INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

NAVAL SURFACE WARFARE CENTER
ACOUSTIC RESEARCH DETACHMENT
BAYVIEW, IDAHO

September 2018

Naval Facilities Engineering Command Northwest
Everett, WA

Prepared By:

Linda Wagoner
Naval Station Everett Natural Resources Manager

Commander, Navy Region Northwest

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 U.S.C. 670a et. seq., as amended); Department of Defense Instruction 4715.03 *Natural Resources Conservation Program*; and OPNAV M-5090.1 *Environmental Readiness Program Manual*.

C. S. GRAY
Rear Admiral, U.S. Navy
Commander, Navy Region Northwest

11/1/18
Date

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Commanding Officer

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M. F. DAVIS
Captain, U.S. Navy
Commanding Officer, Naval Station Everett

8 NOV 18
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Captain, U.S. Navy
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Idaho Department of Fish and Game

This Integrated Natural Resources Management Plan meets the requirements of the Sikes Act (16 U.S.C. 670a et. seq., as amended); and supports Idaho Department of Fish and Game policies, management goals, and objectives.

CHARLES CORSI
Regional Supervisor
Idaho Department of Fish and Game

12/20/18
Date

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Acoustic Research Detachment Bayview

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ALAN R. GRIFFITTS
Director, NSWCCD ARD Bayview

12/20/2018
Date

U.S. Fish and Wildlife Service

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 policies, management goals, and objectives.

GREGORY M. HUGHES
State Supervisor, Idaho Fish & Wildlife Office
U.S. Fish & Wildlife Service

02/01/2019
Date

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Natural Resources Staff

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Cynthia A. Kunz

CYNTHIA KUNZ
Sr. Natural Resources Specialist
NRNW Code N45

11/13/2018
Date

Jennifer L. Sullivan

JENNIFER SULLIVAN
Natural Resources Manager
Naval Station Everett

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Date

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This plan will be reviewed annually and updated as necessary. Updates and changes will be recorded below.

DATE	SECTION/ PAGE	COMMENT	REVIEWER
3/2018	Multiple	Review for operation and effect (Sept. 2016), and update (2018) to include the following:	ALL
		Included results of baseline biological survey conducted 2016-2017	
		Updated to reflect USFWS bull trout recovery plan (2015)	
		Recognition of USFWS Priority Conservation Strategy (2017)	
		Recognition of IDFG State Wildlife Action Plan (2015)	
		Recognition of local Tribes and Navy policy on Tribal consultation	
		Recognition of presence of invasive Eurasian milfoil and flowering rush; added management action to monitor and remove	
		Recognition of maintaining access to a Farragut State Park system trail	
		Added management action to ensure watercraft are inspected for invasive species before entering the water at ARD Bayview.	
		Updated language throughout to be consistent with other NRNW INRMPs	
		Added a chapter on INRMP Implementation; consistent with other NRNW INRMPs	
		Added language recognizing ARD Bayview's Comprehensive Environmental Response Plan	
		Added language concerning monitoring for other aquatic invasive organisms	

DATE	SECTION/ PAGE	COMMENT	REVIEWER

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ACRONYM LIST

BMP	Best Management Practices
CNIC	Commander, Navy Installations Command
CNO	Chief of Naval Operations
dbh/DBH	Diameter Breast Height
DoD	Department of Defense
DODINST	Department of Defense Instruction
DON	Department of the Navy
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
EPR	Environmental Program Requirements
ERL	Environmental Readiness Level
ESA	Endangered Species Act
ESH	Environmental, Safety, and Health
FONSI	Finding of No Significant Impact
FR	Federal Register
IDFG	Idaho Department of Fish and Game
IFWO	Idaho Fish and Wildlife office
INRMP	Integrated Natural Resources Management Plan
ISMS	Intermediate Scale Measurement System
MBTA	Migratory Bird Treaty Act
NAVFAC NW	Naval Facilities Engineering Command Northwest
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRM	Natural Resources Manager
NSWCCD	Naval Surface Warfare Center Carderock Division
OHWM	Ordinary High Water Mark
OUTPOST	Operations Utility Power and Signal Transmitter
PIF	Partners in Flight
RDT&E	Research, Development, Testing and Evaluation
SGCN	Species of Greatest Conservation Need
SWAP	State Wildlife Action Plan
TES	Threatened, Endangered, and Sensitive
TSI	Timber Stand Improvement
USC	United States Code
USDA	United Stated Department of Agriculture
USFWS	United States Fish and Wildlife Service

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1.0 Overview

A note on naming convention
In this Integrated Natural Resources Management Plan, "Bayview" or "ARD Bayview" refers to the Carderock Acoustic Research Detachment property, not the town of Bayview, unless otherwise noted.

1.1 Purpose

The Acoustic Research Detachment at Bayview (ARD Bayview) is a Navy research facility on the shore of Lake Pend Oreille in northern Idaho (Figure 1) and is under the command of Naval Station Everett (NSE) at Everett, Washington. This Integrated Natural Resources Management Plan (INRMP) is a planning document intended to guide the NSE Command in the management of natural resources at ARD Bayview. The purpose of this plan is to identify and evaluate natural resources at Bayview, and to integrate natural resources management with the military mission. Natural resources management under the INRMP intends to protect and enhance natural resources in a manner consistent with the military mission and to ensure activities are conducted in compliance with stewardship and legal requirements.

Additionally, OPNAV M-5090.1, Chapter 12 (12-3.3) requires INRMP development to follow these principles:

1) A shift from single species to multiple species conservation;
2) Formation of partnerships necessary to consider and manage ecosystems that cross installation boundaries; and
3) Use of the best available scientific information and scientifically sound strategies for adaptive management.

Actions contemplated in this INRMP are subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. §1341.

This INRMP is an update of the one signed in 2010. It reflects the mutual agreement of the U.S. Fish and Wildlife Service (USFWS) and the Idaho Department of Fish and Game (IDFG).

1.2 Scope

This plan was developed specifically for the federally-owned lands used by the Naval Surface Warfare Center, Carderock Division (NSWCCD), Acoustic Research Detachment at Bayview, Idaho, two outlying shoreline parcels, and the public lake waters used for in-water testing.

1.3 Goals and Objectives

The installation's successfully implemented natural resources program will meet two basic goals, which are closely related and not mutually exclusive:

1) Ensure the sustainability of all ecosystems encompassed by an installation; and

2) Ensure no net loss of the capability of installation lands to support the Department of Defense (DoD) mission.

Bayview's natural resources program objectives are to accomplish the following:

a) Assign professionally trained personnel to this program and provide natural resource personnel the opportunity to participate in job-training activities and professional meetings.
b) Protect, conserve and manage the watersheds, soils, uplands, fish and wildlife and other natural resources as vital elements of a natural resources program.
c) Protect threatened, endangered, and sensitive (TES) species and critical habitats regulated by the Endangered Species Act (ESA).
d) Use and care for natural resources in the combination best serving the present and future needs of the U.S. and its people.
e) Provide for the optimum use of land and water areas and access thereto while maintaining safety, security and ecological integrity.

1.4 Responsibilities

ARD Bayview and CNRNW MOA –
A Memorandum of Agreement (MOA) is being developed between Commander, Navy Region Northwest (to include NSE) and Commanding Officer Naval Surface Warfare Center, Carderock Division. The MOA will identify roles and responsibilities at ARD Bayview. It will define responsibilities for base operating support services including environmental compliance and natural resources conservation. The responsibility for maintaining this INRMP will remain with Naval Station Everett. After the MOA is signed by all parties, this INRMP will be updated to reflect roles and responsibilities consistent with the MOA.

Responsibility for implementation of this program flows through the following chain of command:

1.4.1. Chief of Naval Operations, Environmental Readiness Division

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

a) Provide policy, guidance, and resources for the development, revision, and implementation of INRMPs and associated National Environmental Policy Act (NEPA) documents.
b) Represent the Navy on issues regarding development and implementation of INRMPs and delegate responsibility in writing.
c) Resolve high-level conflicts associated with development and implementation of INRMPs.
d) Approve all INRMP projects before INRMPs are submitted to regulatory agencies for signature.

1.4.2. Commander, Navy Installations Command

The Commander, Navy Installations Command (CNIC) shall:

a) Ensure that installations under its command develop, revise and implement INRMPs, if required, and:
   1) Reevaluate the need for an INRMP at all installations that currently do not have an INRMP.
   2) Following the initial evaluation, reevaluate all remaining installations that do not have an INRMP every five years.
b) Ensure that installations comply with DoD, Department of the Navy (DON) and CNO policy on INRMPs and associated NEPA document preparation, revision and implementation.
c) Ensure the programming of resources necessary to maintain and implement INRMPs, which involves:
   1) The review of and endorsement of projects recommended for INRMP implementation prior to submittal for signature. These projects are identified in Appendix A.
   2) The evaluation and validation of Environmental Program Review (EPR)-web project proposals.
d) Participate in the development and revision of INRMPs, which involves the maintenance of a close liaison with N45, NAVFAC and other budget submitting offices (BSOs).
e) Provide overall program management oversight for all natural resources program elements.

1.4.3. Regional Commander

The Regional Commander shall:

a) Ensure that installations comply with DoD, DON and Director Environmental Readiness Division (CNO) policy on INRMPs and associated NEPA document preparation, revision and implementation.
b) Ensure that installation 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.
c) Ensure the programming of resources necessary to maintain and implement INRMPs, which involves:
   1) The evaluation and validation of EPR-web project proposals.
   2) The funding of installation natural resources management staff.
d) Establish 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 is accomplished.

1.4.4. Commanding Officer

The Commanding Officer, Naval Station Everett (NSE), in coordination with the Director, ARD Bayview, shall ensure the preparation, completion and implementation of the INRMP and associated NEPA documentation for this installation and should systematically apply the conservation practices set forth in the Plans. Their roles are to:

a) Act as stewards of natural resources under their jurisdiction and integrate natural resources requirements into the day-to-day decision-making process.

b) Ensure that natural resources management and the INRMP comply with all natural resources-related legislation, Executive Orders and Executive Memoranda, as well as DoD, SECNAV, DON and CNO directives, instructions and policies.
c) Involve appropriate tenant, operational, training or R&D commands in the INRMP review process to ensure no net loss of military mission.
d) Designate by letter, a Natural Resources Manager (NRM) responsible for the management efforts related to the preparation, revision, implementation, and funding for the INRMP.
e) Involve appropriate Navy Judge Advocate General (JAG) or Office of the General Counsel (OGC) Legal Counsel to provide advice and counsel with respect to legal matters related to natural resources management and INRMPs.
f) Endorse the INRMP via Commanding Officer NSE and Director ARD Bayview signatures.

The Commanding Officer at NSE holds the highest-ranking position at the installation and, along with the Director of ARD Bayview, is ultimately responsible for all aspects of the installation and its many functions. This includes ensuring that the INRMP is developed, implemented and fully supported. The Commanding Officer and Director can facilitate the implementation of the INRMP by encouraging support down the chain of command; ensuring that a process is established for early coordination between the NRM and key installation staff; and ensuring that natural resources management is integrated with other installation management functions, military operations, security, and Research, Development, Testing & Evaluation (RDT&E) activities.

1.4.5. Installation Natural Resources Manager (NRM)

The NRM is responsible for natural resources management at ARD Bayview. The NRM is designated in writing by the NSE Commanding Officer (Appendix B). The NRM duties include ensuring that the CO is informed of natural resource conditions and issues; goals and objectives of the INRMP; and potential or actual conflicts between mission requirements and natural resource mandates.

The NRM is a member of the NSE Public Works Department – Environmental Division and is administratively a NAVFAC employee. The NRM is primarily responsible for the preparation, revision and implementation of this INRMP and coordinating with other personnel on the installation as necessary to implement the INRMP and meet the goals and objectives. The NRM is also responsible for ensuring this plan is reviewed, current, and compliant in coordination with the USFWS and the Idaho Department of Fish and Game (IDFG). The NRM is responsible for annually compiling, tracking, and maintaining the INRMP metrics on the Navy Conservation Website.

1.4.6. Region Program Director for Environmental (N45)

The Region Program Director for Environmental (N45) provides a Senior Regional Natural Resources Specialist to ensure execution of Natural Resources conservation responsibilities in support of the Regional Commander. The specialist reviews and signs INRMPs for technical sufficiency, consistency within the region, and compliance with Navy and DoD policy.

1.4.7. Naval Facilities Engineering Command Northwest

Naval Facilities Engineering Command Northwest (NAVFAC NW) provides oversight and support for the development, maintenance and implementation of Navy Region Northwest's installation INRMPs and the natural resources program. NAVFAC NW's role in natural resources management is to:

a) Provide technical and contractual support to ARD Bayview for the preparation, development, and implementation of the INRMP and associated NEPA documents.
b) Facilitate and coordinate the issuance of INRMP-related NEPA documents.
c) Evaluate and disseminate information concerning new technology, methods, policies and procedures for use in the development and implementation of INRMPs.
d) Assist with the development of the INRMP Project Implementation Table, EPR and Legacy project proposals.
e) Provide technical and administrative guidance for the development and execution of contracts and cooperative agreements to develop and implement INRMPs.
f) Facilitate the acquisition of INRMP "mutual agreement" between the Navy, USFWS and state fish and wildlife agencies.
g) Facilitate conflict resolution between the Navy, USFWS and state fish and wildlife agencies and other stakeholders, as necessary.
h) Provide technical oversight and resources for forest management and assist in implementing forest habitat management actions.
i) Provide support and resources to installation fish and wildlife program and assist with hunting and fishing fee and permit collections and distributions.
j) Assist with compiling, tracking and maintaining INRMP metrics on the Navy Conservation Website.

In addition to the installation NRM, NAVFAC NW has professionally qualified foresters, botanists, fisheries specialists, marine mammal experts, marine and terrestrial bird specialists, and knowledgeable biologists for invasive species management. These subject matter experts are all available to support and assist the installation's natural resources program and associated consultations pertaining to ESA Section 7, Magnuson Stevens Act, MMPA, BASH and MBTA.

1.5 External Stakeholders

1.5.1 U.S. Fish and Wildlife Service

The Sikes Act (16 U.S.C. 670a *et seq.*, as amended) directs DoD to prepare INRMPs in cooperation with the USFWS. The goal is to gain mutual agreement with respect to the entire INRMP, but agreement is only required concerning the conservation, protection, and management of fish and wildlife resources. The USFWS, along with the Navy and the Idaho Department of Fish and Game (IDFG) indicates mutual agreement and endorsement of this INRMP via signature. USFWS biologists may be called upon to provide assistance and support to the NRM, if necessary.

1.5.2 Idaho Department of Fish and Game

The Sikes Act also directs DoD to prepare INRMPs in cooperation with the appropriate state fish and wildlife office; in this case the Idaho Department of Fish and Game. The goal is to gain mutual agreement with respect to the entire INRMP, but agreement is only required concerning the conservation, protection, and management of fish and wildlife resources. The IDFG, along with the Navy and the USFWS, indicates mutual agreement and endorsement of this INRMP via signature. State biologists may be called upon to provide assistance and support to the NRM, if necessary.

Commitment of Cooperating Agencies - The USFWS and IDFG agree to cooperate in the development of the INRMP and to review the INRMP as to operation and effect at least once every five years. No element of the Sikes Act is intended to either enlarge or diminish the existing responsibility and authority of the USFWS, or IDFG concerning fish and wildlife responsibilities on military lands. An INRMP reflects a mutual agreement of the parties concerning the conservation, protection, and management of fish and wildlife resources. Per the Memorandum of Understanding (MOU) between the U.S. Department of Defense, USFWS and the Association of Fish and Wildlife Agencies (July 29, 2013), a comprehensive, joint review by all parties as to operation and effect will be conducted no less often than every five years. While once every five years is required, DoD policy calls for an annual review to be conducted in coordination with the Sikes Act partners.

