether the plan is being satisfactorily implemented. NAVFAC NW has also invited NMFS to collaborate in the management of NMFS-regulated species that occur near the northern Alaska sites. Appendix G documents those who have participated in the review and preparation of the Northern Alaska Sites INRMP. The NRM will record feedback from Sikes Act partners in the Navy Conservation website, which is then reported to CNIC Headquarters and eventually the Office of the Secretary of Defense.

During the annual Metrics process, the NRM reports on the natural resources program’s performance in the following seven focus areas: natural resources management; listed species and critical habitat; recreational use and access; Sikes Act cooperation; team adequacy; INRMP implementation; and natural resources program support of the installation mission.

With agreement from USFWS and ADF&G through written documentation, the annual informal evaluations of the INRMP may be used to substitute for the five-year formal review. The NRM will incorporate minor changes to the INRMP following the annual metrics review to keep the plan updated and relevant. The NRM will track and document these changes in the “Annual Review and Updates” table at the beginning of this document, to expedite future review of the document by all parties.

1.8 Management Strategy

Pursuant to DoDM 4715.03, NAVFAC NW employs an adaptive management approach in relation to natural resources management on its northern Alaska sites:

- 1) Identify management goal
- 2) Design management plan
- 3) Implement management plan

- 4) Monitor results
- 5) Analyze effectiveness of action
- 6) Adjust and adapt management plan and goals

This plan emphasizes ecosystem-based management, a process that considers the environment as a complex system functioning as a whole, not as a collection of parts. It recognizes the needs of people and the mission as parts of the whole. Ecosystem-based management stresses shifting from single species to multiple species conservation actions and forming partnerships necessary to consider and manage ecosystems that cross installation boundaries (DoDM 4715.03, OPNAV-M 5090.1E). To effectively implement ecosystem-based management, the Navy will work with the stakeholders identified in Section 1.4.3 to ensure the Navy's actions are coordinated with landscape-scale management efforts. The Navy has incorporated information and objectives from statewide and regional plans throughout this document. The natural resources management goals, objectives, and strategies for the Navy's northern Alaska sites are discussed in Section 4.

1.9 Mission Integration

This plan was developed in coordination with the ERP, the Navy's only ongoing mission activity at the sites, discussed further in Section 2.1.4. The management goals, objectives, and strategies detailed in Section 4 support the ERP mission and, where applicable, capitalize on actions already being carried out by the ERP.

2 CURRENT CONDITIONS AND USE

2.1 Installation Information

2.1.1 General Description

Icy Cape

Icy Cape is located on the Chukchi Sea coast of northwest Alaska approximately 50 miles southwest of Wainwright, about halfway between Wainwright and Point Lay (Figure ES-1). The property is approximately 156 acres and consists of two former gravel runways, three inactive landfills, coastal lagoon and bluff habitat, largely undisturbed tundra, a gravel road which connects the coastline to the upland habitat, and several thaw ponds (Figure 2-1a, Figure 2-2).

Barrow

The former NARL site is on the Chukchi Sea coast about four miles northeast of the city of Utqiagvik and six miles southwest of Point Barrow (Figure ES-1). The city of Utqiagvik, formerly known as Barrow, officially restored its original name in 2016; however, the Navy continues to refer to the “Barrow” properties after the name of the former NARL. The Navy-owned Barrow properties consist of the former antenna field (535 acres; Figure 2-1b) and the airstrip site and associated structures (150 acres; Figure 2-1c). The antenna field parcel consists primarily of undeveloped tundra, while the airstrip site has next to no vegetation and is predominantly covered by imported gravel (Figure 2-3). The airstrip site consists of three buildings and a 5,000 foot Marston matting runway which runs parallel to the Chukchi Sea coast, designated by the arrow in Figure 2-1c.

Point McIntyre

Pt. McIntyre is located approximately 12 miles northwest of Prudhoe Bay on the Beaufort Sea coast (Figure ES-1). The site covers approximately 70 acres and consists of coastal marine habitat, tundra, thaw ponds, a former airstrip, a freezeback landfill, and gravel surfaces (Figure 2-1d, Figure 2-4).



Figure 2-1. Aerial views of the Navy’s northern Alaska sites. a) Icy Cape b) Barrow antenna field, ground view c) Barrow airfield site, in foreground (arrow), d) Pt. McIntyre.

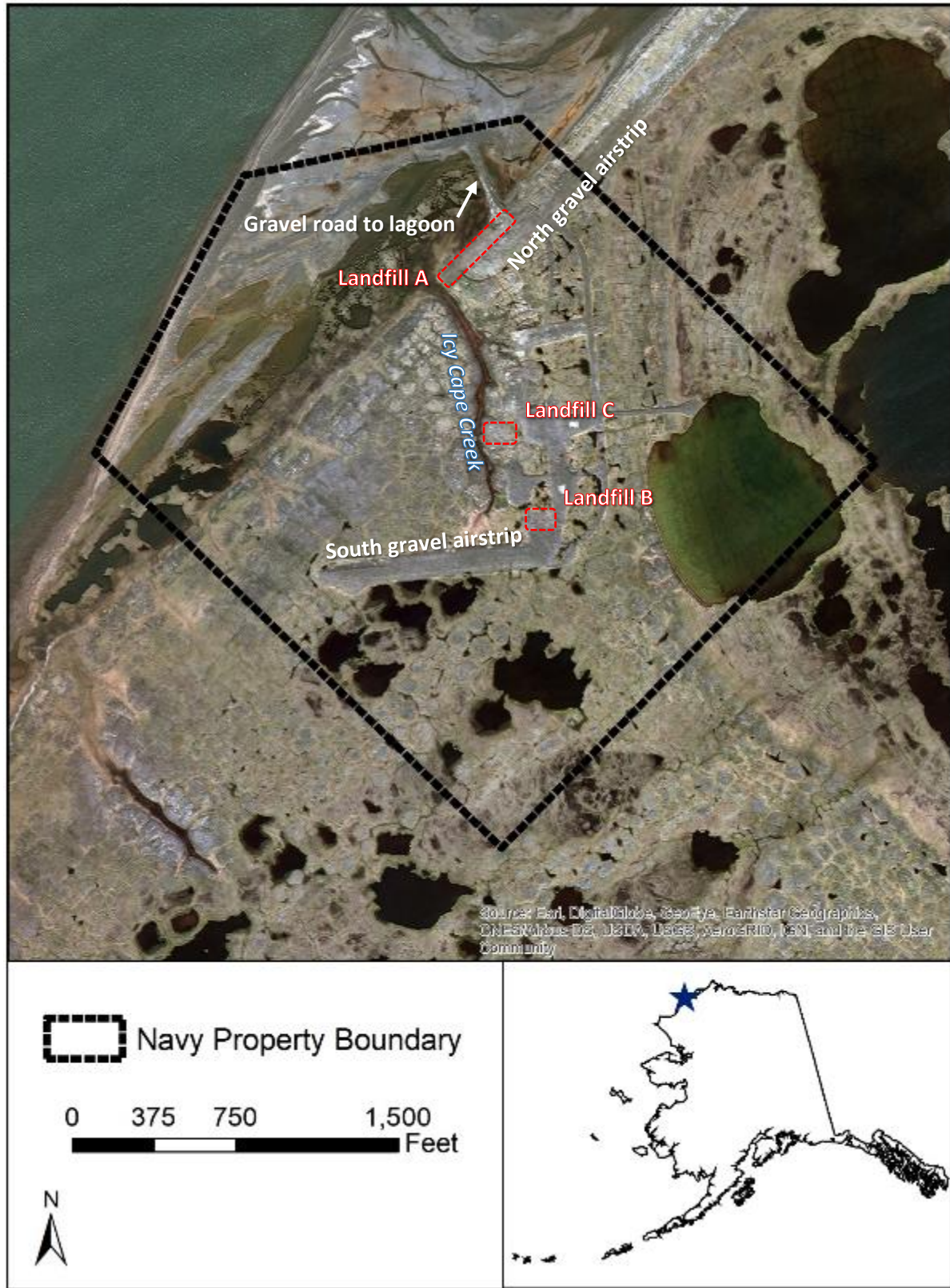


Figure 2-2. Icy Cape, satellite imagery, 156 acres

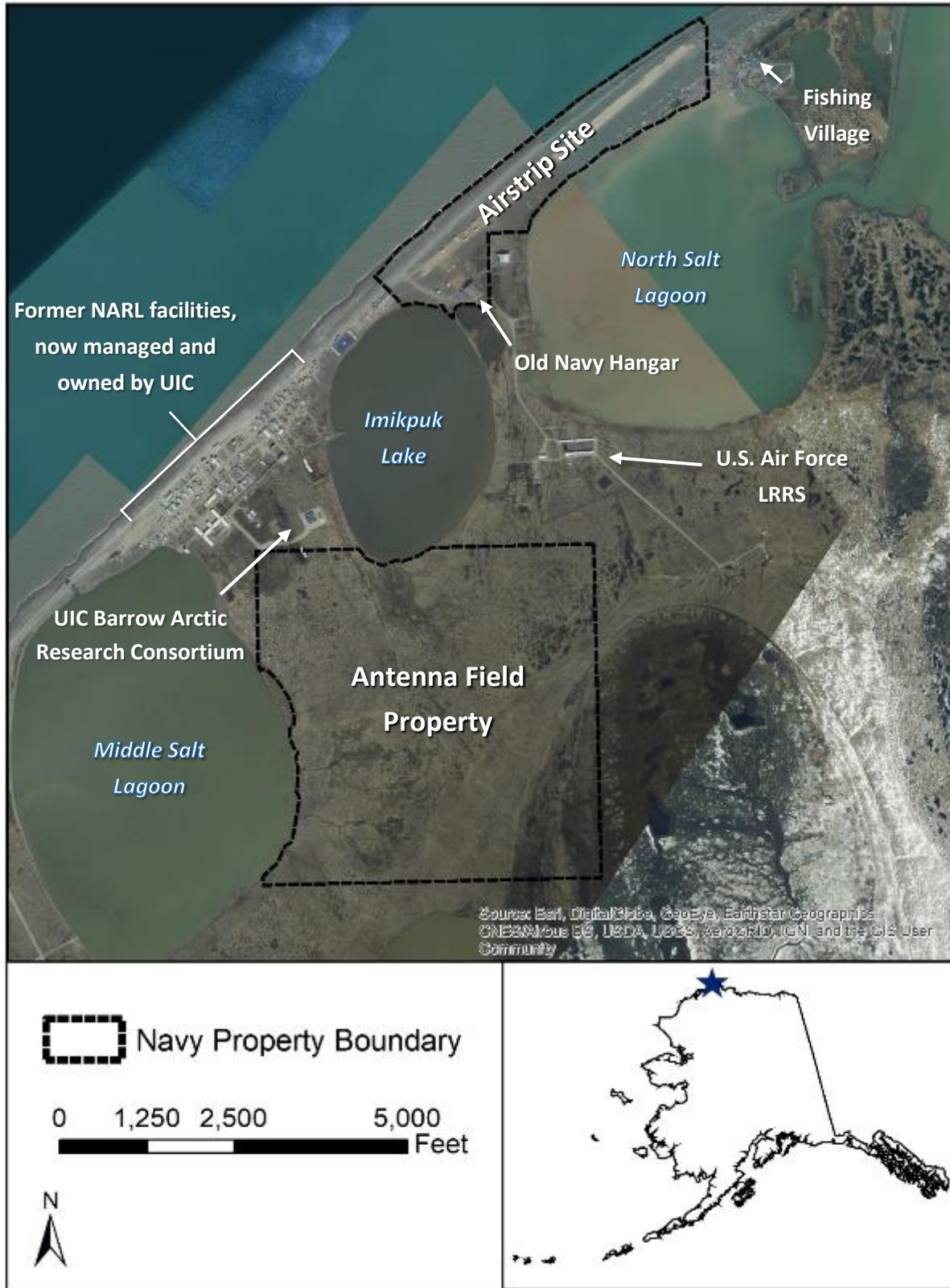


Figure 2-3. Barrow, satellite imagery. Airstrip site, 150 acres and Antenna Field, 535 acres

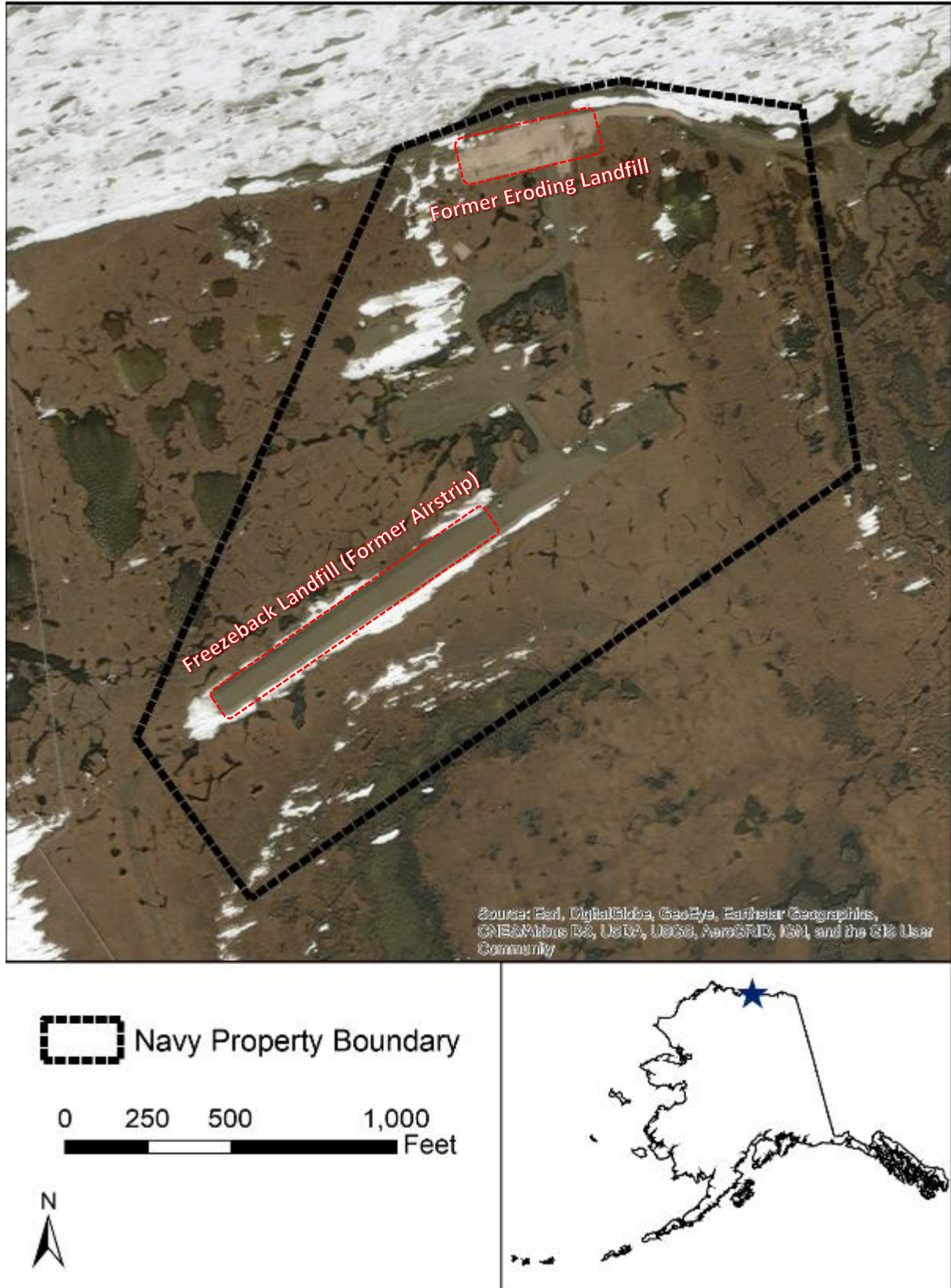


Figure 2-4. Pt. McIntyre, satellite imagery, 70 acres

2.1.2 Regional Land Use

Icy Cape is surrounded by relatively undeveloped tundra. The lands to the east of Navy property are incorporated into the National Petroleum Reserve-Alaska (NPR-A) and are under the jurisdiction of BLM, while the lands to the west are owned and managed by ADNR.

The Barrow properties are adjacent to the former NARL. The Barrow Arctic Research Consortium is directly north of the antenna field, which is owned and operated by UIC, an Alaska Native corporation (Figure 2-3). UIC also owns the land surrounding the Navy's property, comprising 2,600 acres of tundra designated for conducting and supporting arctic research and upholding the legacy of NARL. A still-active U.S. Air Force Long Range Radar Station (LRRS, labeled in Figure 2-3) is located east of the antenna field and south of the Navy hangar on the airstrip site.

Like Icy Cape, ADNR owns the land surrounding Pt. McIntyre. However, energy companies based out of Prudhoe Bay have leased these lands and developed them for crude oil extraction. The oil is transported to Prudhoe Bay and is then transported 800 miles south to the Valdez Marine Terminal via the Trans-Alaska Pipeline System. Historically, BP Alaska held the leases and development rights for the land surrounding Pt. McIntyre; but in July 2020 the company completed a sale that transferred its Alaska assets and rights to Hilcorp. Two active oil wells are located within a two-mile radius of Pt. McIntyre.

2.1.3 Abbreviated History and Pre-Military Land Use

Homo sapiens migrated to the Arctic Coastal Plain approximately 15 thousand years ago (Goebel et al., 2008). The Iñupiat people occupied the area north of the Brooks Range between Nome, Alaska and northeastern Canada. The culture was largely nomadic, moving among field camps and following food resources as the seasons changed, including seal, whale, waterfowl, caribou, berries, and roots (Huryn & Hobbie, 2012). Icy Cape and Barrow were both important resource-gathering sites and Iñupiat have hunted and gathered at these sites for hundreds, if not thousands of years (Nelson, 1981; University of Alaska Fairbanks, 2020).

The Navy originally established a runway and facilities three miles northeast of the city of Utqiagvik (then Barrow) in 1944 to support its oil exploration program for Naval Petroleum Reserve No. 4 (formerly NPR-4, now NPR-A). The Office of Naval Research subsequently established NARL at the site in 1947 to research the arctic environment, then a little-known frontier to Lower-48 scientists, although not to Alaska Native people. The purpose of NARL was to provide a scientific research center where civilian scientists from universities, research institutions, and government departments could conduct physical and biological studies of the arctic environment (Shelesnyak, 1948).

Icy Cape and Pt. McIntyre were originally developed by the DoD as Distant Early Warning (DEW) Line stations: the U.S. Air Force (Air Force) built a system of stations approximately 50 miles apart along Alaska's northern coastline to detect incoming missile attacks from adversaries (Air Force, 2013). As technology improved, intermediate sites became obsolete, and Icy Cape and Pt. McIntyre were abandoned by the Air Force and transferred to the Navy in 1965 to be used as remote field camps for NARL.

Even after the Navy ended oil exploration operations in 1953, the Office of Naval Research continued funding its arctic programs and NARL functioned as the premier biological research center of the Arctic

(Norton, 2001). Scientists at NARL conducted groundbreaking research that supported national security efforts, energy resource development, and enhanced scientific understanding of the relationships between the Arctic's physical environmental and the physiology and ecology of the native flora and fauna. NARL's longest-serving director, Dr. Max C. Brewer, conducted pioneering studies of the physical properties of permafrost (e.g., Brewer, 1958). Other notable contributions by NARL scientists, as summarized in ARCUS (1999) and Norton (2001) included the following breakthroughs: George and Nettie MacGinitie's work collecting marine organisms from the sea floor led to the discovery of the Barrow Sea Canyon, which allowed the Navy to send multiple nuclear-powered submarines into arctic waters; the Tundra Biome Program resulted in the first syntheses of the processes and components of tundra ecosystems; and the Arctic Ice Dynamics Joint Experiment led to a more complete understanding of the properties and dynamics of sea ice, which aided the Navy in developing novel technologies for navigation in the harsh environment.

In the late 1970s, the Navy determined it could no longer provide funding for NARL and decommissioned the site in 1981. The Navy and BLM completed a land exchange with UIC under the ANCSA in 1986 that transferred ownership of the majority of the landholdings and buildings at the Barrow site; at this time, the Navy owns only the former airstrip and antenna field at Barrow, but retains environmental restoration responsibilities at some of the transferred sites. As mentioned in Section 2.1.2, UIC continues to host visiting and resident scientists and to facilitate arctic research at the former NARL facility, now known as the UIC National Arctic Research Laboratory or UIC-NARL.

2.1.4 Military Mission

The Navy has no active military mission on its northern Alaska sites as the sites have all been decommissioned (see Section 2.1.3). The Navy's mission presence at these sites is limited to the DON ERP activities. The following information is an excerpt from the DON ERP Manual (2018):

In response to CERCLA, the Navy established the Naval Assessment and Control of Installation Pollutants Program in the 1980s, mandating an Initial Assessment Study at all DON installations. This program was renamed the Installation Restoration Program, also referred to as the ERP, after the passage of the Superfund Amendments and Reauthorization Act (SARA) of 1986 (42 U.S.C. 9601 *et seq.*). The DON ERP combines aggressive policies, technical training, innovative technologies, stakeholder partnerships, and proactive, dedicated personnel to clean up past contamination on property under Navy and Marine Corps stewardship.

2.1.4.1 Environmental Restoration Program Process

The DON ERP follows a multi-phase cleanup process consistent with CERCLA that has several key milestones along the path to site closure (DON ERP Manual 2018):

Phase 1. Preliminary Assessment/Site Inspection: The preliminary assessment identifies contaminated sites based on the review of existing information about hazardous waste disposal practices at an installation to determine if a release is known or suspected to have occurred at a site. A site inspection includes limited sampling to confirm the presence or absence of contamination.

Phase 2. Remedial Investigation/Feasibility Study: The remedial investigation includes extensive sampling that is adequate to determine the nature and extent of contamination in the environment, an ecological risk assessment, and human health risk assessment. The remedial investigation often includes collection and evaluation of biological samples for presence or absence of contaminants, (e.g., invertebrates, vegetation). The feasibility study includes an initial screening of remediation alternatives and detailed evaluation of remediation alternatives.

Phase 3. Remedial Design: If a removal/remedial action is necessary, then a record of decision or decision document is developed that contains the official statement of removal/remedial action required for a site. A remedial design includes the full-scale detailed design and work plans to implement the removal/remedial action.

Phase 4. Remedial Action Construction: The remedial action construction is implementation of the remedial design and work plans.

Phase 5. Response Action: In situations where prompt action is required to address releases or a threatened release, a removal action is conducted in an expedited manner. A removal action can either be the final remedy or an interim action followed by a longer-term remedial action. This phase can occur at any time in the program.

Phase 6. Remedial Action Operation: This phase includes ongoing long-term monitoring activities, such as groundwater sampling and, if necessary, land use control inspections that are required to monitor reduction of contamination and progress toward cleanup goals for a site.

Phase 7. Long-term management: This phase occurs after the site meets all cleanup goals and/or remedial actions are complete, however there is contamination left in place (e.g., a landfill or residual contamination in groundwater or soil). This phase is required at sites where hazardous substances or pollutants or contaminants remain in place and some levels of contamination do not allow for unrestricted and unlimited use.

No further action (referred to as Site Closeout): This milestone signifies that DON has completed active management and monitoring at a site, the remedy is protective of human health and the environment, and contaminant levels at a site allow for unlimited and unrestricted use. This milestone can occur at any time in the program.

Note that if a site has multiple contaminants, each contaminant may be at a different phase of the cleanup process; the Navy defaults to the earliest phase in the CERCLA process for budgetary tracking purposes. Please see the phase status and description for each of the sites below (Table 2-1).

Table 2-1. Remediation status for each of the Navy's northern Alaska sites.

| <i>SITE</i> | <i>Phase</i> | <i>Description</i> |
|--------------------------------------|--------------|---|
| BARROW ANTENNA FIELD (ERP SITE 1) | 4 | In 2007, the Navy and ADEC signed a decision document (DD) for this site. At the time, no further action was required for any contamination; however, extensive inert debris remained at the site, which could not be addressed under the DON ERP. Eventually, NAVFAC NW funded an extensive cleanup of the site in 2014. In 2015, the Navy found lead-based batteries on the property which likely resulted in lead contamination. The Navy performed an independent removal action for lead contaminated soil in 2018/2019. One more phase of removal is planned in 2021. The goal is to remove the lead contamination below ADEC's residential cleanup level for lead in soil. No further action is expected to be necessary and the site will closeout following the 2021 removal action. The Navy expects this to occur by 2025, at which point the Navy will likely transfer ownership of the property. |
| BARROW AIRSTRIP SITE (ERP SITE 5) | 2 | In 2002, the Navy and ADEC signed a decision document for this site to address petroleum contamination. In 2003, the Navy performed active remediation on highly contaminated soil and has been performing monitored natural attenuation (MNA) for the residual contamination in active zone water since 2004 (phase 4/6). The Navy is evaluating more active treatment options because MNA is not as effective as planned for this arctic site. In 2017, the Navy identified per- or polyfluoroalkyl substance (PFAS) contamination in Imikpuk Lake near the site. The Navy performed a preliminary assessment and site inspection for PFAS and determined that a remedial investigation is necessary (Phase 2). Site closeout is not likely in the foreseeable future. |
| PT. MCINTYRE (ERP SITE 15) | 6 | In 2012, the Navy and ADEC signed a Record of Decision (ROD) for this site. In 2013/2014, the Navy excavated an eroding landfill from the shoreline and constructed a new freezeback landfill for the non-hazardous contamination from the eroding landfill (phase 4). The Navy currently monitors contamination levels near the shoreline and implements land use controls of the freezeback landfill. This site will move to Phase 7 once shoreline cleanup levels are achieved. The Navy expects to conduct long-term management at this site for the foreseeable future. |
| ICY CAPE (ERP SITE 16) | 2 | There are three landfills at this site. The Navy is currently conducting a remedial investigation (phase 2) to determine if a feasibility study, ROD, and a remedial/removal action is necessary. The Navy does not expect Site Closeout at Icy Cape in the foreseeable future. |

2.1.4.2 Past and Future Restoration Activities

The Navy has periodically conducted clean up and remediation activities at these sites since the 2000s and has developed ground-breaking techniques for monitoring and treating petroleum contamination in the arctic tundra environment (USACE, 2018). A summary of past major restoration activities is included in Table 2-2, and a summary of future planned restoration activities is provided in Table 2-3. For further information on past and future restoration actions on each site, consult with the site's restoration program manager.

Table 2-2. Summary of past restoration actions at the Navy's northern Alaska sites

| <i>Year</i> | <i>Action</i> | <i>Report (if pertinent)</i> |
|----------------------|--|------------------------------|
| Icy Cape | | |
| 1997 | USACE performed a clean-up/removal effort at the site where they 1) removed all buildings and most of the site debris and 2) excavated contaminated soils and shipped them to an off-site disposal facility. | OHM, 1999 |
| 2013 | Navy performed soil sediment sampling, groundwater sampling, landfill repairs, and limited debris removal. | Navy, 2014a |
| 2019 | Conducted ground water testing and evaluated condition of landfills. | Navy, 2020a |
| Barrow | | |
| <i>Airstrip site</i> | | |
| 1996-2000 | Navy installed a fuel recovery trench and a 1,720-foot-long subsurface ice-barrier wall (containment berm/barrier) to address former fuel spills at the Airstrip Site. | Navy, 2001 |
| 2000-2002 | Navy treated approximately 2,268 cubic yards of fuel-contaminated soils from the airstrip site. | Navy, 2004 |
| 2003 | Navy began monitoring the natural attenuation of petroleum contamination in the active zone water and surface water quality of Imikpuk Lake. | Navy, 2004 |
| 2010-2016 | Navy conducted several investigations to identify the location of residual petroleum contamination. | Navy, 2012; Navy, 2013 |
| 2017 | Navy identified two PFAS contaminants in Imikpuk Lake at levels above the Environmental Protection Agency's (EPA) health advisory. | Navy, 2019b |
| 2018 | Navy removed three buildings (containing asbestos and lead based paint) and removed petroleum and lead-contaminated soils under each building. | Navy, 2020b |
| 2018 | Navy performed preliminary assessment for PFAS at all Navy-owned and formerly owned property in Utqiaġvik and associated areas (including Icy Cape and Point McIntyre) | Navy, 2020d |
| 2019 | Navy performed site inspection for PFAS at Airstrip site. | Navy, 2021 |
| <i>Antenna Field</i> | | |
| 2011 | Navy contracted the Air Force to remove all surface debris from the antenna field property, to address the physical hazard the debris presented to human and wildlife. Note that this work was not performed by DON ERP. | Air Force, 2013b |
| 2016 | Navy removed a small amount of lead and petroleum contaminated soils identified onsite in 2012 and 2013. | Navy, 2017 |
| 2018-2019 | Navy removed a large amount of debris and lead-contaminated soils from the eastern shoreline of Middle Salt Lagoon. | Navy, 2020b; Navy, 2020c |
| Pt. McIntyre | | |
| 2004 | The Navy demolished site structures and performed clean up actions for contaminated soils. | Navy, 2005 |
| 2013 | Relocated former eroding landfill to a new freezeback landfill constructed within the former runway 1,200 feet inland. | Navy, 2014b |

Last updated January 2021

Table 2-3. Planned restoration activities at the Navy's northern Alaska sites, 2021-2025.

| <i>Year</i> | <i>Activity</i> | <i>Frequency</i> | <i>Description</i> |
|---|--|------------------|--|
| Icy Cape | | | |
| 2022 | Prepare Risk Assessment | Once | Prepare a report evaluating the different options for mitigating the contamination. These will likely include 1) No action, 2) Conduct long-term inspection and maintenance, and 3) Consolidate contaminated materials and create a new landfill onsite. |
| 2023 | Issue a Record of Decision (ROD) | Once | After assessing all alternatives and seeking feedback from the public, native villages, and state and federal agencies, the Remediation Advisory Board will issue a decision as to which alternative is preferred. |
| 2025 | Clean-up action | Once | We will not know what this action is until the ROD is issued. |
| *ROD and clean-up action at Icy Cape may be delayed to collect more sampling data in out-years. | | | |
| Barrow | | | |
| <i>Airstrip Site</i> | | | |
| 2021-2025 | Long term monitoring (LTM) | Annually | Collect surface water and active zone water samples in order to monitor for migration of contaminants, and to monitor the rate of attenuation of the petroleum. |
| 2021-2023 | PFAS Remedial Investigation/ Feasibility Study | Once | Delineate the extent of PFAS contamination at the site, evaluate risk associated with PFAS to human health and the environment, and evaluate remedial alternatives for PFAS, if necessary. Cleanup has not been programmed in out years but will likely be required. |
| 2022 | Five-year review (FYR) | Every 5 years | Review the Decision Document for the site, consider LTM results, and determine if current course of action is meeting all goals, or if a new course of action must be implemented. |
| 2024 | Removal and/or remedial action | Once | Removal and/or remedial action to address residual petroleum contamination. |
| <i>Antenna Field</i> | | | |
| 2021 | Removal Action | Once | Remove residual lead contamination near the eastern shoreline of Middle Salt Lagoon. |
| Pt. McIntyre | | | |
| 2021-2025 | LTM* | Annually | Collect ground water samples in order to monitor for migration of contaminants, and to monitor the rate of attenuation of the contaminants. Examine the landfill for signs of erosion and stability. Conduct Land Use Control inspections. |

| <i>Year</i> | <i>Activity</i> | <i>Frequency</i> | <i>Description</i> |
|--|-----------------------|----------------------------|--|
| 2021 | Shoreline Monitoring* | Biennial (every two years) | Measure erosion and/or accretion on site of the shoreline. |
| *Long term monitoring and shoreline monitoring at Pt. McIntyre may become less frequent, pending results from 2020 sampling and ongoing conversations with ADEC. | | | |

Last updated January 2021

2.1.4.3 Standard Practices Prior to Conducting Environmental Restoration Work

Prior to all ER projects at the northern Alaska sites, the Navy completes the following consultations/coordination with the appropriate management agencies:

- 1) The Navy submits an application for a Letter of Authorization for Polar Bear Deterrence to USFWS. With that letter, the Navy includes a site-specific Polar Bear Human Interaction Plan, bear guard certifications, and USFWS Wildlife Bear Awareness certifications.
- 2) The Navy consults with USFWS Fairbanks office for effects of the ERP activities on ESA-listed species and polar bear critical habitat.
- 3) Apply for the North Slope Borough Land Management Regulations Permit.
- 4) As needed, apply for the UIC Land Use Permit.
- 5) As needed, develop work plans to protect human health and the environment with each project, e.g., Accident Prevention Plan/Site Safety and Health Plan, Sampling and Analysis Plan, Environmental Protection Plan, Waste Management Plan, Quality Control Plan.