1.6 Native American Tribes

Pursuant to SECNAVINST 11010.14A, COMNAVREGNWINST 11010.14, and OPNAV M-5090.1, the Navy consults with federally recognized American Indian Tribes if Navy proposed actions could potentially affect Indian resources. The ARD Bayview lands are included within aboriginal lands of the Coeur d'Alene Tribe, Confederated Salish and Kootenai Tribes, and Kalispel Tribe ceded to the United States. In accordance with Navy policy, the tribe will be invited to review and comment on the INRMP and annual updates

Several Native American Tribes historically lived in the general vicinity of ARD Bayview; around Lake Pend Oreille and the surrounding area. They continue to have a presence in the area, actively involved in the management of natural resources, hunting, and fishing.

Coeur d'Alene Tribe - The aboriginal territory of the Coeur d'Alene Tribe encompassed approximately four million acres over an area that extended from Idaho into Washington and Montana and included numerous permanent sites on the shores of Lake Pend Oreille. The Coeur d'Alene Reservation was established by an E.O. in 1873 (Coeur d'Alene Tribe n.d.). The area surrounding the reservation contains many streams, rivers, and lakes that support recreational fishing. Tribal members continue to fish on and beyond reservation boundaries (Tiller 2005). Hunting and fishing rights are reserved to the original boundaries identified in the E.O. Lake Pend Oreille is outside the established reservation, however it is included in the ceded aboriginal lands of the Coeur d'Alene Tribe.

Confederated Salish and Kootenai Tribes - The Confederated Salish and Kootenai Tribes include the Bitterroot Salish, the Pend d'Oreille, and the Kootenai Tribes. The Confederated Salish and Kootenai Tribes signed the Treaty of Hellgate in 1855, which established the Flathead Indian Reservation in western Montana. The treaty provided the tribes the right to hunt and fish throughout open and

unclaimed ceded lands. Although the exact boundaries of the treaty rights are unclear, the ceded lands include Lake Pend Oreille (Confederated Salish and Kootenai Tribes 2004, State of Montana 2012). The tribal land is the primary source of timber for the region's lumber industry. The tribes also receive revenue from fishing, hunting, and camping fees (Tiller 2005). The Confederated Salish and Kootenai Tribes are interested in aboriginal water rights in the upper Clark Fork River and Lake Pend Oreille.

Kalispel Tribe - The Kalispel Tribe historically lived in the Pend Oreille River Valley until a reservation was created by E.O. in 1914. The tribe consisted of semi-nomadic hunters, diggers, and fishermen. The Kalispel Indian Reservation is located in Usk, Washington along 10 miles of the Pend Oreille River. The Kalispel Tribe is a co-manager of the river's watershed (Kalispel Tribe of Indians 2009, State of Washington n.d.). The tribe is highly concerned about pollution in the Pend Oreille River (Tiller 2005). There are no off-reservation hunting or fishing rights; however aboriginal lands of the Kalispel Tribe included Lake Pend Oreille and surrounding areas.

Kootenai Tribe - The Kootenai Tribe of Idaho was historically part of the larger Kootenai Tribe existing in areas of Montana and Canada. The Idaho Kootenai Tribe was not represented at the signing of the Treaty of Hellgate in 1855, although their lands were ceded. The tribe had the right to hunt and fish on open and unclaimed lands in their ceded territory. Tribal members received few federal allotments until 1974 when lands were set aside in trust for the Kootenai Tribes by the United States (Kootenai Tribe of Idaho n.d.). The main ARD Bayview facility is far south in Lake Pend Oreille and considered outside the Kootenai Tribal lands but the tribe may have an interest in Navy activities at the on-water test areas that may be included in their aboriginal lands.

No usual and accustomed tribal fishing grounds have been identified at ARD Bayview shore facilities or at the in-water areas occupied by the submerged test areas, floating facilities, and tow path. However, the Navy will consult with the federally recognized Indian tribes whose interests may be affected by the implementation of this INRMP. Natural resource management can affect traditional subsistence and medicinal resources as well as the character of sacred and religious sites.

The NRM will coordinate with the Naval Station Everett Cultural Resources PM (who has responsibilities for ARD Bayview) in order to maintain contact with the interested Tribes and their staff regarding cultural and natural resources issues.

1.7 Authority

The Sikes Act (16 U.S.C. 670a *et seq.*, as amended) is one of the primary drivers behind the development of this INRMP. According to the Sikes Act, the purposes of a military conservation program are conservation and rehabilitation of natural resources, sustainable multipurpose use of those resources, and public access to military lands, subject to safety requirements and military security. Moreover, the conservation program must be consistent with the mission-essential use of the installation and its lands. The Sikes Act requires the preparation of an INRMP to facilitate the conservation program: "the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate."

In addition to the Sikes Act, this INRMP has been updated consistent with guidance and regulations provided in DoD Instruction 4715.03, OPNAV M-5090.1, associated Navy Guidance (2006), and DoD Sikes Act and INRMP guidance. Collectively these guiding documents require a management approach that integrates mission support, multiple use, natural resource conservation, ecosystem management and environmental compliance and stewardship:

- ***DODINST 4715.03, Department of Defense Instruction (18 March 2011).*** Reissues and renames Department of Defense Instruction 4715.3 to establish policy and assign responsibilities for compliance with applicable Federal, State, and local statutory and regulatory requirements, Executive Orders, Presidential memorandums, and Department of Defense policies for the integrated management of natural resources including lands, air, waters, coastal, and nearshore areas managed or controlled by DoD, b) Develops new policy and updates policy for the integrated management of natural resources (including biological and earth resources) on property and lands managed or controlled by DoD, c) Implements new Natural Resources Conservation metrics, and d) Provides procedures for DoD Components and installations for developing, implementing, and evaluating effective natural resources management programs.
- ***DODINST 4715.03, Department of Defense Manual (25 November 2013) INRMP Implementation Manual.*** This manual pertains to both natural and cultural resources management on DoD lands. It includes budgeting classifications for funding priorities and detailed information on the intent of INRMPs. Exhibit 1–1 of this manual lists the specific contents required in an INRMP document.
- ***Memorandum of Understanding (MOU) between the U.S. Department of Defense, U.S. Fish and Wildlife Service and the Association of Fish and Wildlife Agencies. (July 29, 2013).*** This Tripartite MOU furthers a cooperative integrated natural resource management program on military installations and furthers cooperative relationships between the U.S. Department of Defense, U.S. Department of the Interior Fish and Wildlife Service, and state fish and wildlife agencies acting through the Association of Fish and Wildlife Agencies in preparing, reviewing, revising, updating and implementing INRMPs for military installations.
- ***USFWS Guidelines for Coordination on Integrated Natural Resource Management Plans (June 2015).*** This document provides updated guidance specifically to U.S. Fish and Wildlife Service personnel for implementing the requirements of the Sikes Act. It replaces the June 8, 2001 memorandum: Guidance for Coordination of Department of Defense Sikes Act Integrated Natural Resource Management Plans. The 2015 guidelines address USFWS program responsibilities, INRMP contents and requirements, reviews and mutual agreement, interagency agreements, reporting, and other items.
- ***Mutual DoD and USFWS Guidelines for Streamlined Review of Integrated Natural Resources Management Plan Updates (July 20, 2015).*** These guidelines clarify and describe a process for cooperating agencies to review and concur specifically on updates to existing INRMPs; not revisions or new documents. To more effectively respond and rapidly adapt to ongoing natural resource activities and to changes that are administrative, process-oriented, or minor, the USFWS, DoD, and the state fish and wildlife agencies included a provision in the Tripartite MOU to streamline the review process. Such updates do not result in new biophysical effects, do not change the management prescriptions set forth in the INRMP, and do not require analysis under the NEPA nor associated public review. The guidelines provide guidance on format, coordination and responsibilities for submitting draft and final updates.

These guidelines are not a required process, and need not apply to DoD components or installations that have already implemented a successful method for updating INRMPs with their USFWS field offices and state agencies.

- ***Memorandum on Implementation of Sikes Act Improvement Amendment: Updated Guidance.*** This Memorandum of the Under Secretary of Defense, issued on 10 October 2002, provides guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD and replaces the 21 September 1998 guidance. The October 2002 memorandum and its supplement issued in November 2004 emphasize implementing and improving the overall INRMP coordination process, and focus on coordinating with stakeholders, reporting requirements and metrics, budgeting for INRMP projects, using the INRMP as a substitute for critical habitat designation, supporting military training and testing needs, and the INRMP review process.
- ***The Implementation of Sikes Act Improvement Amendment: Supplemental Guidance Concerning Leased Lands, 17 May 2005.*** This document provides supplemental guidance for implementing Sikes Act requirements consistently throughout the Department of Defense. The guidance covers lands occupied by tenants or lessees or being used by others pursuant to a permit, license, right of way, or any other form of permission. Installation Commanding Officers may require tenants to accept responsibility for performing appropriate natural resource management actions as a condition of their occupancy or use, but this does not preclude the requirement to address the natural resource management needs of leased lands in the installation INRMP.
- ***OPNAV M-5090.1, Environmental Readiness Program Manual 2014.*** This manual establishes broad policy and assigns responsibilities for the Naval Natural Resources Program. Naval Facilities Engineering Command is assigned overall program management responsibility with authority to establish, coordinate, and promulgate the program; to issue appropriate instructions to the Navy installations for implementation of the various natural resources programs; and to provide professional natural resources services and technical assistance, through Engineering Field Activities, to Navy and Marine Corps Installations. It also directs major claimants and intermediate commands to ensure that subordinate commands support natural resources programs on installations under their control.

*******Guidance in OPNAV M-5090.1 that is pertinent to this INRMP is incorporated herein by reference.

- ***Guidelines for Preparing Integrated Natural Resources Management Plans for Navy Installations (April 2006).*** This guidance provides natural resources managers at Navy installations with an interpretation of what processes are needed to prepare INRMPs, including the INRMP template. This document is divided into three sections. The first section suggests a process to develop an INRMP. The second section addresses traditional technical areas to be included in the INRMP. The third section includes a discussion on implementing the INRMP. Of particular value within this guidance is a comprehensive list of Laws, Regulations, Executive Orders, templates and instructions applicable to this INRMP.
- ***DOI Secretarial Order 3289 (September 14, 2009).*** This Order establishes Landscape Conservation Cooperatives, which focus on on-the-ground strategic conservation efforts at the landscape level. Landscape Conservation Cooperatives (LCCs) are management-science partnerships that inform integrated resource management actions addressing climate change

and other stressors within and across landscapes. They link science and conservation delivery. LCCs are true cooperatives, formed and directed by land, water, wildlife and cultural resource managers and interested public and private organizations. Federal, State, tribal, local government and non-governmental management organizations are all invited as partners in their development.

- ***NAVFAC Natural Resources Management Procedure Manual, P-73, Chapter 2. December 7, 2005*** - Establishes the governing format under which the INRMP is structured. This document addresses all CNO natural resources program requirements, guidelines and standards.

1.8 Sustainability and Compliance

As a steward of military lands, the Navy recognizes that the installations in Navy Region Northwest are part of diverse and functioning ecosystems. Sustainability ensures the integrity of natural ecosystems over time while meeting the needs of the military mission. Sustainability goes beyond the definition of regulatory compliance, which is simply meeting the minimum requirements of laws and regulations that pertain to the environment. Bayview's personnel and the designated NRM will take an active approach to managing the natural resources of the installation and integrate all plans and operations into the concepts of biodiversity and sustainability of these resources.

1.9 Review and Revision Process

An evaluation of natural resource management at ARD Bayview will be performed each year using this INRMP as the basis for the evaluation, and a review for operation and effect will be performed at least every five years (EPR#62182R0001**ARD Bayview INRMP**). These reviews will include participation by representatives from USFWS and IDFG, and will use the Navy's internal Conservation Website and Metrics tool (see below) to evaluate the plan's relevance, operation, and effectiveness. These evaluations are the venue for assessing the effectiveness of the INRMP, and promote regular interagency coordination.

Annual INRMP Review and Conservation Metrics - Per DODINST 4715.03 Department of Defense Manual (2013) and OPNAV M-5090.1, Natural Resources Conservation Metrics (metrics) must be completed by each Navy installation with natural resources. The metrics ensure that Navy installations are in compliance with the Sikes Act and that each region or installation is preparing, maintaining, and implementing its INRMP. The metrics also support Endangered Species Act (ESA) expenditure reporting to Congress by the USFWS. Furthermore, the metrics contribute to information collected for the Defense Environmental Program Annual Report to Congress (DEPARC) and the Office of Secretary of Defense's (OSD) Environmental Management Review (EMR). Data collected during the metrics exercise also supports briefings up the DoD and Navy chains of command regarding the status of the Navy's Natural Resources Programs. As required by DoD and Navy policy, the metrics are to be completed with the USFWS, state fish and wildlife agencies, and, when appropriate, National Marine Fisheries Service and other stakeholders and partners. For the ARD Bayview INRMP, the USFWS and IDFG participate in this annual review.

The annual INRMP review considers seven focus areas documented within the Navy's internal Conservation Website that can be accessed via the Navy Environmental Portal https://eprweb.cnic.navy.mil/eprwebnet/web/NemosPortal.aspx. Access requires a Common Access Card and login.

1) Ecosystem Integrity
2) Listed Species and Critical Habitat
3) Recreational Use and Access
4) Sikes Act Cooperation
5) Team Adequacy
6) INRMP Implementation
7) INRMP (Natural Resource Program) Support of the Installation Mission

Use of the web-based Conservation Metrics generates Navy natural resource program metrics which annually provide information on the status of the installation's Natural Resource Program, and the status of the Navy's relationship with USFWS and IDFG.

The annual evaluation is completed in cooperation with the appropriate field offices of the USFWS and IDFG. It measures program success and identifies issues resulting from INRMP implementation. The NRM at Naval Station Everett will maintain the controlled version of this INRMP and associated data within the installation's electronic and hardcopy file system.

Review for Operation and Effect - Consistent with guidance and references in the Sikes Act, DODINST 4715.03 Department of Defense Manual (2013) and the Natural Resources chapter of OPNAV M-5090.1, the NRM will review this INRMP for operation and effect cooperatively with USFWS and IDFG at least once every five years. This review is the statutory responsibility of these agencies, and Navy funds may not be used to pay for their participation in this requirement. The review for operation and effect is conducted during the annual INRMP review. Mutual agreement on operation and effect will be documented in writing in the form of a new signature page. The new signature page will be appended to this INRMP and uploaded to the Navy's internal Conservation Website accessed via the Navy Environmental Portal: https://eprweb.cnic.navy.mil/eprwebnet/web/NemosPortal.aspx.

1.10 Management Strategy

Ecosystem management is a goal-driven approach to environmental management that is at a scale compatible with natural processes; is cognizant of nature's time frames; recognizes social and economic viability within functioning ecosystems; and is realized through effective partnerships among private, local, state, tribal and federal interests. Ecosystem management is a process that considers the environment as a complex system functioning as a whole, not as a collection of parts, and recognizes that people and their social and economic needs are a part of the whole. The ecosystem management approach has the overarching goal of protecting the properties and functions of natural ecosystems. Over the long term, this approach will maintain and improve the sustainability and biological diversity of terrestrial and aquatic ecosystems while supporting sustainable economies and communities. Maintenance of healthy ecosystems supports realistic military training and testing, which in turn promotes mission readiness.

The Commander, Navy Region Northwest, considers this approach to be responsible stewardship. The Natural Resources Management Program is based on the premise that responsible stewardship and ecosystem management are synonymous and are compatible with integrated natural resources management.

Natural Resources Management Strategy - The NRM will use the best available data in order to determine what natural resources, habitats, vegetation, wildlife and water resources are on the installation, where they are located, and when they are present in order to make natural resource management decisions for the installation. Since the NRM is not on-site at Bayview, they will coordinate regularly with the Bayview Environmental, Safety and Health manager to see that mission requirements and natural resources are not in conflict.

Early Review and Risk Assessment - An early review of proposed actions and the assessment of environmental risk will be conducted. The installation review process requires all new projects, programs and operations, or changes to existing projects, programs, and operations, be reviewed by the NAVFAC Environmental Division at NSE for potential impacts to natural resources so that appropriate follow-up actions can be taken (e.g., NEPA analysis, ESA consultation). Bayview with the support of the NRM will review planned actions, assess the risks to natural resources, and provide comments and/or alternatives to the action proponents that will minimize or if possible eliminate the risks. The early review process also allows the installation an opportunity to identify the appropriate level of NEPA analysis needed (e.g., Environmental Impact Statement, Environmental Assessment or Categorical Exclusion).