2.1.4.4 Standard Practices While Conducting Work Onsite

While onsite, Navy personnel and/or Navy contractors typically follow the subsequent protocols. Natural resources best management practices and avoidance and minimization measures followed while onsite are discussed in Section 4.2.2 and 4.3.2.

Icy Cape

Workers may either travel to and from the site via helicopter primarily following the coastline, or set up a temporary field camp and stay onsite for the duration of the surveys (Figures 2-5a, 2-5c). Workers traverse the site on foot. At least one polar bear guard accompanies workers; the guard may use an all-terrain vehicle on the old gravel airstrips to more efficiently traverse the site. Crews always set up an emergency shelter the first day onsite in the case they are stranded overnight (Figure 2-5c); the shelter typically includes one or two tents, cots, sleeping bags, dehydrated foods, water, camp stoves, and medical supplies.

Barrow

Workers stay in Utqiagvik and drive to the site daily. At least one polar bear guard is on site at all times while work is being performed. Workers typically transit gravel areas in a vehicle and access vegetated areas on foot. Occasionally vehicles and heavy machinery are required for remediation in vegetated areas, and in these cases, tundra mats are used to avoid and minimize damage to tundra habitat (2-5b).

Pt. McIntyre

Workers stay in Deadhorse/Prudhoe Bay and travel to the site daily via boat (small craft). Heavy machinery has typically been barged onsite when needed in the past, but the Navy does not anticipate needing heavy machinery onsite in the foreseeable future. Teams collecting monitoring samples typically consist of two to four people on foot. One polar bear guard accompanies workers. Similar to Icy Cape, contractors typically set up an emergency field camp their first day onsite (2-5c).

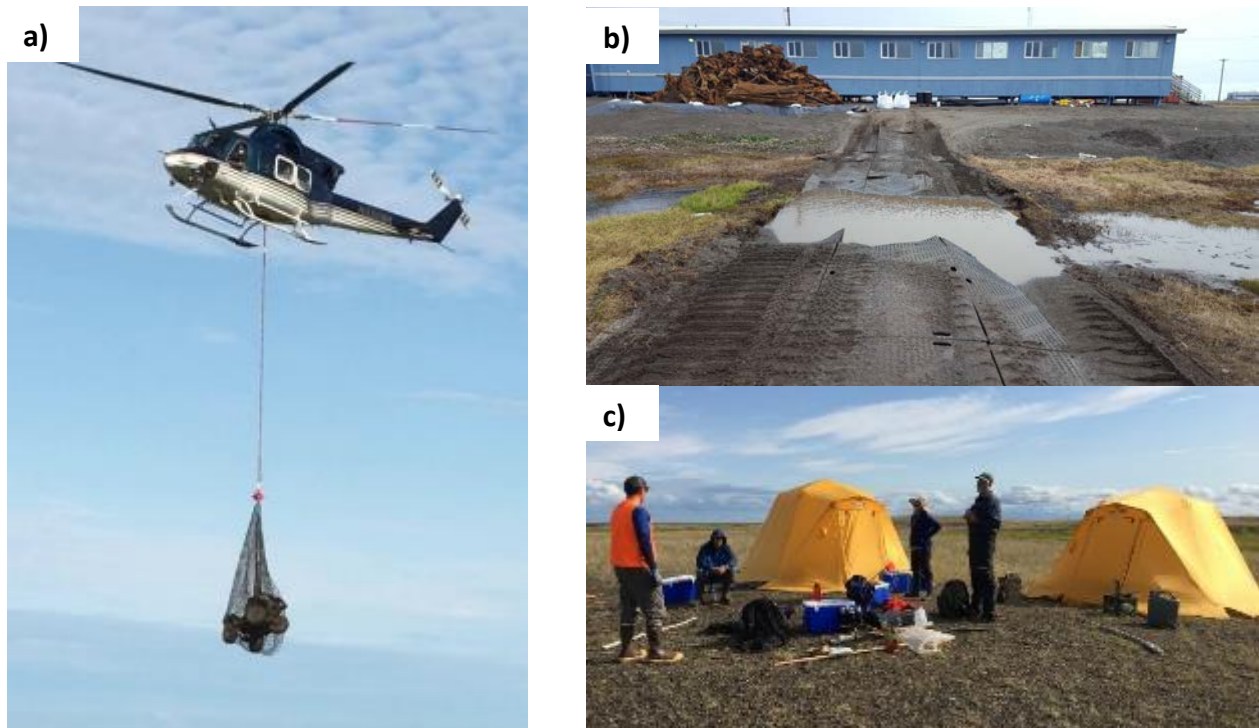


Figure 2-5. a) Field crews have historically accessed Icy Cape by helicopter, sling loading field gear onsite. b) Navy contractors lay down tundra mats over vegetated areas to avoid unnecessary vegetation and ground disturbance when heavy machinery is used to complete remedial actions on the tundra; all disturbed areas are reseeded. c) Crews set up a field camp during fieldwork at the more remote sites (Icy Cape and Pt. McIntyre) in the case they are stranded onsite overnight.

2.1.5 Operations and Activities – Potential Mission Impacts to Natural Resources

Below potential mission impacts to natural resources relate to the Navy's restoration activities, as this is the only active mission onsite. Strategies to minimize or mitigate these adverse effects are detailed in Sections 4.2.2 and 4.3.2.

Mission Impact 1: Ground/vegetation disturbance

Transiting the site during monitoring or clean-up activities inevitably causes some degree of disturbance to the habitat, to include vegetation disturbance, decrease in vegetation productivity, change in active layer depth, and/or change in soil moisture (Bader & Guimond, 2006). This can result from repeatedly walking over the same area, driving vehicles or heavy equipment on the tundra (Figure 2-6), or certainly from ground disturbance construction activities (Figure 2-5b; Cater, 2010).



Figure 2-6. Ruts observed on antenna field property, 2019, responsible party unknown.

Mission Impact 2: Wildlife disturbance

Human presence can disrupt wildlife behavior, physiology, and demography (Price, 2008). “Human presence” includes physical presence as well as noise disturbance near an animal. This is of highest concern when considering nesting or brooding birds, large mammals with young, and hauled out marine mammals. In regards to breeding animals, travel with young is slower, more difficult, and possibly infeasible, so avoidance becomes more difficult for the animals. Alternatively, if an adult does flee the area because perceived risk is high, this leaves their young vulnerable to predation and exposure. In regards to marine mammals, haul out periods are important to individuals to replenish energy stores and to thermoregulate (USFWS, 2017b). Marine mammals are sensitive to human presence: human sightings, sounds, and even scents can cause resting animals to flee a haulout (USFWS, 2017b).

Mission Impact 3: Wildlife attraction

Alternatively, human presence on a site may artificially attract wildlife to an area. Various species may recognize human scents as a potential food source: Human food, toiletry products, trash, and even excrement, can attract wildlife to an area. Additionally, wildlife can learn to associate humans with a food source, even without a direct scent attractant, if humans have fed the individual or the individual has successfully scavenged near human settlements in the past. Wildlife attraction can result in increased human-wildlife conflict or lead to increased predation pressure in an area (e.g., increasing likelihood of encountering an aggressive brown bear or polar bear or attracting foxes and ravens to an area which then opportunistically feed on avian nests).

Mission Impact 4: Accidental spills

Transporting and operating vessels, vehicles, and heavy machinery on these sites presents a risk of oil or fuel spills onsite if a machine malfunctions or if an accident occurs.

2.1.6 Constraints Map

The constraints for development and activity at the northern Alaska sites are primarily wetland areas, as identified in Figures 2-7, 2-8, and 2-9. Note that these areas have not been formally surveyed for wetlands and only represent rough boundaries. During the summers, tundra ground is typically soft and the active soil layer is particularly vulnerable to disturbance. This limits the ability for heavy equipment to operate in wetland areas. Wetland constraints and management are discussed further in Sections 2.3.2 and 4.3.

Additionally, these sites have timing constraints. The Navy typically conducts work after 15 July to avoid disturbance to federally threatened eiders, and prior to 15 October to avoid disturbing denning polar bears, discussed further in Section 4.2. These timing constraints could be alleviated by collecting better data for the sites. By better understanding when and where federally listed species are present onsite, the Navy could potentially develop site-specific guidelines rather than following the general guidelines developed for the greater North Slope area.

2.1.7 Opportunities Map

Natural resources opportunities maps identify areas where the military mission (i.e., new construction or training) could expand with limited effect upon the area's natural resources. No training is conducted at the northern Alaska sites and no development is planned at the sites, so no opportunities maps are included in this plan.

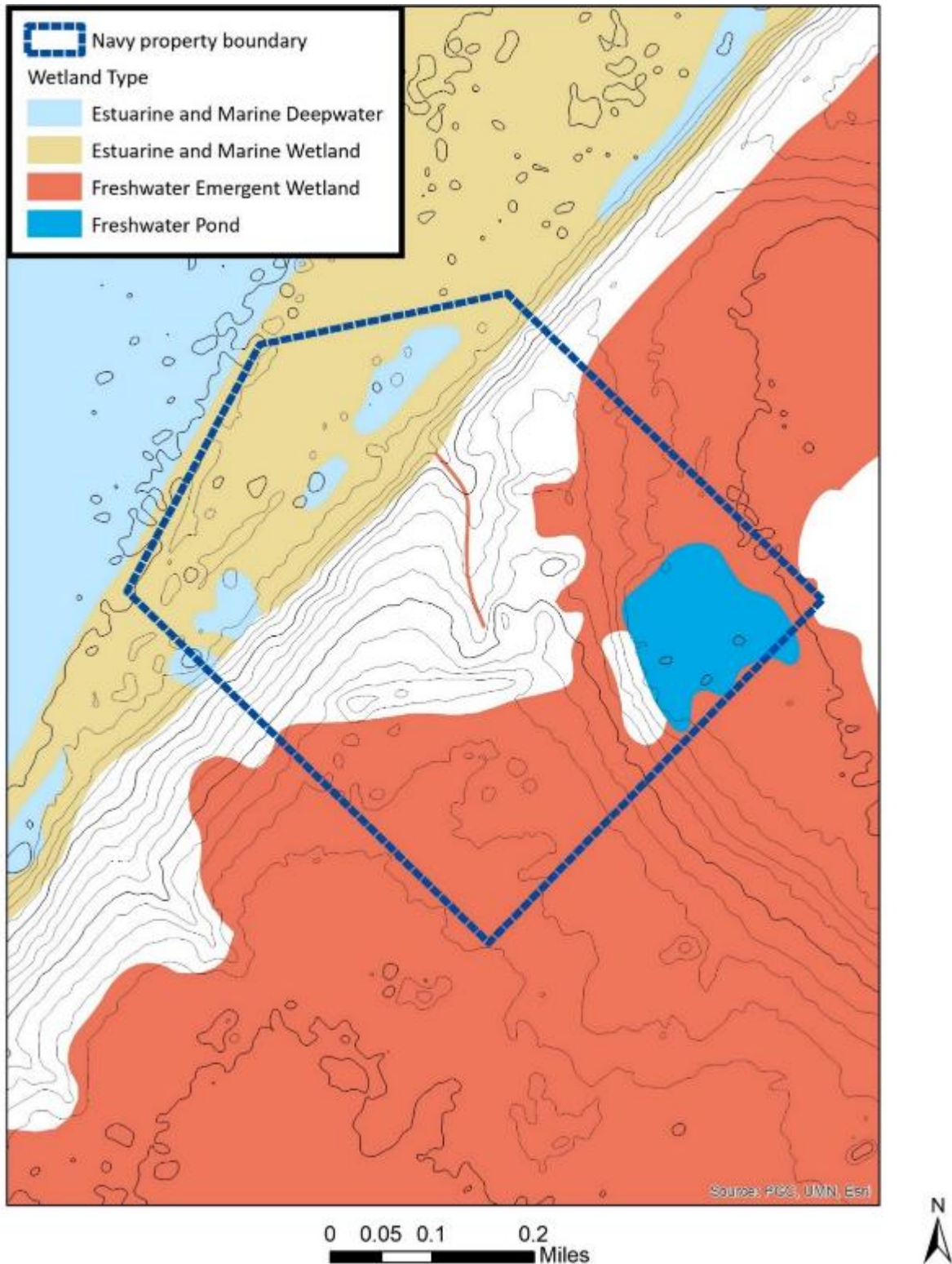


Figure 2-7. Icy Cape, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Icy Cape (white areas) are either human-constructed gravel pads or bluff habitat.

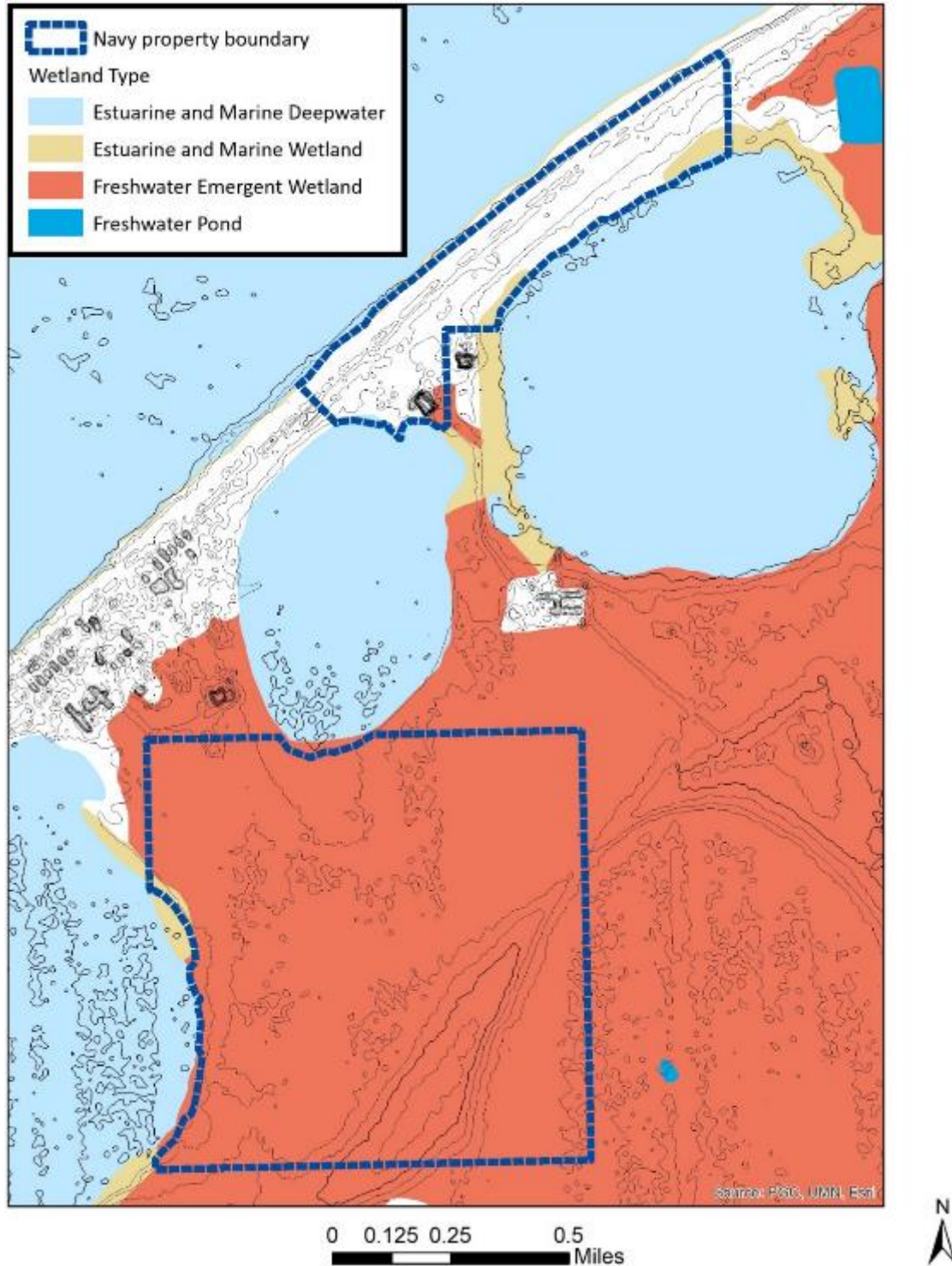


Figure 2-8. Barrow, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Barrow (white areas) are typically developed, gravel-covered areas. The airstrip site is primarily covered by imported gravel and Marsten matting.

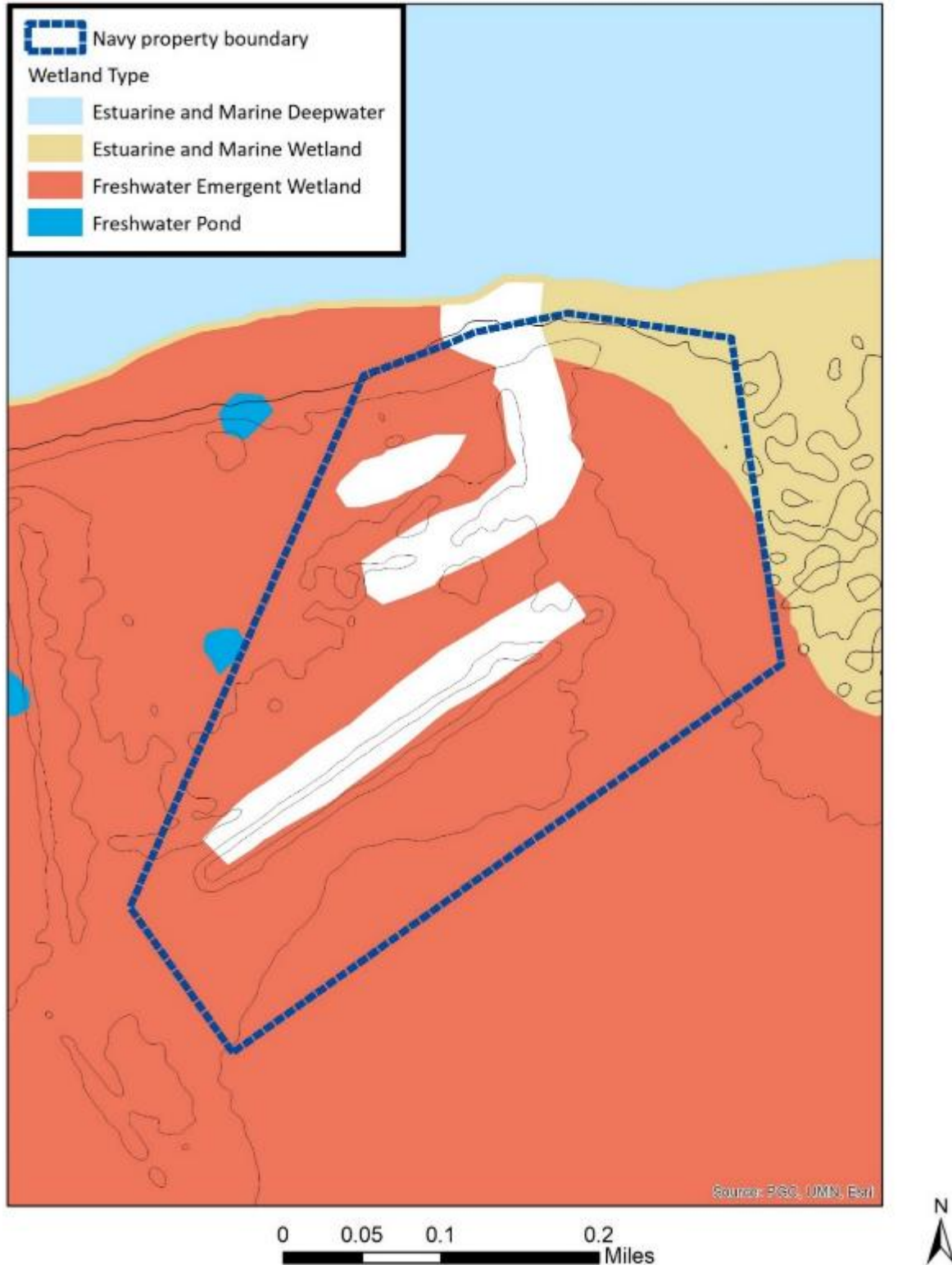


Figure 2-9. Point McIntyre, wetland areas and topography. Topographic contours represent 2 meters in elevation. Wetland information from National Wetland Inventory (USFWS, 2020c). Areas not designated as wetlands at Pt. McIntyre (white areas) are gravel-covered, manmade areas – former airstrips, building platforms, roads, or landfills.

2.2 General Physical Environment and Ecosystems

The Navy's three arctic sites are located on the Arctic Coastal Plain (ACP) ecological subregion of the United States (Figure 2-10). The entire ACP is underlain by permafrost, defined as a zone of frozen material—rock, soil, organic material, and/or ice—which does not thaw for at least two consecutive years (Huryn & Hobbie, 2012). The permafrost can be anywhere from 90-600 meters thick (Huryn & Hobbie, 2012). The surficial active layer or subsidence zone, which can vary from less than a foot to about two feet in depth, freezes and thaws each year. Decomposition and nutrient cycling occur solely in this subsidence zone, where roots and bacteria grow. Below the active zone, the permanently frozen substrate prevents penetration by water, trapping snowmelt and runoff on the surface as a perched water table. This condition results in the wetlands that cover most of the North Slope despite the desert-like level of annual precipitation of 4.53 inches per year (Tarnocai, 2009; Arguez et al., 2019).

The ACP lies north of the arctic tree line. Trees cannot physically grow in this climate due to several limiting factors: Mean temperature during the summers is too low with mean July temperatures ranging from 41-45° Fahrenheit (Raynolds et al., 2005); it has extremely limited sunlight for a large portion of the year; the active soil layer is too shallow; and likely other factors related to moisture and nutrient availability (Huryn & Hobbie, 2012).

The ACP is characterized by a network of lakes, ponds, and streams that make up nearly 30 percent of the land area (McEwen & Butler, 2018; McNab & Avers, 1996), and wetlands cover over 80 percent of the ACP (ADF&G, 2006; Hall et al., 1994). The majority of those wetlands (approximately 84 percent) are considered palustrine emergent wetlands; soils become saturated during the summers as the ground thaws and summer precipitation is collected (Hall et al., 1994). Vegetation is covered by snow and ice from October through mid-June in a typical year.

The soil system of the ACP is generally characterized by a peaty layer with a dense fine/medium root system, which transitions into a gravelly silt loam (NRCS, 2002). This system typically has poor drainage due to the permafrost layer and moderately slow permeability due to the high silt content, though level of permeability varies markedly depending on the amount of unconsolidated gravels in the upper soil column (NRCS, 2002).

The thawing and freezing cycle of soils creates many unique geographic features on the North Slope. The geographic features most prominent on the Navy sites include polygons and thermokarst, as defined below. As the ground freezes each year, it dries out significantly, causing cracks to form in the earth like those seen in a dried mud puddle (Figure 2-11a). During the spring, when the subsidence zone thaws, water fills these cracks, which will then freeze in the fall and form an ice wedge, which expands and creates an even bigger gap. This freeze-thaw process creates a pattern on the landscape of tundra



Figure 2-10. Alaska North Slope subregions, based on USGS geographic designations (Wahrhaftig, 1965). Figure from Cater, 2010.

“polygons” delineated by these ice wedges and resulting waterways (Figure 2-11b). Polygonal tundra may be classified as high-centered or low-centered, depending on if the polygon centers are higher or lower than the polygon margins, respectively. High-centered polygons tend to be drier in the polygon centers with wet margins, whereas low-centered polygons tend to be wet in the centers with drier margins. As the ice wedges expand each winter and subsequently melt each summer, margins tend to break down, which causes polygons to consolidate and often form shallow ponds and pools on the landscape called thaw ponds (Huryn & Hobbie 2012).

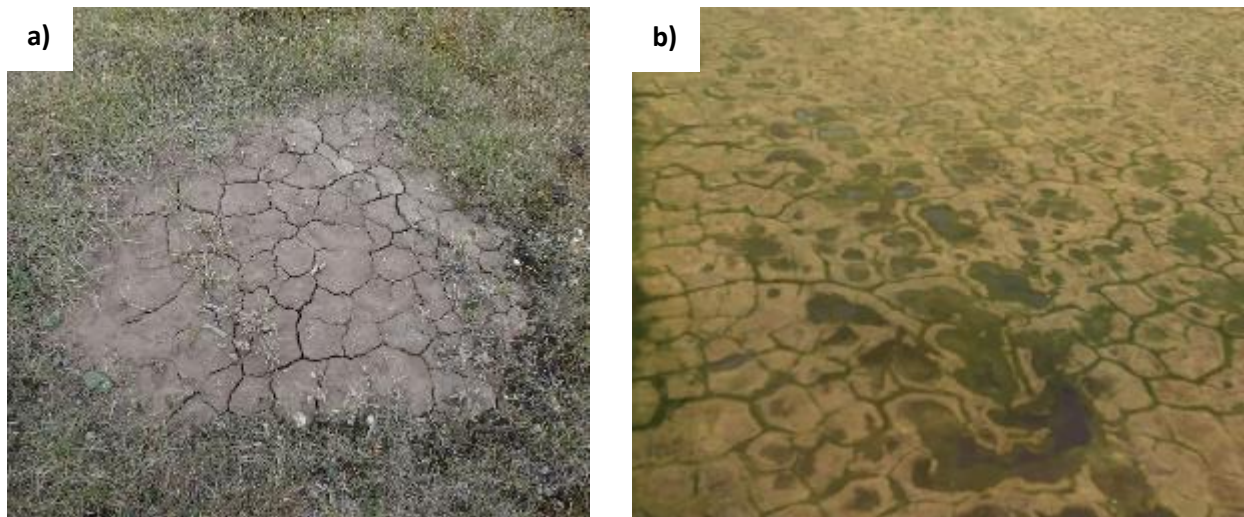


Figure 2-11. a) Dried mud on antenna field property. b) Aerial view of polygonal tundra, Arctic Coastal Plain.

Thermokarst features result from thawing permafrost, which causes the overlying surface soils to settle unevenly. This slumping can result in small pits, valleys, or hummocks on the ground surface, and can damage overlying infrastructure. Though this is a naturally occurring process, warming arctic temperatures increase the rates of permafrost thaw and the frequency of thermokarst activity (Lewkowicz & Way, 2019).

All three parcels are in direct proximity to the Arctic Ocean. The Chukchi Sea lies west of Pt. Barrow, while the Beaufort Sea lies east. Icy Cape is on the Chukchi Sea coast, while Pt. McIntyre is on the Beaufort Sea coast. The Barrow runway parcel parallels the Chukchi Sea coast and is in close proximity to the confluence of the two seas.

The marine environmental dynamics are dominated by sea ice, which typically grows in the Arctic Ocean from the end of September through mid-March, and then begins melting from the end of March through mid-September (Figure 2-13). Historically, the Beaufort Sea would remain covered in ice for the majority of the year, while the Chukchi typically melted in late spring (National Snow and Ice Data Center, 2019).

2.2.1 Ecosystem Types

The Navy uses the International Ecological Classification Standards (ICES) as defined by NatureServe (2013) to define ecosystem types during the Conservation Metrics reporting process. Though no formal vegetation surveys have been completed for Barrow, Icy Cape, and Point McIntyre, five terrestrial ICES ecosystem types are identified as likely occurring on them (Table 2-3): Alaska Arctic Shrub Tussock-Tundra, Alaska Arctic Sedge Freshwater Marsh, Alaska Arctic Polygonal Ground Wet Sedge Tundra (Figure 2-12a), Alaska Arctic Polygonal Ground Tussock Tundra, and Alaska Arctic Marine Beach and Beach Meadow (Figure 2-12b). Additionally, the Navy sites include intermittent streams and lakes and freshwater ponds and lakes.



**Figure 2-12. a) Alaska arctic polygonal ground wet sedge tundra, Barrow antenna field.
b) Kasegalik Lagoon shoreline; marine beach meadow habitat at Icy Cape.**

Table 2-4. Ecosystem types presumed to occur on the Navy's northern Alaska sites

| <i>CODE</i> | <i>NAME</i> | <i>Description</i> | <i>Dominant cover-types</i> | <i>Presumed Site Occurrence</i> |
|-------------|---|--|---|---------------------------------|
| CES102.180 | ALASKA ARCTIC SHRUB-TUSSOCK TUNDRA | Generally occurs in valleys and on slopes throughout arctic Alaska. Systems are typically poorly drained and underlain by mesic, silty mineral soils with a shallow surface organic layer surrounding the tussocks. | The system is dominated by tussock-forming sedges (>35 % cover) as well as low and dwarf shrubs (>25 %). | Icy Cape |
| CES102.184 | ALASKA ARCTIC SEDGE FRESHWATER MARSH | Generally occurs along margins of ponds, lakes, and beaded streams. These systems typically have standing water, which is usually nutrient-rich. Soils are typically muck or mineral. | The system is dominated by sedges, but may support horsetails, forbs, or other grasses. | Icy Cape, Barrow |
| CES102.203 | ALASKA ARCTIC POLYGONAL GROUND WET SEDGE TUNDRA | Generally occurs on low-centered polygons. Polygon centers typically have standing water present during the summers. Low perimeters are also typically wet, though higher perimeters may support low shrubs and tussock-forming grass communities. | Both low centers and low perimeters are dominated by wet sedge vegetation. Higher perimeters may support shrub and tussock-forming vegetation. | Icy Cape, Pt. McIntyre, Barrow |
| CES102.204 | ALASKA ARCTIC POLYGONAL GROUND TUSSOCK TUNDRA | Generally occurs on high-centered polygons. Centers are typically mesic, dominated by tussocks, while the perimeters are typically wet. | High centers are dominated by tussock-forming sedges, with interspersed grasses, forbs, shrubs, and mosses. Perimeters are dominated by wet sedges. | Icy Cape, Pt. McIntyre, Barrow |
| CES102.207 | ALASKA ARCTIC MARINE BEACH AND BEACH MEADOW | Generally occurs just above mean high tide along beaches, beach dunes, or vegetation that has stabilized sand and cobble deposits. | Salt-tolerant forb communities; dwarf shrubs may be present on crests of older dune systems. | Icy Cape, Pt. McIntyre, Barrow |
| N/A | INTERMITTENT STREAMS AND LAKES | Freshwater streams and lakes that occur only seasonally, during periods with mean temperatures above freezing and seasons of high precipitation and high groundwater tables. | N/A | Icy Cape |
| N/A | FRESHWATER PONDS AND LAKES | Bodies of water surrounded by land, without tidal inundation from the marine environment. Most of the ponds and lakes on the coastal plain are the result of the freeze/thaw cycle of polygonal tundra. | N/A | Icy Cape, Pt. McIntyre, Barrow |

Table adapted from NatureServe's (2013) *Descriptions of Ecological Systems for Modeling of LANDFIRE Biophysical Settings*

2.2.2 Topography

Icy Cape

The Navy's Icy Cape property extends approximately 300 meters along the shoreline about one mile south of Icy Cape, an alluvial point where the coastline turns abruptly east. The property is protected by a long, low barrier island separating the mainland from the Chukchi Sea. A shallow lagoon has formed behind the barrier island with a network of interconnected circular ponds and tidelands next to the Navy's site. The ponds and tidelands are further protected from wave action by a gravel road built to transport barged gravel to construct the Icy Cape facility (Figure 2-2). The shoreline is backed by a low terrace (about seven meters tall) that rises to a higher upland on which the former DEW line station was built (Figure 2-7). The most conspicuous natural feature in the upland area is the Icy Cape Creek drainage which runs north through the middle of the site (Figure 2-7). The head of the drainage is truncated by a formal gravel airstrip. The five-foot thick gravel pad forming the south runway reaches 15 meters above sea level, the maximum site elevation.