1.11 Restoration and Enhancement of Resources

Due to the existing conditions and environment at ARD Bayview, and the small size of the property, there are limited opportunities for restoration and enhancement. The NRM will maintain awareness of installation military requirements and identify areas heavily impacted by the operations and thus not appropriate for restoration activities. Opportunity, mission, biological, seasonal or budgetary constraints may dictate when restoration projects can be implemented. Restoration planning must be detailed enough to allow for successful completion of the project. Monitoring for success or failure should also be a key component of any restoration or enhancement project.

One restoration opportunity concerns removal of invasive Eurasian watermilfoil (*Myriophyllum spicatum*) from shoreline kokanee spawning areas, thus improving these areas (EPR # 6218212001 **ARD Bayview Invasive Species/Noxious Weed Control**). See Sections 1.12.4, 2.6.2 and 4.3.

1.12 Current Conditions and Use

1.12.1. Military Mission

Bayview's mission is to conduct underwater acoustic testing in Lake Pend Oreille. The ARD Bayview is a detachment of the Carderock Division of the Naval Surface Warfare Center (NSWC). The Carderock Division is a full-spectrum research and development, test and evaluation, engineering, and Fleet support organization for the Navy's ships, submarine, military watercraft, and unmanned vehicles. Bayview staff and facilities support mission activities that include:

- Structural acoustic measurements of vessels from 10 to 110 ft. in length using the Intermediate Scale Measurement System (ISMS)
- Large scale vehicle (LSV) submarine (all current and future platforms) testing in propulsion development, advanced submarine structures, submarine flow noise reduction, and other submarine stealth and cost reduction initiatives
- Surface vessel signature testing
- Submarine flow and structure borne noise testing using buoyantly propelled submarine models
- Testing towed arrays and underwater signature systems
- Other testing for other Navy commands, universities, and private industry.

ARD Bayview operations include two remote support facilities on the shoreline of Lake Pend Oreille and five test sites on the lake (Figure 4) in addition to the main facility. The two shoreline facilities, Operations Utility Power and Signal Transmitter (OUTPOST) and Wigwam, are located in Bonner County and house cable systems, piers, and several buildings integral to the research, development, testing and evaluation activities conducted on the lake. The five test sites on the lake include three underwater testing facilities (hydroacoustic arrays), a static test barge, and a tow testing site. These are all within public waters.

In 2014, the Navy proposed to continue current research, development, testing, and evaluation (RDT&E) activities, and to conduct additional mission testing activities beyond those presently occurring. This proposal, described in an Environmental Assessment (EA) (U.S. Navy 2015), analyzed the effects of both ongoing and expanded RDT&E operations and activities. These include passive and active detection of electromagnetic energy, passive measurement of infrared heat energy, laser testing-to evaluate laser applications for fleet use, surface and submerged testing in shallow waters, and other testing (e.g., portable tracking devices, manned and unmanned vehicles, other sensors and equipment).

The Carderock Division of the NSWC uses the Bayview location because of the unique environment provided by Lake Pend Oreille. Conditions in the lake are ideal to support ARD Bayview's research because the lake is one of the world's quietest bodies of water, with 26 square miles of current-free water. The flat mud bottom minimizes noise reflection, and the consistent year-round water temperature enhances ARD Bayview's ability to acquire repeatable scientific test results. Activities can occur from shallow water (3 feet) to over 1100 feet, but most research and testing occurs in the water column between 30 and 400 feet.

Bayview currently supports lake testing approximately 100–200 days per year. The testing facilities are used 80 percent of the available days per year and 20 percent of the available nighttime capacity. Approximately 21 percent of testing days each year are lost due to maintenance downtime, recreational boating activities, and weather. Approximately 2 percent of night testing activities are lost due to weather. Possible increases in tempo of activities (number of testing days per year) would require an additional static test barge to support testing activities (U.S. Navy 2015).

1.12.2. General Description

The installation comprises about 38 acres mostly within the town of Bayview, Idaho in Kootenai County at the southern end of Lake Pend Oreille. The installation owns approximately 21 developed acres on the shore of Lake Pend Oreille and manages approximately 16 acres of lake bottom (Figure 2, Table 1.1). The upland site contains model shop buildings; piers; boathouses; several floating barges; and administrative, security, storage, and parking facilities (Figures 2, 3). The upland acres include two shoreline operational areas which are located on U.S. Forest Service property and used under a Special Use Permit.

Operational Areas	**Acreage**
Developed Installation	8
Remote Storage Area	13
Outlying Parcels (Wigwam and OUTPOST)	<1
Submerged Lake Bottom	16
Submerged Test Areas, Floating Facilities, and Tow Path	N/A
Total Acres	**~38**

Table 1.1. Bayview Operational Areas

1.12.3. Installation History

Bayview is a small remnant of an extensive naval training camp developed in the 1940's. The 7 December 1941 attack on Pearl Harbor emphasized the vulnerability of the U.S. Navy's coastal training facilities. Four months following the attack, the desire for a more secure facility led the Navy to select Bayview, Idaho as the location of a new inland training facility. The site was rapidly developed and the first training camp was activated in August of 1942 as Farragut Naval Training Station, covering 4,050 acres.

Farragut Naval Training Station was deactivated in September 1946, shortly following the end of World War II. During its active life span of less than 4 years, nearly 300,000 troops were trained at the facility. The vast majority of the original property is now Idaho's largest state park. Farragut State Park is managed by Idaho Department of Parks and Recreation and they maintain a collection of photographs and memorabilia from the Park's days as a naval training facility.

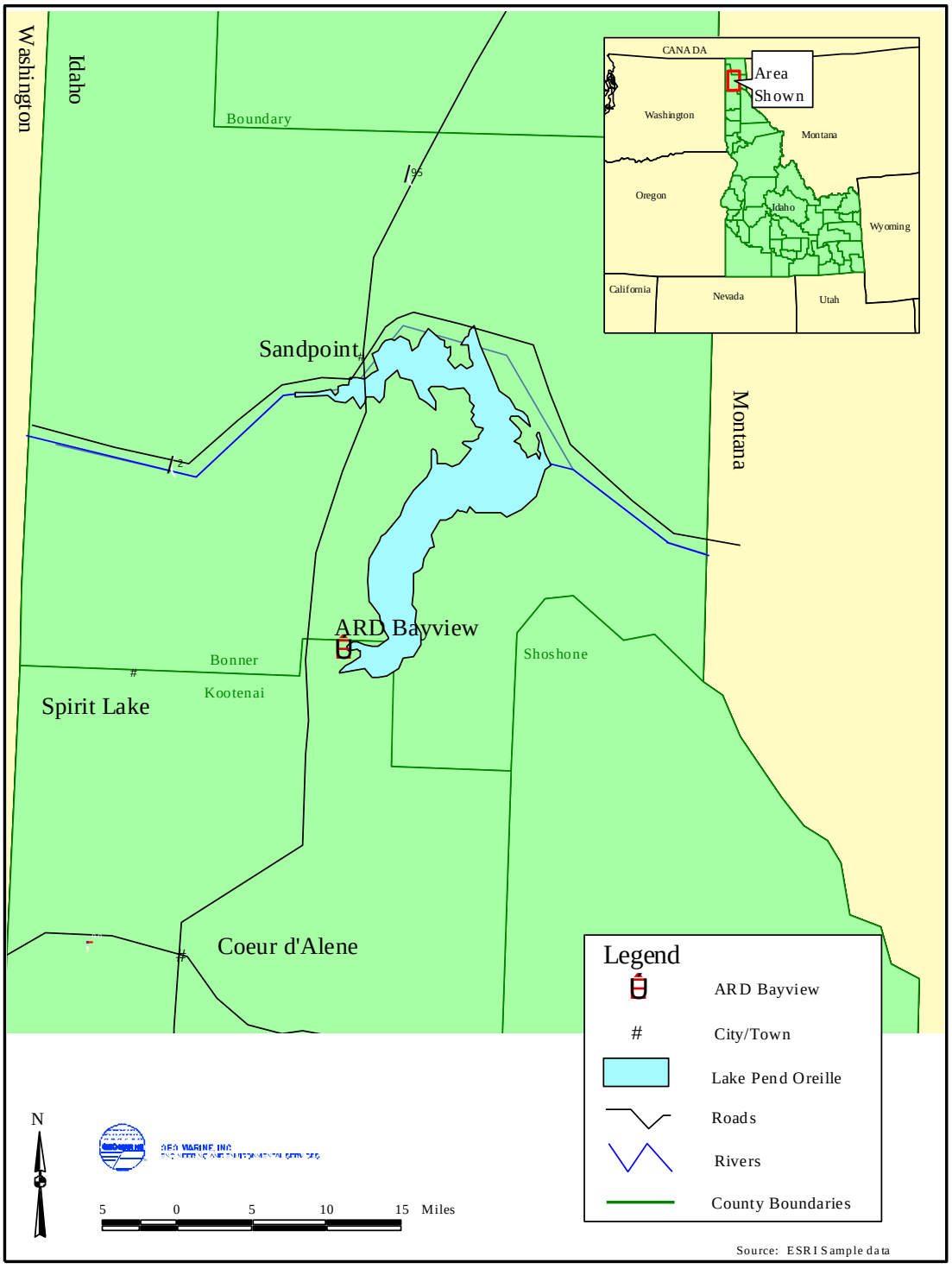

Figure 1. Location of ARD Bayview, Idaho

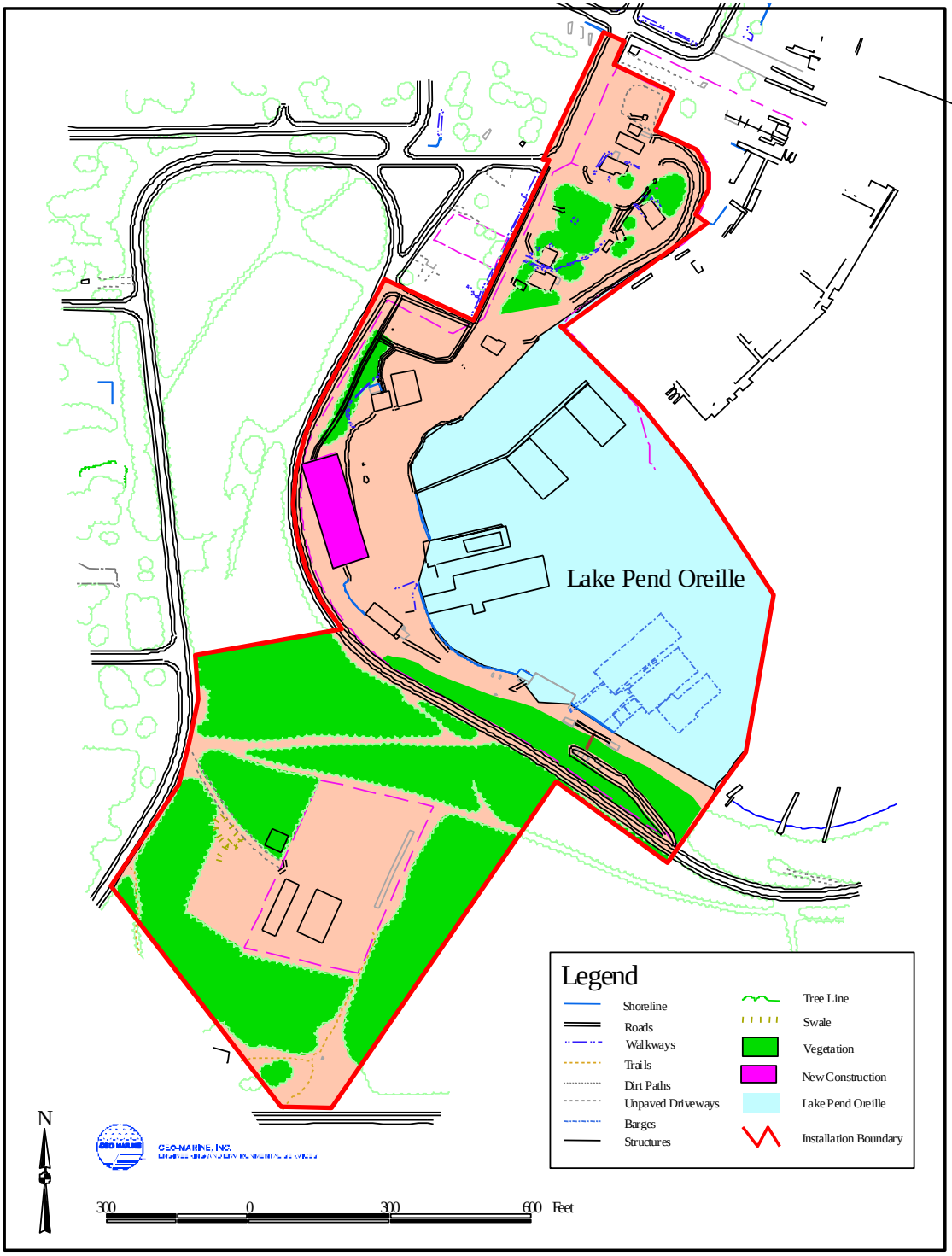

Figure 2. ARD Bayview Installation.

1.12.4. Constraints

Under current environmental conditions, no net loss is anticipated to ARD Bayview's RDT&E activities attributable to natural resource conditions at the upland facility, at the two remote sites, or within the lake environment. A baseline biological survey conducted in 2016-2017 did not identify plants, animals, or other resources of concern within the ARD Bayview operating areas that would constrain existing operations (Appendix C).

The lake contains ESA-listed bull trout (*Salvelinus confluentus*), kokanee salmon (*Oncorhynchus nerka*) (the main food source for bull trout) and other fish species and aquatic organisms. There is a potential for mission research and testing to be limited, should it impact these species. However an EA evaluated the effects of ARD Bayview's activities, including an expansion of certain testing activities and concluded that there were no significant effects (U.S. Navy 2015). This analysis included a Biological Assessment and consultation with USFWS which determined that proposed mission activities were not likely to adversely affect ESA-listed bull trout.

Existing upland use at ARD Bayview and the possibility of future development in support of the military mission are not expected to be limited by natural resource concerns or constraints. Future construction of upland facilities would likely occur within the existing developed portion of the installation.

Presently, there are only small amounts of forested areas at ARD Bayview. The forested areas and other natural habitats would be compromised in productivity and resilience should their size be reduced. Proposed future upland development should provide opportunities to improve natural resources conditions, for example by offsetting the loss of natural resources due to new construction by demolishing obsolete structures or removing paved areas and restoring these areas to native vegetation. Also, the establishment of natural, native vegetation can reduce the potential for invasive non-native species to become established.

Eurasian watermilfoil (*Myriophyllum spicatum*) - In 2014, this plant was found growing around the docks and piers at ARD Bayview. This invasive aquatic plant out-competes native vegetation and degrades aquatic habitats by reducing biodiversity. It forms dense canopies of growth in the water, creating a potential impediment to in-water operational activities such as conducting underwater maintenance, diving related to maintenance, and movement of scale model vessels. Periodic removal of the plant will minimize this impediment.

In-water work window - In-water work requiring a permit from the U.S. Army Corps of Engineers is restricted to the period from July 1 to November 1. This work window protects adult bull trout, which migrate from the lake into streams for spawning in late summer, and shoreline kokanee spawning which begins in early November. Other in-water activities that do not require U.S. Army Corps of Engineers permitting such as diving or underwater maintenance should be coordinated with the NRM to verify that adult bull trout and spawning kokanee are protected.

Migratory Birds - To reduce the likelihood of direct mortality to nesting birds, the USFWS recommends minimizing potential disturbances between April 1 and August 1 (Appendix C). Disturbances could be related to activities such as unintentional human disturbance, vegetation and snag removal, and pesticide use.

Osprey nesting - Osprey have actively nested on a barge and hoist at the main Bayview property and could attempt to nest on these and similar structures in the future. Active nests (those containing eggs or dependent young) are protected under the Migratory Bird Treaty Act, but under certain circumstances the military is authorized to "take" migratory birds per the military readiness rule (72 FR 8931). Personnel at ARD Bayview coordinated with the USFWS in 2016 to meet the requirements of the MBTA and the military readiness rule (see Appendix C and 4.3.4.1 below for more information).

1.12.5. Opportunities

Administratively, program implementation is the responsibility of the designated NRM at Naval Station Everett, with support and assistance from the Bayview Environmental, Safety and Health manager. Typical program management duties include documentation of actions requiring NEPA, forest and land management, and fish and wildlife management. Conservation of biodiversity and ecosystem management has been directed by DoD as the management approach for protection and enhancement of natural resources. The NRM supports the military mission by implementing this INRMP; maintaining compliance with applicable laws, regulations and instructions; and preparing NEPA documentation for pier repairs, dock replacements and upgrades to mission-related support structures.

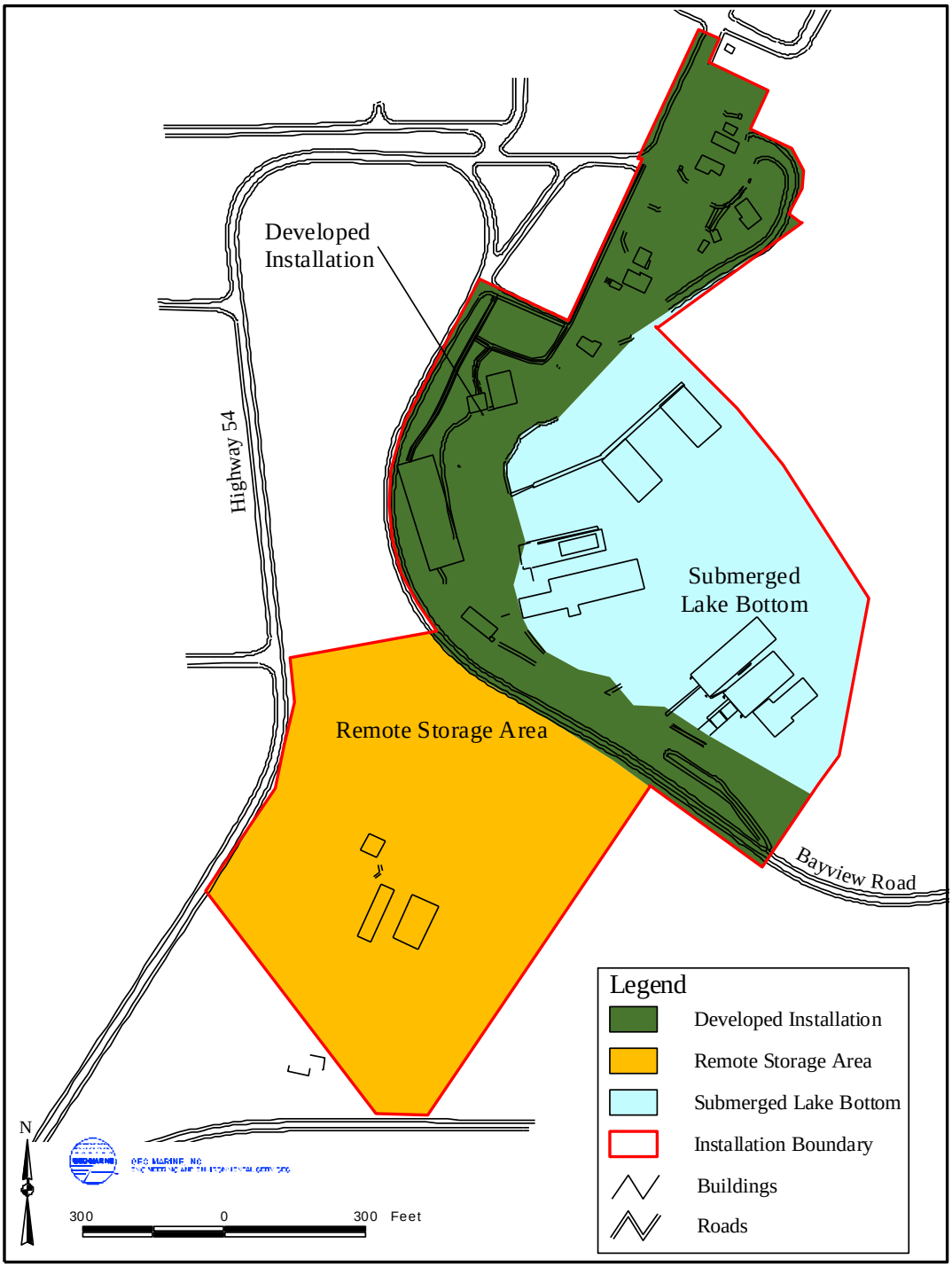

Figure 3. ARD Bayview Main Facility Operational Areas.

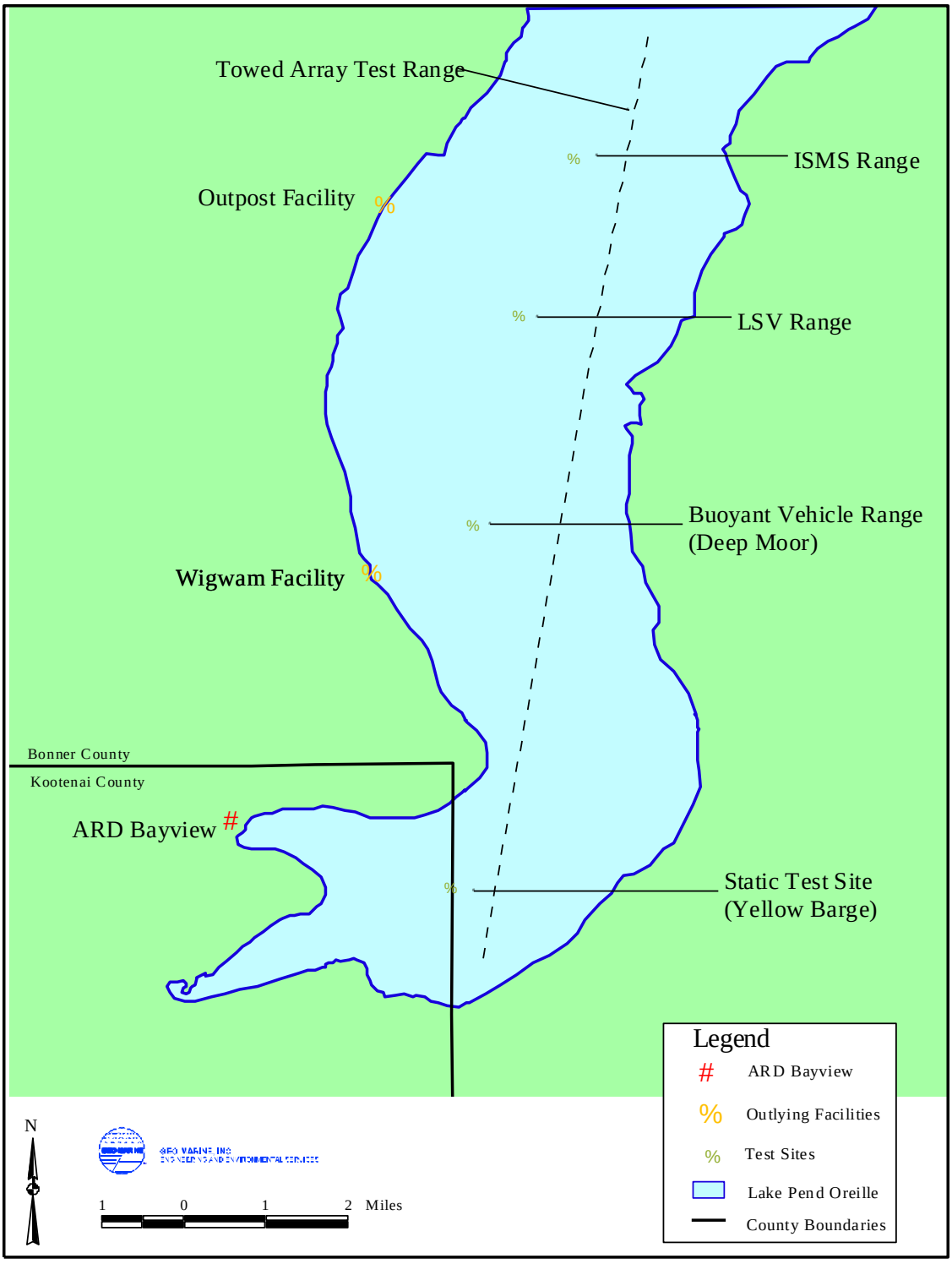

Figure 4. ARD Bayview Outlying Parcels and Operational Areas.

2.0 Physical and Biotic Environment

2.1 Regional Setting and Climate

Bayview is located in northern Idaho, approximately 75 miles south of Canada, bordered on the southwest by Farragut State Park and to the east and northeast by Lake Pend Oreille. Surrounding the lake to the east and north is the Kaniksku National Forest, one of three forests that make up the Idaho Panhandle National Forests.

The regional climate is influenced by predominantly west winds, which deliver moist air masses from the Pacific Ocean (University of Idaho 2001). The local climate is also influenced by Lake Pend Oreille. The large, deep lake has much capacity to moderate local temperatures and despite its northern latitude, the deep lake remains ice-free throughout the winter.

Temperatures in the region are typically warmer in the winter and cooler in the summer than those found east of the Rockies. The average temperature at Bayview, Idaho is 45.6 °F based on data collected by the U.S. Climate Data Center from 1981-2010 (U.S. Climate Data Center website 2016). Average lows can reach 22 °F in December and January and highs reach 80 °F in July and August.

The average annual precipitation is 25.3 inches. This includes rain, snow and hail. The monthly precipitation averages are highest in November (3.13 inches) and December (3.29 inches). The lowest monthly average precipitation occurs in July through September, ranging from 1.19-1.25 inches.

The average annual snowfall in the vicinity of ARD Bayview is 57.7 inches. This is 158% more than the national average of 22.4 inches. Snowfall can occur from October through April, with the most occurring in December and January. The average snow depth is highest in January and February, 5 and 4 inches, respectively. https://snowfall.weatherdb.com/l/1647/Bayview-Idaho. Because of the influence of the surrounding Bitterroot Mountains, Coeur d'Alene Mountains and Selkirk Mountains, precipitation patterns vary dramatically over small spatial scales.

2.2 Geology

The northern part of the Idaho has elevations ranging from 700 to 9,000 feet. Forested mountains and high plains characterize this region. A unique combination of events formed this northern Idaho setting. The northern Rocky Mountains formed from compression and volcanism, in contrast to the spreading forces that formed the basin and range topography represented in southern Idaho.

Perhaps equally important to the shape of the modern-day landscape was the last glacial advance occurring 10,000 to 12,000 years ago. Near the end of the last ice age, the southern extent of the continental ice sheet reached into the states of Washington, Idaho, and Montana. Glaciers carved steep sided valleys and left steep mountain spires, or cirques, where several glaciers originated around a mountain peak. During the glacial advance, a large portion of the ice sheet advanced into northern Idaho. This "finger" of ice formed a dam near the present-day Lake Pend Oreille, blocking waters draining westward from Montana via the Clark Fork River.

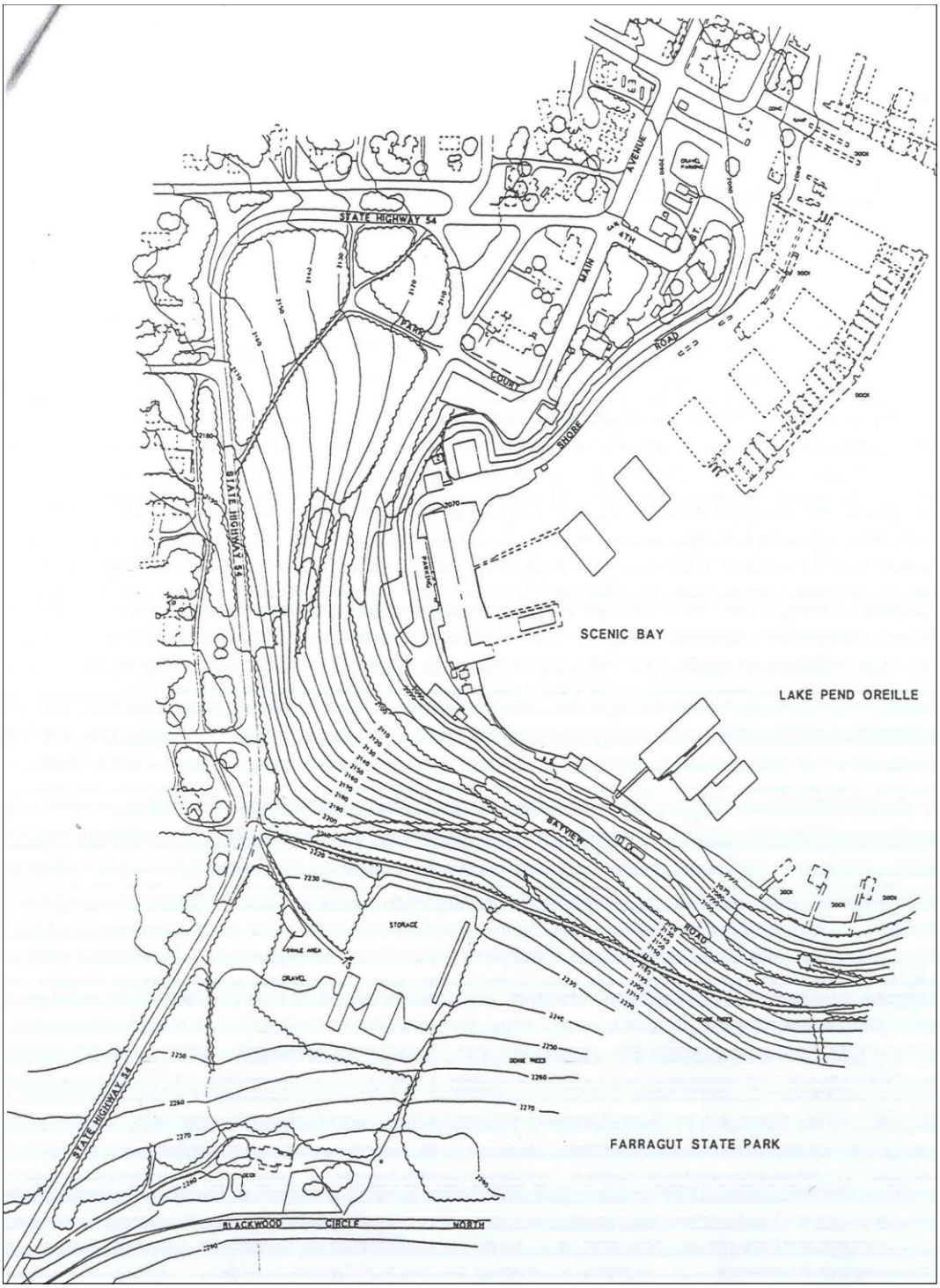

Figure 5. Bayview Topography.

The ice dam created a lake more than 2,000 feet deep, impounding water hundreds of miles to the east into what is now Montana. At its greatest, this Lake Missoula contained more water than combined volumes of Lake Erie and Lake Ontario (Idaho Geological Survey n.d.). Perhaps even more dramatic than the formation of Lake Missoula, was the catastrophic collapse of the ice dam.

The rapid outflow of water approached speeds of 65 miles per hour and scoured soils down to the underlying bedrock (Idaho Geological Survey n.d.). In some places, the erosive force of the water stripped away more than 200 feet of soil. This event is believed to have occurred not once, but many times.

2.3 Topography

The topography at ARD Bayview is slightly sloped, ranging from 2,051 feet along the shoreline of Lake Pend Oreille to approximately 2,290 feet at a remote storage yard (Figure 5). Erosion as a result of disturbed or denuded soils ranges from slight to severe. In order to maintain slope stability and prevent erosion, vegetation will be maintained on undeveloped portions of the property.

2.4 Soils

The soils at ARD Bayview are described in the Soil Survey of Kootenai County Area, Idaho (Soil Conservation Service, 1981) and are shown in Figure 6. Three soils have been identified at ARD Bayview and one additional soil type represents the outlying parcels, Wigwam and OUTPOST. Much of the soil resource found at ARD Bayview includes altered or disturbed materials. Sources of disturbance include building site preparation and road-building activities.