Barrow

The antenna field ranges from sea level to just six meters in elevation (Figure 2-8). The highest point on the property is a former access road, which transects the southeast corner of the antenna field; the former road is no longer used and is largely revegetated. The old Navy runway is at approximately three meters in elevation and is flat, situated between the Chukchi Sea, Imikpuk Lake, and the North Salt Lagoon, all of which are at sea level (Figure 2-8).

Point McIntyre

Pt. McIntyre is also protected by barrier Islands located approximately one mile from the shoreline; the inland waterway is Gwydyr Bay. The station was built on a five-foot thick gravel pad laid on permafrost. The surrounding land consists of small thaw ponds. The gravel platforms reach a maximum height of just five meters above sea level (Figure 2-9).

2.2.3 Climate Trends

The Arctic is warming at twice the rate as the rest of the planet, as indicated by over-land air temperatures (Overland et al., 2018). Average arctic temperatures surpassed historic records each year between 2014 and 2018 (Overland et al., 2018) and the average sea ice extent between 2011-2018 fell well below 90 percent of the variation observed between 1980 and 2010 (Figure 2-13).

Coastal Alaskan communities and wildlife alike rely on landfast ice. Landfast ice primarily forms off coasts in shallow water, and unlike pack ice, typically remains affixed to coastlines or shallow sea floor. Landfast ice usually starts to form in the fall and typically melts completely during the summer in this area (Polar Science Center, 2021). Landfast ice mitigates shoreline erosion by protecting vulnerable shorelines from large swells and storm events. Additionally, both polar bears (*Ursus maritimus*) and native people hunt sea mammals hauled out on the ice sheet's seaward edge (Laidre et al., 2015). However, landfast ice is generally forming later in the year and breaking up earlier, similar to the overall sea ice trends (Mahoney, 2018). This has severe consequences for polar bears as well as subsistence hunters. Polar bears have a shorter sea ice hunting period, forcing them to spend more time on land, and increasing polar bear-human interactions (Laidre et al., 2020). During a site visit, one native

Utqiagvik community member stated, “We used to be ice hunters – now we have to be sea hunters.” Another stated that landfast ice usually arrived by her birthday on September 12, but in late-September 2019, sea ice was still 350 miles offshore.

On land, the overall abundance and productivity of arctic tundra vegetation above ground on the North Slope has increased significantly between 1982 and 2017 (Epstein et al., 2018). While this may have positive effects on terrestrial wildlife in the short term, this increase could result in the acceleration of permafrost thawing in the long term, releasing trapped methane, which would then accelerate the effects of climate change.

Pursuant to Stein et al. (2019), climate adaptation considerations are integrated throughout this plan, and discussed in more detail in future sections.

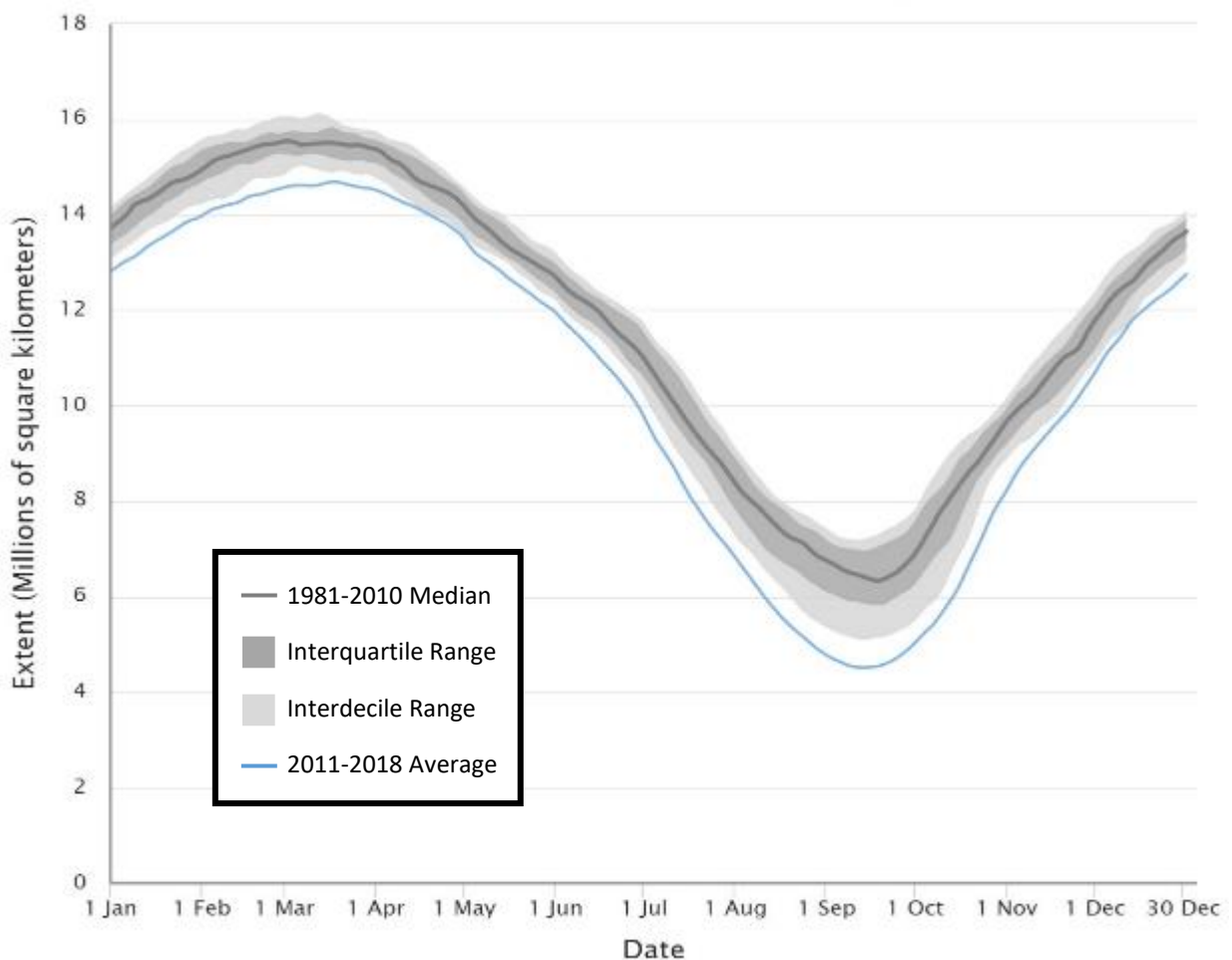


Figure 2-13. 30-year median, interdecile range, and interquartile range of sea ice extent in the Arctic Ocean between 1981-2010. Also illustrated is the 2011-2018 average extent. Area of sea ice coverage is defined as that area of ocean with at least 15 percent sea ice. Figure from the National Snow and Ice Data Center (2019).

2.3 General Biotic Environment

2.3.1 Threatened and Endangered Species and Species of Concern

Three species that occasionally occur on Navy sites have been designated threatened under the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*): polar bear, spectacled eider, and Steller's eider (Table 2-4).

Additionally, three listed marine mammals are likely to occur in the nearshore marine environment proximate to the Navy's three sites: bowhead whale, ringed seal, and bearded seal (Table 2-4).

In addition to protection under ESA, the bowhead whale, ringed and bearded seals, and polar bears are also protected under the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*, as amended).

Table 2-5. Federally threatened and endangered species occasionally present on the Navy's northern Alaska sites

| COMMON NAME | Scientific Name | ESA Status | MMPA Stock Status | Final Rule to List (Year) | Final Rule to Designate Critical Habitat (Year) | Species Presence at Site |
|--------------------|-------------------------------------|-------------------|--------------------------|----------------------------------|--|---------------------------------|
| POLAR BEAR | <i>Ursus maritimus</i> | Threatened | Depleted | 73 FR 28306 (15 MAY 2008) | 75 FR 76086 (07 DEC 2010) | IC, BA, PM |
| SPECTACLED EIDER | <i>Somateria fischeri</i> | Threatened | N/A | 58 FR 27474 (10 MAY 1993) | 66 FR 9146 (08 MAR 2001) | IC, BA |
| STELLER'S EIDER | <i>Polysticta stelleri</i> | Threatened | N/A | 62 FR 31748 (11 JUN 1997) | 66 FR 8850 (02 FEB 2001) | IC, BA |
| BOWHEAD WHALE | <i>Balaena mysticetus</i> | Endangered | Depleted | 35 FR 18319 (02 DEC 1970) | N/A* | IC, BA, PM |
| RINGED SEAL | <i>Phoca hispida hispida</i> | Threatened | Depleted | 77 FR 76706 (28 DEC 2012) | 86 FR 1452 (08 JAN 2021)** | IC, BA, PM |
| BEARDED SEAL | <i>Erignathus barbatus nauticus</i> | Threatened | Depleted | 77 FR 76739 (28 DEC 2012) | 86 FR 1433 (08 JAN 2021)** | IC, BA, PM |

IC: Icy Cape, BA: Barrow, PM: Point McIntyre

*NOAA has no legal obligation to designate critical habitat for the bowhead whale because the species was listed prior to 1973.

**Proposed rule, not final

USFWS determined ESA-listing is not warranted for either the Pacific walrus or the yellow-billed loon, after the species were petitioned for listing in 2007 and 2008, respectively (Table 2-6). NMFS determined ESA-listing is not warranted for the Bering distinct population segment (DPS) of the spotted seal in 2009, after the population was petitioned for listing in 2008. However, all three species are still designated state species of greatest conservation need (SGCN) by ADF&G (ADF&G, 2015), the Pacific walrus and spotted seal are protected under MMPA, and the yellow-billed loon is on the Alaska Audubon Society’s red list of declining birds.

Table 2-6. Species proposed and determined not warranted for listing under the ESA, found in the vicinity of the Navy’s northern Alaska sites

| COMMON NAME | Scientific Name | Year petitioned for listing | Years of petition findings | Determination Not Warranted for Listing | Potential presence at site |
|--------------------------|------------------------------------|------------------------------------|-----------------------------------|--|-----------------------------------|
| YELLOW-BILLED LOON | <i>Gavia adamsii</i> | 2007 | 2007, 2009, 2011, 2012, 2014 | 79 FR 59195 | IC, BA, PM |
| PACIFIC WALRUS | <i>Odobenus rosmarus divergens</i> | 2008 | 2009, 2011, 2012, 2017 | 82 FR 46618 | IC, BA, PM |
| SPOTTED SEAL, BERING DPS | <i>Phoca largha</i> | 2008 | 2009 | 74 FR 53683 | IC, BA, PM |

Icy Cape has a known walrus haulout on the barrier islands, just one to two miles from Navy property (Figure 2-14). Walrus herds may use these haulouts in the summer and fall for months at a time, numbering in the thousands. A haulout is typically used sporadically from year to year and not used regularly. Stampedes can occur at these haulouts if walruses are startled, resulting in deaths and injuries en masse (USFWS, 2019c). Less frequently, walruses may haul out on shore individually or in pairs. A pair of walruses was observed on the Icy Cape property’s shoreline during a summer 2019 restoration survey (Navy, 2020a), and walruses occasionally haul out on the Barrow shoreline, though this is a rare occurrence. It is also unlikely, but possible, for individuals or small groups of walruses to haul out near Pt. McIntyre since walruses have occasionally been observed in nearby areas by oil field workers (USFWS, unpublished reports).

Yellow-billed loons likely occasionally feed in ponds/lagoons on Navy property, but typically nest further inland. No formal surveys have been completed for the species on Navy property. During a July 2019 site visit to the Barrow property, no yellow-billed loons were observed on the property or in the adjacent lagoons, though one individual was observed flying overhead (unpublished data). Navy contractors observed a single yellow-billed loon on an Icy Cape thaw pond in July 2019 (Navy, 2020a).

Ice seals are regularly observed hauled out on barrier islands off Icy Cape (Figure 2-14). It is difficult to distinguish the four smaller arctic pinnipeds—spotted seal, ringed seal, bearded seal, and ribbon seal (*Histiophoca fasciata*)—from each other in a small plane or helicopter with consistency, so they are collectively referred to as ice seals or “small unidentified pinnipeds”.

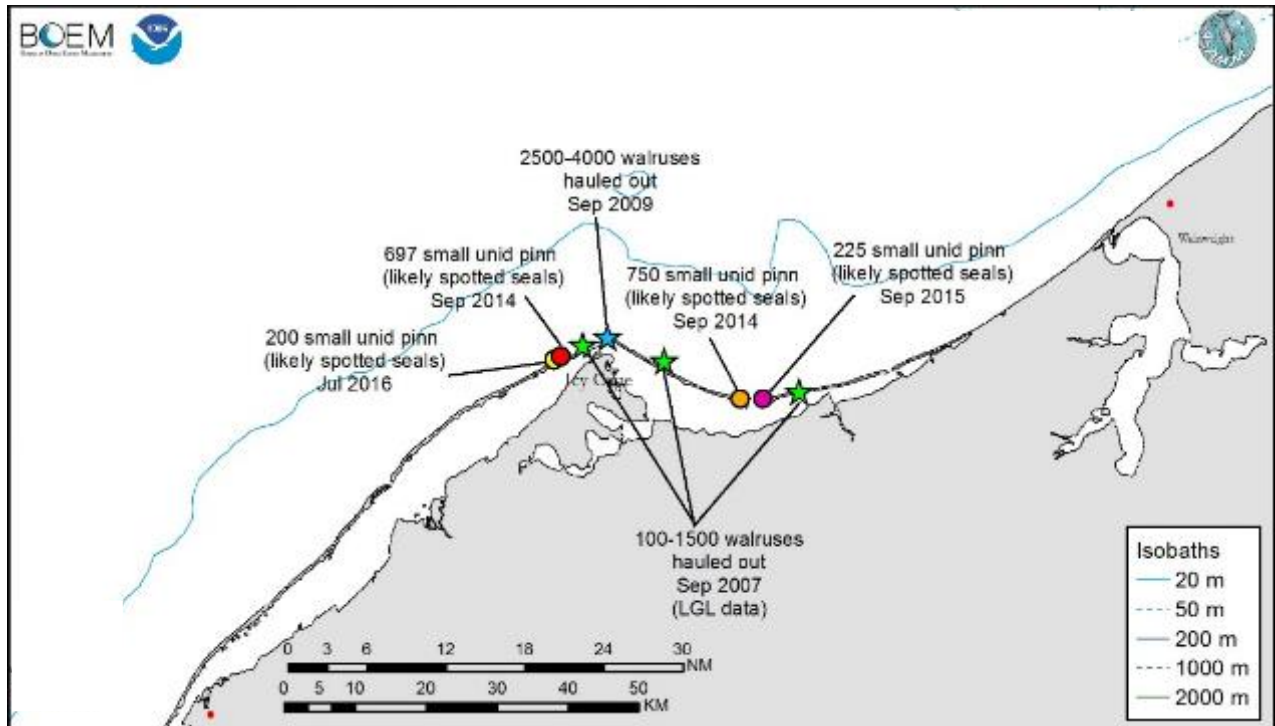


Figure 2-14. Pinniped and walrus occurrence near Icy Cape, Alaska. Figure prepared by Janet Clarke, Bureau of Ocean Energy Management, in 2017. All data are from the Aerial Surveys of Arctic Marine Mammal monitoring program, unless otherwise noted. “Small unid pinn” is shorthand for small unidentified pinniped.

2.3.2 Wetlands and Deep Water Habitats

As seen in Figures 2-7, 2-8, and 2-9, Icy Cape, Pt. McIntyre, and the Barrow antenna field are predominantly covered by wetlands (Table 2-7). The sites are dominated by high-centered and low-centered polygonal tundra, with scattered thaw ponds. Those areas which are not designated as wetlands are typically former runways, roads, and pads which the Navy elevated to avoid inundation and covered in gravel or Marston matting to discourage erosion. This is especially true on the Barrow airstrip site, which in contrast to the other sites, only 7 percent of the site is considered wetland habitat.

The Navy has not performed ground-based wetland surveys for these sites; these data are from the USFWS National Wetland Inventory (USFWS, 2020c), which uses high-altitude aerial imagery to identify wetlands based on vegetation, visible hydrology, and geography.

Table 2-7. Wetland acreage on the Navy's northern Alaska sites

| NAVY PROPERTY | Wetland Area (acres) | Total area (acres) | Proportion of property designated as wetlands (%) |
|---|---------------------------------|-------------------------------|--|
| PT. MCINTYRE | 57.75 | 70 | 82.5 |
| ICY CAPE | 99.28 | 156 | 63.6 |
| BARROW-RUNWAY | 11.65 | 150 | 7.8 |
| BARROW-ANTENNA FIELD | 503.4 | 535 | 94.1 |
| NAVY NORTHERN ALASKA SITES TOTAL | 672.08 | 911 | 73.8 |

Data from USFWS, 2020c

2.3.3 Fauna

No standardized fauna surveys have been completed on the Navy's northern Alaska sites, though surveys have been conducted specifically for Steller's and spectacled eiders at Barrow in the past. However, NSB has produced general flora and fauna lists for the North Slope region, which are summarized in Appendix C (NSB, 2019a). Though some of the species listed in Appendix C may be more representative of the Arctic Foothills (Figure 2-10), the list serves as a starting reference for fauna on the Navy's northern Alaska sites.

2.3.3.1 Invertebrates

Arctic invertebrates are found at densities of several hundred thousand individuals per square meter, and occasionally even as great as several million per square meter during the height of the growing season (Hodkinson, 2013). They play integral roles in energy flow, decomposition, nutrient cycling, and pollination processes in both aquatic and terrestrial ecosystems in the Arctic (Hodkinson, 2013).

In terms of biomass, terrestrial invertebrate communities in the vicinity of Barrow are dominated by orders Diptera (flies and mosquitoes), Collembola (springtails), and subclass Acari (mites) (Maclean & Pitelka, 1971). Diptera populations reach a sharp peak in surface activity in mid-July, which closely aligns with the peak of shorebird hatchling activity on the tundra, one of the ACP's dominant terrestrial insectivorous taxa during the summer (McKinnon et al., 2012; Maclean & Pitelka, 1971).

Within ponds and lakes, Alaskan freshwater invertebrate communities are concentrated either in the sediments in the center of the waterbody, or among the grasses and sedges on pond and lake margins (Lougheed et al., 2011; Butler et al., 1980). Class Insecta is by far the most diverse and abundant group in terms of species and biomass in tundra ponds near Utqiagvik: Chironomidae (midge larvae) comprised 75-95 percent of the macrobenthos biomass by itself, while Coleoptera (water beetles) and Plecoptera (stoneflies) were also present in smaller numbers. Additionally, classes Annelida (worms), Gastropoda (snails), Hydracarina (water mites), and Turbellaria (flatworms) were present in the sampled ponds to varying degrees (Lougheed et al., 2011; Butler et al., 1980).

Approximately 5,000 marine invertebrate species inhabit the Arctic Ocean and at least 24 phyla (Josefson & Mokievsky, 2013). Most species (upwards of 90 percent) occur in the benthic environment on the continental shelf, but pelagic (open water) communities exist as well, in addition to entire

communities entirely dependent on sea ice. Under the current plan of work, the Navy has relatively limited effects on these marine invertebrate communities.

The ACP's invertebrate communities are already responding to environmental changes. Warmer temperatures lead to increased survival of mosquito larvae, contributing to larger adult populations as well as earlier emergence (Culler et al., 2015). Additionally, new species of predatory midge larvae, water beetles, dragonflies, and wasps have been observed in the Barrow area in the past twenty years (Milman, 2018; Waldman, 2017; Loughheed et al., 2011).

2.3.3.2 Fish

Fourteen species of fish are widespread in the North Slope freshwater systems: longnose sucker (*Catostomus catostomus*), burbot (*Lota lota*), nine spine stickleback (*Pungitius pungitius*), and slimy sculpin (*Cottus cognatus*), along with ten species in family Salmonidae (char, ciscoes, grayling, and whitefish) (Huryn & Hobbie, 2012). NSB has identified 39 common fish species in the freshwater and marine environments combined, along with one shark and one skate (Appendix C; NSB, 2019a). These fish are most likely to occur in the lagoons on or adjacent to Navy property, as well as in the marine nearshore environment.

Taking into account Traditional Ecological Knowledge (TEK), North Slope residents have noted pronounced differences in fish populations in recent years, presumably as a result of climate change. To name a few examples, Barrow residents have caught red/sockeye salmon (*Onchorhynchus nerka*) and northern wolfish (*Anarhichas denticulatus*) for the first time in oral history; hunters report a boom in pike (*Esox lucius*) populations – a significant predator of native fishes; and anglers note that broad whitefish (*Coregonus nasus*) seem more lethargic as stream temperatures increase (Waldman, 2017). Warmer water temperatures have allowed access to species that typically are found further south, and whitefish are adapted to cold water temperatures in the Arctic.

2.3.3.3 Amphibians and Reptiles

No amphibians or reptiles are known to occupy habitat near the Navy's northern Alaska sites.

2.3.3.4 Birds

Only seven avian species are year-round residents of the ACP, including the rock and willow ptarmigans (*Lagopus mutus* and *L. lagopus*), common raven (*Corvus corax*), common and hoary redpolls (*Acanthis flammea* and *A. hornemanni*), gyrfalcon (*Falco rusticolus*), and snowy owl (*Bubo scandiacus*) (NSB, 2019a; Huryn & Hobbie, 2012). However, nearly 100 avian species from across the world travel thousands of miles each summer to breed on Alaska's ACP due to a combination of low competition, rich food resources, and comparatively low predation risk (Huryn & Hobbie, 2012; Mckinnon et al., 2010). Enormous flocks of waterfowl stage and molt together on arctic lakes or in the nearshore environment – brandt and eider flocks can number in the thousands during the summers on Middle Salt Lagoon at Barrow or at Kasegalik Lagoon offshore at Icy Cape. NSB identifies 91 avian species common to the North Slope including raptors, seabirds, shorebirds, songbirds, upland birds, and waterfowl (Figure 2-15; Appendix C; NSB, 2019a).

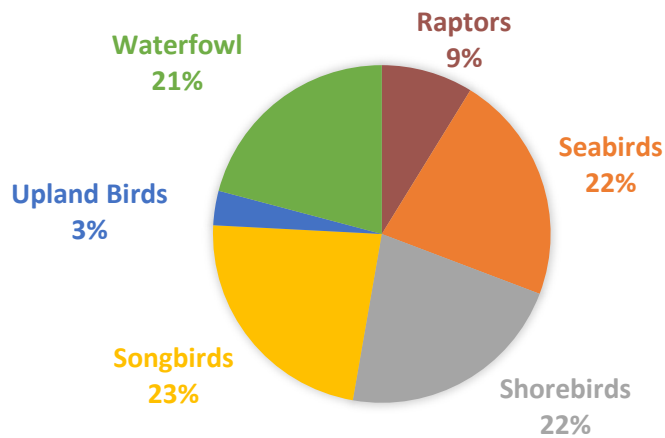


Figure 2-15. Percentage of each ecological group that comprise the 91 common North Slope avian species (Appendix C; NSB, 2019a).

Avifauna evolved to match their hatch dates with peak food availability on the tundra, which closely aligns with environmental conditions such as first snow-free day and air temperature (Saalfeld et al., 2019; Liebezeit et al., 2014; McKinnon et al., 2012). Several studies indicate that primarily insectivorous songbird and shorebird species (N=11 species) on the ACP are initiating nesting earlier over time on average, correlated to the warming conditions in the Arctic (Liebezeit et al., 2014; McKinnon et al., 2012; Hoyer et al., 2007). Saalfeld et al. (2019) indicated that climate unpredictability could contribute high variability in shorebird chick survival, and could lead to lower shorebird populations over the long run, as well as other species dependent on invertebrate emergence such as the threatened eiders.

Taylor et al. (2018) observed that over a 60-year timespan (1951-2012) in study areas near Utiagvik, Alaska (south of the Navy's Barrow Antenna Field), species which preferred breeding in moist or wet tundra demonstrated stable or increasing nesting trends while probability of nesting has declined for species that prefer breeding in dry habitats.

2.3.3.5 Mammals

NSB lists 36 mammalian species in the region: 27 terrestrial species and 9 marine. The mammalian community is dominated by orders Carnivora (i.e., bears, foxes, wolves, weasels, seals, n=16), Rodentia (i.e., squirrels, lemmings, voles, n=10), and Cetartiodactyla (i.e., muskox, caribou, whales, and dolphins, n=7).

Brown lemmings (*Lemmus trimucronatus*) are a keystone species of the arctic terrestrial system and drive population dynamics of several predators in the system such as arctic foxes (*Alopex lagopus*), weasels (*Mustela* spp.), jaegers (*Stercorarius* spp.), and snowy owls (*Nyctea scandiaca*) (Hury & Hobbie, 2012), in addition to affecting vegetation availability. Brown lemmings have enormous population fluctuations every five to seven years, ranging in density from 1 individual/Ha to 200+ individuals/Ha (Hobbie, 1980). Fateaux et al. (2015) suggest favorable climate conditions and food availability lead to population surges during the winter, and increased predation pressure leads to population crashes the following summer.

Additionally, mammals are hugely important subsistence and cultural resources in the Iñupiat culture. The most important subsistence resource on the North Slope is the bowhead whale (*Balaena mysticetus*; Brower and Hepa, 1998). Each part of the practice—preparation, hunt, harvest, and feast—is steeped in tradition for the Iñupiaq and involves the entire community. Residents are increasingly seeing

humpback whales (*Megaptera novaeangliae*) and orcas (*Orcinus orca*) straying into arctic waters in addition to the more historically typical bowheads and belugas (*Delphinapterus leucas*) (Milman, 2018; Waldman, 2017).

The most important terrestrial cultural resource on the North Slope is the caribou (*Rangifer tarandus*), which provides fresh meat for the North Slope communities as well as traditional resources such as furs and sinew for cultural practices (Brower and Hepa, 1998). Caribou herds forage on the ACP during summer, which is more proximate to the coast and therefore has stronger winds than inland foraging grounds, providing relief from mosquitoes and other biting insects (ADF&G, 2006). However, warmer temperatures in recent years have led to increased mosquito abundance in the Arctic (Culler et al., 2015). Larger mosquito swarms can drive the caribou herds to windier areas at higher latitudes with diminished food quality, causing increased calf mortality and poorer body condition (Culler et al., 2015).

Icy Cape¹

Brown lemmings are extremely common at Icy Cape. Additionally, arctic ground squirrels (*Spermophilus parryii*) are common on site (Navy, 2014a); they have built burrows and caused breaches in the landfill cap in the past (Navy, 2014a). These larger rodents attract brown bears to the site (*Ursus arctos*), which remediation crews generally observe at least once during summer fieldwork expeditions. Remediation crews also observed a red fox and its burrow onsite during the 2019 season (Navy, 2020a). Caribou are also more commonly observed at Icy Cape than at Barrow (Figure 2-16).

Historically and contemporarily, Icy Cape was a valuable hunting site for native Alaskans. Native peoples travelled to Icy Cape to hunt bowhead and beluga whale; bearded, ringed, and spotted seals; walrus; polar bear; and arctic fox (Nelson, 1981). Additionally, seals arrive in late July and are common through August in Kasegaluk Lagoon where they bask on sandbars and feed in the protected waters (Nelson, 1969).



Figure 2-16. Caribou pictured off in distance during fieldwork at Icy Cape. Caribou were observed regularly onsite between 24 JUL and 07 AUG 2019.

¹ All occurrence information is qualitative in nature and based on site visits by Navy personnel, reference material available for the general area, and/or information from local residents.

Barrow

Large mammals are infrequently observed on Barrow property, however caribou and polar bears periodically occur. One polar bear was observed by remediation crews on the airfield site during 2018



Figure 2-17. Arctic fox observed using a structure as shelter in Utqiagvik.

fieldwork. Signs of brown lemmings (i.e., tunnels and old nests) are evident throughout the antenna field site. Arctic foxes are relatively common around the area, though their populations fluctuate in response to the brown lemming populations. Additionally, USFWS has periodically instituted fox control efforts in the area since 2001 with the goal to reduce predation of federally protected eiders and their nests (Graff, 2018). USFWS considers the arctic fox population around Utqiagvik artificially high; the community supplements foxes' available food and shelter, thereby unnaturally increasing the local carrying capacity (Figure 2-17).

Pt. McIntyre

Caribou, polar bear, and fox have been observed at Pt. McIntyre by remediation crews (Navy, 2019c).

2.3.4 Flora

No standardized vegetation surveys exist for these sites, however, Reynolds et al. (2005) developed plant community-level maps for arctic Alaska, using data available from the Circumpolar Arctic Vegetation Map project and other published vegetation studies (Table 2-8). As discussed in Section 2.2, no trees grow naturally in the region. The most dominant cover species on the sites are graminoids, followed by mosses and lichens (Figure 2-18a; Table 2-8). Dwarf-shrubs—namely willows—and forbs also co-occur on the sites, typically on higher microsites such as high-centered polygons (Figure 2-18b; Table 2-8). A more comprehensive list of common plants observed on the North Slope is included in Appendix C, produced by the NSB (2019a). As discussed in Section 2.2.3, the ACP is experiencing an overall greening trend due to increasing temperatures and a longer growing season. One North Slope elder shared a piece of Traditional Ecological Knowledge (TEK) with NSB on the changing landscape: Grasses during the summer used to reach ankle height before snowy cold weather returned – now, it often grows to his waist or higher (Waldman, 2017).

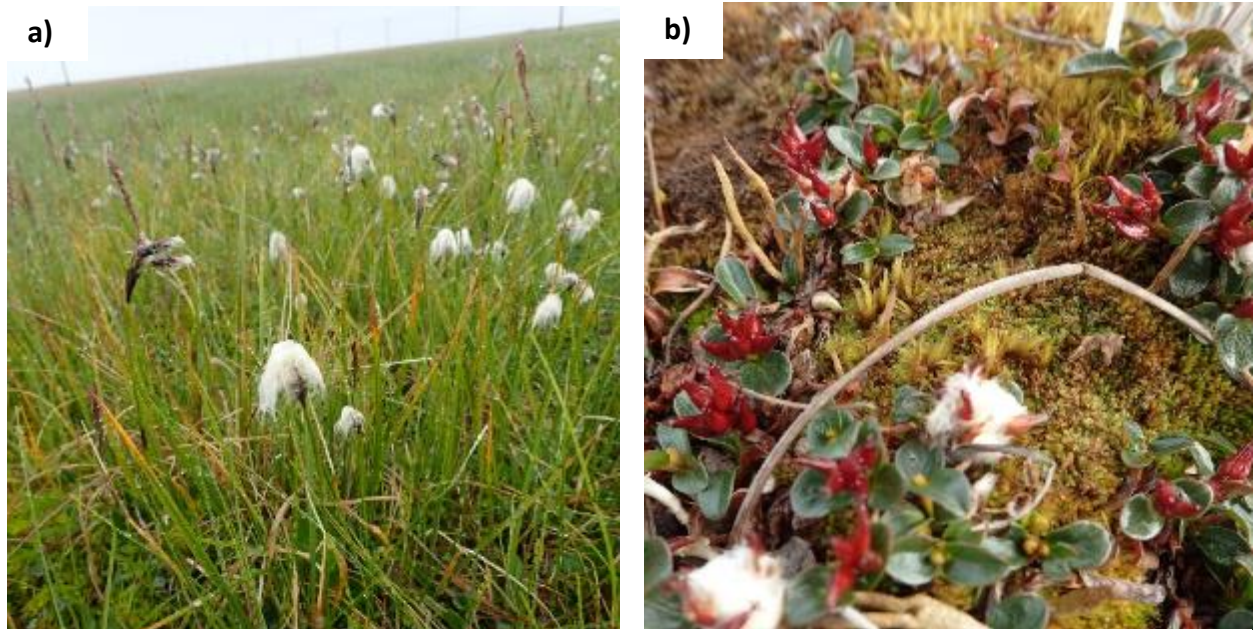


Figure 2-18. Graminoid communities dominate the Navy's antenna field property (a), while dwarf shrubs co-occur onsite (b). a) *Eriophorum angustifolium* (cottongrass) and *Carex* spp. (sedge) predominantly. b) *Salix rotundifolia* (dwarf willow) and moss.

Table 2-8. Plant-community types on the Navy's northern Alaska sites and dominant species in those communities

| SITE | Community type | Wet community dominant species | Moist community dominant species |
|--------------|---|---|---|
| Icy Cape | <p>W2.2. Non-acidic portions of the northern Coastal Plain. <i>Wet areas:</i> Sedge and moss communities (comm. 29) <i>Moist areas:</i> Non-tussock sedge, dwarf-shrub, and moss communities on higher microsites (comm. 27)</p> | <p>Sedges: <i>Carex aquatilis</i>, <i>Eriophorum angustifolium</i>, <i>Carex</i> spp. Mosses: <i>Drepanocladus brevifolius</i>, <i>Scorpidium scorpioides</i>, <i>Cinclidium latifolium</i>, <i>Meesia triquetra</i>, <i>Catoscopium nigratum</i>, <i>Distichium capillaceum</i></p> | <p>Sedges: <i>Eriophorum angustifolium</i> ssp. <i>triste</i>, <i>Carex bigelowii</i>, <i>C. membranacea</i>, <i>C. aquatilis</i> Prostrate dwarf-shrubs: <i>Dryas integrifolia</i>, <i>Salix reticulata</i> Erect dwarf-shrub: <i>Salix richardsonii</i> Forbs: <i>Tephroses atropurpurea</i>, <i>Eutrema edwardsii</i>, <i>Papaver macounii</i>, <i>Leucanthemum integrifolium</i>, <i>Pedicularis kanei</i>, <i>Tofieldia pusilla</i> Mosses: <i>Tomentypnum nitens</i>, <i>Drepanocladus brevifolius</i>, <i>Distichium capillaceum</i>, <i>Ditrichum flexicaule</i>, <i>Hypnum bambergeri</i> Lichens: <i>Thamnolia subuliformis</i>, <i>Flavocetraria cucullata</i>, <i>Cetraria islandica</i></p> |
| Barrow | <p>W1.1. Acidic coastal areas in northern Alaska. <i>Wet areas:</i> Graminoid and moss communities (comm. 4) <i>Moist areas:</i> Graminoid, dwarf-shrub, forb, and moss communities on higher microsites (comm. 2)</p> | <p>Sedges: <i>Eriophorum angustifolium</i>, <i>Carex aquatilis</i> Grasses: <i>Dupontia fisheri</i>, <i>Arctophila fulva</i> Mosses: <i>Sarmenthypnum sarmentosum</i>, <i>Limprichtia revolvens</i></p> | <p>Sedges: <i>Carex aquatilis</i>, <i>Eriophorum angustifolium</i> Grasses: <i>Poa arctica</i>, <i>Dupontia fisheri</i> Rush: <i>Luzula arctica</i> Prostrate dwarf-shrub: <i>Salix rotundifolia</i> Forbs: <i>Saxifraga cernua</i>, <i>S. hieraciifolia</i>, <i>S. hirculus</i>, <i>Cardamine pratensis</i>, <i>Petasites frigidus</i>, <i>Ranunculus nivalis</i> Mosses: <i>Oncophorus wahlenbergii</i>, <i>Sarmenthypnum sarmentosum</i>, <i>Aulacomnium turgidum</i></p> |
| Pt. McIntyre | <p>W1.2. Non-acidic coastal areas in northern Alaska. <i>Wet areas:</i> Graminoid and moss communities (comm. 10) <i>Moist areas:</i> Sedge, dwarf-shrub, and moss communities on higher microsites (comm. 9)</p> | <p>Sedges: <i>Carex aquatilis</i>, <i>Eriophorum angustifolium</i> Grass: <i>Dupontia fisheri</i> Moss: <i>Drepanocladus brevifolius</i></p> | <p>Sedge: <i>Carex aquatilis</i> Prostrate dwarf-shrubs: <i>Salix pulchra</i>, <i>S. reticulata</i>, <i>Dryas integrifolia</i> Mosses: <i>Tomentypnum nitens</i>, <i>Oncophorus wahlenbergii</i>, <i>Campyllum stellatum</i>, <i>Distichium capillaceum</i></p> |

Community descriptions from Maclean et al. (2005)

3 ENVIRONMENTAL MANAGEMENT STRATEGY AND MISSION SUSTAINABILITY

3.1 Supporting Sustainability of the Mission and the Natural Environment

3.1.1 Integrate Mission and Sustainable Land Use

Pursuant to DoDI 4715.03 and the Sikes Act, military installations shall protect and manage their natural resources to facilitate the mission, conserve biodiversity, and maintain ecosystem services. At these sites, natural resource management is in support of the ERP: 1) Manage and monitor natural resources to avoid and mitigate natural resources constraints to the Navy's mission at these sites, as defined in Section 3.1.2; and 2) To avoid and mitigate the restoration mission's impacts to the Navy's natural resources at these sites, as defined in Section 2.1.5.

3.1.2 Define Impact to the Mission – Natural Resources Constraints to Mission

Decreased sea ice, unpredictable weather, and an increased presence of federally protected species have already impacted the Navy's restoration mission at the northern Alaska sites. Additional ESA species listings and thawing permafrost potentially could further impact the Navy's mission, looking ahead to the next 10 to 30 years, if current or projected climate trends continue.

NR Constraint 1: Unpredictable weather – High impact to mission, Extremely likely to occur

The weather is becoming more unpredictable in arctic Alaska, as a result of climate change (Section 2.2.3). This makes keeping to a work schedule difficult, increasing project costs to the Navy. For example, historic rainfall led to high freshwater tables near North Salt Lagoon in 2019, which interrupted ERP actions at the Former Bulk Fuel Farm site near the Airstrip site. Increased occurrence of high winds and fog decreased site access at both Icy Cape and Point McIntyre during 2019 field events.

NR Constraint 2: Decreased sea ice – High impact to mission, Moderately likely to occur

Decreased landfast sea ice leads to increased shoreline exposure to wave action and weather. This could result in saltwater inundation on sites during large storm events, or could lead to erosion of Navy landfills. For example, the Navy had to relocate the contents of Pt. McIntyre landfill further inland after debris was exposed along the shoreline due to erosion. Potential erosion is also a concern for Landfill A at Icy Cape.

NR Constraint 3: Permafrost thaw – High impact to mission, Somewhat likely to occur

Thawing permafrost could decrease the amount of time the ground is frozen enough to build ice roads, which could significantly increase construction costs for any future projects, by requiring barge or air transport of heavy machinery. Thawing permafrost may also increase thermokarst activity or raise the temperature of freezeback landfills, which would disrupt the integrity of the landfills.

NR Constraint 4: Additional regulatory burden – High impact to mission, Somewhat likely to occur

Climate change is projected to negatively affect many arctic species, either through a decline in available habitat or a decline in available food. This could lead to an increased regulatory burden when

performing work on Navy sites, and generate further obstacles to an already logistically complicated mission. For example, thirty bird species are on state, federal, and international watch lists for species in decline or at risk of extinction, many of which have the potential to nest on the Navy's northern Alaska sites. If these species become threatened or endangered in the future, this could further restrict an already tight field season.

NR Constraint 5: Increasingly unpredictable protected species occurrence – Moderate impact to mission, Extremely likely to occur

Unforeseen presence of protected species on sites delays work and presents obstacles to completing the restoration mission. With changing climate conditions, species are shifting habitat use and timing. For example, a Navy contractor was forced to use two "weather days" due to polar bears sleeping on the boat ramp in 2019, increasing costs to the Navy. As discussed in Sections 2.2.3 and 4.2.1.1, polar bears are spending increasing amounts of time on land in the summer as sea ice becomes less available.

3.1.3 Relationship to Environmental Restoration Program

As stated in Sections 1.9 and 3.1.1, this plan has been prepared in close coordination with the DON ERP, and projects are planned and coordinated with restoration actions. The ERP has complied with natural resources legislation and has implemented best management practices to avoid and minimize impacts to natural resources throughout the years, even prior to the development of the INRMP. The INRMP documents the strategies the DON ERP already practices, in addition to developing a plan to contribute to regional management priorities.

3.2 Natural Resources Consultation Requirements

3.2.1 Endangered Species Act

Section 7(a)(2) of the Endangered Species Act requires all federal agencies to enter into consultation with the USFWS and/or NMFS whenever actions are proposed that may affect listed and proposed threatened and endangered species of plants and animals or their designated critical habitat. Section 7(a)(4) of the ESA, similarly directs all federal agencies to confer on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. Threatened and endangered species for the northern Alaska sites are identified in Section 2.3.1 and further discussed in Section 4.2.1.1.

The Navy enters into Section 7 consultation with USFWS or NMFS if a proposed action or restoration activity may affect a threatened or endangered species or their designated critical habitat. Between May 2011 and January 2021, the Navy received letters of concurrence from USFWS for five environmental restoration activities on or near the Navy's northern Alaska sites that were determined to have triggered consultation requirements (USFWS, 2011; USFWS, 2012b; USFWS, 2014; USFWS, 2018; USFWS, 2021).

3.2.2 Clean Water Act

The Clean Water Act (33 U.S.C. 404) prohibits discharges of dredged or filled material into waters of the United States, including wetlands, without first obtaining a permit from the U.S. Army Corps of Engineers

(USACE). Executive Order 11990 requires federal agencies to minimize the loss or degradation of wetlands and to enhance their natural values. However, the EPA and USACE have provided guidance for flexibilities in the mitigation requirements for wetlands in Alaska, given the high proportion of land in Alaska designated as wetlands, as described in the 2018 Memorandum of Agreement between the Department of the Army and the Environmental Protection Agency. The guiding principles outlined in this MOA include the following:

- 1) Avoiding wetlands may not be practicable where there is a high proportion of land in a watershed or region which is jurisdictional wetlands [like the North Slope];
- 2) Restoring, enhancing, or establishing wetlands for compensatory mitigation may not be practicable due to limited availability of sites and/or technical or logistical limitations;
- 3) Compensatory mitigation options over a larger watershed scale may be appropriate given that compensation options are frequently limited at a smaller watershed scale;
- 4) Where a large proportion of land is under public ownership, compensatory mitigation opportunities may be available on public land;
- 5) Out-of-kind compensatory mitigation may be appropriate when it better serves the aquatic resource needs of the watershed; and
- 6) Applying a less rigorous permit review for small projects with minor environmental impacts is consistent with the Section 404 program regulations.

The Navy must consult with the USACE if the Navy plans to fill a wetland or degrade the quality of a wetland during the course of its restoration activities. Reference Section 4.3 for the Navy's management of wetlands at these sites, including avoidance and minimization practices.

3.2.3 Magnuson-Stevens Fishery Conservation Management Act

The Navy must consult with NMFS prior to undertaking any actions that may reduce the quality or quantity of an essential fish habitat (EFH), pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*). EFH for arctic cod (*Boreogadus saida*) and arctic snow crab (*Chionecetes opilio*) is designated in the nearshore waters of Icy Cape, Barrow, and Point McIntyre. Additionally, EFH for the arctic saffron cod (*Eleginus gracilis*) is designated in the nearshore waters of Barrow and Icy Cape.

3.2.4 Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas. Take is defined as to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. The term harass is further defined under the MMPA, for non-military readiness activities, to mean any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Section 101(a)(5)(A) allows the Service, if requested, to authorize the incidental taking, including harassment, of small numbers of marine mammals provided certain determinations are met. The MMPA also provides certain other specific exceptions that allow for the deterrence of marine mammals to protect public safety or property. Additionally, because of the unique challenges associated

with minimizing human-polar bear conflict situations, deterrence of polar bears may be further authorized under a letter of authorization (LOA) issued by the USFWS in accordance with sections 101(a)(4)(A), 109(h) and 112(c) of the MMPA.

Typically, the Navy annually submits an application for a Letter of Authorization for Polar Bear Deterrence to USFWS to cover ERP activities. With that letter, the Navy includes a site-specific Polar Bear Human Interaction Plan, bear guard certifications, and USFWS Wildlife Bear Awareness certifications. Further, the barrier islands located less than a mile off Icy Cape's shoreline are a known haulout location for marine mammals, as discussed in Section 2.3.1. Typical precautions to avoid disturbance to marine mammals are discussed in Section 4.2.2. The Navy consults with the USFWS and/or NMFS under the MMPA if a Navy activity is expected to or has the potential to result in the take of any marine mammal, to include polar bears, walruses, seals, and cetaceans at the northern Alaska sites.

3.3 NEPA Compliance

Impact analysis of this plan and its proposed actions was completed in 2021, pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*). The Navy prepared an Environmental Assessment and determined the proposed actions would have no significant impact on the environment. The Navy signed a Finding of No Significant Impact (FONSI) in 2021 (Appendix I). This initial review does not preclude the requirement to conduct NEPA analysis and/or initiate consultation on individual future management actions.

3.4 Beneficial Partnerships and Collaborative Resource Planning

The Navy has discussed partnering on future monitoring efforts with the Air Force, which owns neighboring property at Barrow and other scattered properties across the North Slope. By collaborating, this could save the DoD mobilization costs, minimize duplication of effort, and make management efforts more effective by covering a broader area.

In the future, the Navy intends to utilize interagency and cooperative agreements to conduct natural resource management activities proposed at these sites, and may work with federal, state, county, and/or native government organizations. All natural resources data and final reports will be shared with management partners via email as it becomes available.

3.5 Public Access and Outreach

3.5.1 Public Access and Outdoor Recreation

These sites have no fences and no permanently stationed personnel, but have installed signs for the public where necessary. The Navy has signs warning the public not to drink or cook with water from Imikpuk Lake due to PFAS impacts near the Airstrip Site. The Navy has signs around the Antenna Field site warning public of remaining residual contamination and debris; however, all known contamination will be removed after 2021 field effort. The Navy has signs at Point McIntyre warning public of residual contamination in groundwater along shoreline and to not disturb the freezeback landfill.

3.5.2 Public Outreach

The Navy has no active mission, nor onsite personnel at these sites, and so does not conduct public outreach for its natural resources program. The main vehicle for public outreach is through the Restoration Advisory Board (RAB) meetings that the DON ERP conducts in Utqiagvik and Point Lay. Typically, the RAB meetings occur twice a year.

3.6 Encroachment Partnering

Because the Navy does not have an active military mission onsite, the Navy is not concerned with encroachment at these sites.

3.7 State Wildlife Action Plan

ADF&G designated the following taxa as SGCN in the northern Alaska region in the State Wildlife Action Plan (SWAP; 2015): 23 species or groups of invertebrates; 23 species of fish; 11 species of terrestrial mammals, namely small mammals; 9 species of marine mammals; and 43 avian species. Species designated as SGCN potentially found on the northern Alaska sites are identified in Appendix C. Wildlife species qualified as SGCN if they met one or more of the following criteria: at-risk species; stewardship species; culturally important species; ecologically important species; sentinel species (ADF&G, 2015). Additionally, the SWAP identifies habitat priorities for management – of these priority habitats, arctic tundra and wetlands underlain by permafrost can be found on the Navy's northern Alaska sites.

The 2015 SWAP outlines eight conservation actions for management of SGCN and their habitats: Data acquisition; land and water protection; land and water management; species management; law and policy; livelihood, economic, and other incentives; and external capacity building. Of these conservation actions, the Navy will contribute to Alaska's wildlife by contributing to data acquisition (Goal 1) and land and water management (Goal 2) discussed further in Chapter 4.

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4 NATURAL RESOURCES MANAGEMENT

4.1 General Organization

This chapter is organized to align with the overall program goals, as identified in Section 1.3 and further discussed in Sections 4.2 and 4.3:

Section 4.2 Fauna Management

- 4.2.1 Natural History, Status, and Trends of Focus Groups
 - 4.2.1.1 Federally Threatened and Endangered Species
 - 4.2.1.2 Non-ESA Marine Mammals
 - 4.2.1.3 Migratory Birds
 - 4.2.1.4 Other Priority Species
- 4.2.2 Goal 1: Objectives and Strategies

Section 4.3 Land Management

- 4.3.1 Status and Trends of Terrestrial Environment
 - 4.3.1.1 Wetlands and Deep Water Habitats
 - 4.3.1.2 Floodplains
 - 4.3.1.3 Coastal/Marine
 - 4.3.1.4 Vegetation
- 4.3.2 Goal 2: Objectives and Strategies

Section 4.4 Program Benefits to Species

Section 4.5 Data and Personnel Management

- 4.5.1 Geographical Information Systems, Data Integration, Access, and Reporting
- 4.5.2 Training of Natural Resources Personnel

Section 4.6 Reduced Programs at the Navy's Northern Alaska Sites

- 4.6.1 Outdoor Recreation
- 4.6.2 Invasive Species

Section 4.7 Absent Programs at the Navy's Northern Alaska Sites

- 4.7.1 Agricultural Outleasing Program
- 4.7.2 Forestry Program
- 4.7.3 Wildland Fire Program
- 4.7.4 Bird/Animal Aircraft Strike Hazard Program
- 4.7.5 Pest Management
- 4.7.6 Law Enforcement Program
- 4.7.7 Other Leases

4.2 Fauna Management

4.2.1 Natural History, Status, and Trends of Focus Fauna

4.2.1.1 Federally Threatened and Endangered Species

As discussed in Section 2.3.1, three federally threatened species occasionally occur on Navy property, and three federally threatened marine mammals occasionally occur in the nearshore environment adjacent to Navy property. All are discussed in further detail below. Of these six species, the polar bear, Steller's eider, and spectacled eider have critical habitat designated and ringed and bearded seals have critical habitat proposed. Proposed and/or designated critical habitat for all of these species is in the vicinity of the northern Alaska sites with the exception of the Steller's eider (Figure 4-1).

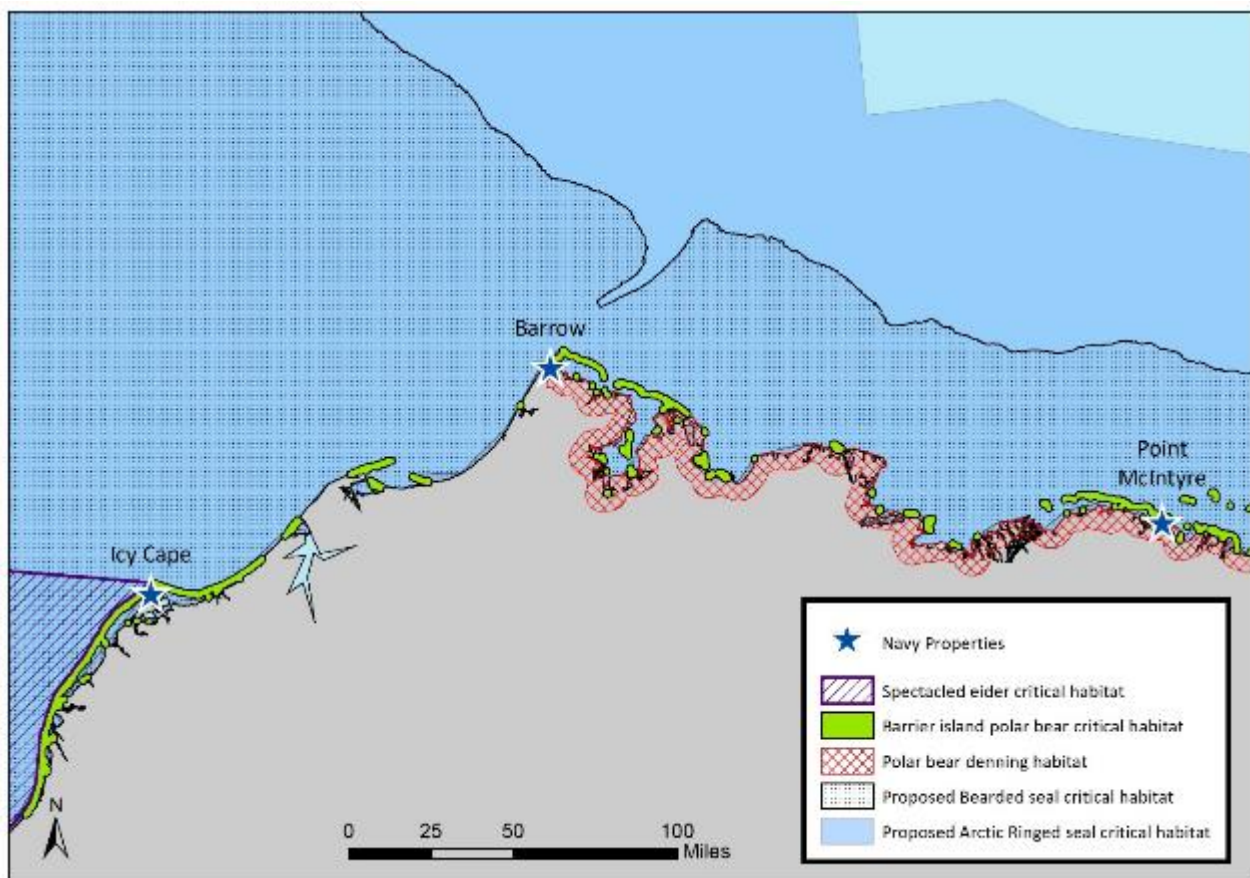


Figure 4-1. Designated critical habitat for spectacled eiders and polar bears and proposed critical habitat for bearded and arctic ringed seals in relation to the Navy's northern Alaska sites. Steller's eider critical habitat is designated southwest of the North Slope.

Polar Bear (Threatened)

USFWS listed the polar bear (Figure 4-2) as threatened in 2008 because polar bear habitat, principally sea ice habitat, is declining throughout the species' range; this decline is expected to continue for the foreseeable future; and this loss threatens the species throughout all of its range (73 FR 28212). USFWS promulgated a special rule implementing ESA protections for the polar bear in 2013 (78 FR 11766).

In addition to being protected under ESA, the polar bear has been federally protected since 1972 under MMPA. Polar bears are considered a depleted species under the MMPA because of their 2008 ESA listing status. Pursuant to 50 Code of Federal Regulations (CFR) Part 18, USFWS implements MMPA regulations for polar bears in addition to ESA regulations.

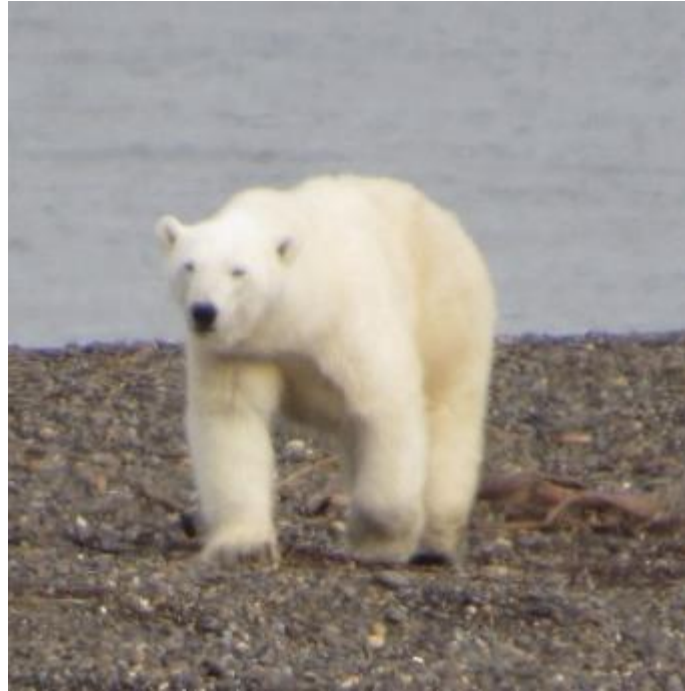


Figure 4-2. Polar bear observed by Navy contractors at the boat launch near Deadhorse, AK, 2019.

USFWS identified the following primary constituent elements (PCEs) crucial to the survival and recovery of polar bears in the 2010 final determination of critical habitat (75 FR 76086):

- 1) **Sea ice habitat** used for feeding, breeding, denning, and movements, which is sea ice over waters 300 m (984.2 ft) or less in depth that occurs over the continental shelf with adequate prey resources (primarily ringed and bearded seals) to support polar bears.
- 2) **Terrestrial denning habitat**, which includes topographic features, such as coastal bluffs and river banks, with suitable macrohabitat characteristics:
 - a) Steep, stable slopes (range 15.5-50°) with heights ranging from 1.3 to 34m (4.3 to 111.6 ft), and with water or relatively level ground below the slope and relatively flat terrain above the slope.
 - b) Unobstructed, undisturbed access between den sites and the coast.
 - c) Sea ice in proximity of terrestrial denning habitat prior to the onset of denning during the fall to provide access to terrestrial den sites.
 - d) The absence of disturbance from humans and human activities that may attract other bears.
- 3) **Barrier island habitat** used for denning, refuge from human disturbance, and movements along the coast to access maternal den and optimal feeding habitat. This includes all barrier islands along the Alaska coast and their associated spits, within the range of the polar bear in the United States, and the water, ice, and terrestrial habitat within 1.6 km (1 mile) of these islands (no-disturbance zone).

Based on these PCEs, USFWS designated three subtypes of critical habitat for polar bears: sea ice, denning habitat, and barrier island habitat (Figure 4-1). The entire Beaufort Coast is designated as

denning critical habitat, along with barrier islands along the northern and northwestern coast of Alaska (Figure 4-1). However, the area must have the macrohabitat characteristics, as defined in the critical habitat ruling, and all existing manmade structures, including landing strips and roads, were exempted from critical habitat at the time of designation (75 FR 76086). The only site that is proximate to denning habitat with the suitable macrohabitat features is Pt. McIntyre, though no suitable denning habitat is identified on Navy property (Figure 4-3c). Barrier island critical habitat or its associated no-disturbance zone was designated on or near all three Navy sites (Figure 4-3).

Managers have designated 19 subpopulations of polar bears (PBSG, 2019); Alaska contains portions of the ranges of the southern Beaufort Sea and Chukchi Sea subpopulations. These two subpopulations are also identified as stocks under MMPA. Individuals spotted at Icy Cape and Barrow could be from either subpopulation, while those observed at Pt. McIntyre would most likely be southern Beaufort individuals (USFWS, 2017a).

While the Chukchi Sea subpopulation has remained stable in the short term, the southern Beaufort subpopulation has likely declined since the 1960s (PBSG, 2019). The southern Beaufort subpopulation has experienced declining body condition and periods of low survival (PBSG, 2019). Body condition and recruitment in the spring in the Chukchi Sea subpopulation are apparently robust, though autumn observations suggest declining cub survival (PBSG, 2019).

Polar bears are generally active throughout the winter, though female polar bears construct dens in the fall in order to birth cubs and nourish their altricial young through the winter; they emerge from dens in February or March (Ramsay & Stirling, 1988). Cubs typically stay with females for two and a half years until they are weaned (USFWS, 2017a).

Polar bears spend the majority of their time on sea ice hunting hauled out marine mammals, mostly ringed and bearded seals; they typically only spent late-summer months ashore when the sea ice regressed (Ramsay & Stirling, 1988). According to data collected by the U.S. Geological Survey, historically, less than 10 percent of the polar bear locations obtained via radio telemetry were on land over decades of tracking individuals (75 FR 76086). However, polar bears are increasingly spending more and more time on land as the availability of sea-ice declines (USFWS, 2017a; PBSG, 2019), and accordingly, human-wildlife conflict is becoming more of a concern. USFWS has issued general deterrence guidelines for polar bears (75 FR 21571). If the Navy determines polar bear interaction is a possibility for site activities, the Navy submits a human polar bear interaction plan for each activity, which USFWS reviews.

During the Navy's usual work window (15 JUL-15 OCT), polar bears are not typically observed around Barrow and Icy Cape, while they are more common around Pt. McIntyre (Figure 4-4a). Conversely, polar bears may be more likely to use the habitat in the vicinity of the Navy's Icy Cape and Barrow sites between 16 OCT and 14 JUL, than the area around Pt. McIntyre (Figure 4-4b).