The three soils identified at ARD Bayview are Bonner silt loam, Bonner gravelly silt loam and Kootenai gravelly silt loam. The Bonner and Kootenai soils are mapped in the soil survey (Soil Conservation Service, 1981); Dystrochreptic Arents are also included based on the intensive development at the site. Dystrochreptic Arents represent human disturbance over Bonner soils. Descriptions of the soils and mapping units found at ARD Bayview follow:

Bonner silt loam, 0 to 8 percent slopes – This Bonner soil is a very deep, well-drained soil that formed in glacial outwash mantled with volcanic ash and loess on glacial outwash plains and terraces. The soils have moderately rapid permeability, slight to moderate erosion hazard, a rooting depth to 60 inches and a low available water capacity. Other characteristics include gravelly subsoil and a dusty soil surface when dry.

Bonner gravelly silt loam, 0 to 8 percent slopes – This Bonner soil is a very deep, well drained gravelly soil that formed in glacial outwash mantled with volcanic ash and loess on glacial outwash plains and terraces. The soils have moderately rapid permeability, slight to moderate erosion hazard, a rooting depth to 60 inches and a low available water capacity. Other characteristics include small stones throughout the profile and a dusty soil surface when dry.

Kootenai gravelly silt loam, 20 to 45 percent slopes – This Kootenai soil is very deep, well-drained soil that formed in slightly weathered glacial till that is modified by water and mantled by loess and volcanic ash on glacial outwash terraces and escarpments. Permeability is moderate and the steep slope contributes to a very high erosion hazard.

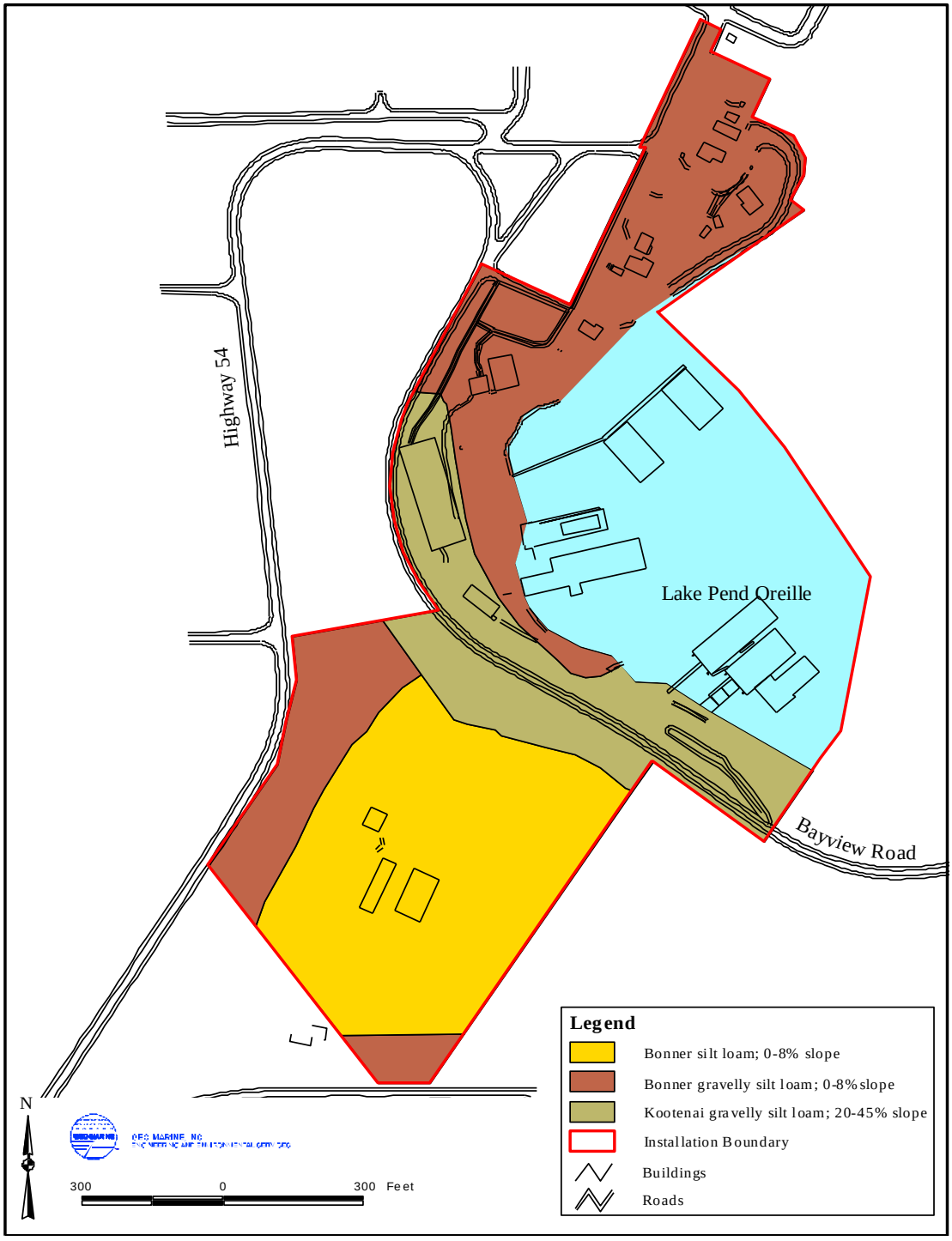

Figure 6. ARD Bayview Soils.

Dystrochreptic Arents, 0 to 20 percent slopes – Dystrochreptic Arents are human-disturbed soils on glacial outwash terraces. Soils are variable and well drained. They are made up of Bonner soils where the surface has been stripped and soils have been mixed.

The soil type at the two outlying locations (Wigwam and OUTPOST) is considered to be Ardtoo gravelly sandy loam. The soil is described in the soil survey of Bonner County (Soil Conservation Service 1982), but this area is not included in the survey. The attribution of the Ardtoo soil to the Wigwam and OUTPOST sites is based on the 1997 INRMP (U.S. Department of the Navy 1997).

> **Ardtoo gravelly sandy loam, 35 to 65 percent slopes –** Ardtoo soils are formed from granite, gneiss, and schist and are found on south-facing mountainsides. Permeability is moderately rapid, but the erosion hazard is very high.

2.5 Water Resources

2.5.1. Watersheds

Bayview is located within the Lake Pend Oreille watershed (Hydrologic Unit Code 17010214) (Figure 7). Lake Pend Oreille is fed by the Clark Fork River, which originates near Butte, Montana, and accounts for more than 90 percent of the lake's inflow. The Clark Fork drainage encompasses much of northwestern Montana.

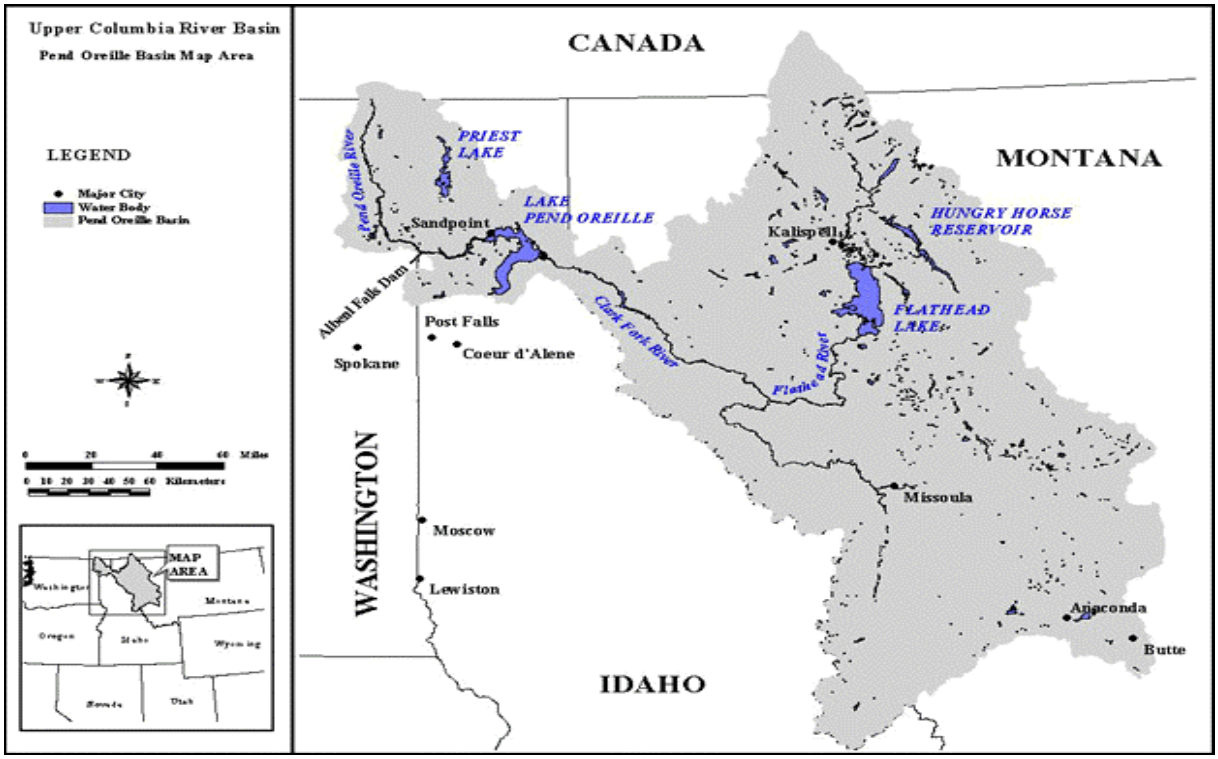

Figure 7. Upper Columbia River and Lake Pend Oreille Watersheds.

2.5.2. Surface Water

Other than Lake Pend Oreille itself, there are no surface water features or impoundments on the ARD Bayview property. Lake Pend Oreille is the largest and deepest lake in Idaho and the fifth deepest

lake in the U.S., encompassing 148 square miles and reaching a depth of 1,152 feet. It is approximately 43 miles long and over 6 miles wide, and is generally oriented north-south. The lake receives widespread use for recreation purposes, including fishing, boating, sailing and sightseeing. The area of surface water covered by Naval facilities is approximately 16 acres.

Lake Pend Oreille water levels are regulated by the U.S. Army Corps of Engineers through operation of Albeni Falls Dam. This dam was constructed in 1952 to regulate the water level for power production and flood control (Figure 8). Kokanee salmon, which spawn in shallow, nearshore areas throughout Lake Pend Oreille, including the shoreline of ARD Bayview are susceptible to lake level drawdowns, which expose shoreline spawning areas during kokanee spawning periods (U.S. Army Corps of Engineers 1983; Maiolie and Elam 1993.) A variety of efforts have been undertaken to restore populations of kokanee and bull trout in Lake Pend Oreille, including management of lake levels to avoid affecting shoreline kokanee spawning habitat. Levels are determined with input from USFWS and IDFG to mimic pre-dam winter conditions, protect shorelines from winter storms, and provide healthy spawning conditions for fish.

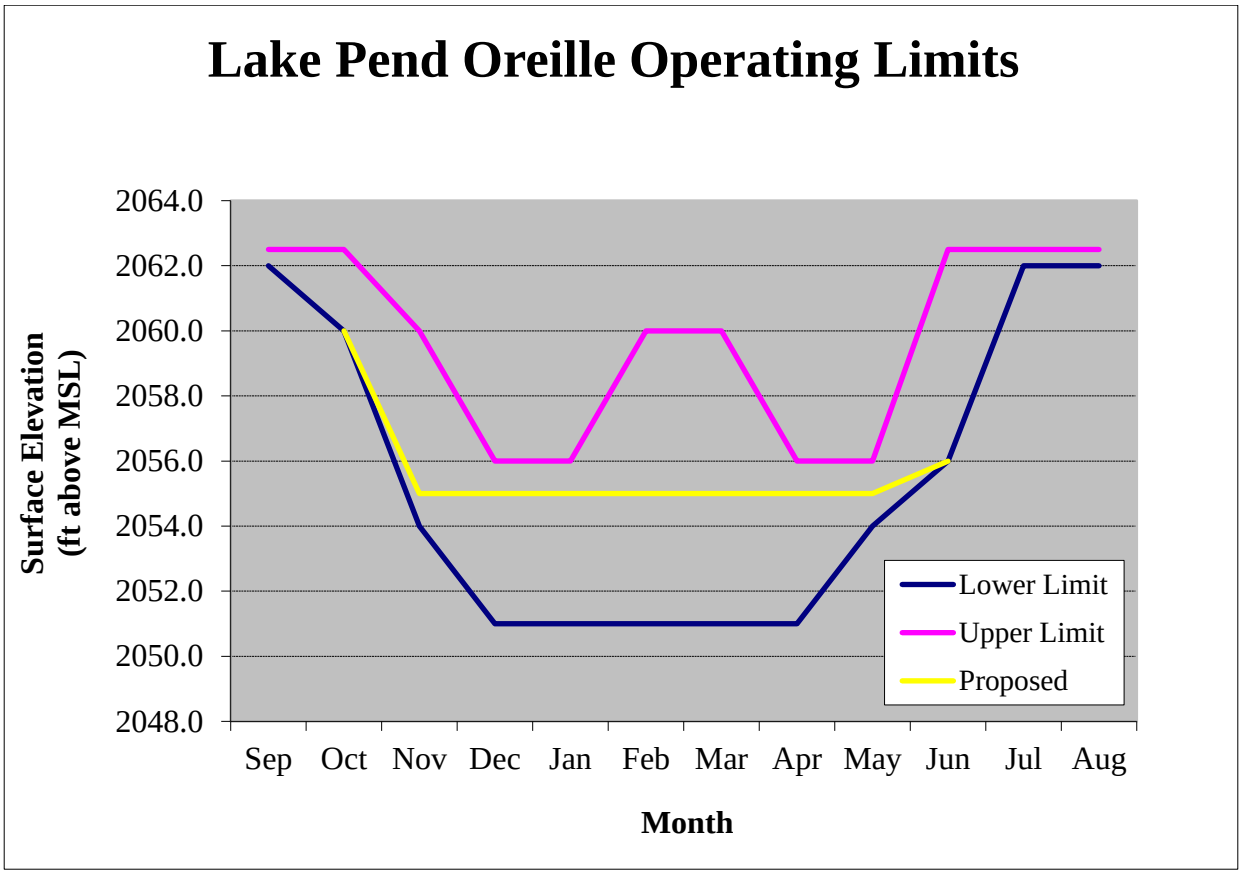

Figure 8. Lake Pend Oreille Water Level Range.

2.5.3. Wetlands

Indicators of wetlands are hydric soils (soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation), hydrophytic vegetation (vegetation that has adapted to living in aquatic

environments and that occur where at least the root zone of plants are seasonally or continually found in saturated or submerged soil) and hydrologic characteristics (areas that are periodically inundated or have soils saturated to the surface at some time during the growing season, and areas with evident characteristics of wetland hydrology, i.e., those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively). Such characteristics are usually present in areas that are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic soil conditions (U.S. Corps of Engineers 1987).

Wetland resources at ARD Bayview were delineated in 1993 (U.S. Navy 1994) and no signs of wetland hydrology were found. The National Wetlands Inventory, accessed November 2016, (https://www.fws.gov/wetlands/data/mapper.HTML) did not identify any wetlands on the property. Since ARD Bayview lacks jurisdictional wetlands, Section 404 permitting associated with potential development opportunities is not applicable. However, other permit requirements under the Clean Water Act Section 404 for activities within the ordinary high water mark (OHWM) of Lake Pend Oreille are required for in-water work.

2.5.4. Groundwater

The sole groundwater supply to northern Idaho and eastern Washington is the Spokane Valley-Rathdrum Prairie Aquifer, which covers 325 square miles of northern Idaho and eastern Washington. The aquifer formed during the last ice age from coarse gravelly deposits of glacial outwash (sands, gravels, and cobbles). The coarse nature of these sediments contributes to the aquifers extreme permeability and high groundwater velocities. These characteristics also forewarn of the great risks associated with the potentially rapid spread of contamination. Aquifer recharge originates from Coeur d'Alene Lake and the Spokane River (approximately one-third); the watersheds of Hayden, Spirit, Twin, Hauser and Pend Oreille Lakes provide one-third; and precipitation supplies the remaining one-third.