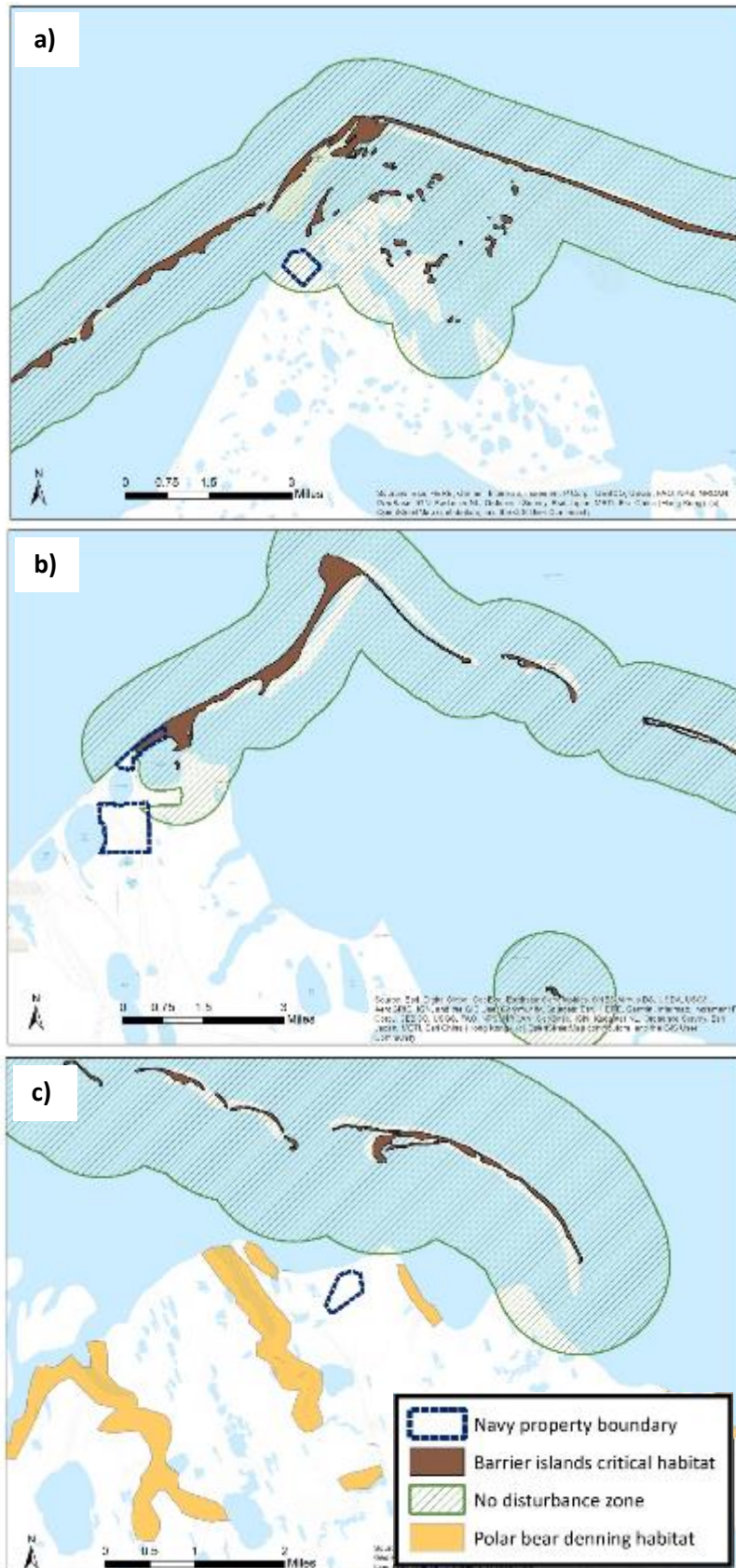


Figure 4-3. Polar bear barrier island critical habitat and associated “no disturbance zone” as well as denning critical habitat with necessary macrohabitat features as identified by USFWS at a) Icy Cape, b) Barrow, and c) Pt. McIntyre.

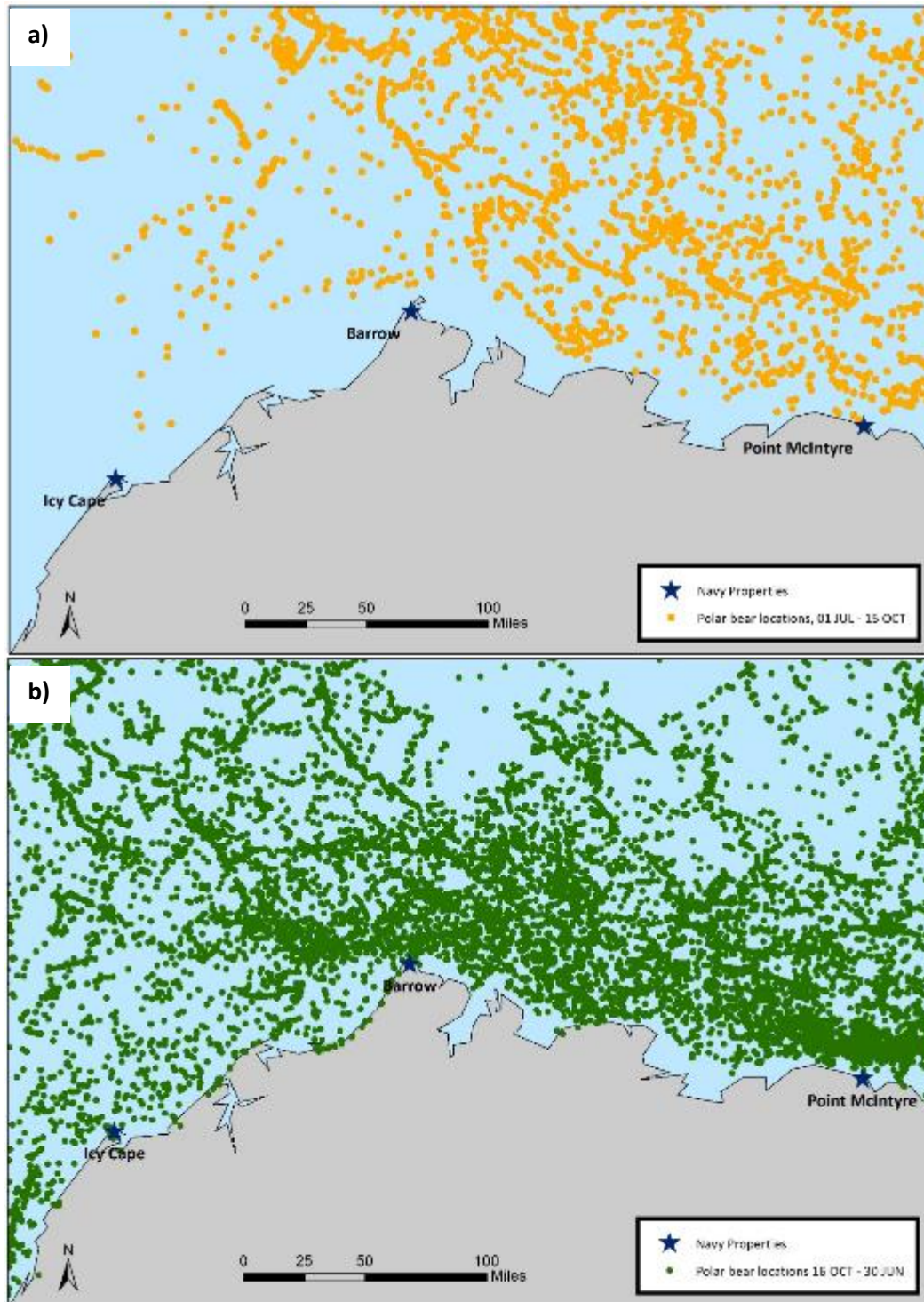


Figure 4-4. Polar bear locations from 62 tagged individuals between 1986 and 2015 (Durner, 2019) in relation to the Navy's northern Alaska sites. a) Locations from tagged individuals around the Navy's typical field work window in northern Alaska (01JUL-15OCT). b) Tagged polar bear locations during 16OCT-30JUN, which covers mating and denning life stages.

Spectacled Eider (Threatened)

The primary reason for listing spectacled eiders (Figure 4-5) in 1993 was their rapid and continuing decline in the Y-K Delta breeding grounds and indications that they may have declined on Alaska's North Slope as well (58 FR 27474; USFWS, 1996).

The 2001 final determination of critical habitat designated molting areas in Norton Sound and Ledyard Bay; nesting grounds on the Yukon-Kuskokwim (Y-K) Delta; and wintering habitat south of Saint Lawrence Island (66 FR 9146; Figure 4-6).

The closest critical habitat to Navy property is Ledyard Bay, depicted in Figure 4-1. The PCEs for Ledyard Bay include all marine waters greater than 5 meters (16.4 feet) and less than or equal to 25 meters (82 feet) in depth at mean lower low water (MLLW), along with associated marine aquatic flora and fauna in the water column, and the underlying marine benthic community (66 FR 9146).

The spectacled eider has three primary nesting areas: the central coast of the Y-K Delta, the ACP of Alaska, and the ACP of Russia (Figure 4-6). After breeding, spectacled eiders move to marine waters where they undergo a complete molt, including simultaneous replacement of their flight feathers. Within U.S. waters, eastern Norton Sound and Ledyard Bay are important late summer and fall molting areas (USFWS, 2012); Ledyard Bay is approximately 50 miles southwest of Icy Cape. Wintering flocks of spectacled eiders have been observed in openings in sea ice in the Bering Sea between St. Lawrence and St. Matthew islands (USFWS, 2012).



Figure 4-5. Spectacled eiders, male and female (photo from USFWS, 2020a).

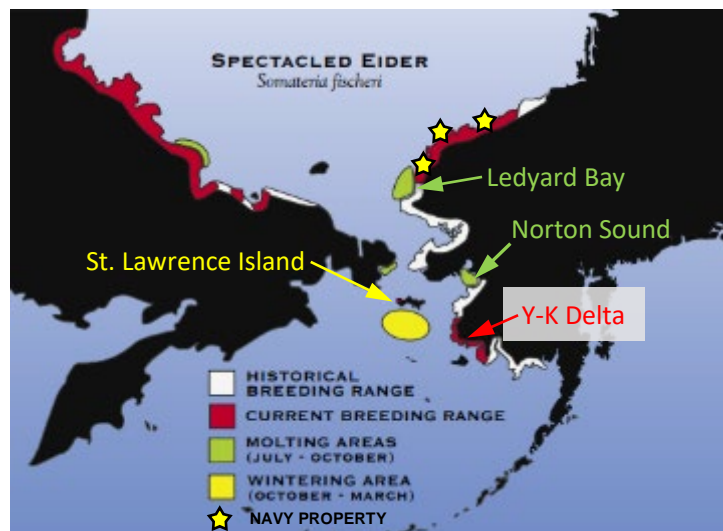


Figure 4-6. Distribution of spectacled eiders in Alaska and Russia (figure from USFWS, 2003).

(USFWS, 1996). The North Slope breeding population typically utilizes low-lying, poorly drained, coastal plains (USFWS, 1996). Males depart the breeding areas sometime during egg-laying and early incubation (typically by the end of June), leaving the females to care for the brood (USFWS, 2012). The

Spectacled eiders typically arrive on the breeding grounds in early June, soon after the snowmelt (Safine, 2011). Spectacled eiders may potentially breed on Icy Cape, Barrow, and Pt. McIntyre; USFWS observed a single spectacled eider during their annual surveys on the Barrow antenna field in both 2018 and 2019 (Graff, 2021). Spectacled eider hens with broods and migrating spectacled eiders may occasionally use Imikpuk Lake and North Salt Lagoon in late summer and early fall (USFWS, 2011). Preferred nest sites appear in low-lying arctic and sub-arctic wetlands dominated by graminoids and characterized by numerous shallow ponds and lakes

females incubate the eggs 24-28 days and tend to the young after they hatch. Females most frequently use shallow *Carex* (sedge) and *Arctophila* (grass) ponds for rearing their young broods (Safine, 2011). Young spectacled eiders fledge at approximately 50 days (USFWS, 2010).

As identified in the USFWS 5-year Review (2010), threats to the species are listed below:

- 1) Habitat contamination by lead shot.
- 2) Potential effects of climate change on marine food base, such as warming ocean temperatures and ocean acidification.
- 3) Potential effects of climate change on brood rearing ponds, such as changes to salinity and invertebrate communities.
- 4) Artificial increases in nest predator populations (foxes, gulls, and ravens), due to growing human settlements, which supplement the food source for these meso-predators and provide them with artificial roosts/dens.

Steller's Eider (Threatened)

The Alaska breeding population of Steller's eiders (Figure 4-7) were determined to be threatened in 1997 due to a substantial decrease in the species' nesting range in Alaska; a reduction in the number of Steller's eiders nesting in Alaska; and the resulting increased vulnerability of the remaining breeding population to extirpation (62 FR 31748). The 2001 final determination of critical habitat for Alaska breeding Steller's eiders identified breeding habitat on the Y-K Delta and four units in marine waters of southwest Alaska important for molting, resting, feeding, and wintering (66 FR 8850); none of these sites are in the vicinity of Navy's northern Alaska sites.



Figure 4-7. Steller's eider male and female (photo from USFWS, 2020b)

Most Steller's eiders nest in northeastern Russia, with less than five percent of the population breeding in North America (Figure 4-8a). The subpopulation breeding in northern Alaska is small (in the hundreds) and highly variable from year to year (USFWS, 2019a). The Alaska breeding population of Steller's eiders is concentrated around Utqiagvik (the area around the Navy's Barrow property), and occurs at very low densities elsewhere on the ACP (USFWS, 2019b; Figure 4-8b). Three nests were observed on the antenna field property during USFWS breeding surveys between 1991-2010, along with a handful of observations of individuals (USFWS, 2011). Steller's eiders likely use the antenna field property for breeding in low densities, and individuals use Imikpuk Lake and the North Salt Lagoon as staging areas pre-migration (USFWS, 2011).

Individuals migrate to breeding grounds, and arrive near the end of May. Steller's eiders nest on tundra adjacent to small ponds or within drained lake basins, generally near the coast but range as far as 90 kilometers (56 miles) inland (USFWS, 2002). Males leave the breeding areas by early July to travel to molting areas, while females remain on the breeding grounds until the chicks fledge. Young hatch in late June, shortly after which females lead their young to proximate wetlands to feed on aquatic insects and plants until they fledge at about 40 days (USFWS, 2002).

High and moderate threats to the Alaska subpopulation in the terrestrial environment include the following stressors (USFWS, 2019b):

- 1) Ingestion of lead shot
- 2) Shooting
- 3) Human disturbance
- 4) Avian and fox predation
- 5) Changes to the lemming-avian predator system on the ACP

Climate change effects on spring weather, breeding pond availability, water salinity, and marine food sources may also affect the population, though the extent of the effect remains unknown.

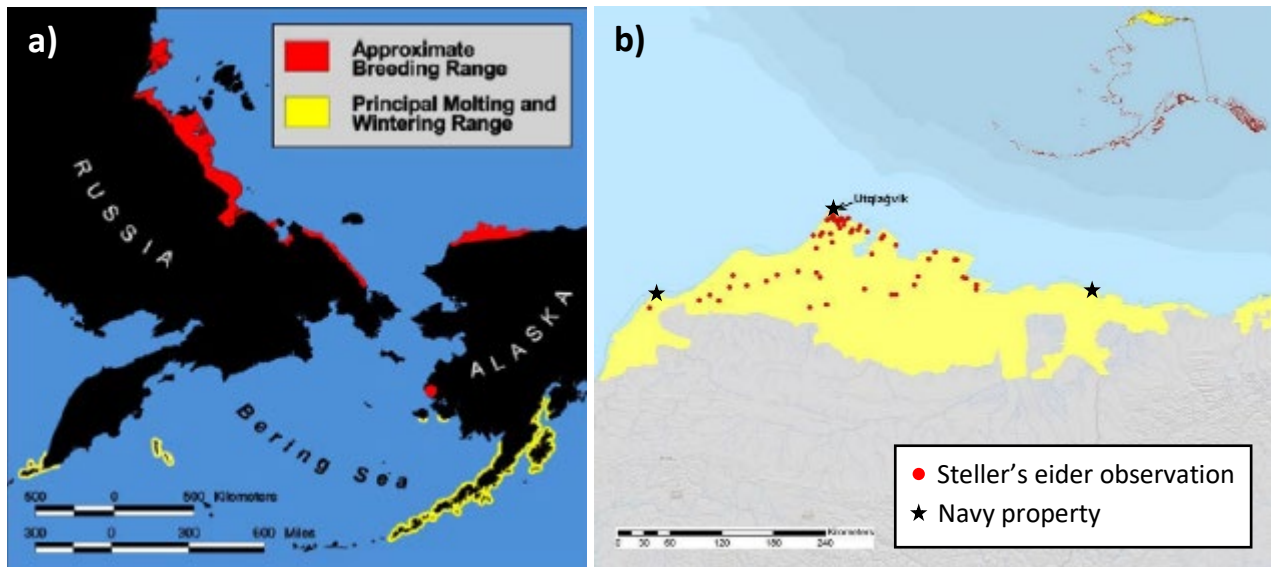


Figure 4-8. a) Range distribution of the Pacific population of the Steller's eider (figure from USFWS, 2002); b) Observations of Steller's eider males, pairs, and flocks from the June ACP aerial survey 1999-2018 (figure from USFWS, 2019a)

Bowhead Whale (Endangered)

Bowhead whales were federally listed as endangered in 1970 (35 FR 18319), primarily due to population declines due to commercial whaling. Because the bowhead whale was listed prior to 1973, critical habitat designation is not required for the species.

Bowhead whales travel through the nearshore environment of the Navy's three northern Alaska sites at different points throughout the year (Figure 4-9). Between 1978 and 2011, the Western Arctic stock of bowhead whales has roughly tripled in population (Muto et al., 2018). The species has made an incredible recovery since commercial whaling ceased. However, scientists have recently observed increased rates of attacks by killer whales (*Orcinus orca*) on Pacific Arctic bowhead whales (George, et al., 2017; Willoughby, et al., 2020).

As mentioned in Section 2.3.3.5, the bowhead whale is the most important cultural resource to the peoples of the North Slope (Brower & Hepa, 1998). Alaska natives have been hunting bowhead whales

for subsistence purposes since time immemorial – as far back as oral tradition exists for native peoples (Stephen R. Braund & Associates, 2018).

Threats to the Western Arctic stock of the bowhead whale include the following (Muto et al., 2018):

1. Increasing vessel traffic as extent of sea ice declines.
2. Potential oil spills.
3. Noise pollution due to increased vessel traffic and increased oil exploration and extraction in the arctic marine environment.
4. Modification of habitat due to loss of sea ice and ocean acidification.

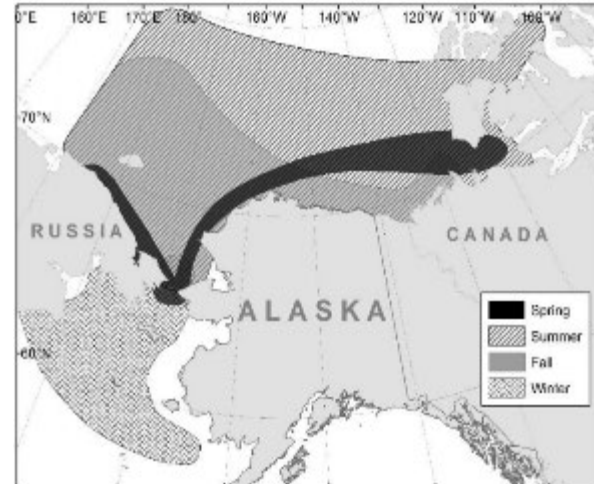


Figure 4-9. Annual range of the Western Arctic stock of bowhead whales by season from satellite tracking data, 2006-2017 (figure from Muto et al., 2018).

Ringed and Bearded Seals (Both Threatened)

The Arctic, Okhotsk, and Baltic subspecies of the ringed seal and the Beringia and Okhotsk distinct population segments of the bearded seal were determined to be threatened under the ESA in 2012 (77 FR 76706 and 77 FR 76739, respectively). The primary threat identified in the listing decisions for both species was habitat alteration stemming from climate change (77 FR 76706, 77 FR 76739).

Proposed rules for designating critical habitat for both ringed and bearded seals were published in the Federal Register in January 2021 (86 FR 1452 and 86 FR 1433, respectively). The proposed rules identified marine waters in the northern Bering, Chukchi, and Beaufort seas (Figure 4-1). The physical and biological features identified as essential to the conservation of ringed and bearded seals in the critical habitat were as follows:

Ringed seals – sea ice suitable for pupping, nursing, basking, and molting, as well as primary prey resources to support these seals.

Bearded seals – sea ice suitable for pupping, nursing, and molting; acoustic conditions that allow for effective communication by bearded seals for breeding purposes; and primary prey resources to support these seals.

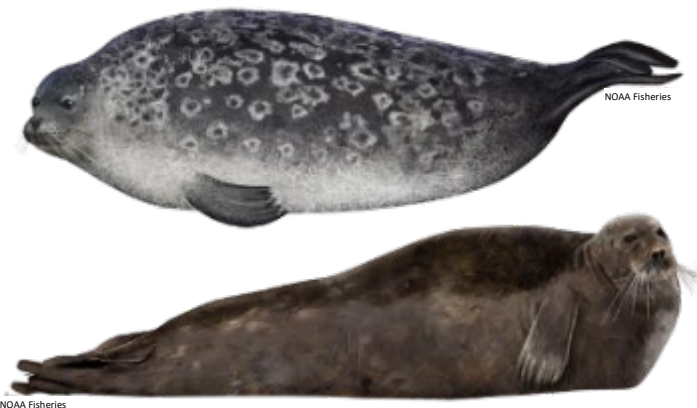


Figure 4-10. Ringed seal (above) and bearded seal (below), images from NOAA Fisheries.

Ice seals occasionally occur in the immediate nearshore vicinity of Icy Cape and Pt. McIntyre, and the barrier islands off the coast of the Icy Cape site are a known ice seal haulout area (Figure 2-14; Clarke et

al., 2019, 2020). They are also common in the nearshore waters of Barrow in July as the shorefast sea ice melts (Clarke et al., 2019). However, these seals mainly haul out on sea ice, not on land (Clarke et al., 2019). Arctic ringed seals are the main prey of Alaskan polar bears, while bearded seals are preyed upon less often (USFWS, 2017a). Ice seals are also an important subsistence resource for native Alaskans, providing food and raw materials and fulfilling nutritional and cultural needs (NSB, 2019b).

Ringed and bearded seals are managed under the Ice Seal Management Plan (Ice Seal Committee, 2012). Management concerns for this group include the following (Ice Seal Committee, 2012):

1. Reduction in sea ice habitat associated with climate change.
2. Changes in snow and ice cover of arctic waters.
3. Offshore oil and gas development.
4. Increased ship traffic.
5. Environmental contamination.
6. Natural predation, prey availability, and noise protection.

4.2.1.2 Marine Mammals

As mentioned in Section 2.3.3, the NSB lists nine common marine mammals which may occur in the nearshore environment – the four ESA-listed marine mammals discussed in detail above in addition to the beluga whale, Pacific walrus, ribbon seal, spotted seal, and harbor porpoise (*Phocoena phocoena*) (Appendix C). All of these species are designated SGCM (ADF&G, 2015) in addition to being protected by the MMPA. Additionally, managers have documented gray whales (*Eschrichtius robustus*) in high numbers off the Barrow coastline during summers (Clarke et al., 2019) and killer whales are increasingly common in the Chukchi Sea as sea ice declines (Willoughby, et al., 2020). In this region, USFWS has jurisdiction over the Pacific walrus and polar bear, while NMFS has jurisdiction over other marine mammals.

4.2.1.3 Migratory Birds

A general summary of birds with the potential to occur on Navy sites is discussed in Section 2.3.3; all of these species are protected under the Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703 *et seq.*) and listed in the Federal List of Migratory Birds (50 CFR Sec. 10.13). Additionally, all federal agencies which negatively affect or may affect migratory bird populations must promote the conservation of migratory birds, per EO 13186. The DoD and USFWS developed the 2014 Memorandum of Understanding (MOU) to advance migratory bird conservation, avoid or minimize the take of migratory birds, and ensure DoD activities (other than military readiness activities) are consistent with the MBTA. The military readiness rule, 50 CFR 21.15, which authorizes the Armed Forces to take migratory birds incidental to military readiness activities, does not apply to the activities conducted at the northern Alaska sites. All of the above guidance and legislation are discussed in further detail in Appendix H.

The Navy prioritizes management of certain migratory birds in alignment with regional partners, who have noted a substantial threat to species or observed a decline in the population. Appendix C details birds of management concern to the Navy's agency and regional partners, including ADF&G, USFWS, DoD Partners in Flight, and the Alaska Audubon Society. Sixty of the ninety-one bird species documented

by the NSB (2019) are considered sensitive species: shorebirds (n=14), songbirds (n=14), seabirds (n=12), waterfowl (n=10), raptors (n=7), and upland birds (n=3) (Appendix C).

At this time, shorebirds in decline, yellow-billed loons, snowy owls, and the two federally-threatened eiders remain the Navy's top management priorities for migratory birds.

4.2.1.4 Other Priority Species

The Navy follows an ecosystem-based management approach, per OPNAV-M 5090.1, DoDI 4715.03, and DoDM 4715.03. Managers can use keystone species as an indicator of ecosystem health, as well as a predictor of certain natural processes. As discussed in Section 2.3.3.5, the brown lemming functions as a keystone species, driving predator population dynamics as well as vegetation loads. Similarly, invertebrates drive the populations of shorebirds, waterfowl, and many small mammals on the ACP. Consequently, ADF&G has designated thirteen terrestrial, freshwater, and marine invertebrate taxa as SGCN in the Arctic region. The terrestrial taxa are ants, bees, wasps, and hornets (order Hymenoptera); flies, midges, and gnats (order Diptera); dragonflies and damselflies (order Odonata); butterflies and moths (order Lepidoptera); and spiders (order Arachnida). The designated freshwater taxa are mayflies (order Ephemeroptera); stoneflies (order Plecoptera); caddisflies (order Trichoptera); and water fleas (order Cladocera). The marine taxa are euphausiids (order Euphausiacea), copepods (subclass Copepoda); mysids (order Mysida); and amphipods (order Amphipoda) (Appendix C; ADF&G, 2015). Based on cultural importance (Section 2.3.3.5), the Navy will also prioritize management of caribou.

4.2.2 Goal 1: Objectives, and Strategies

The following goal, objectives, and strategies in addition to those detailed in Section 4.3.2 are in accordance with the Sikes Act, which states that the Navy must provide for the conservation and rehabilitation of natural resources and ensure no net loss to the mission due to implementation of this plan. All actions identified in this INRMP are subject to the availability of funds properly authorized and appropriated under federal law. Nothing in this INRMP is intended to be, nor should be construed to be, a violation of the Anti-Deficiency Act (31 U.S.C. 1341 *et seq.*).

Each strategy identified below addresses a mission impact to the natural resources at the site, as described in Section 2.1.5 and/or a natural resource constraint to the mission at these sites, as described in Section 3.1.2. To briefly summarize these impacts, please see Table 4-1.

Table 4-1. Natural resource constraints and mission impacts at the Navy's northern Alaska sites

| <i>Natural Resource (NR) Constraints to Mission</i> | <i>Mission Impacts to Natural Resources</i> |
|--|--|
| 1 Decreased sea ice | 1 Ground/vegetation disturbance |
| 2 More unpredictable weather | 2 Wildlife disturbance |
| 3 Permafrost thaw | 3 Wildlife attraction |
| 4 Threatened and endangered species occurrence | 4 Accidental spills |
| 5 Additional listed species | |

Goal 1. Support restoration program managers by providing accurate information of fauna occurrence on the Navy's northern Alaska sites, which would minimize wildlife disturbance and feed into the regional body of knowledge of the wildlife of the Arctic Coastal Plain.

Objective 1.1. Minimize and avoid human-wildlife conflict to the maximum extent practicable, while ensuring the Navy can complete its mission.

Strategy 1.1.1. Minimize wildlife attraction to the site while work is ongoing.

- i. Ensure proper disposal and storage of odor attractants such as food waste, human waste, toiletry products, and chemicals while onsite.
- ii. Addresses Mission Impact 3.

Strategy 1.1.2. Ensure all personnel conducting work onsite are aware of potential hazardous wildlife situations, and are informed of protocols to follow should wildlife present a danger to human life.

- i. Avoid surprising a polar bear or brown bear onsite.
- ii. Make substantial noise when travelling on foot, either by talking, singing, or even having a radio playing.
- iii. Conduct fieldwork within line-of-sight of at least one other team member.
- iv. As needed, hire a bear guard with the appropriate bear guard certification and USFWS Wildlife Bear Awareness certifications.
- v. Follow the USFWS deterrence guidelines for polar bears (75 FR 21571)
- vi. Addresses Mission Impacts 2 and 3 and NR Constraint 4.

Strategy 1.1.3. Avoid working onsite during sensitive times in the life histories of protected species.

- i. Avoid work onsite prior to 15JUL to avoid nesting eiders and other nesting waterfowl.
- ii. Cease working onsite after the ground freezes each year—between 01OCT and 15OCT in a typical year—to avoid conflict with polar bear denning.
- iii. When transiting to Icy Cape via helicopter, coordinate with the community of Wainwright via the Olgoonik Corporation to avoid disturbance to caribou herds and interruption of hunting activities.
- iv. These dates may be flexible dependent upon consultation with and approval from the appropriate regulatory agency (i.e., USFWS).
- v. Addresses Mission Impact 2.

Strategy 1.1.4. Follow best management practices outlined by USFWS (2019c) for operating boats and aircraft near hauled out pinnipeds (walruses and ice seals) and in-water marine mammals.

- i. Pilots of helicopters and multi-engine aircraft should not knowingly fly over or fly within one mile of pinnipeds hauled out on land or ice to avoid causing a disturbance. Landings and take-offs should take place at least 1 mile from hauled out pinnipeds.

- ii. Marine vessels 50 feet in length or less should remain at least 0.5 miles away from hauled out walruses. Marine vessels 50 feet or more but less than 100 feet in length should remain at least one nautical mile from hauled out walruses. Marine vessels 100 feet or more in length should remain at least 3 nautical miles from hauled out walruses.
- iii. Vessels should reduce noise levels and avoid sudden changes in engine noise, using loud speakers, loud deck equipment, or other operations that produce noise when in the vicinity of pinniped haulouts. Note that sound carries a long way across the water and often reverberates off of cliffs and bluffs adjacent to coastal haulouts, amplifying noise.
- iv. These guidelines may change depending on the specific area and size of the haulout.
- v. Vessels should reduce speed and maintain a minimum distance of 0.5 miles from groups of marine mammals in the water.
- vi. If marine mammals are observed in the water, vessels should travel in a predictable manner, avoiding sudden changes in speed or direction. They should not operate the vessel in such a way as to separate members of a group.
- vii. If marine mammals approach the vessel or suddenly appear in close proximity, boat engines should be placed in neutral to allow the animals to pass. If vessel safety is jeopardized, carefully steer around animals. If the vessel is taken out of gear, vessel crew will ensure that no marine mammals are within 50 meters of the vessel when propellers are re-engaged, thus minimizing risk of marine mammal injury.
- viii. Reduce vessel speed to 10 knots or less when weather conditions reduce visibility to 1.6 kilometers (1 mile) or less to avoid the likelihood of injury to marine mammals.
- ix. The NRM will notify local management partners that people will be on site, the duration, and mode of transportation prior to the start of any fieldwork at Icy Cape. NRM will stay apprised of any reports of pinniped haulouts in the area (Strategy 1.2.8), and ensure on-site personnel are following best management practices in the case of a nearby haulout.
- x. Additional consultation with USFWS may be required in the case of a walrus haulout in the immediate vicinity of Icy Cape when fieldwork is scheduled to take place.
- xi. Addresses Mission Impact 2.

Strategy 1.1.5. Ensure compliance with all federal wildlife regulations and applicable DoD guidance while conducting work onsite.

- i. Endangered Species Act, Migratory Bird Treaty Act, Marine Mammal Protection Act, DoDI 4715.03.
- ii. Addresses Mission Impacts 1, 2, and 3

Objective 1.2. Better determine what species are present on or near Navy sites, when or how frequently they are present, and where they occur onsite.

Strategy 1.2.1. Conduct nest surveys at least every five years on each site, with a focus on listed Steller's and spectacled eiders.

- i. Likely complete these surveys through interagency agreement with either USFWS or USACE.
- ii. Would be able to concurrently collect data on other nesting MBTA and at-risk species on Navy sites.
- iii. Follow methodology completed on Air Force properties to develop larger comparable dataset for the ACP region.
- iv. Addresses Mission Impact 2 and NR Constraints 4 and 5.

Strategy 1.2.2. Monitor polar bear activity and population numbers near Navy sites via aerial or geospatial imagery.

- i. Air Force has expressed interest in partnering in this effort, along with USFWS.
- ii. Addresses Mission Impact 2 and NR Constraint 4.

Strategy 1.2.3. Prepare field observations report and share with management partners within three months of each visit to the site (restoration or otherwise).

- i. Addresses NR Constraint 4.

Strategy 1.2.4. Institute a social survey to determine when and how frequently sites are used for subsistence purposes, what people gather, and historic trends and observations.

- i. Likely will seek supplemental or alternate funding, further discussed in Appendix D.
- ii. Addresses NR Constraints 1 and 4, Mission Impact 2.

Strategy 1.2.5. Determine where shorebirds that nest on Navy property overwinter and identify their migration pathways.

- i. Partner with Air Force, DoD Partners in Flight, and researchers conducting ongoing shorebird tracking studies on the North Slope (e.g., Kempnaers & Valcu, 2017; Brown et al., 2017)
- ii. Has DoD-wide implications if shorebird populations continue to decline.
- iii. Likely will seek supplemental or alternate funding, further discussed in Appendix D.
- iv. Addresses NR Constraints 4 and 5.

Strategy 1.2.6. Delineate ecosystem type on each property to better predict where species might be more or less likely to nest and/or forage onsite.

- i. Classify ecotypes by the NatureServe Ecological Classification Standards as discussed in Section 2.2.1.

- ii. Address Mission Impacts 1 and 2 by identifying areas to avoid transporting heavy machinery, and areas most likely to be used by wildlife species of interest.
- iii. Addresses NR Constraint 4 by better being able to predict when wildlife will be in a certain habitat and which species will occur there.
- iv. Also provides monitoring strategy for Objective 2.2 and 2.3.

Strategy 1.2.7. Deploy cameras on remote sites (Icy Cape and/or Pt. McIntyre) to monitor marine mammal haul outs and big-game activity onsite.

- i. Addresses NR Constraints 4 and 5 by gaining better idea of what species are present and how often.

Strategy 1.2.8. Track and record marine mammal haulout locations, through cooperation with USFWS and NSB.

- i. Addresses Mission Impact 2 and NR Constraints 1, 4, and 5 by gaining a better idea of when and where protected species are typically present and new occurrence trends in light of loss of sea ice.

4.3 Land Management

4.3.1 Status and Trends of Terrestrial Environment

4.3.1.1 Wetlands and Deep Water Habitats

Pursuant to EO 11990, DoDI 4715.03, and OPNAV-M 5090.1, the Navy will comply with the national goal of no net loss of wetlands, and will avoid loss of size, function, and value of wetlands. In addition, the Navy will preserve and enhance the natural and beneficial values of wetlands in carrying out its activities.

As mentioned in Section 2.3.2, more than 80 percent of the ACP is considered wetland habitat. The Navy has not delineated wetlands at any of the northern Alaska sites, but uses the USFWS National Wetland Inventory for baseline information regarding potential wetland areas, as well as best available knowledge based on site visits and habitat type. Besides anthropogenically altered lands, (e.g., gravel runways, roads, landfills), the Navy's northern Alaska sites are predominantly covered by wetland habitat. The Navy is responsible for approximately 672 acres of wetland habitat, or nearly 75 percent of its land holdings in northern Alaska, as discussed in Section 2.3.2 (Figures 2-7, 2-8, 2-9; Table 2-7).

4.3.1.2 Floodplains

Floodplain delineations are not available for these sites. However, given the perched groundwater tables that emerge each summer atop the permafrost, these sites are at high risk for flooding. An unusually high amount of rain and early snowmelt led to flooding in the Barrow region in 2019, and contractors lost valuable work time in Barrow in both the early and late season, where it was impossible to excavate and treat soils as planned. Flooding at Icy Cape could exacerbate erosion issues of the former landfills.

4.3.1.3 Coastal/Marine

The Navy manages approximately 1.75 miles of coastline in total along the Arctic coast. As discussed in previous sections (2.2.3, 3.1.2), one of the most serious threats which could affect the Navy's mission and its real estate holdings is coastline erosion, which has been exacerbated by loss of shorefast ice that historically protected shorelines from powerful fall storm surges.

Navy archaeologists witnessed the aftermath of heavy rainfall and powerful storm surges in July 2019: as they travelled overhead via helicopter, they observed that huge sections of bluff along the Chukchi coast had collapsed, and sediment deposits could be seen overhead. The former Pt. McIntyre landfill was entirely relocated in 2014 due to shoreline erosion.

The Pt. McIntyre property's shoreline erosion rate over the course of approximately 50 years was between 0.3 and 5.0 meters per year, whereas Icy Cape and Barrow were more conservative at 0 to 2.0 meters per year (Gibbs & Richmond, 2015).

While the Navy has little to no control over the greater processes which contribute to these issues (i.e., weather pattern changes and decreasing sea ice), managers will monitor shoreline erosion and ensure erosion does not allow former landfills or contaminants to migrate into the marine environment. Additionally, managers will work to re-establish native vegetation in disturbed areas, especially along coastlines.

4.3.1.4 Vegetation

A brief description of ecosystem types and ACP flora are provided in Sections 2.2.1 and 2.3.4, respectively. As mentioned in Section 2.2.1, all of the native ecosystem types found on Navy property at these sites are classified as wetlands. Protection of vegetation, which plays an integral part in wetland functionality, is very much linked to wetland management and preventing erosion, as discussed above.

4.3.2 Goal 2: Objectives and Strategies

Goal 2. Work in cooperation with the Environmental Restoration Program to facilitate restoration of Navy lands to conditions as close as feasible to nearby undisturbed landscapes.

Objective 2.1. Minimize adverse impacts to wetland habitats due to Navy activities.

Strategy 2.1.1. Follow best management practices when trekking across site or using heavy machinery on site, as outlined in ADEC's Tundra Treatment Guidelines (Cater, 2010).

- i. Ensure Navy personnel and contractors clean boots and equipment prior to arriving onsite to prevent transfer of non-native species.
- ii. Ensure Navy contractors can identify potential invasive species and report occurrence to ERP managers, e.g., foxtail barley, Canada thistle, and common dandelion.
- iii. Disburse impact if possible, by not walking over the same area intensively.

- iv. Lay down tundra mats or other approved material to protect tundra habitat if heavy machinery must be used for clean-up activities.
- v. Address Mission Impact 1.

Strategy 2.1.2. Ensure a work plan and best management practices are in place each time vessels, aircraft, and/or heavy machinery are utilized on Navy property, to prevent fuel and oil spills.

- i. Address Mission Impact 4.

Strategy 2.1.3. Ensure compliance with all pertinent environmental regulations and guidance while conducting work onsite.

- i. Review activity plans and environmental permits.
- ii. Participate in briefings with Contractors prior to work and following work performed onsite.
- iii. E.g., Section 404 Clean Water Act, ESA, DoDI 4715.03.
- iv. Address Mission Impacts 1, 2, 3, and 4.

Strategy 2.1.4. To the maximum extent practicable, coordinate site visits with restoration program and other agencies.

- i. Minimize human presence at these sites. Each time the Navy or its contractors travel to and from a property, wildlife is disrupted and inevitably, humans leave a footprint (metaphorically and literally). While the Navy takes its stewardship responsibilities for these sites seriously, physical presence onsite should be minimized and travel to and from remote sites will be coordinated with other activities to the maximum extent practicable.
- ii. Utilize geospatial data and analysis techniques to the maximum extent practicable.
- iii. Address Mission Impacts 1, 2, 3, and 4.

Objective 2.2. Increase the areal extent of tundra habitat on Navy property by five percent by 2030.

Strategy 2.2.1. Improve at least 35 acres of habitat through reseeding, debris removal, and/or protection from vehicle traffic.

- i. Develop a habitat improvement plan in coordination with the ERP managers and natural resources management partners to 1) identify priority areas for habitat improvement on Navy lands, 2) develop a site restoration plan, and 3) a monitoring plan for restoration effectiveness. Target date for completion is September 2022.
- ii. ADNR produced a robust revegetation manual for Alaska, which identifies appropriate seed mixes, and to some degree, methods of revegetation based on the geographic region, soil type, and soil

- moisture level (Wright, 2008). Managers will reference this manual when considering planting/habitat restoration actions.
- iii. Managers will use native seed to reduce the spread of invasive species.
- iv. Address Mission Impact 1.

Strategy 2.2.2. Document effectiveness of management efforts via photopoint monitoring.

- i. Photopoint monitoring is relatively low effort, but provides visual documentation of an area over time. Photos are repeatedly taken from a set point to document changes in the landscape (or lack thereof).
- ii. The restoration program already has established photo points at some sites.
- iii. The NR program will expand on these photopoints, if necessary, and establish points in areas where deemed most appropriate, such as the areas where proposed restoration activities will occur or areas where climate change impacts are expected to be most severe.
- iv. Address Mission Impact 1.

Objective 2.3. Identify potential impacts to Navy sites due to projected climate change using scientifically robust models.

Strategy 2.3.1. Develop a climate change report, which will focus on potential impacts to Navy restoration activities on the ACP.

- i. Items of interest include, but are not limited to inundation levels, projected available work season, impacts of warming temperatures on freezeback landfills, and impact of increased shoreline exposure due to a decline in landfast ice.
- ii. Address NR Constraints 1, 2, and 3.
- iii. Will likely seek supplemental/alternate funding, further discussed in Appendix D.

Strategy 2.3.2. Continue and implement standardized protocols to monitor shoreline erosion levels. Also, explore available geospatial datasets and analyses.

- i. Pt. McIntyre already has a robust shoreline monitoring protocol in place; however, managers may design and implement more robust protocols for Icy Cape and Barrow.
- ii. Explore geospatial methodology and applicability for monitoring shoreline erosion, possibly expanding the Navy's available dataset given the remote locations of the sites.
- iii. Address NR Constraints 1, 2, and 5.

4.4 Benefit to Species

Each objective and its associated strategies above can be separated into two categories:

1. Non-discretionary compliance actions and best management practices to avoid or minimize negative impacts of Navy activities.
 - a. Objectives 1.1 and 2.1
2. Projects that provide benefit to species and/or their habitat, supporting local and regional management objectives.
 - a. Objectives 1.2, 2.2, and 2.3

For the most part, the Navy has consistently implemented those non-discretionary compliance actions and best management practices (first category), even prior to the development of the INRMP, and will continue to do so with in-house labor and without any supplemental funding. These strategies are not included in Table 4-2 or in Appendix B, the Project Implementation Table, but will be assessed during the annual INRMP review and Metrics process to determine the effectiveness of each strategy in achieving its associated objective.

The NR projects that provide benefit to sensitive species are summarized in Table 4-2. The majority of these strategies require supplemental funds and are therefore subject to funding availability, as discussed in Section 4.2.2. Appendix B is an implementation schedule and funding plan for these INRMP projects.

Table 4-2. Direct benefits of strategies to sensitive species on or near the Navy's northern Alaska sites

| <i>SPECIES/TAXA BENEFITED</i> | <i>Strategy Number</i> | <i>Action</i> |
|--|------------------------|------------------------------------|
| EIDERS | 1.2.1 | Surveys |
| | 1.2.6 | Surveys |
| POLAR BEARS | 1.2.2 | Monitoring |
| SHOREBIRDS | 1.2.5 | Regional collaboration, Monitoring |
| MARINE MAMMALS | 1.2.7 | Monitoring |
| | 1.2.8 | Monitoring |
| LARGE TERRESTRIAL MAMMALS | 1.2.7 | Monitoring |
| ALL TERRESTRIAL AND MARINE SPECIES, VIA REGULATORY COMPLIANCE AND HABITAT MANAGEMENT | 1.2.3 | Regional collaboration, Monitoring |
| | 1.2.4 | Regional collaboration, Surveys |
| | 1.2.5 | Monitoring |
| | 2.2.1 | Habitat Management |
| | 2.2.2 | Monitoring |
| | 2.3.1 | Modeling and Monitoring |
| | 2.3.2 | Modeling and Monitoring |

4.5 Data and Personnel Management

4.5.1 Geographical Information Systems, Data Integration, Access, and Reporting

Accurate and current geospatial data representing the natural resources managed at Icy Cape, Barrow and Pt. McIntyre is a critical component of an effective natural resources management program. Geospatial data facilitates the installation's efforts to comply with environmental laws and ensure the protection of sensitive resources while supporting mission activities. Informed decision-making relies upon data collection and integration into an enterprise system. All natural resource geospatial data created by the Navy are to be stored and maintained in NAVFAC's enterprise geodatabase, referred to as the GeoReadiness Enterprise System (GES). This will facilitate accessibility in the GeoReadiness Explorer (GRX), NAVFAC's primary web-based geospatial data viewing tool, as well as future editing of data. Additionally, geospatial data for the area is available from other agencies and research organizations, which may be helpful in the management of natural resources at these remote sites. Regional data for all NAVFAC NW installations is maintained by the CNRNW GeoReadiness Center (GRC).

As this INRMP is reviewed and updated to accommodate new information and objectives, natural resource data requirements and planning-level surveys will be identified. Any data acquisition proposed under this INRMP must comply with the standards identified in the current version of the Navy Data Model (NDM), per the NAVFAC GeoReadiness Modelling, Standards and Metrics Team. The CNRNW GRC will be consulted when scopes of work are being prepared to ensure sufficient compliance with data standards and formats for integration into the GES. Further, Data Collection Guides for each feature class in the NDM Natural Resource Dataset are available from the CNRNW GRC and must be referenced for any geospatial data collection efforts.

All data and reports produced as a result of implementation of this INRMP will be stored on Navy shared drives, and reports will be posted on the Navy Region Northwest environmental public website, provided no security risks are posed. Similarly, all natural resources reports and data will be disbursed and shared with management partners, provided there is no breach of security.

4.5.2 Training of Natural Resource Personnel

Training for natural resources personnel is vital to ensuring that staff are knowledgeable and kept abreast of current natural resources laws, regulations, and guidance. Natural resources personnel benefit from attending professional conferences and meetings including the annual National Military Fish and Wildlife Association conference, regional natural resources seminars and training, geospatial classes, and training related to management of threatened and endangered wildlife and invasive species. Training needs for the NRM will be assessed on an annual basis.

Personnel with natural resources conservation responsibilities shall receive the appropriate job-specific education and training to perform their assigned tasks per OPNAV-M 5090.1, Chapter 12, Section 3.15.

4.6 Reduced Programs at the Navy's Northern Alaska Sites

4.6.1 Outdoor Recreation

The Navy has no outdoor recreation program at its northern Alaska sites, because the Navy has neither civilians nor active duty personnel stationed at these sites to manage a program. However, local residents utilize Barrow and Icy Cape sites for subsistence hunting and gathering. NSB manages wildlife for native peoples and ADF&G issues licenses for state-managed species. The Barrow runway parcel runs perpendicular to the North Salt Lagoon, and residents utilize the area's easy access to hunt waterfowl (Figure 4-11a). This area is directly adjacent to the historic hunting and fishing village, where North Slope native peoples would travel to and stay for months at a time during the summer, collecting food for the year. North Slope residents still use these fishing and hunting cabins for subsistence purpose. Additionally, subsistence hunters haul out whales and the community butchers them on the runway's old Marston matting (Figure 4-11b). Similarly, Icy Cape was a traditional hunting site for waterfowl, walrus, whales, and caribou (Nelson, 1981). Residents continue to use the site for this purpose, mainly accessing the site by water via motorized vessel. Managers for the northern Alaska sites are considering formally pursuing an access agreement with the local communities for Icy Cape and Barrow sites. This

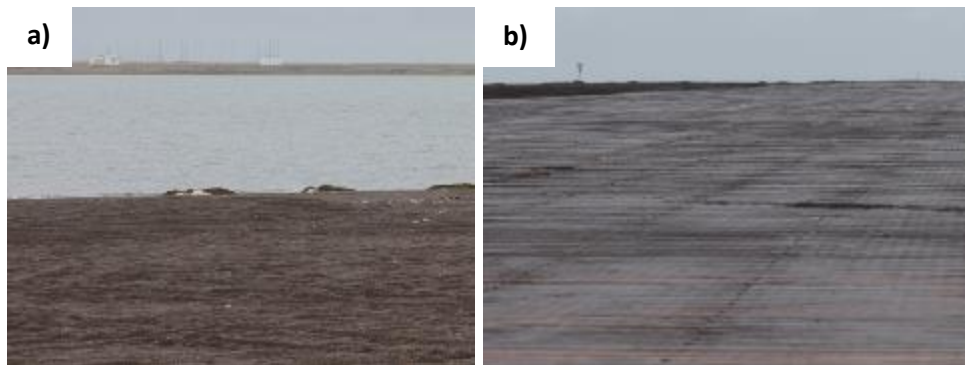


Figure 4-11. a) Local residents access Imikpuk Lake, pictured here, from the Navy's runway to hunt waterfowl during the summer. b) Marston matting, or sheets of perforated steel, still cover the Navy's former runway.

would be a joint effort among the Navy's natural resources, environmental restoration, and cultural resources programs, with cultural resources taking the lead.

4.6.2 Invasive Species

EO 13112, *Invasive Species*, as amended by EO 13751, *Safeguarding the Nation*, establishes U.S. policy "...to prevent the introduction, establishment, and spread of invasive species, as well as to eradicate and control populations of invasive species that are established". An invasive species is defined as, "...a non-native organism, [with regard to a particular ecosystem,] whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health." Responsibilities of federal agencies, with respect to implementing the U.S. invasive species policy, are enumerated in Section 3 of EO 13751, and OPNAV-M 5090.1 details Navy guidance with respect to invasive species management.

No invasive species are yet identified on Navy property or in the immediate vicinity; however, species have begun expanding their ranges and straying further north than seen before in living memory such as the wasp, dragonfly, and pink salmon as mentioned in Section 2.3.3 (Waldman, 2017; Milman, 2018). Warming temperatures and decreased sea ice may allow native terrestrial and aquatic species to continue to expand their ranges, as well as allow alien invasive species to invade the area that may have been climatically prohibited from doing so even a decade ago (Lassuy & Lewis, 2013). The Navy will prevent introducing invasive species to its northern Alaska sites by implementing 1) Strategy 2.1.1 ensuring Navy personnel and contractors clean boots and equipment prior to arriving onsite and 2) Strategy 2.2.1 ensuring revegetation efforts use only native seed.

The Alaska Center for Conservation Science maintains a terrestrial invasive plant database: the Alaska Exotic Plants Information Clearinghouse (AKEPIC). No invasive plants have been identified anywhere along the Arctic Ocean coastline. However, the nearest invasive terrestrial plants documented on the North Slope are the common dandelion (*Taraxcum officinale*), foxtail barley (*Hordeum jubatum*), and Canada thistle (*Cirsium arvense*) (AKEPIC, 2019). Navy personnel and contractors will opportunistically monitor for these plant species while onsite, and if observed, the Navy will document, collect samples, and report occurrence to partner agencies, to include the AKEPIC database managers.

4.7 Absent Programs at the Navy's Northern Alaska Sites

4.7.1 Agricultural Outleasing

The Navy does not employ agricultural outleasing at these sites. First, the restoration mission does not require this management tool, and second, the ACP's climate is not conducive to agriculture.

4.7.2 Forestry Management

The Navy does not employ forestry management at these sites, because as discussed in Section 2.2, the ACP is above the arctic tree line.

4.7.3 Wildland Fire Management

The ACP has a very low wildland fire occurrence: the ground is frozen a large portion of the year and mostly saturated for the other portion of the year (Gallant et al., 1995); the groundcover on the sites is primarily classified as hydric vegetation types that do not carry fire (Alaska Fuel Model Guide Task Group, 2018). Wildland fire at these sites is extremely unlikely.

4.7.4 Bird/Animal Aircraft Strike Hazard

The Navy no longer manages an active airstrip for these sites and so does not employ a Bird/Animal Aircraft Strike Hazard program.

4.7.5 Pest Management

The Navy has neither personnel nor active facilities at these sites, and so does not have a pest management program.

4.7.6 Law Enforcement of Natural Resources Laws and Regulations

For the same reasons the Navy does not have a pest management program, the Navy does not have personnel onsite to enforce natural resources laws and regulations.

4.7.7 Other Leases

The Navy does not employ other land leases in these areas, because its mission is so limited in scope at these sites.

5 IMPLEMENTATION

Pursuant to DoD Directive (DODD) 7045.14, the DoD utilizes the Planning, Programming, Budgeting, and Execution (PPBE) process to allocate resources across the enterprise. For the northern Alaska sites, the NRM follows the subsequent process:

- 1) Managers develop a **PLAN** for developing and executing projects, considering the priorities detailed in Section 5.1 for the northern Alaska sites. This INRMP serves as that plan for northern Alaska's natural resources program.
- 2) The NRM **PROGRAMS** those planned projects during the DoD's annual Program Objective Memorandum (POM) process. The NRM identifies each project within the program area requiring funding, and submits a list of projects to be reviewed for approval by CNIC Headquarters. During this process, the NRM submits projects to be funded over a five-year period, starting three years out, e.g., in FY21, the NRM programs projects for FY24 - FY28. The Navy submits this information to the Secretary of Defense, whose office then prepares a budget request for congressional review.
- 3) The Navy **BUDGETS** how it will spend the funds actually allocated to any given program. Usually, the Navy will receive less funds than it has requested, and thus, the Navy must decide which projects will not fit into the budget, given other priorities. These priorities are assigned based on the criteria identified in Section 5.4. This budget is developed the prior fiscal year, e.g., FY21's budget is developed in FY20.
- 4) The Navy **EXECUTES** its budget, by funding and implementing projects.

5.1 Project Development Process

Navy NRMs develop INRMP projects with the following factors in mind for the Navy's northern Alaska sites:

- 1) **How can natural resources management enable the Navy's mission at the northern Alaska sites?** Managers focus on projects that either address the mission's impacts to natural resources or conversely, natural resources constraints to the mission.
- 2) **What are the Navy's statutory and regulatory obligations?** Managers focus on projects that address the heaviest natural resources regulatory burdens on the sites, most notably ESA-listed species.
- 3) **What are the Navy's external stakeholders' biggest priorities?** Managers incorporate the management priorities of the Navy's Sikes Act partners and regional partners, identified in Section 1.4.3.
- 4) **How can managers accomplish objectives, given limited site access and limited funds?** Managers use geospatial technology as much as possible to collect information without having to mobilize to the sites. Additionally, managers plan to coordinate actions with neighboring landowners, such as the Air Force, to minimize costs and disturbance to the environment.

5.2 Achieving No Net Loss

The Sikes Act states that the Navy must provide for the conservation and rehabilitation of natural resources on installation lands and ensure no net loss in the capability of installation lands to support the military mission. By following the strategies outlined in Sections 4.2.2 and 4.3.2 in this management plan, the Navy will ensure its capability to complete its restoration mission at these sites. However, as discussed in Section 2.2.3, the arctic is warming at twice the rate as the rest of the planet. Climate change will continue to affect the natural resources at these sites and the physical environment. In a rapidly changing environment, employing an adaptive management approach, as discussed in Section 1.8, is critical to effectively managing the Navy's natural resources. The Navy's management actions focus on monitoring changes in the landscape, analyzing how those changes will affect the Navy's mission, and adapting management actions to the new conditions.

5.3 Use of Cooperative Agreements

The Navy does not currently employ cooperative agreements or interagency agreements for management of its northern Alaska sites. However, the Navy may pursue this option in the future, as authorized in the Sikes Act, Section 670c-1(b).

5.4 Funding

The Navy programming hierarchy is based on DoD funding level classifications and then by Navy programming guidelines. All actions contemplated in this INRMP are subject to the availability of funds properly authorized and appropriated under federal law. Nothing in the INRMP is intended to be, nor should be construed as, a violation of the Anti-Deficiency Act.

DoD programming priorities are classified into four levels, and are based on a project's relation to legal compliance and mission support. DoD guidance for the four classification levels is detailed in Appendix B.

In accordance with OPNAV-M 5090.1, the northern Alaska environmental program priorities are assigned based on four separate Environmental Readiness Levels (ERLs). Similarly, project prioritization is based on legal requirements and level of support to mission. Navy guidance for ERLs is detailed in Appendix B.

Because INRMPs must be implemented and the status of implementation is reported to Congress, the INRMP must reflect an annual strategy that addresses legal, regulatory, and DoD, DON, and CNO directive or policy requirements; funding; and manpower. Implementation anticipates the execution of all ERL 4 projects and activities in accordance with specific timeframes identified in the INRMP (Appendix B). The Navy considers the INRMP implemented if the installation completes the following annually:

- 1) Actively requests, receives, and uses funds for all ERL 4 projects and activities.
- 2) Ensures that sufficient numbers of professionally trained natural resources management staff are available to perform the tasks required by the INRMP.
- 3) Coordinates annually with all cooperating offices.
- 4) Documents specific INRMP action accomplishments for the reporting year.

All INRMP projects must be entered into EPR web and receive approval up the chain of command prior to funding. CNO N45 is the final authority for designating the appropriate ERL. Once validated, and entered into EPR web, typically, funding for all ERL Level 3 and 4 projects will be programmed. Projects that are designated ERL 1 and 2 should seek alternate funding sources, which are detailed in OPNAV-M 5090.1, Chapter 2. Projects identified in Sections 4.2.2 and 4.3.2 that may need alternate funding sources are identified and discussed in Appendix D.

The NRM will report status of the projects on the Navy Conservation website during the annual metrics process, as discussed in Section 1.7.

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APPENDIX A. LIST OF ACRONYMS AND ABBREVIATIONS

| Acronym | Meaning |
|----------------|---|
| ACP | Arctic Coastal Plain |
| ADEC | Alaska Department of Environmental Conservation |
| ADF&G | Alaska Department of Fish and Game |
| ADNR | Alaska Department of Natural Resources |
| Air Force | United States Air Force |
| AKEPIC | Alaska Exotic Plants Information Clearinghouse |
| BLM | Bureau of Land Management |
| BSO | Budget Submitting Office |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CHE | Critical Habitat Exemption |
| CNIC | Commander, Navy Installations Command |
| CNO | Chief of Naval Operations |
| CNRNW | Commander, Navy Region Northwest |
| CO | Commanding Officer |
| DEW Line | Distant Early Warning Line |
| DoD | Department of Defense |
| DoDI | Department of Defense Instruction |
| DoDM | Department of Defense Manual |
| DON | Department of the Navy |
| DPS | Distinct Population Segment |
| EFH | Essential Fish Habitat |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| EPR | Environmental Readiness Program Requirements |
| ERL | Environmental Readiness Level |
| ERP | Environmental Restoration Program |
| ESA | Endangered Species Act |
| FONSI | Finding of No Significant Impact |
| FR | Federal Register |
| FYR | Five-year review |
| GRX | Georeadiness Exchange |
| ICES | International Ecological Classification Standards |
| INRMP | Integrated Natural Resources Management Plan |
| INST | Instruction (e.g., OPNAVINST or SECNAVINST) |
| JAG | Judge Advocate General |
| LTM | Long term monitoring |
| MBTA | Migratory Bird Treaty Act |
| MMPA | Marine Mammal Protection Act |
| MOU | Memorandum of Understanding |
| NARL | Naval Arctic Research Laboratory |
| NAVFAC | Naval Facilities Engineering Systems Command |
| Navy | Department of the Navy OR United States Navy |

| Acronym | Meaning |
|----------------|---|
| NEPA | National Environmental Policy Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NPR-A | National Petroleum Reserve-Alaska |
| NR | Natural Resources |
| NRM | Natural Resources Manager |
| NSB | North Slope Borough |
| NW | Northwest |
| OGC | Office of General Counsel |
| OPNAVINST | Chief of Naval Operations Instruction |
| OPNAV-M | Chief of Naval Operations Manual |
| PAO | Public Affairs Officer |
| PCE | Primary constituent element |
| PFAS | per- or polyfluoroalkyl substances |
| Pt. | Point |
| RDT&E | Research, Development, Training, and Evaluation |
| ROD | Record of Decision |
| SECNAV | Secretary of the Navy |
| SGCN | Species of Greatest Conservation Need |
| TEK | Traditional Ecological Knowledge |
| U&A | Usual and Accustomed |
| U.S. | United States |
| U.S.C. | United States Code |
| UIC | Ukpeagvik Iñupiat Corporation |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |
| Y-K | Yukon-Kuskokwim |

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APPENDIX B. PROJECT IMPLEMENTATION TABLE

| <i>EPR Number: EPR Title</i> | <i>Legal Driver(s)</i> | <i>Scheduled Implementation</i> | <i>Implementation Year(s)</i> | <i>Funding Source</i> | <i>DoD Priority (Class)</i> | <i>Navy Priority (ERL)</i> |
|---|--|---------------------------------|-------------------------------|-----------------------|-----------------------------|----------------------------|
| Annual INRMP Updates and Revisions | | | | | | |
| 68742CN006: CHE/D NRNW INRMP Updates and Revisions | ESA, MMPA, Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E | Annually | FY23, FY24, FY25, FY26 | CNIC CN | 0 | 4 |
| Strategy 1.2.1. Conduct nest surveys at least every five years on each site, with a focus on listed Steller's and spectacled eiders. | | | | | | |
| 6874200101: 1 S NW Alaska Properties T&E Species Surveys | ESA, MBTA, Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E | Non-annual recurring | FY25 | CNIC CN | 0 | 4 |
| Strategy 1.2.2. Monitor polar bear activity and population numbers near Navy sites via aerial or geospatial imagery. | | | | | | |
| 6874200101: 1 S NW Alaska Properties T&E Species Surveys | ESA, MMPA, Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E | Non-annual recurring | FY23, FY25 | CNIC CN | 0 | 4 |
| Strategy 1.2.6. Delineate ecosystem type on each property to better predict where species might be more or less likely to nest and/or forage onsite. | | | | | | |
| 68742NRMAP: SIKES NW Puget Sound & Alaska INRMP Conservation Mapping | Sikes Act, ESA, MBTA, MMPA | Recurring, as needed | FY23 | CNIC CN | 1 | 4 |
| Strategy 1.2.7. Deploy cameras on remote sites (Icy Cape and/or Pt. McIntyre) to monitor marine mammal haul outs and big-game activity onsite. | | | | | | |
| 6874200101: 1 S NW Alaska Properties T&E Species Surveys | ESA, MMPA, MBTA, Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E | Non-annual recurring | FY23, FY25 | CNIC CN | 1 | 4 |

| <i>EPR Number: EPR Title</i> | <i>Legal Driver(s)</i> | <i>Scheduled Implementation</i> | <i>Implementation Year(s)</i> | <i>Funding Source</i> | <i>DoD Priority (Class)</i> | <i>Navy Priority (ERL)</i> |
|--|---|--|--------------------------------------|------------------------------|------------------------------------|-----------------------------------|
| Strategy 2.2.1. Improve at least 35 acres of habitat through reseeding, debris removal, and/or protection from vehicle traffic. | | | | | | |
| 68742NWTJ1: 1 CP NW Establishing, Sustaining & Improving Threatened and Endangered Species Habitats - Climate | ESA, Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E | Recurring | FY22, FY23, FY24, FY25, FY26 | CNIC CN, ER | 3 | 1 |
| Strategy 2.3.1. Develop a climate change report, which will focus on potential impacts to Navy restoration activities on the ACP. | | | | | | |
| 68742CN009: SIKES NW Region Climate Resilience and Adaptation - Climate | Sikes Act, DoDI 4715.03, OPNAVINST 5090.1E, ESA | Non-recurring | FY26 | CNIC CN, ER | 0 | 4 |

The above projects reflect those strategies which were programmed for within the CNIC CN program during the Navy's FY24 Program Objective Memorandum (POM) process. As of August 2021, the Navy intends to accomplish other strategies identified within the document through a) in-house labor or b) pursuing alternate means and/or funding sources.