2.6 General Biotic Environment

In 2016 and 2017 the USFWS conducted a comprehensive survey of installation lands, including the OUTPOST and Wigwam properties (Appendix C). They found small and medium mammals, bats species, birds, bumble bees, and both native and non-native plants.

2.6.1. Terrestrial Vegetation

Bayview is a developed installation with little natural vegetation. Most of the area is comprised of buildings, impervious surfaces (roads, parking, and sidewalks), lawn grass and ornamental vegetation landscaping.
Three areas support native forest cover. The first area, located near the main gate, supports a mature forest canopy including ponderosa pine and Douglas-fir. The understory and shrub vegetation layer has been cleared however. This site is used as a picnic area.

The second forested area is located in the southeastern area of the installation. Native forest is present on the slope between Bayview Road and the developed installation. This slope provides a noise and

visual buffer as well as slope stabilization. This area is unique relative to the rest of the property in that it contains a wet conifer habitat type, with western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*), and grand fir (*Abies grandis*) (Appendix C).

The largest forested area surrounds the Remote Storage Area on the southern part of the installation and will be maintained as a mature forest to provide wildlife habitat and a buffer for the Remote Storage Area. This is the largest contiguous patch of forest at ARD Bayview (approximately 7 acres). This forest also functions as a buffer to Highway 54 and Bayview Road. Tree species occurring in the forested areas include Douglas-fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), and western larch (*Larix occidentalis*). Understory species include false Solomon's seal (*Maianthemum spp*.), creeping Oregon grape (*Berberis aquifolium*), and oceanspray (*Holodiscus discolor*) (U.S. Department of the Navy 1997).

The remaining vegetation at ARD Bayview is typical of disturbed sites and includes a mix of native and non-native invasive species. Ornamental shrubs and lawn grass are maintained on the grounds as well. A survey of plant species was performed in 2016 and is included in Appendix C.

2.6.2. Invasive Species

Executive Order 13112 (as amended) addresses the prevention of the introduction of invasive species and provides for their control and for minimization of the economic, ecological, and human health impacts invasive species cause. The EO establishes the Invasive Species Council, which is responsible for the preparation and issuance of the National Invasive Species Management Plan (NISC 2016-2018), which details and recommends performance-oriented goals and objectives and specific measures of success for Federal Agencies.

The 2016-2018 National Invasive Species Council Management Plan identifies the high priority, interdepartmental actions that the Federal government and its partners can take to prevent, eradicate, and control invasive species, as well as recover ecosystems and restore other assets adversely impact by invasive species.

Several upland invasive species grow at ARD Bayview. A survey for noxious weeds was performed, and a management plan for weed control developed by the Kootenai County noxious weed supervisor (Kootenai County Noxious Weed Control 2006). This survey noted a prevalence of invasive weeds such as:

- Spotted knapweed
- Meadow and orange hawkweed
- Japanese/Bohemian knotweed
- Common tansy
- Canada thistle

Other upland weeds of note were hairy vetch, St. Johnswort and bull thistle.

Plant surveys conducted in 2016 noted that the relative abundance of invasive plants on the ARD Bayview properties is low. Species found included yellow devil hawkweed, which is included in Idaho's Early Detection Rapid Response category; other hawkweed species; Canada thistle and others. A complete inventory and descriptions are in Appendix C.

Eurasian watermilfoil - Eurasian watermilfoil (*Myriophyllum spicatum*) was discovered above Albeni Falls Dam in 1997 and in Lake Pend Oreille in 2002. Eurasian watermilfoil grows at depths from three to thirty-three feet; generally the depth of sunlight penetration. This plant spreads very rapidly, primarily by rhizomes and by dispersal of plant fragments. It forms very dense mats of vegetation on the water's surface. This interferes with water-based recreation such as fishing, boating, water skiing, and swimming. The mats increase the pH of the water and reduce the amount of dissolved oxygen, killing fish and other aquatic organisms.

Eurasian watermilfoil was discovered at ARD Bayview in 2014. In 2016 a removal action was implemented and much of the plant biomass was removed from the property around the piers and boathouses. Regular removal is needed to keep the watermilfoil from becoming re-established and spreading. It degrades shoreline kokanee spawning habitat and interferes with mission-related in-water work.

Flowering rush - Flowering rush (*Butomus umbellatus*) was discovered in the northern part of Lake Pend Oreille, in the vicinity of the Clark Fork river delta in 2007 (Woolf et al. 2011). The plant forms mats of dense growth. The majority of flowering rush is in this northern area, but small populations are becoming established throughout the lake. Initial findings from recent research conducted by USDA and U.S.Army Corps of Engineers on Lake Pend Oreille and elsewhere suggest potential effective treatment options for flowering rush (Poovey et al. 2013, Wersal et al. 2014, Madsen et al. 2016a and 2016b). Eventually this plant will spread to ARD Bayview, creating an impairment to kokanee spawning habitat and to mission-related in-water work.

Asian clam - An infestation of Asian clams (*Corbicula fluminea*) was discovered in 2012 in the northeast part of the lake, near East Hope. The clams are highly mobile in their larval stage and can be transported by boats, canoes, jet skis, bait buckets and other means. The species poses a risk to ARD Bayview mission activities, should become established near the installation. The clams can clog intakes and foul equipment. They also alter benthic substrates (Sickel 1986), and compete with native species for food and space (Devick 1991).

Other aquatic invasive species - Zebra and Quagga mussels, water fleas, and other invasive aquatic invertebrate species are concerns for fish, wildlife, and recreation in Lake Pend Oreille. Mussels can form dense populations and are highly competitive with native invertebrate species. They are dispersed by watercraft, fishing equipment, water currents and other means. They can clog pipes and other infrastructure, damage watercraft, and detrimentally alter food webs. Invasions of water fleas decrease native zooplankton species and directly compete with small fish. Aquatic invasive species that become established at ARD Bayview could interfere with mission-related operations, equipment and infrastructure.

2.6.3. Terrestrial Mammals

Bayview is within the range of several large mammals common to northern Idaho including elk (*Cervus elaphus*), moose (*Alces alces*), black bear (*Ursus americanus*), and white-tailed deer (*Odocoileus virginianus*). Aside from white-tailed deer, these mammals are not found on the

installation due to the small sized of the property. Discussions with neighboring landowners confirmed the occasional presence of black bear in the area. Elk inhabit nearby Farragut State Park.

Smaller mammals that utilize the grounds include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), river otter (*Lutra canadensis*), mink (*Mustela vison*) and chipmunk (*Eutamias spp.*). Surveys for small and medium-sized mammals in 2016 found deer mice (*Peromyscus maniculatus*) and raccoons. Red squirrels (*Tamiasciurus hudsonicus*) were observed incidentally (Appendix C).

Acoustic bat surveys were conducted in 2016 at the main facility and the Wigwam location. Nine bat species were documented. The two most commonly detected species were Yuma myotis and the little brown myotis (Appendix C).

2.6.4. Fish

Numerous fish species are present in Lake Pend Oreille. These include kokanee, kamloops (rainbow) trout (*Oncorhynchus mykiss*), bull trout, brown trout (*Salmo trutta*), lake trout (*Salvelinus namaycush*), westslope cutthroat trout (*Oncorhyncus clarki lewisi*), mountain whitefish (*Prosopium williamsoni*), northern pike (*Esox lucius*), northern pikeminnow (*Ptychocheilus oregonensis*), smallmouth bass (*Micropterus dolomieui*), largemouth bass (*Micropterus salmoides*), and others. A complete listing of Lake Pend Oreille fishes is included in Appendix C.

The bull trout is listed as threatened under the ESA by the USFWS and requires special management considerations (see below).

2.6.5. Birds

During surveys in 2016 and 2017, 73 bird species were identified on the ARD Bayview properties. A comprehensive list is included in Appendix C, as well as the conservation status for each species. Mixed conifer forest and shrubby understory provide foraging and nesting habitat for both migrating birds and residents.

The 2008 Birds of Conservation Concern list (USFWS 2008) identifies 22 species in the Northern Rockies Bird Conservation Region, which encompasses ARD Bayview. The flammulated owl (*Otus flammeolus*) and the pygmy nuthatch (*Sitta pygmaea*) were documented at ARD Bayview.

Idaho's SWAP identifies Species of Greatest Conservation Need. The California gull (*Larus californicus*), common loon (*Gavia immer*), harlequin duck (*Histrionicus histrionicus*), ring-billed gull (*Larus delawarensis*), and western grebe (*Aechmophorus occidentalis*) are identified in the SWAP and were observed during surveys (Appendix C).

Osprey occur at Lake Pend Oreille and are known to establish, or attempt to establish nests on ARD Bayview barges and hoists. This presents a nuisance and safety hazard to employees and requires coordination with the USFWS to ensure compliance with the MBTA and the military readiness rule.

2.6.6. Threatened and Endangered (T&E) Species and Species of Concern

Bull Trout - The USFWS listed all populations of bull trout within the coterminous United States as threatened pursuant to the ESA in 1999 (64 Federal Register [FR]58910). Bull trout inhabit Lake Pend Oreille and would be expected to use waters near any of the ARD Bayview facilities for foraging, migrating, and overwintering.

The bull trout is a member of the char family. It was considered a member of the Dolly Varden (*Salvelinus malma*) species until being recognized as a distinct species in 1980.

Bull trout populations in the Upper Columbia River Basin declined dramatically in the 1950's following construction of the Albeni Falls dam, which regulates Lake Pend Oreille water levels, and the Cabinet Gorge Dam, which limits movement up the Clark Fork River from the lake. Both dams were constructed without fish passage, thereby isolating populations above and below the dams.

Bull trout travel along shorelines and are found throughout the entire water column in the fall, winter, and spring. In winter and spring bull trout are often found near the mouths of migratory routes (Goetz, 1989). In lake environments, bull trout occur predominantly in deeper pools where they utilize bottom habitats, and occur less commonly in shallow nearshore waters.

Their occurrence in nearshore waters is limited to months of colder temperatures due to their preference for deeper water habitats with water temperatures of 57°F or lower, and they are rarely found in water temperatures above 59°F (Wydoski and Whitney, 2003). During months when the surface water is cold, bull trout may be found in shallow areas. In summer months, as the surface water layer warms up, bull trout move to deeper cold water (Pratt, 1992).

Habitat components that influence bull trout distribution and abundance include water temperature, cover, channel form, and stability, valley form, spawning and rearing substrate, and migratory corridors (Fraley & Shepard, 1989; Goetz, 1989; Hoelscher and Bjornn, 1989; Pratt, 1992; Rieman and McIntyre, 1993; Rich, 1996; Watson and Hillman, 1997). Cold water temperatures play an important role in determining bull trout habitat, as these fish are primarily found in colder streams (below 59°F), and spawning habitats are generally characterized by temperatures that drop below 48°F. All life history stages of bull trout are associated with complex forms of cover, including large woody debris, undercut banks, boulders, and pools. Additionally, since bull trout are iteroparous (they survive to spawn year after year) and many populations are migratory, these fish require two-way passage up and downstream, not only for repeat spawning, but also for foraging.

Most bull trout in the Lake Pend Oreille system are adfluvial, meaning that juvenile fish rear from 1 to 3 years in tributary streams before migrating to the lake. Adult bull trout reside in Lake Pend Oreille throughout much of the year, but then move into tributary streams to spawn. Spawning typically occurs in late August and continues through December, peaking in September and October (at periods of lowest water temperature). It is unknown where subadult and alternate year spawners occur in Lake Pend Oreille during July through October.

Juvenile bull trout feed primarily on invertebrates, notably larval and adult aquatic insects and crustaceans. The main diet of adult bull trout in Lake Pend Oreille is kokanee, which are found along the ARD Bayview shorelines. A decline in kokanee populations is believed to be a factor in the decline in bull trout populations (Navy 2004). Loss or degradation of spawning habitat and

fragmentation and disconnection of migratory corridors have contributed to the decline of bull trout (Epifanio et al. 2003).

As bull trout mature and reach adult size, their diet shifts from invertebrates to fish (Wydoski and Whitney, 2003). For adult bull trout in Lake Pend Oreille, the prey source is primarily kokanee (Bassista et al., 2005).

The USFWS released an updated Bull Trout recovery plan in 2015 which provides additional details on the status of bull trout near ARD Bayview and surrounding watersheds.

Kokanee are an important species in the Lake Pend Oreille fish community, and are the primary food source for bull trout in Lake Pend Oreille. Potential impacts to their population are of concern. Kokanee provided a popular sport fishery in Lake Pend Oreille in the early 1950s, particularly in the Bayview area (Maiolie et al. 2002). The kokanee sport and commercial fishery was closed by IDFG in the mid-1970s because of declining populations. New rules in effects since 1 January, 2014 permit recreational fishing, within established limits. The decline of kokanee is believed to be a possible contributing factor to the decline of bull trout in the lake.

Kokanee spawn along the southern shoreline of Lake Pend Oreille, preferring areas of low disturbance (reduced vessel traffic), suitable substrate size, and overwater shade (Bennett and Chipps, 1995). Kokanee spawning habitat is composed of gravels that are at least 30 percent free of silt and sand. Kokanee spawn from mid-November through January (Bennett and Chipps 1995). Egg incubation period begins in late December continuing through April, with fry emergence in April through July. After spawning, the adults move to deeper offshore habitats. The majority of fry rear through their first and second summer in the northern portion of the lake.

Kokanee spawning habitat - Shorelines near, and on, ARD Bayview are important for kokanee spawning. Kokanee have been observed spawning in the vicinity of the Wigwam pier and the main ARD Bayview site by IDFG biologists (K. Siitari, IDFG biologist 2016). From 1972 through 2013 an average of 83% of shoreline-spawning kokanee counted during index surveys were in the vicinity of Bayview, in Scenic Bay (Wahl et al. 2015). Kokanee spawning is concentrated in Scenic and Idlewilde bays, more heavily used for spawning than other areas of the lake, offer unique characteristics apparently preferred by kokanee (Whitlock 2013). These bays are the furthest upstream recharge points for the Spokane Valley-Rathdrum Prairie aquifer (Hsieh et al. 2007). Outflow from Lake Pend Oreille into the aquifer creates a downwelling effect which may provide well-oxygenated water to kokanee eggs in otherwise less-than-ideal habitat (Hall and Wissmar 2004; Whitlock 2013). Such habitats where downwelling occurs should be protected and enhanced to improve egg incubation success.

In 2015, the substrate at ARD Bayview was sampled for the presence of downwelling (Wahl and Dux 2015). Forty-seven sites were sampled and downwelling was documented at only one site. Downwelling alone does not determine successful egg incubation. The shoreline at ARD Bayview has historically been used for spawning and suitable, clean gravel substrate exists. Additional spawning gravel enhancement is not needed, but protection of the shoreline during spawning and egg incubation (November through June) should continue.

Westslope Cutthroat Trout - The westslope cutthroat trout is not listed by the USFWS as threatened or endangered nor is it identified in the Idaho's State Wildlife Action Plan (SWAP) as a Species of Greatest Conservation Need. It is however identified as a priority species in the Landscape Conservation Strategy for Idaho (USFWS 2017).

The westslope cutthroat trout was previously the most common trout in Lake Pend Oreille (USFWS 1999, citing others). The habitat requirements of westslope cutthroat trout are similar to the bull trout. Both live in lakes and rivers, but migrate to cold, clear headwaters to spawn. Cold spring-fed streams, such as Gold Creek on the southeast side of Lake Pend Oreille, provide prime spawning habitat for both trout. Similarly, declines in the westslope cutthroat trout have been attributed to migration barriers, multiple man-made dams, degradation of habitat in tributaries used for spawning and rearing, and competition and hybridization from introduced species.