CHE/D: Critical Habitat Exemption/Designation, CN: Conservation Program, CNIC: Commander, Naval Installations Command, CP: Conservation Project, DoDI: Department of Defense Instruction, ER: Environmental Restoration Program, ERL: Environmental Readiness Level, ESA: Endangered Species Act, FY: Fiscal Year, INRMP: Integrated Natural Resources Management Plan, MMPA: Marine Mammal Protection Act, MBTA: Migratory Bird Treaty Act, NRNW: Navy Region Northwest, NSB: North Slope Borough, NW: Northwest, OPNAVINST: Chief of Naval Operations Instruction, S: Survey, SIKES: Sikes Act, T&E: Threatened and Endangered

DoD Funding Priority

Class 0 - Recurring Natural and Cultural Resources Conservation Management Requirement: Must contain INRMP actions necessary to rehabilitate or prevent resource degradation that may affect military readiness.

Class 1 - Current Compliance: contains requirements to manage species and habitats of concern to prevent listing of species that could affect military readiness.

Class 2 - Maintenance Requirements: includes projects and activities needed that are not currently out of compliance, but will be out of compliance if

projects or activities are not implemented in time to meet an established deadline.

Class 3 - Enhancement Actions Beyond Compliance: includes projects and activities that enhance conservation resources or the integrity of the installation mission, or are needed to address overall environmental goals and objectives, but are not specifically required under a regulation or Executive Orders (EO) and are not of an immediate nature.

Navy Funding Priority**Environmental Readiness Level (ERL) 4:**

- a) Supports all actions specifically required by law, regulation or Executive Order (DoD Class 1 and 2 requirements).
- b) Supports all DoD Class 0 requirements as they relate to a specific statute such as hazardous waste disposal, permits, fees, monitoring, sampling and analysis, reporting and record keeping.
- c) Supports recurring administrative, personnel and other costs associated with managing environmental programs that are necessary to meet applicable compliance requirements (DoD Class 0).
- d) Supports DoD policy requirement to comply with overseas Final Governing Standards and Overseas Environmental Baseline Guidance Document.
- e) Supports minimum feasible Navy executive agent responsibilities, participation in Office of the Secretary of Defense sponsored inter-department and inter-agency efforts, and OSD mandated regional coordination efforts.

ERL 3:

- a) Supports all capabilities provided by ERL4.
- b) Supports existing level of Navy executive agent responsibilities, participation in OSD sponsored interdepartment and interagency efforts, and OSD mandated regional coordination efforts.

- c) Supports proactive involvement in the legislative and regulatory process to identify and mitigate requirements that will impose excessive costs or restrictions on operations and training.
- d) Supports proactive initiatives critical to the protection of Navy operational readiness.

ERL 2:

- a) Supports all capabilities provided under ERL3.
- b) Supports enhanced proactive initiatives critical to the protection of Navy operational readiness.
- c) Supports all Navy and DoD policy requirements.
- d) Supports investments in pollution reduction, compliance enhancement, energy conservation, and cost reduction.

ERL 1:

- a) Supports all capabilities provided under ERL2.
- b) Supports proactive actions required to ensure compliance with pending/strong anticipated laws and regulations in a timely manner and/or to prevent adverse impact to Navy mission.
- c) Supports investments that demonstrate Navy environmental leadership and proactive environmental stewardship.

APPENDIX C. SPECIES LIST

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|---|---|----------------------------|-----------------------|
| FLORA | | | |
| ALASKA BLUE ANEMONE | <i>Anemone drummondii</i> | | |
| ALASKA DANDELION | <i>Taraxacum alaskanum</i> | | T |
| ALPINE BISTORT | <i>Polygonum viviparum</i> | | T |
| ALPINE BLUEBERRY | <i>Vaccinium uliginosum</i> | | T |
| ALPINE FESCUE | <i>Festuca brachyphylla</i> | | |
| ALPINE FORGET-ME-NOT | <i>Myosotis alpestris</i> | | |
| ALPINE FOXTAIL | <i>Alopecurus alpinus</i> | | |
| ALPINE MILK VETCH | <i>Astragalus alpinus</i> | | |
| ALPINE WORMWOOD | <i>Artemisia glomerata</i> | | |
| ARCTIC DAISY | <i>Hulteniella integrifolia</i> | | |
| ARCTIC FORGET-ME-NOT | <i>Eritrichium nanum</i> | | |
| ARCTIC GROUNDSEL | <i>Tephrosia frigida</i> | BA ¹ | |
| ARCTIC LUPINE | <i>Lupinus arcticus</i> | | |
| ARCTIC POPPY | <i>Papaver macounii</i> | | |
| ARCTIC STITCHWORT | <i>Minuartia arctica</i> | | |
| ARCTIC WILLOW | <i>Salix arctica</i> | | T |
| BEACH GREENS | <i>Honckenya peploides</i> | | T |
| BEACH PEA | <i>Lathyrus maritimus</i> | | |
| BLACK BEARBERRY | <i>Arctous alpina</i> | | T |
| BOG ROSEMARY | <i>Andromeda polifolia</i> | | |
| BOG SAXIFRAGE | <i>Saxifraga hirculus</i> | | |
| BOREAL SAGEBRUSH | <i>Artemisia arctica</i> | | |
| CHICKWEED | <i>Cerastium beeringianum</i> | | |
| COLTSFOOT | <i>Petasites frigidus</i> | BA ¹ | T |
| CORDATE-LEAVED SAXIFRAGE /BROOK SAXIFRAGE | <i>Micranthes nelsoniana</i> var. <i>nelsoniana</i> | | T |
| CROWBERRY OR BLACKBERRY | <i>Empetrum nigrum</i> | | T |
| CUCKOO FLOWER | <i>Cardamine pratensis</i> | BA ¹ | |
| DANDELION | <i>Taraxacum ceratophorum</i> | | T |
| DWARF BIRCH | <i>Betula nana</i> | | |
| DWARF BUTTERCUP | <i>Ranunculus pygmaeus</i> | | |
| DWARF FIREWEED | <i>Epilobium latifolium</i> | | T |
| DWARF HAWKSBEARD | <i>Crepis nana</i> | | |
| ESKIMO POTATO/ ALPINE SWEETVETCH | <i>Hedysarum alpinum</i> | | T |
| FELT-LEAF WILLOW | <i>Salix alaxensis</i> | | T |
| FINGER LICHEN | <i>Dactylina arctica</i> | BA ¹ | |
| FLEABANE | <i>Erigeron eriocephalus</i> | | |
| GLACIER AVENS | <i>Geum glaciale</i> | | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|----------------------------------|----------------------------------|----------------------------|-----------------------|
| GOLDEN WHITLOW GRASS | <i>Draba alpina</i> | | |
| GRAINED SAXIFRAGE | <i>Saxifraga foliolosa</i> | | |
| HAIRY ARCTIC MILK VETCH | <i>Astragalus umbellatus</i> | | |
| HARE'S TAIL GRASS | <i>Eriophorum vaginatum</i> | | T |
| HEATHER | <i>Cassiope tetragona</i> | | T |
| HORSETAIL | <i>Equisetum</i> spp. | | |
| JACOB'S LADDER | <i>Polemonium</i> spp. | | |
| KINNICKINNICK | <i>Arctostaphylos uva-ursi</i> | | T |
| LABRADOR TEA | <i>Ledum palustre</i> | | T |
| LAGOTIS/ WEASELSNOUT | <i>Lagotis glauca</i> | | |
| LAKE HURON TANSY | <i>Chrysanthemum bipinnatum</i> | | |
| LAPLAND ROSEBAY | <i>Rhododendron lapponicum</i> | | |
| LARGE-FLOWERED WINTERGREEN | <i>Pyrola grandiflora</i> | | |
| LINGONBERRY OR LOWBUSH CRANBERRY | <i>Vaccinium vitis-idaea</i> | | T |
| LOCOWEED | <i>Oxytropis borealis</i> | | T |
| MANY-SPIKED COTTON GRASS | <i>Eriophorum angustifolium</i> | | T |
| MARE'S TAIL | <i>Hippuris vulgaris</i> | | |
| MARSH FLEABANE | <i>Senecio congestus</i> | BA ¹ | |
| MARSH MARIGOLD | <i>Caltha palustris</i> | | T |
| MOSS CAMPION | <i>Silene acaulis</i> | | |
| MOUNTAIN AVENS / ARCTIC DRYAD | <i>Dryas integrifolia</i> | | |
| MOUNTAIN AVENS / ARCTIC DRYAD | <i>Dryas octopetala</i> | | |
| MOUNTAIN OR ARCTIC SORREL | <i>Oxyria digyna</i> | | T |
| NARROW-LEAVED SAUSSUREA | <i>Saussurea viscida</i> | | |
| NET-VEINED WILLOW | <i>Salix reticulata</i> | | T |
| NODDING BLADDER-CAMPION | <i>Silene uralensis</i> | BA ¹ | |
| NODDING SAXIFRAGE | <i>Saxifraga cernua</i> | BA ¹ | |
| NORTHERN ANEMONE | <i>Anemone parviflora</i> | | |
| NORTHERN PRIMROSE | <i>Primula borealis</i> | | |
| NORTHERN ROCK JASMINE | <i>Androsace septentrionalis</i> | | |
| NORTHERN WATER CARPET | <i>Chrysosplenium tetrandrum</i> | | |
| OYSTERLEAF | <i>Mertensia maritima</i> | | T |
| PAINTBRUSH | <i>Castilleja caudata</i> | | |
| PALLAS BUTTERCUP | <i>Ranunculus pallasii</i> | BA ¹ | |
| PARRY'S WALLFLOWER | <i>Parrya nudicaulis</i> | | T |
| PASQUE FLOWER | <i>Pulsatilla patens</i> | | |
| PENDANT GRASS | <i>Arctophila fulva</i> | | |
| PINK PLUMES | <i>Polygonum bistorta</i> | | T |
| POLAR GRASS | <i>Arctagrostis latifolia</i> | | |
| PUFFBALL | Basidiomycota (Division) | | T |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|-------------------------------------|--------------------------------|----------------------------|-----------------------|
| PURPLE MOUNTAIN SAXIFRAGE | <i>Saxifraga oppositifolia</i> | | |
| PURPLE OXYTROPE | <i>Oxytropis nigrescens</i> | | |
| RED BEARBERRY | <i>Arctous rubra</i> | | T |
| REINDEER LICHEN | <i>Cladonia rangiferina</i> | BA ¹ | |
| RICHARDSON'S SAXIFRAGE OR BROOKFOAM | <i>Boykinia richardsonii</i> | | |
| ROCK JASMINE | <i>Androsace chamaejasme</i> | | |
| ROSEROOT | <i>Sedum rosea</i> | | |
| ROSS' SANDWORT | <i>Minuartia rossii</i> | | |
| ROUND-LEAVED WILLOW | <i>Salix rotundifolia</i> | BA ¹ | T |
| RUSH | <i>Luzula confusa</i> | | |
| RUSTY SAXIFRAGE | <i>Saxifraga hieracifolia</i> | BA ¹ | |
| SALMONBERRY | <i>Rubus chamaemorus</i> | | T |
| SCHEUCHZER'S COTTON GRASS | <i>Eriophorum scheuchzeri</i> | | T |
| SCURVYGRASS | <i>Cochlearia officinalis</i> | | T |
| SEDGE | <i>Carex capillaris</i> | | |
| SEDGE | <i>Carex chordorrhiza</i> | | |
| SEDGE | <i>Carex glacialis</i> | | |
| SEDGE | <i>Carex rostrata</i> | | |
| SEDGE | <i>Carex rotundata</i> | | |
| SEDGE | <i>Carex rupestris</i> | | |
| SEDGE | <i>Carex stans</i> | | |
| SEDGE | <i>Carex atrofusca</i> | | |
| SEDGE | <i>Carex bigelowii</i> | | |
| SEDGE | <i>Carex glareosa</i> | | |
| SEDGE | <i>Carex loliacea</i> | | |
| SEDGE | <i>Carex lugens</i> | | |
| SEDGE | <i>Carex lyngbyei</i> | | |
| SEDGE | <i>Carex media</i> | | |
| SEDGE | <i>Carex membranacea</i> | | |
| SEDGE | <i>Carex misandra</i> | | |
| SEDGE | <i>Carex nardina</i> | | |
| SEDGE | <i>Carex obtusata</i> | | |
| SEDGE | <i>Carex ramenskii</i> | | |
| SEDGE | <i>Carex rariflora</i> | | |
| SEDGE | <i>Carex saxatilis</i> | | |
| SEDGE | <i>Carex scirpoidea</i> | | |
| SEDGE | <i>Carex subspathacea</i> | | |
| SEDGE | <i>Carex tenuiflora</i> | | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|---------------------------------|---------------------------------|----------------------------|-----------------------|
| SEDGE | <i>Carex vaginata</i> | | |
| SIBERIAN ASTER | <i>Aster sibiricus</i> | | |
| SNOW BUTTERCUP | <i>Ranunculus nivalis</i> | BA ¹ | |
| SOAPBERRY/ SOOPOLLALIE | <i>Shepherdia canadensis</i> | | T |
| SOLITARY COTTON GRASS | <i>Eriophorum russeolum</i> | | T |
| SOURDOCK OR ARCTIC DOCK | <i>Rumex arcticus</i> | BA ¹ | T |
| SPHAGNUM MOSS | <i>Sphagnum spp.</i> | BA ¹ | T |
| SPIKE TRisetum | <i>Trisetum spicatum</i> | | |
| STARWORT | <i>Stellaria humifusa</i> | | |
| STARWORT | <i>Stellaria laeta</i> | | |
| STINKWEED / WILD SAGE | <i>Artemisia tilesii</i> | | |
| SUDETIC LOUSEWORT | <i>Pedicularis sudetica</i> | | |
| TANSY | <i>Tanacetum bipinnatum</i> | | |
| THRIFT SEAPINK | <i>Armeria maritima</i> | | |
| TUFTED HAIRGRASS | <i>Deschampsia cespitosa</i> | | |
| TUFTED SAXIFRAGE | <i>Saxifraga caespitosa</i> | | |
| TUNDRA GRASS | <i>Dupontia fischeri</i> | | |
| TUNDRA ROSE / ARCTIC CINQUEFOIL | <i>Potentilla hyparctica</i> | BA ¹ | T |
| VALERIAN | <i>Valeriana capitata</i> | | |
| WATER SEDGE | <i>Carex aquatilis</i> | | |
| WEAK/PYGMY SAXIFRAGE | <i>Saxifraga rivularis</i> | | |
| WHITE CUCKOO FLOWER | <i>Cardamine digitata</i> | | |
| WHITLOW GRASS | <i>Draba nivalis</i> | | |
| WILD SWEET PEA | <i>Hedysarum mackenzii</i> | | |
| WILLOW | <i>Salix arbusculoides</i> | | T |
| WILLOW | <i>Salix glauca</i> | | T |
| WILLOW | <i>Salix lanata</i> | | T |
| WILLOW | <i>Salix pulchra</i> | BA ¹ | T |
| WOOD RUSH | <i>Luzula arctica</i> | | |
| WOOLLY LOUSEWORT | <i>Pedicularis kanei</i> | | T |
| WOOLLY LOUSEWORT | <i>Pedicularis lanata</i> | BA ¹ | T |
| WOOLLY LOUSEWORT | <i>Pedicularis langsдорffii</i> | | T |
| YARROW | <i>Achillea borealis</i> | | |
| YELLOW LOUSEWORT | <i>Pedicularis capitata</i> | | T |
| INVERTEBRATES (MARINE) | | | |
| AMPHIPODS | Malacostraca (Class) | | SGCN |
| ANEMONE | <i>Urticina lofotensis</i> | | |
| BASKETSTAR | <i>Gorgonocephalus eucnemis</i> | | |
| BRITTLE STAR | <i>Ophiura sarsi</i> | | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|---|--------------------------------|----------------------------|-----------------------|
| BROWN JELLY FISH | <i>Chrysaora melanaster</i> | | |
| CLAM | <i>Protothaca stamineais</i> | | |
| CLAM | <i>Mya</i> spp. | | |
| COMB JELLY / CTENOPHORES | <i>Beroe cucumis</i> | | |
| COPEPOD | <i>Calanus</i> spp. | | SGCN |
| CRAB | Decapoda (Order) | | |
| HERMIT CRAB | Paguroidea (Superfamily) | | |
| ICE CREAM CONE OR TRUMPET WORMS | <i>Pectinaria</i> spp. | | |
| ISOPOD / TOE BITER | <i>Saduria sabini</i> | | |
| ISOPOD / TOE BITER | <i>Synidotea marmorata</i> | | |
| KRILL | <i>Euphausiid</i> spp | | SGCN |
| KRILL | <i>Thysanoessa</i> spp. | | |
| LION'S MANE JELLYFISH | <i>Cyanea capillata</i> | | |
| MYSID / FAIRY SHRIMP | <i>Mysis</i> spp. | | SGCN |
| MYSID / FAIRY SHRIMP | <i>Eualus gaimardii</i> | | SGCN |
| NUDIBRANCH | <i>Flabellina salmonacea</i> | | |
| OCTOPUS | Octopoda (Order) | | |
| PEANUT WORM | <i>Pelonaia corrugata</i> | | |
| POLYCHAETE WORM | <i>Nephtys</i> spp. | | |
| PRIAPULID WORM | <i>Priapulus caudatus</i> | | |
| SAND DOLLAR | Clypeasteroida (Order) | | |
| SEA ANGEL / PTEROPOD | <i>Clione limacina</i> | | |
| SEA CUCUMBER | Holothuroidea (Class) | | SGCN |
| SEA SNAIL | <i>Buccinum</i> spp. | | |
| SEA SNAIL | <i>Neptunea</i> spp. | | |
| SEA SPONGE | Porifera (Phylum) | | |
| SEA STAR | <i>Ctenodiscus crispatus</i> | | SGCN |
| SEA STAR | <i>Pisaster</i> spp. | | SGCN |
| SEA URCHIN | <i>Strongylocentrotus</i> spp. | | |
| SHRIMP | Pleocyemata (Suborder) | | |
| SOFT CORAL | <i>Gersemia</i> spp. | | |
| SPOONWORM | Echiura (Subclass) | | |
| SQUID | Decapodiformes (Superorder) | | |
| TUNICATE | Chordata (Phylum) | | |
| WATER FLEA | <i>Daphnia</i> spp. | | SGCN |
| WHALE LICE | Cyamidae (Family) | | |
| INVERTEBRATES (FRESHWATER AND TERRESTRIAL) | | | |
| ARCTIC BUMBLEBEE | <i>Bombus polaris</i> | | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|--|----------------------------------|----------------------------|-----------------------|
| ARCTIC FRITILLARY | <i>Boloria chariclea</i> | | SGCN |
| ARCTIC WOODLAND RINGLET | <i>Erebia</i> spp. | | SGCN |
| BOTFLY | <i>Oestrus</i> spp. | | SGCN |
| CHIRONOMID LARVAE | <i>Chironomus tardus</i> | | |
| CRANEFLY | <i>Erioptera</i> spp. | | |
| DRAGONFLY | Odonata (Order) | | SGCN |
| EPHEMPTERANS | Ephemeroptera (Order) | | SGCN |
| GROUND BEETLES | Carabidae (Family) | | |
| HOUSE FLY | Muscidae (Family) | | SGCN |
| HOUSE LOUSE | <i>Pediculus humanus capitis</i> | | |
| LADYBUG | Coccinellidae (Family) | | |
| MITES AND TICKS | Acari (Subclass) | | |
| MOSQUITO | Culicidae (Family) | | SGCN |
| MOSQUITO LARVAE | Culicidae (Family) | | |
| NASAL BOTFLY | <i>Oedemagena tarandi</i> | | SGCN |
| NO-SEEUM OR GNAT | Ceratopogonidae | | SGCN |
| PLECOPTERANS | Plecoptera (Order) | | SGCN |
| SPIDER | Araneae (Order) | | SGCN |
| SULPHUR BUTTERFLY | <i>Colias</i> spp. | | SGCN |
| TADPOLE SHRIMP | <i>Lepidurus arcticus</i> | | |
| TRICHOPTERANS | Trichoptera (Order) | | SGCN |
| WARBLE FLY | <i>Hypoderma</i> spp. | | SGCN |
| WASP, HORNET | Hymenoptera (Order) | | SGCN |
| WOOLLY BEAR MOTH | <i>Gynaephora groenlandica</i> | | |
| FISH (MARINE, FRESHWATER, AND ANADROMOUS) | | | |
| ALASKA BLACKFISH | <i>Dallia pectoralis</i> | | SGCN |
| ARCTIC CHAR | <i>Salvelinus alpinus</i> | | SGCN |
| ARCTIC CISCO | <i>Coregonus autumnalis</i> | | SGCN |
| ARCTIC COD | <i>Boreogadus saida</i> | | SGCN |
| ARCTIC FLOUNDER | <i>Liopsetta glacialis</i> | | |
| ARCTIC GRAYLING | <i>Thymallus arcticus</i> | | SGCN |
| ARCTIC LAMPREY | <i>Lampetra japonica</i> | | SGCN |
| ARCTIC SKATE | <i>Amblyraja hyperborea</i> | | |
| BERING CISCO | <i>Coregonus laurettae</i> | | SGCN |
| BERING WOLFFISH | <i>Anarhichas orientalis</i> | | |
| BROAD WHITEFISH | <i>Coregonus nasus</i> | | SGCN |
| BURBOT | <i>Lota lota</i> | | |
| CAPELIN | <i>Mallotus villosus</i> | | SGCN |
| CHUM SALMON | <i>Onchorhynchus keta</i> | | SGCN |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|------------------------|-----------------------------------|----------------------------|-----------------------|
| COHO SALMON | <i>Onchorhynchus kisutch</i> | | |
| DOLLY VARDEN | <i>Salvelinus malma</i> | | SGCN |
| EELPOUT | <i>Lycodes</i> spp. | | |
| FOUR-HORNED SCULPIN | <i>Myoxocephalus quadricornis</i> | | |
| HUMPBACK WHITEFISH | <i>Coregonus clupeaformis</i> | | SGCN |
| LAKE TROUT | <i>Salvelinus namaycush</i> | | SGCN |
| LEAST CISCO | <i>Coregonus sardinella</i> | | SGCN |
| LEATHER-FIN LUMPSUCKER | <i>Eumicrotremus deerjugini</i> | | |
| LONGNOSE SUCKER | <i>Catostomus catostomus</i> | | |
| NINESPINE STICKLEBACK | <i>Pungitius pungitius</i> | | SGCN |
| NORTHERN PIKE | <i>Esox lucius</i> | | SGCN |
| PACIFIC HERRING | <i>Clupea pallasii</i> | | SGCN |
| PACIFIC SAND LANCE | <i>Ammodytes hexapterus</i> | | SGCN |
| PACIFIC SLEEPER SHARK | <i>Somniosus pacificus</i> | | |
| PINK SALMON | <i>Onchorhynchus gorbuscha</i> | | SGCN |
| RAINBOW SMELT | <i>Osmerus mordax</i> | | SGCN |
| ROUND WHITEFISH | <i>Prosopium cylindraceum</i> | | SGCN |
| SAFFRON COD | <i>Eleginus gracilis</i> | | SGCN |
| SHEEFISH, INCONNU | <i>Stenodus leucichthys</i> | | SGCN |
| SLENDER EELBLENNY | <i>Lumpenus fabricii</i> | | |
| SLIMY SCULPIN | <i>Cottus cognatus</i> | | |
| SNAILFISH | <i>Liparis megacephalus</i> | | |
| SNAILFISH | <i>Liparis tunicatus</i> | | |
| SOCKEYE SALMON | <i>Onchorhynchus nerka</i> | | New |
| STARRY FLOUNDER | <i>Platichthys stellatus</i> | | |
| THREESPINE STICKLEBACK | <i>Gasterosteus aculeatus</i> | | |
| WOLF EEL | <i>Anarrhichthys ocellatus</i> | | |
| BIRDS | | | |
| AMERICAN GOLDEN PLOVER | <i>Pluvialis dominica</i> | BA ³ | SGCN, A |
| AMERICAN ROBIN | <i>Turdus migratorius</i> | BA ³ | |
| AMERICAN TREE SPARROW | <i>Spizella arborea</i> | BA ³ | |
| AMERICAN WIGEON | <i>Mareca americana</i> | BA ³ | |
| ARCTIC TERN | <i>Sterna paradisaea</i> | BA ^{1,3} | SGCN |
| ARCTIC WARBLER | <i>Phylloscopus borealis</i> | BA ³ | SGCN |
| BAIRD'S SANDPIPER | <i>Calidris bairdii</i> | BA ³ | |
| BAR-TAILED GODWIT | <i>Limosa lapponica</i> | BA ³ | SGCN, A |
| BLACK BRANT | <i>Branta bernicla</i> | BA ³ | SGCN, V |
| BLACK GUILLEMOT | <i>Cephus grylle</i> | BA ³ | SGCN |
| BLACK TURNSTONE | <i>Arenaria melanocephala</i> | BA ³ | V |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|-----------------------------|---------------------------------|----------------------------|-----------------------|
| BLACK-BELLIED PLOVER | <i>Pluvialis squatarola</i> | BA ³ | SGCN |
| BLACK-LEGGED KITTIWAKE | <i>Rissa tridactyla</i> | BA ³ | SGCN, A |
| BLUETHROAT | <i>Luscinia svecica</i> | BA ³ | |
| BUFF-BREASTED SANDPIPER | <i>Calidris subruficollis</i> | BA ³ | SGCN, A |
| CANADA GOOSE | <i>Branta canadensis</i> | BA ³ | V |
| COMMON EIDER | <i>Somateria mollissima</i> | BA ³ | SGCN |
| COMMON MURRE | <i>Uria aalge</i> | BA ³ | |
| COMMON RAVEN | <i>Corvus corax</i> | BA ^{1,3} | SGCN |
| COMMON REDPOLL | <i>Acanthis flammea</i> | BA ³ | SGCN |
| COMMON SNIPE | <i>Gallinago gallinago</i> | | |
| CRESTED AUKLETS | <i>Aethia cristatella</i> | BA ³ | |
| DARK-EYED JUNCO | <i>Junco hyemalis</i> | BA ³ | |
| DUNLIN | <i>Calidris alpina</i> | BA ^{1-BR, 3} | SGCN, A |
| GLAUCOUS GULL | <i>Larus hyperboreus</i> | BA ^{1, 3} | SGCN |
| GOLDEN EAGLE | <i>Aquila chrysaetos</i> | BA ³ | SGCN |
| GREATER SCAUP | <i>Aythya marila</i> | BA ³ | A |
| GREATER WHITE-FRONTED GOOSE | <i>Anser albifrons</i> | BA ^{1-BR, 3} | SGCN, V |
| GREEN-WINGED TEAL | <i>Anas carolinensis</i> | BA ³ | V |
| GYRFALCON | <i>Falco rusticolus</i> | | SGCN |
| HORNED PUFFIN | <i>Fratercula corniculata</i> | BA ³ | A |
| IVORY GULL | <i>Pagophila eburnea</i> | BA ³ | A |
| KING EIDER | <i>Somateria spectabilis</i> | BA ^{1,3} | SGCN, V |
| LAPLAND LONGSPUR | <i>Calcarius lapponicus</i> | BA ^{1-BR, 3} | SGCN |
| LESSER SCAUP | <i>Aythya affinis</i> | BA ³ | |
| LESSER SNOW GOOSE | <i>Chen caerulescens</i> | BA ³ | |
| LESSER YELLOWLEGS | <i>Tringa flavipes</i> | BA ³ | A |
| LONG-BILLED DOWITCHER | <i>Limnodromus scolopaceus</i> | BA ³ | SGCN |
| LONG-TAILED DUCK | <i>Clangula hyemalis</i> | BA ¹ | SGCN |
| LONG-TAILED JAEGER | <i>Stercorarius longicaudus</i> | BA ^{1,3} | |
| MALLARD | <i>Anas platyrhynchos</i> | BA ³ | |
| MERLIN | <i>Falco columbarius</i> | BA ³ | |
| NORTHERN FULMAR | <i>Fulmarus glacialis</i> | BA ³ | SGCN |
| NORTHERN HARRIER | <i>Circus cyaneus</i> | | SGCN |
| NORTHERN PINTAIL | <i>Anas acuta</i> | BA ^{1,3} | |
| NORTHERN SHOVELER | <i>Anas clypeata</i> | BA ³ | |
| NORTHERN SHRIKE | <i>Lanius excubitor</i> | BA ³ | SGCN |
| NORTHERN WHEATEAR | <i>Oenanthe oenanthe</i> | BA ³ | SGCN |
| PACIFIC LOON | <i>Gavia pacifica</i> | BA ³ | |
| PARASITIC JAEGER | <i>Stercorarius parasiticus</i> | BA ^{1,3} | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|-------------------------|---------------------------------|-------------------------------------|-----------------------|
| PECTORAL SANDPIPER | <i>Calidris melanotos</i> | BA ^{1,3} | SGCN, A |
| PEREGRINE FALCON | <i>Falco peregrinus</i> | BA ³ | SGCN |
| POMARINE JAEGER | <i>Stercorarius pomarinus</i> | BA ^{1,3} | |
| RED KNOT | <i>Calidris canutus</i> | BA ³ | A |
| RED PHALAROPE | <i>Phalaropus fulicaria</i> | BA ^{1,3} | SGCN |
| RED-BREASTED MERGANSER | <i>Mergus serrator</i> | BA ³ | |
| RED-NECKED PHALAROPE | <i>Phalaropus lobatus</i> | BA ^{1-BR, 3} | |
| RED-THROATED LOON | <i>Gavia stellate</i> | BA ³ | SGCN |
| ROCK PTARMIGAN | <i>Lagopus mutus</i> | | V |
| ROSS' GULL | <i>Chen rossii</i> | BA ³ | V |
| ROUGH-LEGGED HAWK | <i>Buteo lagopus</i> | BA ³ | SGCN |
| RUDDY TURNSTONE | <i>Arenaria interpres</i> | BA ³ | |
| RUSTY BLACKBIRD | <i>Euphagus carolinus</i> | BA ³ | W |
| SABINE'S GULL | <i>Xema sabini</i> | BA ³ | SGCN |
| SANDHILL CRANE | <i>Grus canadensis</i> | BA ³ | SGCN |
| SAVANNAH SPARROW | <i>Passerulus sandwichensis</i> | BA ^{1,3} | SGCN |
| SEMIPALMATED PLOVER | <i>Charadrius semipalmatus</i> | BA ^{1-BR, 3} | |
| SEMIPALMATED SANDPIPER | <i>Calidris pusilla</i> | BA ^{1-BR, 3} | SGCN |
| SHORT-EARED OWL | <i>Asio flammeus</i> | BA ³ | SGCN, W |
| SHORT-TAILED SHEARWATER | <i>Puffinus tenuirostris</i> | BA ³ | |
| SMITH'S LONGSPUR | <i>Calcarius pictus</i> | | SGCN |
| SNOW BUNTING | <i>Plectrophenax nivalis</i> | BA ^{1,3} | SGCN |
| SNOWY OWL | <i>Nyctea scandiaca</i> | BA ^{1,3} | SGCN, D, A |
| SPECTACLED EIDER | <i>Somateria fischeri</i> | BA ^{2,3} , IC ⁴ | FT, SGCN, A |
| STELLER'S EIDER | <i>Polysticta stelleri</i> | BA ³ | FT, SGCN, A |
| STILT SANDPIPER | <i>Calidris himantopus</i> | BA ³ | |
| SURF SCOTER | <i>Melanitta perspicillata</i> | BA ³ | |
| THICK-BILLED MURRE | <i>Uria lomvia</i> | BA ³ | |
| TUFTED PUFFIN | <i>Fratercula cirrhata</i> | BA ³ | A |
| TUNDRA SWAN | <i>Cygnus columbianus</i> | BA ³ | |
| VARIED THRUSH | <i>Ixoreus naevius</i> | BA ³ | W |
| WESTERN SANDPIPER | <i>Calidris mauri</i> | BA ³ | V |
| WHIMBREL | <i>Nemenius phaeopus</i> | BA ³ | SGCN, V |
| WHITE-CROWNED SPARROW | <i>Zonotrichia leucophrys</i> | BA ³ | |
| WILLOW PTARMIGAN | <i>Lagopus lagopus</i> | BA ³ | V |
| WILSON'S WARBLER | <i>Wilsonia pusilla</i> | BA ³ | W |
| YELLOW WAGTAIL | <i>Motacilla flava</i> | BA ³ | |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|---|----------------------------------|---|-----------------------|
| YELLOW WARBLER | <i>Setophaga petechia</i> | BA ³ | V |
| YELLOW-BILLED LOON | <i>Gavia adamsii</i> | BA ^{1,3} , IC ⁴ | SGCN, A, FPNW |
| YELLOW-RUMPED WARBLER | <i>Setophaga coronata</i> | BA ³ | |
| MAMMALS (TERRESTRIAL AND MARINE) | | | |
| ALASKA MARMOT | <i>Marmota broweri</i> | | SGCN |
| ARCTIC FOX | <i>Alopex lagopus</i> | PM ⁴ , BA ¹ , IC ⁴ | SGCN |
| ARCTIC GROUND SQUIRREL | <i>Spermophilus paryii</i> | BA ⁵ , IC ⁴ | SGCN |
| BARREN GROUND SHREW | <i>Sorex ugyunak</i> | | SGCN |
| BEARDED SEAL | <i>Erignathus barbatus</i> | | FT, SGCN |
| BEAVER | <i>Castor canadensis</i> | | |
| BELUGA WHALE | <i>Delphinapterus leucas</i> | | SGCN |
| BLACK BEAR | <i>Ursus americanus</i> | | |
| BOWHEAD WHALE | <i>Balaena mysticetus</i> | BA ⁵ | FE, SGCN |
| BROWN BEAR | <i>Ursus arctos</i> | IC ⁴ | |
| BROWN LEMMING | <i>Lemmus trimucronatus</i> | BA, IC ⁴ | SGCN |
| CARIBOU | <i>Rangifer tarandus</i> | BA ¹ , IC ⁴ , PM ⁴ | |
| COLLARED LEMMING | <i>Dicrostonyx groenlandicus</i> | BA ⁵ | SGCN |
| DALL SHEEP | <i>Ovis dalli</i> | | |
| HARBOR PORPOISE | <i>Phocoena phocoena</i> | | SGCN |
| LEAST WEASEL | <i>Mustela nivalis</i> | | |
| LYNX | <i>Lynx canadensis</i> | | |
| MOOSE | <i>Alces alces</i> | | |
| MUSKOX | <i>Ovibos moschatus</i> | | |
| MUSKRAT | <i>Ondatra zibethicus</i> | | |
| NORTHERN RED-BACKED VOLE | <i>Clethrionomys rutilus</i> | | SGCN |
| PACIFIC WALRUS | <i>Odobenus rosmarus</i> | IC ⁴ | FPNW, SGCN |
| POLAR BEAR | <i>Ursus maritimus</i> | BA ⁵ , PM ⁵ | FT, SGCN |
| PORCUPINE | <i>Erethizon dorsatum</i> | | |
| RED FOX | <i>Vulpes vulpes</i> | | |
| RIBBON SEAL | <i>Histiophoca fasciata</i> | | SGCN |
| RINGED SEAL | <i>Phoca hispida</i> | | FT, SGCN |
| RIVER OTTER | <i>Lutra canadensis</i> | | |
| SHORT-TAILED WEASEL / ERMINE | <i>Mustela erminea</i> | | |
| SINGING VOLE | <i>Microtus miurus</i> | | SGCN |
| SNOWSHOE HARE | <i>Lepus americanus</i> | | SGCN |
| SPOTTED SEAL | <i>Phoca largha</i> | | SGCN |
| TUNDRA SHREW | <i>Sorex tundrensis</i> | | SGCN |
| TUNDRA VOLE | <i>Microtus oeconomus</i> | | SGCN |

| COMMON NAME | Scientific Name | Presence Documented | Special Status |
|--------------------|------------------------|----------------------------|-----------------------|
| WOLF | <i>Canis lupus</i> | | |
| WOLVERINE | <i>Gulo gulo</i> | | |

IC: Icy Cape; **BA:** Barrow properties; **PM:** Point McIntyre

FE: Federally Endangered; **FPNW:** Federally proposed, determined not warranted for listing; **FT:** Federally Threatened; **NEW:** New species observed in the Barrow nearshore environment by Iñupiat people; ; **PIF:** Yellow Watchlist, Partners in Flight, Species with population declines and moderate to high threats; **R:** Red List, Alaska Watchlist, Audubon Alaska, Currently declining or depressed from a prior decline; **SGCN:** Species of Greatest Conservation Need, Alaska State Wildlife Action Plan (2015); **T:** Traditional-use plant, as designated by the North Slope Borough (2019); **Y:** Yellow List, Alaska Watchlist, Audubon Alaska, Vulnerable but populations are either increasing, stable, or unknown; **W:** Watchlist, Partners in Flight, Common Species in Decline

1. Presence documented during July 2019 site visit by NAVFAC NW team
2. Presence documented on the Barrow Antenna Field by USFWS during 20 years of monitoring around Barrow (USFWS, 2011).
3. Ebird data for the National Arctic Research Laboratory (former Naval Arctic Research Laboratory). Sightings do not necessarily indicate these species were observed on Navy property, however, species were in close proximity, and therefore, occasional occurrence on the Navy's Barrow properties is likely.
4. Presence documented in Restoration reports for the sites. Reference Navy documents.
5. Presence documented in agency reports, i.e., USFWS, 2011; Muto et al., 2018; Durner, 2019

BR: Breeding activity observed onsite – observed chicks or guarding behavior.

APPENDIX D. RESEARCH REQUIREMENTS

Three of the strategies identified in the Northern Alaska Sites INRMP and Appendix B are likely outside of the funding capabilities and program priorities of CNIC CN Dollars. However, the Navy may be able to use alternate funding sources, either through other Navy or DoD programs, or through other grants to accomplish the following research objectives. The Navy has had discussions with the Air Force about some of the below projects, which faces similar natural resources management concerns on its installations across the Arctic Coastal Plain.

Strategy 1.2.4. Institute a social survey to determine how frequently sites are used by subsistence hunters, what they gather at the sites, historic trends and observations at the sites, and the time of year they tend to access the sites.

This strategy would allow the Navy to access the rich Traditional Ecological Knowledge available for these sites – information on species occurrence and trends over time – in the absence of long-term standardized data. It would also help to establish human use frequency onsite, informing some Environmental Restoration risk analyses for contaminant exposure. Additionally, while the Navy might send a team to these sites every few years, or at most, for a few weeks a year, these communities regularly access and visit these sites and may be able to provide a more complete picture of the environmental conditions onsite and provide commentary on the effects of climate change. It could also inform Environmental Restoration actions, by informing the cultural resource impact analysis of various actions. Additionally, if ownership of these sites is eventually transferred, this would inform that impact analysis. The DoD could potentially tap into existing programs such as the National Snow and Ice Data Center’s Exchange for Local Observations and Knowledge of the Arctic

Strategy 1.2.5. Determine which shorebird populations nest on Navy property, and identify their overwintering sites and migration pathways.

Of the 60 avian species considered to be in decline or in need of conservation actions in northern Alaska (Appendix C), 20 percent of them are shorebirds. Shorebirds may be one of the most at-risk avian groups in the Arctic because their fledging success is so closely associated with the timing of peak invertebrate availability, and unpredictable weather patterns have made the timing of invertebrate hatches much more stochastic (Saalfeld et al., 2019). Therefore, some of these species may be at highest risk of species-wide declines, which would lead to increased regulatory pressure for the DoD. However, as discussed in Ryder et al. (2017), conservation and management on breeding grounds may not be the most effective approach to managing populations.

The DoD has the opportunity to manage some of these populations/species on a national scale, throughout their life history. The first part of this strategy – i.e., determining which shorebirds nest on Navy property – can be accomplished during the breeding surveys conducted for threatened eiders (Strategy 1.2.1) and making observations during site visits. The Air Force already has collected fairly long-term datasets for many of their sites on the ACP. The second phase would likely involve placing satellite tags on these shorebirds on their nesting grounds, and watching them disperse south to overwinter almost in real time. Groups around Utqiagvik are already placing satellite tags on shorebirds around the area, and the Navy and/or DoD could potentially partner with these groups to expand sites and look at stopover sites in relation to other DoD installations in the lower 48 (e.g., Brown et al., 2017; Kempnaers & Valcu 2017).

The DoD could then identify key migration stopover sites and wintering grounds for these populations, possibly associating these key sites to other military installations. If the DoD works across branches, across regions, and across agencies to monitor these species and manage habitat for these species, this could result in slowing or reversing population declines, preventing future listing decisions or being “ahead of the curve” in terms of species management if future listings occur. Next steps could then include identifying where in each species’ life history survivorship is lowest and which steps are limiting factors to population growth.

Of course, none of the above research methods are necessarily novel concepts. However, the DoD is uniquely situated as a land management agency in managing vast tracts of land, scattered across the country. For many of the arctic shorebirds at risk or in decline, the DoD manages habitat throughout the ranges of these species.

Strategy 2.3.1. Develop a climate change report, which will focus on potential impacts to Navy restoration activities on the Arctic Coastal Plain.

This strategy has more to do with the way in which the physical environment will change more than the biotic environment, and likely CNIC CN funding may not be the most appropriate funding source. However, considering the five natural resources constraints to the mission identified in the Northern Alaska Sites INRMP—decreased sea ice, more unpredictable weather, permafrost thaw, unpredictable threatened and endangered species occurrence, and additional regulatory pressure due to more species being listed— all of them are direct symptoms of climate change or strongly associated with the effects of climate change. The Navy needs to invest in studying and modeling climate change effects on these sites at a micro-scale to better prepare for future climate conditions. This study could focus on inundation levels, projected available work season, impacts of warming temperatures on freezeback landfills, and impacts of increased shoreline exposure due to a decline in landfast ice. The DoD is increasingly focusing on climate resilience, especially in relation to potential impacts to the mission.

The Arctic is warming at twice the rate of the rest of the planet (Overland et al., 2018) and thus, the likelihood of the above phenomena occurring is high. The DoD has pioneered innovative strategies for conducting clean-up activities in the arctic tundra environment. However, these strategies may not be effective under future climate conditions. Better informed managers will ultimately save the Navy time and resources and better protect the arctic environment.

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APPENDIX E. CRITICAL HABITAT ISSUES

As observed in Figures 4-1 and 4-3 in the Northern Alaska Sites INRMP, critical habitat has been designated for the polar bear near and on Navy property in northern Alaska. However, this has limited effect on the Navy's mission at these sites, given the Navy's limited presence and limited scope of activity.

NMFS proposed critical habitat for ringed and bearded seals in January 2021. The Navy did not request an exemption for its northern Alaska sites during an opportunity to comment on draft language for the proposed rule, because the Navy does not anticipate any actions which would affect or modify proposed critical habitat near these sites and critical habitat designation was not proposed for terrestrial environments.

The Navy is not aware of any other imminent critical habitat proposals or species listings in the vicinity of its northern Alaska sites.

**APPENDIX F. NATURAL RESOURCES MANAGER DESIGNATION
LETTER**



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND NORTHWEST
1101 TAUTOG CIRCLE
SILVERDALE, WASHINGTON 98315-1101

5090
Ser N45/20-00538
NOV 13 2020

From: Commanding Officer, Naval Facilities Engineering Systems Command Northwest
To: Ms. Rebecca Johnson, Natural Resource Specialist, Naval Facilities Engineering Systems Command Northwest

Subj: APPOINTMENT AS INSTALLATION NATURAL RESOURCES MANAGER

Ref: (a) OPNAV M-5090.1
(b) OPNAVINST 5090.1E

1. Per reference (a), you are hereby designated as the Installation Natural Resources Manager for all facilities and special areas covered by the Remote Alaska Properties (former Naval Arctic Research Laboratory Barrow, Pt. McIntyre, and Icy Cape) Area of Responsibility. You will familiarize yourself with the policies and procedures of references (a) and (b) in the performance of your duties.
2. This designation remains in effect until rescinded in writing or upon your transfer from this command, whichever occurs first.

A handwritten signature in black ink, appearing to read "E. B. MILLER", is positioned above the printed name.

E. B. MILLER

APPENDIX G. PREPARERS AND REVIEWERS

| Name | Title | Organization |
|-----------------------|---|-------------------------|
| Amal Ajmi | Fish and Wildlife Biologist | USFWS |
| Melissa Burns | Proactive Conservation Coordinator | USFWS |
| Kendra Clubb | Restoration Project Manager, Barrow sites | NAVFAC NW |
| Tammy Conkle | Conservation and Environmental Planning Division Director | NAVFAC HQ |
| Carmen Daggett | North Slope Area Biologist | ADF&G |
| Annette Franzen | Restoration Program Manager, Icy Cape, Barrow, and Pt. McIntyre | NAVFAC NW |
| Charles Hamilton | Wildlife Biologist | USFWS |
| Nina Harris | Tribal Coordinator | NAVFAC NW |
| Susan Hughes | Cultural Resources Specialist | NAVFAC NW |
| Rebecca Johnson | Northern Alaska Natural Resources Manager | NAVFAC NW |
| Amy Kirkham | Proactive Conservation Coordinator | USFWS |
| David Knutson | Lands Manager | Olgoonik Corporation |
| Cynthia Kunz | ESA Lead | NAVFAC NW |
| Mark Mettler | Former Restoration Program Manager, Icy Cape and Pt. McIntyre | NAVFAC NW |
| Marilyn Myers | Consultation Biologist, Contractor with Lynker in support of NOAA Alaska Region Protected Resources Division | Lynker |
| Jennifer Oelke Farley | Senior Environmental Planning and Conservation Specialist | SECNAV |
| Robert Senner | Natural Resources Lead | NAVFAC NW |
| Stephanie Sleeman | Marine Biologist | NAVFAC NW |
| Phillip Thorson | Marine Biologist | NAVFAC NW |

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APPENDIX H. RELEVANT LAWS, REGULATIONS, AND INSTRUCTIONS

Table H-1. Legislation cited in the Northern Alaska Sites INRMP

Table H-2. Executive Orders and National Memoranda referenced in the Northern Alaska Sites INRMP

Table H-3. DoD Instructions, Manuals, and Guidance referenced in the Northern Alaska Sites INRMP

Table H-1. Legislation cited in the Northern Alaska Sites INRMP

| LEGISLATION TITLE (ACRONYM/COLLOQUIAL TITLE) | Year Enacted | Legal Citation | Mandate |
|--|-------------------------|----------------------------------|--|
| ALASKA NATIVE CLAIMS AND SETTLEMENT ACT (ANCSA) | 1971 | 43 U.S.C. 1601 <i>et seq.</i> | Designated 12 regions across Alaska and authorized an Alaska Native for-profit corporation for each region, in addition to a corporation which represents the interests of those Alaska Natives residing outside of Alaska. 45 million acres were transferred from the federal government to the newly created native corporations as well as \$962 million. |
| ANTI-DEFICIENCY ACT | 1884 | 31 U.S.C. 1341 <i>et seq.</i> | Prohibits federal employees from making or authorizing an expenditure from, or creating or authorizing an obligation under, any appropriation or fund in excess of the amount available in the appropriation or fund unless authorized by law. |
| CLEAN WATER ACT (CWA) | 1972 | 33 U.S.C. 1251 <i>et seq.</i> | Requires all states to restore their waters to be "fishable and swimmable." Section 1251 establishes the basic structure for regulating discharge of pollutants into the waters of the US and regulates quality standards for surface waters. Section 404 prohibits discharges of dredged or filled material into waters of the U.S., including wetlands, without first obtaining a permit from the US Army Corps of Engineers. Discharge of other pollutants into navigable waters of the US are regulated under the EPA and require a permit from the National Pollutant Discharge Elimination System. |
| COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA) | 1980 | 42 U.S.C. 9601 <i>et seq.</i> | Requires liable parties to enact remedial response actions to address hazardous waste sites, which may endanger public health or the environment. |
| CONSERVATION PROGRAMS ON MILITARY INSTALLATIONS ACT (SIKES ACT) | 1960 | 16 U.S.C. 670a <i>et seq.</i> | Requires each military installation under the jurisdiction of the Secretary of Defense to prepare and implement an integrated natural resources management plan (INRMP), unless the Secretary of Defense determines an installation is absent significant natural resources. The plan shall be developed and implemented in cooperation with USFWS and appropriate state agency. |

| LEGISLATION TITLE (ACRONYM/COLLOQUIAL TITLE) | Year Enacted | Legal Citation | Mandate |
|---|-------------------------|----------------------------------|---|
| ENDANGERED SPECIES ACT (ESA) | 1973 | 16 U.S.C. 1531 <i>et seq.</i> | Established procedures to protect and recover imperiled species and the ecosystems upon which they depend. Section 7(a)(1) of the ESA requires federal agencies to use their authorities to further the purpose of the ESA by carrying out programs for the conservation of threatened and endangered (T&E) species. Section 7(a)(2) of the ESA requires all federal agencies to enter into consultation with the USFWS and/or NMFS whenever actions are proposed that may affect listed T&E species of plants and animals or their critical habitat. Section 7(a)(4) of the ESA, similarly directs all federal agencies to confer on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the ESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species |
| MARINE MAMMAL PROTECTION ACT (MMPA) | 1972 | 16 U.S.C. 1361 <i>et seq.</i> | Prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas. Take is defined as to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. The term harass is further defined under the MMPA, for non-military readiness activities, to mean any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Section 101(a)(5)(A) allows USFWS or NMFS, if requested, to authorize the incidental taking, including harassment, of small numbers of marine mammals provided certain determinations are met. The MMPA also provides certain other specific exceptions that allow for the deterrence of marine mammals to protect public safety or property. Additionally, because of the unique challenges associated with minimizing human-polar bear conflict situations, deterrence of polar bears may be further authorized under a letter of authorization (LOA) issued by USFWS in accordance with sections 101(a)(4)(A), 109(h) and 112(c) of the MMPA. |

| LEGISLATION TITLE (ACRONYM/COLLOQUIAL TITLE) | Year Enacted | Legal Citation | Mandate |
|---|-------------------------|----------------------------------|---|
| MIGRATORY BIRD TREATY ACT (MBTA) | 1918 | 16 U.S.C. 703 <i>et seq.</i> | Prohibits the take of any migratory bird or nest, except as permitted by regulatory agencies, e.g., hunting and depredation permits. Take in this context means to pursue, hunt, capture, or kill. |
| MILITARY READINESS RULE | 2007 | 50 CFR 21.15 | Authorizes the take of migratory birds incidental to military readiness activities. The Armed Forces are still expected to implement avoidance and minimization measures to mitigate take of migratory birds. |
| NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) | 1970 | 42 U.S.C. 4321 <i>et seq.</i> | Requires federal agencies to evaluate the impacts of their proposed actions on the quality of the human environment. |
| NATIONAL PETROLEUM RESERVES PRODUCTION ACT (NPRPA) | 1976 | 42 U.S.C. 6501 <i>et seq.</i> | Authorized the full commercial development of the Naval Reserve properties set aside in the 1900s. Administration over the Naval Petroleum Reserve-Alaska was transferred from the Navy to the Bureau of Land Management and remonikered National Petroleum Reserve-Alaska. |
| SUPERFUND AMENDMEMENTS AND REAUTHORIZATION ACT (SARA) | 1986 | 42 U.S.C. 9601 <i>et seq.</i> | Reauthorized CERCLA to continue cleanup activities around the country, adding site-specific amendments, definition clarifications, technical requirements, and enforcement authorities. Also authorized the Emergency Planning and Community Right-to-Know Act, effectively encouraging citizen participation in hazardous waste cleanup decisions. |

Table H-2. Executive Orders and National Memoranda referenced in the Northern Alaska Sites INRMP

| <i>CITATION</i> | <i>Subject</i> | <i>Year</i> | <i>Description</i> |
|---|--|-------------|--|
| EO 11990 | Protection of Wetlands | 1977 | Requires federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance their natural values. Directs federal agencies to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. |
| EO 13175 | Consultation and Coordination with Indian Tribal Governments | 2000 | Reaffirms the Federal government's commitment to tribal sovereignty, self-determination, and self-government. Ensures that all Executive departments and agencies consult with Indian tribes and respect tribal sovereignty as they develop policy on issues that impact Indian communities. |
| EO 13186 | Responsibilities of Federal Agencies to Protect Migratory Birds | 2001 | Each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within two years, a Memorandum of Understanding with the US Fish and Wildlife Service that shall promote the conservation of migratory bird populations. |
| EO 13751 | Safeguarding the Nation from the Impacts of Invasive Species | 2016 | Prevent the introduction of invasive species and provide for their control, and minimize the economic, plant, animal, ecological, and human health impacts that invasive species cause through coordinated federal prevention and control efforts. |
| MEMORANDUM OF UNDERSTANDING BETWEEN THE DOD AND USFWS | Promote the Conservation of Migratory Birds | 2014 | Advance migratory bird conservation, avoid or minimize the take of migratory birds, and ensure DoD activities, other than military readiness activities, are consistent with the MBTA while sustaining the use of military managed lands and airspace for testing, training, and operations. |
| MEMORANDUM OF UNDERSTANDING BETWEEN THE DOD, USFWS, AND THE ASSOCIATION OF FISH AND WILDLIFE AGENCIES | Cooperative Integrated Natural Resource Management Program on Military Installations | 2013 | Further a cooperative relationship between the DoD, USFWS, an state fish and wildlife agencies in preparing, reviewing, revising, updating, and implementing INRMPs for military installations |

Table H-3. DoD Instructions, Manuals, and Guidance referenced in the Northern Alaska Sites INRMP

| <i>CITATION</i> | <i>Subject</i> | <i>Date</i> | <i>Purpose</i> |
|--|---|---------------------------------------|---|
| ALASKA IMPLEMENTATION GUIDANCE | DoD Alaska Native Related Policies and Instructions | 13 APR 20 | The Alaska Implementation Guidance (AIG) conveys the application of the revised DoDI for American Indian/Alaska Native Policy (DoDI 4710.02; 24 SEP 18) to the unique aspects of Alaska. The AIG Highlights the nuances of Alaska in order to better assist DoD components with requirements when DoD activities intersect with Alaska Native interests and is designed to inform DoD components on how to approach trust relationships with Alaska Native peoples. |
| DODI 4715.03 | Natural Resources Conservation Program Instruction | 18 MAR 11, As amended 31 AUG 18 | Establishes policy and assigns responsibility for compliance with applicable federal, state, and local statutory and regulatory requirements, Executive Orders, Presidential memoranda, and DoD policies for the integrated management of natural resources including lands, air, waters, coastal, and nearshore areas managed or controlled by DoD. |
| DODM 4715.03 | INRMP Implementation Manual | 25 NOV 13, As amended 31 AUG 18 | Provides procedures to prepare, review, update, and implement INRMPs in compliance with the Sikes Act. |
| OFFICE OF THE UNDER SECRETARY OF DEFENSE MEMORANDUM FOR DEPUTY ASSISTANT SECRETARIES OF THE ARMY, NAVY, AND AIR FORCE AND DIRECTOR, DEFENSE LOGISTICS AGENCY | INRMP Template | 14 AUG 06 | Provides guidance that describes the overall format and organization for all new INRMPs, and, to the extent practicable, for INRMPs that undergo major revisions. |
| CNO GUIDANCE N456K/6U838101 | INRMP Program Guidance | 10 APR 06 | Provides natural resources managers at Navy installations with information necessary to prepare, update, and implement INRMPs. |

| <i>CITATION</i> | <i>Subject</i> | <i>Date</i> | <i>Purpose</i> |
|------------------------|---|--------------------|---|
| SECNAVINST 5090.8B | Policy for Environmental Protection, Natural Resources, and Cultural Resources Programs | 18 OCT 18 | Re-issue policy and assign responsibilities within the Navy in accordance with all applicable DoD and SECNAV Instructions, concerning environmental protection, natural resources, and cultural resources programs. |
| OPNAVINST 5090.1E | Environmental Readiness Program Instruction | 03 SEP 19 | Discuss requirements, delineate responsibilities, and issue implementing policy guidance for the management of the environmental resources for all Navy ships and shore activities, per SECNAVINST 5090.8B. |
| OPNAV-M 5090.1 | Environmental Readiness Program Manual | 03 SEP 19 | Details the Navy's implementing policy guidance for environmental readiness. The Natural Resources Conservation program implementing procedures are primarily enumerated in Chapter 12, which establishes Navy policy guidance and requirements to ensure sustainable military readiness through compliance with all applicable laws and regulation related to the conservation of natural resources in the U.S. and its territories and possessions, and on the high seas. |

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**APPENDIX I. NATIONAL ENVIRONMENTAL POLICY ACT
DOCUMENTATION**

DEPARTMENT OF DEFENSE
DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE ENVIRONMENTAL ASSESSMENT (EA) FOR THE ADOPTION AND IMPLEMENTATION OF AN INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN (INRMP) AT THE NORTHERN ALASKA SITES AT ICY CAPE, BARROW, AND POINT MCINTYRE, ALASKA

Pursuant to the Council on Environmental Quality regulations (40 Code of Federal Regulations Parts 1500-1508) implementing the National Environmental Policy Act and Navy regulations (32 CFR Part 775), and Chief of Naval Operations Instruction 5090.1E, the Department of the Navy (Navy) gives notice that an EA has been prepared and an Environmental Impact Statement (EIS) is not required for the adoption and implementation of an INRMP at the Northern Alaska Sites at Icy Cape, Barrow, and Point McIntyre, Alaska.

A Notice of Availability (NOA) of the Draft EA was published in The Arctic Sounder on April 8, 2021. The Draft EA was made available for public review on the Naval Facilities Engineering Systems Command Northwest website. The public comment period on the Draft EA was from April 8, to May 7, 2021 and no public comments were received. An NOA of the Final EA and FONSI will be published in The Arctic Sounder and copies of the documents will be available at <https://navfac.navy.mil/NWNEPA>.

Proposed Action: The Proposed Action is to adopt and implement an INRMP for the Navy's northern Alaska sites at Icy Cape, Barrow, and Point McIntyre, Alaska consistent with the military use of the property and the goals and objectives established in the Sikes Act (16 United States Code Section 670a et seq., as amended). This INRMP will be implemented once it is signed by Commander, Navy Region Northwest and Commander, Navy Region Northwest Regional Director for Facilities and Environmental (N4).

The purpose of the Proposed Action is to comply with statutory requirements under the Sikes Act. The need for the proposed action is to provide management requirements for species listed under the Endangered Species Act (ESA), and meet the requirements of the U.S. Department of Defense and Department of the Navy Instructions.

Existing Conditions: The northern Alaska sites consist of three sites: Icy Cape, Barrow and Point McIntyre. These sites are located on the coast of the North Slope of northern Alaska. Icy

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Cape is located 50 miles southwest of the community of Wainwright on the coast of the Chukchi Sea, approximately halfway between Pt. Lay and Wainwright. The Barrow properties are located at the confluence of the Chukchi Sea and the Beaufort Sea, four miles northeast of the city of Utqiagvik and six miles southwest of Pt. Barrow. Point McIntyre is located 12 miles northwest of Prudhoe Bay and is approximately 600 feet south of the Beaufort Sea. The Icy Cape site measures 156 acres and consists of two gravel runways, three former landfills, a coastal lagoon and wetlands. The Barrow properties consist of a former antenna field (535 acres) and a runway strip (150 acres). The majority of the Barrow site is undeveloped wetlands and tundra with the exception of a gravel runway parcel. The Point McIntyre site is approximately 70 acres and consists of marine shoreline, tundra, wetlands, a former airstrip and graveled area.

Alternatives Analyzed: This EA analyzes two alternatives: the No Action Alternative and an Action Alternative (Preferred Alternative) to adopt and implement an INRMP for the Navy's northern Alaska sites at Icy Cape, Barrow and Point McIntyre. Under the No Action Alternative, the northern Alaska sites would have no INRMP. The No Action Alternative would not include management improvements described in the Preferred Alternative, nor provide management strategies for newly-listed threatened and endangered species and their habitats. Under the Preferred Alternative, the Navy would adopt and implement an updated ecosystem-based approach to natural resources management at the northern Alaska sites that would continue to meet the land use needs of the military mission, comply with the Sikes Act, and initiate actions and projects to meet the natural resources management program goals of the INRMP.

The EA analyzed the potential impacts of the Proposed Action (Preferred Alternative) and No Action Alternative on the quality of the human environment on a programmatic level. As management decisions are made and project plans developed, further NEPA analysis may be necessary.

Environmental Effects: The following is a summary of the environmental consequences of the Proposed Action:

Water Resources. The Preferred Alternative would implement a water resources management approach based on best available science that identifies current conditions, evaluates impacts of Navy activities, and determines appropriate actions to reduce

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shoreline erosion, and protect wetlands and water resources at the northern Alaska sites. The new management and monitoring that would take place under the INRMP would result in beneficial effects for wildlife habitat, the control of erosion, and an increase in information and data on water quality and potential climate-related changes at the northern Alaska sites. Therefore, there will be no significant impacts to water resources.

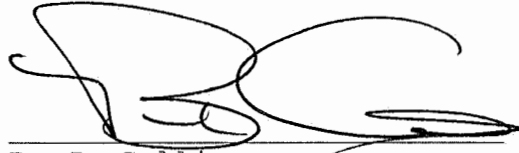
Biological Resources. The Preferred Alternative would manage biological resources through an ecosystem-based approach to improve and protect habitat features, water quality, terrestrial and marine wildlife, and other threatened, endangered or special status species. Improvements would include: new wildlife and vegetation surveys; creation and conservation of native habitat; reducing human-wildlife conflict; protection of threatened and endangered species (TES), as well as other special-status species. The INRMP would also emphasize use of an environmental review process for proposed actions that could adversely affect biological resources so that impacts could be minimized and resources protected. The Preferred Alternative is expected to have a beneficial effect for TES and be used as an early planning tool to identify potential impacts of planned and ongoing Navy actions on TES, providing an opportunity to implement measures to avoid or minimize impacts to these resources. The Preferred Alternative would identify projects to assist in conserving and managing TES through species surveys, monitoring, and habitat protection and restoration. Therefore, there will be no significant impacts to biological resources, including TES.

Finding: Based on the analysis presented in the EA and coordination with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and Alaska Department of Fish and Game, the Navy finds that implementation of the proposed action will have no significant impact to the quality of the human environment.

FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR THE ENVIRONMENTAL ASSESSMENT (EA) FOR THE IMPLEMENTATION OF THE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN (INRMP) AT THE NORTHERN ALASKA SITES AT ICY CAPE, BARROW, AND POINT MCINTYRE

The EA prepared by the Navy addressing this action is on file and interested parties may obtain a copy from: Naval Facilities Engineering Systems Command, 1101 Tautog Circle, Silverdale, WA 98315-1101 (Attention: Northern Alaska Sites INRMP NEPA Planner).

22SEP21
Date



B. J. Collins
Rear Admiral, U.S. Navy
Commander, Navy Region Northwest