Westslope cutthroat trout compete with several introduced species in Lake Pend Oreille, including rainbow trout, kokanee, brown trout, lake trout, and largemouth bass (USFWS 1999). Additionally, brook trout compete in tributary streams with adfluvial westslope cutthroat trout. The westslope cutthroat trout status review found the highest concentrations in only six locations; all six of these sites lacked rainbow trout and brook trout. The study also determined that westslope cutthroat trout were "most abundant in headwater areas when rainbow trout were absent" (USFWS 1999). Hybridization of westslope cutthroat trout with rainbow trout has also been documented, but the extent is not known.

2.6.7. Reptiles and Amphibians

Visual and call surveys by USFWS in 2016 did not detect reptile or amphibian species, nor were any encountered while conducting surveys for other species. Potential suitable habitat exists however. The USFWS identified ten reptile and nine amphibian species with the potential to occur on the installation (Appendix C). This includes common garter snake, northern alligator lizard, western skink, western toad, Pacific chorus frog, and various salamander species.

No evidence was found indicating the presence of the northern leopard frog (*Lithobates pipiens*). At best the installation could feasibly provide marginal habitat (Appendix C). An intensive survey for this species across northern Idaho did not detect the presence of this species in the region (Lucid et al. 2016).

2.7 Pest Management

Pest management is overseen by the installation Environmental, Health, and Safety Manager, who maintains records of activity. Pests at ARD Bayview include undesirable or nuisance plants and animals. Nuisance species include non-native species that have the potential to impact native species or their habitats, and native species that, lacking natural controls, may expand to population levels that may adversely impact ecosystem balance or employee safety. Additionally, native species such as raccoons and skunks may occasionally become a nuisance. While these animals normally pose no threats, the potential exists for them to carry a range of diseases that may affect humans and/or domestic animals. Through proper education installation personnel will be advised against feeding or any close contact with wild animals.

Osprey periodically build nests on the barges anchored in the lake and moored at the shoreline. This creates a nuisance and hazard for crane operators and other workers on the barges. In 2014, in an effort to draw the osprey away from working barges, one osprey nest platform was installed on a pier extending from the WIGWAM shore facility (pix).

2.8 Outdoor Recreation; Hiking Trail

Outdoor recreation is not permitted at ARD Bayview due to safety and security restrictions. However, the installation shares a boundary with Farragut State Park which maintains an extensive recreational hiking trail system. A section of one trail crosses ARD Bayview property (Figure 9). ARD Bayview recognizes the importance of ensuring the public's access to this trail. Continued access contributes to positive Navy-local community relations and promotes local recreation.

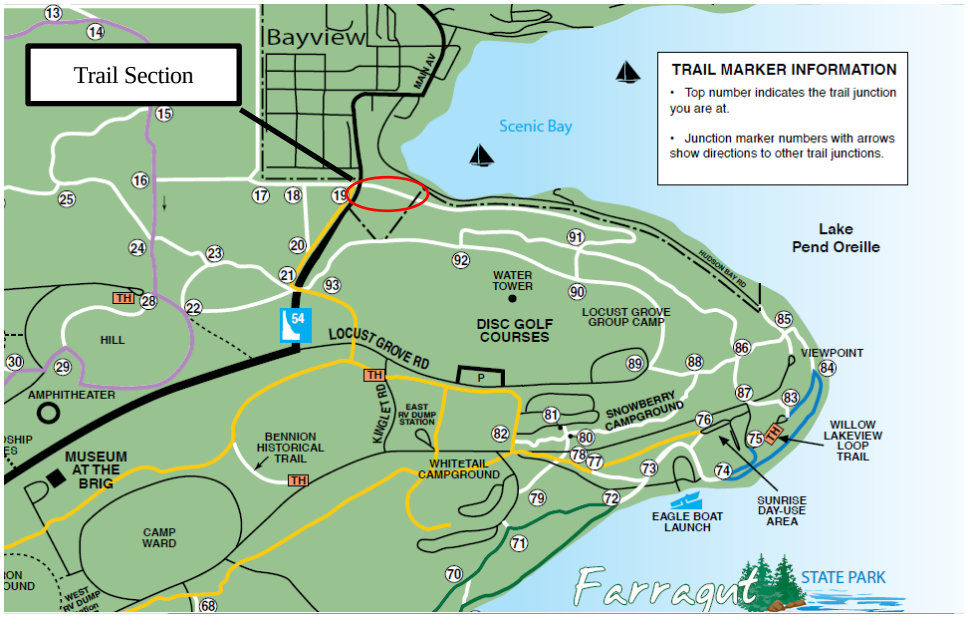

Figure 9. Section of Farragut State Park trail (circled) on ARD Bayview property.

3.0 Environmental Management Strategy and Mission Sustainability

3.1 Supporting Sustainability of the Military Mission and the Natural Environment

The Environmental Readiness Program Manual, OPNAV M-5090.1 requires each installation to have designated in writing, a Natural Resources Manager. This individual is to be a professional, knowledgeable and trained in the particular resource issues for that installation. For ARD Bayview, the NRM is a member of the Naval Station Everett Public Works Department Environmental Division and is administratively a NAVFAC employee. The NRM coordinates with the installation Environmental, Health, and Safety Manager at ARD Bayview. The NRM can call upon other environmental professionals within the Navy Region Northwest and Naval Facilities Engineering Command Northwest, to assist in the management of natural resources. The NRM will integrate environmental protection, conservation and enhancement/restoration within the constraints of the installation's military mission.

3.2 Natural Resources Consultation Requirements

Threatened and Endangered Species Consultation - The Endangered Species Act (ESA) requires federal agencies to manage federally listed threatened and endangered (T&E) species and their habitats in a manner that promotes conservation of T&E species and is consistent with recovery plans for such species. Section 7 of the ESA requires all federal agencies to enter into consultation with the USFWS and NMFS whenever proposed actions may affect listed T&E species of plants and animals.

At ARD Bayview, proposed projects, operations or other actions are evaluated by the NRM for potential effects to bull trout. Section 7 consultations are initiated with USFWS when warranted. Otherwise, written documentation that there are no effects to bull trout will be generated by the NRM, or the assigned NAVFAC Northwest natural resources professional, and kept with the project files.

The NRM will use the installation's INRMP as a tool to identify at an early stage the potential impacts of planned Navy actions on bull trout and to provide a basis for altering the action to prevent or minimize those impacts. The USFWS may require changes or mitigation that could result in project delays and additional costs. Because of this, it is imperative that the NSE Commanding Officer and the ARD Bayview Director initiate early environmental/natural resources review of proposed actions in order to assess risks, develop alternatives and correctly identify mitigation costs both in terms of time and dollars.

Essential Fish Habitat - The Magnuson-Stevens Fishery Conservation and Management Act, as amended in October 1996, requires that federal agencies consult with the U.S. Secretary of Commerce, through NMFS, on any action proposed to be undertaken that may adversely affect essential fish habitat (EFH).

There is no EFH within the ARD Bayview area, or in Lake Pend Oreille therefore EFH and associated consultations are not necessary for ARD Bayview actions.

3.3 National Environmental Policy Act (NEPA) Compliance

The Navy's policies regarding the National Environmental Policy Act (NEPA) (42 USC § 4321 *et seq*.) including OPNAV M-5090.1, the Secretary of the Navy Instruction 5090.6A, Environmental Planning for Department of the Navy actions (26 April, 2004), and the Navy's Supplemental Environmental Planning Policy (23 September 2004), emphasize that environmental planning is necessary and most effective at the earliest stages of project development. The Navy recognizes the NEPA process as including the systematic examination of the likely environmental consequences of implementing a proposed action. To be an effective decision-making tool, the Navy integrates the NEPA process with other Navy project planning at the earliest time. This ensures that planning and decision-making reflect environmental values, avoid unnecessary impacts, avoid delays, and avoid potential conflicts.

The National Environmental Policy Act requires federal agencies to evaluate the impacts of their proposed actions on the quality of the human environment. An INRMP is considered a major federal action and as such, is subject to NEPA. An analysis under NEPA was conducted to evaluate the potential environmental effects associated with adopting the 2003 ARD Bayview INRMP and a Finding of No Significant Impact (FONSI) was signed (Appendix D).

It is foreseeable that actions proposed by the Navy under this INRMP may be minor in nature and may have been adequately addressed under the 2003 NEPA analyses. In such instances, an updated INRMP may not necessarily require a new EA and may rely on the determinations of previous EAs, if the updated INRMP is within the scope of that analysis.

In 2013-2014, the effects of mission- related activities, and planned increases in certain mission-related activities were analyzed extensively in an EA (U.S. Navy 2015) and a Biological Assessment (U.S. Navy 2014). These analyses found that there would be no significant environmental effects from mission activities, including an increase in some activities.

Individual projects that are proposed at ARD Bayview, but that are not part of this INRMP or part of the 2015 EA will be assessed to determine the type of NEPA analysis needed. In most cases, projects can be categorically excluded. Examples of such projects are pier and walkway repairs, and real estate agreements.

Alternatives to proposed actions must be identified and investigated for projects that require an EA or an environmental impact statement (EIS). Because of the time and funding involved, it is imperative that the installation initiate early environmental/natural resources review of proposed actions, in order to assess risks, develop alternatives and correctly identify mitigation costs.

3.4 Public Access and Outreach

Persons authorized to access ARD Bayview are current employees and guests only. Sponsors must accompany guests. General public use of the installation is not permitted.

There is a section of the Farragut State Park trail system that crosses ARD Bayview (Figure 9). Allowing recreational use and access is one focus area of Natural Resource programs that are developed under the Sikes Act. Accordingly the intent is to keep this trail section open and available to the public.

3.5 USFWS Bull Trout Recovery Plan

The USFWS released an updated recovery plan for bull trout in 2015 (USFWS 2015). The recovery strategy is to improve the status of bull trout throughout their extant range so that protection under the ESA is no longer needed by managing threats and ensuring sufficient distribution and abundance of this species. The plan identifies actions needed to:

- Effectively manage and ameliorate primary threats,
- Work cooperatively with partners to develop and implement bull trout recovery,
- Adaptively manage the program, and
- Focus recovery efforts on actions which provide the greatest resilience against difficult-to-manage threats such as climate change.

The recovery plan identifies 6 geographic recovery units and 109 core areas within the recovery units. Lake Pend Oreille and ARD Bayview are within the Columbia Headwaters recovery unit and the Lake Pend Oreille core area, specifically the Pend Oreille lake basin proper and its tributaries. The primary threats in this core area pertain to habitat and include legacy impacts from forest roads, logging, and fires that increase sediment and cause riparian and instream degradation; loss of large woody debris; and pool reduction in some habitats. A number of recovery tasks and conservation measures are identified (Appendix E). The NRM will work with USFWS to contribute to these measures as feasible to accomplish at ARD Bayview.

3.6 USFWS Idaho Landscape Conservation Strategy

The Idaho Fish and Wildlife office (IFWO) of the USFWS released a Priority Conservation Strategy in 2017 which intends to guide conservation efforts specifically in Idaho into the future. The purpose of the strategy is to ensure the IFWO's conservation work is strategically coordinated with partners to provide the greatest long term conservation value. Four priority landscapes are identified, one of which is the Selkirk Cabinet-Yaak landscape in northern Idaho. ARD Bayview is at the far southern end of this landscape. Four strategies were identified for this landscape (Appendix F) one of which is to enhance native salmonid populations and their habitats within the Priest and Pend Oreille basins. Several goals, conservation objectives, and conservation actions are identified concerning ecologically functioning ecosystems and protection/restoration of aquatic habitats, and ensuring abundance populations of native species, including bull trout and westslope cutthroat trout. The NRM will work with the USFWS to contribute to this overall strategy as feasible to accomplish at ARD Bayview. One effort is the monitoring and removal of invasive aquatic plants.

3.7 Idaho State Wildlife Action Plan (SWAP)

In 2015, the IDFG completed a State Wildlife Action Plan (SWAP), which replaces the Idaho Comprehensive Wildlife Conservation Strategy of 2006. The 2015 State Wildlife Action Plan provides a framework for collaborative conservation in Idaho and helps the IDFG to fulfill its mission to *preserve, protect, and perpetuate* all wildlife to provide for the citizens of this state.
Idaho used ecological section planning to develop their SWAP. They identified 14 ecological sections and the SWAP outlines the ecological conditions in each section as well as prioritized strategies that can be used to achieve and maintain the health and vigor of Idaho's wildlife.

ARD Bayview is in the Okanogan highlands ecological section. The SWAP summarizes general habitat associations and requirements for the section and indicates habitat management priorities and opportunities. Eight habitat targets are identified within the section.

The most prominent waterbody in the Okanogan Highlands is Lake Pend Oreille—the largest lake in Idaho and the fifth deepest lake in the United States. Historical overharvest, logging, farming, residential development, roads, the construction of hydroelectric dams, and introduced nonnative plant and animal species are recognized as having taken a toll on the native fish populations and habitat.

The SWAP also identifies species of greatest conservation need (SGCN). IDFG looked at species in an ecological systems context and did not distinguish between game and nongame; the plan focused on species of greatest conservation need—regardless of how they're classified. Thirty-nine species are identified as SGCN in the Okanogan highlands section, including birds, mammals, bivalves, insects and other taxa.

The NRM will work with the IDFG to contribute to this overall strategy as feasible to accomplish at ARD Bayview.

4.0 Management Program Elements

4.1 Threatened and Endangered Species, Critical Habitat, Species of Concern

The Endangered Species Act (ESA) requires federal agencies to manage federally-listed threatened and endangered (T&E) species and their habitats in a manner that promotes conservation of T&E species and is consistent with recovery plans for such species. Section 7 of the ESA requires all federal agencies to enter into consultation with the USFWS and NMFS whenever actions are proposed that may affect listed and proposed T&E species of plants and animals.

This INRMP is meant to be used as a tool to identify at an early stage the potential impacts of planned Navy actions on endangered or threatened species and to provide a basis for altering the action to prevent or minimize those impacts.

Special Management and Protection of T&E Species

Special management and protection is a term that originates in the definition of Occupied Critical Habitat in Section 3 of the Endangered Species Act. For Occupied Critical Habitat, one determines whether the area contains the physical and biological features essential to the conservation of the species and if the area has or needs additional special management or protection. Additional special management is not required if adequate management or protection is already in place.

Adequate special management or protection is provided by a legally operative plan. The DoD uses the term "Integrated Natural Resources Management Plan", or INRMP. It addresses the maintenance and improvement of the primary constituent elements important to the species and manages for the long-term conservation of the species. The Navy uses the following three criteria to determine if a plan provides adequate special management or protection:

Criteria 1. Conservation Benefit
The plan provides a conservation benefit to the species. The cumulative benefits of INRMP management activities for the duration of the plan must maintain or provide for an increase in specie's population, or the enhancement or restoration of its habitat within the area covered by the plan, i.e., those areas deemed essential to the conservation of the species. A conservation benefit may result from reducing fragmentation of habitat, maintaining or increasing populations, insuring against catastrophic events, enhancing and restoring habitats, buffering protected areas or testing and implementing new conservation strategies.

Criteria 2. Implementation of the Plan
The plan provides assurances that the management plan will be implemented. Persons charged with plan implementation are capable of accomplishing the objectives of the management plan and have adequate funding for the management plan. They have the authority to implement the plan and have obtained all the necessary authorizations or approvals. The plan provides a conservation effort implementation schedule, including completion dates.

Criteria 3. Management Effectiveness

The plan provides assurances that the conservation effort will be effective. The following criteria will be considered when determining the effectiveness of the conservation effort: The plan includes (1) biological goals (broad guiding principles for the program) and objectives (measurable targets for achieving the goals); (2) quantifiable, scientifically valid parameters that will demonstrate achievement of objectives, and standards for these parameters by which progress will be measured; (3) provisions for monitoring and, where appropriate, adaptive management; (4) provisions for reporting progress on implementation based on compliance with the implementation schedule, and effectiveness based on evaluation of quantifiable parameters of the conservation effort. This goal will be accomplished at the annual INRMP review and update in coordination with the appropriate federal and state agencies; and (5) a duration sufficient to implement the plan and achieve the benefits of its goals and objectives. This INRMP is a continuous plan. Per OPNAV M-5090.1, it is to be reviewed for operation and effect at least every 5 years in cooperation with USFWS and IDFG, and updated as necessary to continue providing protection and enhancement for T&E species and habitats.

Bull Trout

The bull trout is the only species listed under the ESA that occurs at ARD Bayview. Bull trout inhabit Lake Pend Oreille and can occur in the waters near the shore facilities and in the deep water testing areas.

Critical Habitat

Designated critical habitat for the Columbia River population of bull trout was revised by the USFWS on October 18, 2010 (75FR 63898). Lake Pend Oreille is presently designated as critical habitat for bull trout. However sixteen acres at ARD Bayview property are excluded from the critical habitat designation (Figure 10) because the Navy operates under this approved INRMP and the USFWS recognized that conservation efforts identified in the INRMP would provide a benefit to bull trout occurring in habitats within or adjacent to ARD Bayview.

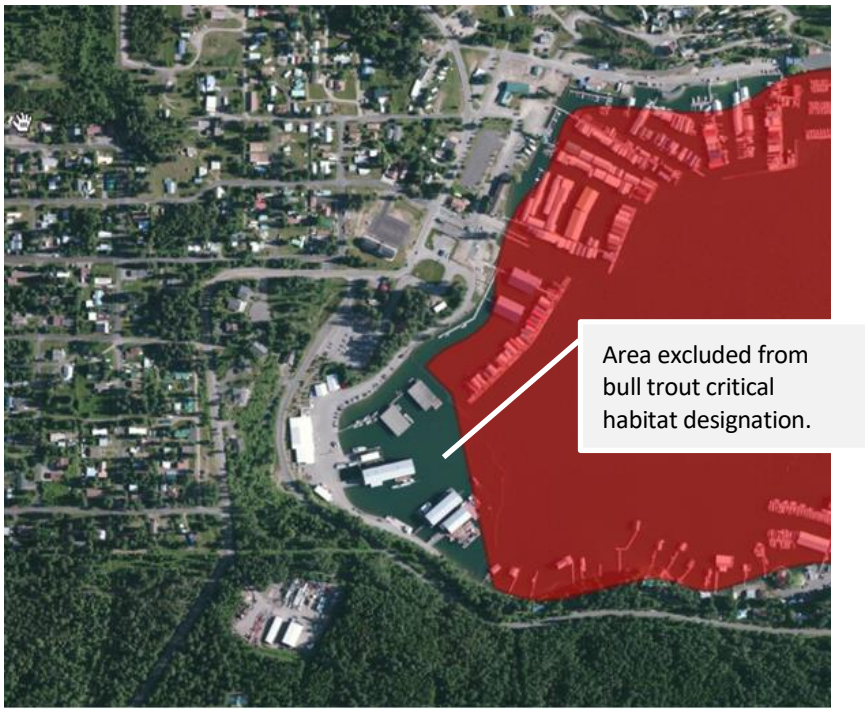

Figure 10. Area Excluded From Bull Trout Critical Habitat Designation.

Primary constituent elements (PCEs) are the physical or biological features essential to the conservation of the species, as identified within the critical habitat designation for the species. Within the boundaries of designated critical habitat, the USFWS determined that the following PCEs are essential for the conservation of bull trout and may require special management considerations or protection (75FR 63931):

(1) Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.

(2) Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

(3) An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

(4) Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.

(5) Water temperatures ranging from 2 to 15 °C (36 to 59 °F), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and

seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.

(6) In spawning and rearing areas, substrate of sufficient amount, size, and composition to ensure success of egg and embryo overwinter survival, fry emergence, and young-of-the-year and juvenile survival. A minimal amount of fine sediment, generally ranging in size from silt to coarse sand, embedded in larger substrates, is characteristic of these conditions. The size and amounts of fine sediment suitable to bull trout will likely vary from system to system.

(7) A natural hydrograph, including peak, high, low, and base flows within historic and seasonal ranges or, if flows are controlled, minimal flow departure from a natural hydrograph.

(8) Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

(9) Sufficiently low levels of occurrence of nonnative predatory (e.g., lake trout, walleye, northern pike, smallmouth bass); interbreeding (e.g., brook trout); or competing (e.g., brown trout) species that, if present, are adequately temporally and spatially isolated from bull trout.

Bull Trout Special Management and Protection Requirements

Criteria 1. Conservation Benefit

The NRM and NAVFAC staff and contractors will ensure that all proposed in-water construction and repair activities be restricted to the approved in-water work time for bull trout (July 1 – November 1) to minimize effects on bull trout and kokanee including underwater noise produced during pile driving. To avoid or minimize impacts to spawning kokanee, an important food source for bull trout, the USFWS may change this work window as applicable to Scenic Bay where ARD Bayview is located.

The installation command will ensure that all proposed actions that may potentially affect bull trout comply with Section 7 of the Endangered Species Act. This Act requires, at a minimum, informal consultation with USFWS to avoid or minimize potential effects.

The on-site Environmental, Safety, and Health (ESH) Manager, or other on-site staff will regularly inspect in-water structures and keep them free of debris or other materials that could hinder bull trout movement along the shoreline.

Customers using the R&D capabilities at Bayview sometimes bring their own watercraft to the facility. The on-site ESH manager will ensure these watercraft are inspected before entering the lake to reduce the risk of introductions of aquatic invasive species.

Criteria 2. Implementation of the Plan

The NRM is responsible for implementation of the INRMP; however, since this person's duty station is in Everett, Washington, they may call upon environmental planners and specialists within NAVFAC NW and at ARD Bayview to assist in conservation and environmental compliance

requirements. The NRM has the authority to implement maintenance and protection plans and obtain all the necessary authorizations or approvals for proposed management actions.

The NRM annually develops projects and seeks funding to address natural resources management issues, including habitat enhancement projects and special projects to assist in the recovery of T&E species, as circumstances require. The NRM, on-site ESH Manager, or other staff will meet as needed with the NSE Command and ARD Bayview Director to ensure that proposed new or changed operations and missions consider bull trout protection measures, as was done in 2014 related to the proposed continuation of RDT&E, and increase in operations tempo for some activities (U.S. Navy 2015). In this case, informal ESA consultation was conducted with USFWS.

A project, 62182R0001 **CHE NW ARD Bayview INRMP (Appendix A),** provides the NRM funding to update, revise, and implement this INRMP as described above.

Criteria 3. Management Effectiveness
The NRM, the on-site ESH Manager, or other designated staff will do the following as needed: coordinate with the appropriate state and federal fish and wildlife agencies to conduct surveys along the Lake Pend Oreille shoreline for bull trout presence, kokanee spawning activity, and presence of invasive aquatic plants; consult with the regulatory partners during the annual INRMP review to identify management changes that would benefit bull trout.

4.2 Wetlands Management

A review of the National Wetland Inventory was conducted and no wetlands were identified for ARD Bayview; no specific management is proposed.

Executive Order 11990 requires Federal agencies to minimize the loss or degradation of wetlands and to enhance their natural values. Section 404 of the Clean Water Act prohibits discharges of dredged or filled material into waters of the U.S., including wetlands, without first obtaining a permit from the U.S. Army Corps of Engineers. Consistent with 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.

4.3 Fish and Wildlife Management

In 2016-2017, comprehensive surveys were conducted of the biota at ARD Bayview under project EPR #62182NR003 **Bayview Baseline Biological Survey**. Future surveys will be conducted periodically under this project to contribute to effective fish and wildlife management at the installation.

Habitat - Habitat loss has a direct correlation to a decline or loss of fish and wildlife populations. This INRMP will be used in operations, training, and construction planning to identify potential habitat losses attributable to mission-related activities, so that such losses can be avoided or minimized. The following management criteria will ensure that the installation provides wise stewardship ethics in managing the fish and wildlife resources:

Comprehensive Environmental Response Plan – To ensure consistent response procedures and facilitate effective implementation of procedures, ARD Bayview maintains and operates under a Comprehensive Environmental Response Plan (CERP); a plan that consolidates the requirements and procedures of a:

- Spill Prevention, Control and Countermeasure Plan (40 CFR 112);
- Emergency Response Action Plan (40 CFR 112 Appendix F);
- Stormwater Pollution Prevention Plan (40 CFR 122);
- Hazardous Waste Contingency Plan (40 CFR 265); and
- Emergency Response Plan (29 CFR 1910.120).

The specific requirements for each of the above documents are identified in the CERP.
The ARD Bayview ESH Office is responsible for ensuring proper implementation and maintenance of the CERP. Per the CERP, inspections of the facility are performed by the ESH Office and Stormwater Pollution Prevention Committee (currently the ESH Manager). Visual inspections verify that:

- Secondary containment structures (i.e., pallets, drum bins, etc) and sumps are in good condition and kept free of stormwater and other liquids;
- Appropriate numbers of spill response equipment are present within each department;
- Loading and unloading areas are free from debris or other contaminants;
- Outdoor dumpsters do not contain material that could contaminate stormwater discharge (solid waste from routine operations is stored indoors where possible) and do not contain waste in excess of their capacity;
- Empty drums are in good condition, have no leaks, do not contain excessive residual material, and are marked "EMPTY"; and
- Raw material drums are in good condition, have no leaks, are properly labeled and stored in containment and under cover.

During the inspections the ESH Office evaluates the effectiveness of the CERP and modifies the plan as necessary to reflect facility changes. The ESH Site Manager is responsible for ensuring that noted deficiencies are corrected within a reasonable time frame.

The ESH Office serves as the Stormwater Pollution Prevention team responsible for implementing and maintaining the SWPPP (found within the CERP). The team identifies stormwater pollution sources, appropriate BMPs (such as preventive maintenance, good housekeeping, sediment and erosion prevention, and management of runoff), and evaluates the effectiveness of BMPs.

The ESH Site Manager or a designated alternate serves as the Incident Commander (IC)/Qualified Individual (QI) for all emergency responses including spill response. In accordance with OPNAV M-5090.1, oil and hazardous substance spill response and prevention are a collaborative effort between the NAVFAC Naval On-Scene Coordinator stationed at Naval Base Kitsap-Bangor, and the Bayview IC. The CERP identifies spill response procedures, requirements and responsibilities.

Program and Project Review - The NSE NRM or the on-site ESH Manager is a part of all planning teams and reviews proposed projects, operations and training plans for possible impacts to habitat and fish and wildlife. If such impacts are identified, the NRM will provide recommendations to the program/project managers so that design changes to minimize effects, or mitigation can be considered

early in the planning process. The recommendations may include, but are not limited to, construction best management practices (BMPs) for erosion control, changing the aspect or placement of a new building to protect trees, or other recommendations that will address potential impacts to fish and wildlife. The NRM is also available to help decide on the best mitigation designs if habitat loss is unavoidable.

Habitat Inspections - The NRM, on-site ESH Manager, or other designated staff will drive and walk throughout the installation, inspecting various habitats for unauthorized encroachment or impacts and stay familiar with fish and wildlife use of these areas. The NRM and the ESH Manager have the ability to elevate concerns about habitat impacts to the ARD Bayview Director.

Habitat Enhancement and Restoration; Invasive Aquatic Plants - Shoreline spawning habitat for kokanee is degraded when invasive watermilfoil grows the area. EPR #6218212001 **ARD Bayview Invasive Species/Noxious Weed Control** (Appendix A) provides a management mechanism for surveying and treating invasive plants to restore habitat, in particular controlling aquatic invasive plants (Eurasian watermilfoil and flowering rush) that can degrade habitat.

In addition to the above project, staff at ARD Bayview will coordinate with Idaho Department of Agriculture, USFWS or others to allow access to ARD Bayview for invasive plant surveys.

Prevention and Inspecting for Aquatic Invasive Organisms (e.g., mussels) - Idaho Statute Section 22-1905 (*Idaho Invasive Species Act of 2008*) prohibits the distribution, transportation or introduction of invasive species into or within Idaho. As mentioned above, customers using the R&D capabilities at Bayview sometimes bring their own watercraft to the facility. To reduce the risk of introducing invasive species, the on-site ESH manager will contact the Idaho Dept. of Agriculture Invasive Species Program for assistance to ensure that watercraft, trailers and other equipment brought to ARD Bayview are inspected and decontaminated as needed before entering or leaving the lake.

Decontamination procedures for any means of conveyance (boats, equipment, trailers, etc.) will be followed as recommended by The Idaho Dept. of Agriculture Invasive Species Program. Decontamination guidelines can be found at:
https://www.usbr.gov/mussels/prevention/docs/EquipmentInspectionandCleaningManual2010.pdf

In addition, during routine inspections submerged equipment will be monitored for invasive mussels.

Shoreline Habitat Management - Fish and many other wildlife species use shoreline areas. The NRM or the on-site ESH Manager will do the following to protect these shoreline habitats:

- **Inspect the shorelines for man-made debris and remove such debris.** Man-made trash may wash up on the shore of Lake Pend Oreille. This trash is not only unsightly, but some items may be perceived as a food source by wildlife and cause harm. Accumulations of trash or man-made objects may interfere with fish spawning or bird use.
- **Stormwater runoff.** The Bayview ESH will review proposed projects and programs for stormwater or other discharges, and ensure that these discharges do not degrade

water or sediment quality of the waters surrounding the installation and are consistent with the CERP.

Developed Areas Habitat Management - The following items may enhance wildlife habitat and deter nuisance animals:

- **Where feasible, reduce mowed areas**. Reducing areas that are mowed will save money, allow native vegetation to grow and enhance wildlife habitat.
- **Use native vegetation for landscaping around buildings**. Native vegetation will require less maintenance. Native vegetation provides better wildlife habitat then exotic, non-native plants and trees.
- **Reduce pesticide/herbicide/fertilizer use.** Reducing the use of chemicals will help protect surface and groundwater quality at the installation, as well as stormwater runoff.
- **Limit the spread of invasive species**. To limit the spread of upland invasive species, either to or from ARD Bayview, all earth-moving equipment should be thoroughly cleaned before entering and leaving the site. This effort will limit the introduction of new invasive species, while limiting the spread of existing species to additional sites.

4.4 Hunting

Hunting is not allowed at ARD Bayview due to security and safety considerations.

4.5 Fishing

Recreational fishing is not allowed at ARD Bayview due to security and safety considerations.

4.6 Outdoor Recreation

The section of trail crossing ARD Bayview that is part of the Farragut State Park trail system will remain accessible to the public.

4.7 Birds

Migratory Bird Treaty Act - Migratory birds are protected under the Migratory Bird Treaty Act (MBTA). The MBTA prohibits the taking of most birds, nests, and eggs, except as permitted by the USFWS. In addition, a MOU between USFWS and DoD (2014) identifies specific activities where cooperation between the two agencies will contribute to the conservation of migratory birds and their habitats. The MOU describes actions that should be taken by DoD to advance migratory bird conservation, avoid or minimize the take of migratory birds, and ensure DoD activities (other than military readiness activities, described below) are consistent with the MBTA. The MOU describes how DoD and USFWS will work together cooperatively to achieve conservation of migratory birds.

At ARD Bayview, individual projects such as building modifications, new construction, energy upgrades, etc. will be evaluated for potential effects to migratory birds and appropriate consultations conducted with USFWS. This will allow the NRM to evaluate these projects for compliance with the

MBTA, and require design features to avoid take, or mitigate for potential impacts in accordance the MBTA and other applicable requirements. One mechanism to accomplish this will be to identify proposed projects that could potentially affect migratory birds and discuss them at the annual INRMP evaluation and conservation metrics meeting (described in Section 1.9).

For projects requiring an EA or EIS under NEPA, the effects to migratory birds and compliance with the MBTA would be evaluated during the NEPA process, and appropriate conservation measures identified.

Military Exemption (72 FR 8931)

Under a military exemption rule (aka military readiness rule) (72 FR 8931), the USFWS authorizes take of migratory birds resulting from military readiness activities. This rule was developed in cooperation and coordination with the Department of Defense and has received concurrence from the Secretary of Defense. Military readiness activities include all training and operations of the Armed Forces that relate to combat, and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use (72 FR 8937). The acoustic research and testing that is conducted at ARD Bayview falls within this definition.

Under the Rule, the Armed Forces have agreed to consult with the USFWS to identify measures to minimize and mitigate adverse impacts to migratory birds from authorized military readiness activities and to identify techniques and protocols to monitor impacts. Monitoring is an important part of cooperation under the Rule, to determine the level of take from military activities.

At ARD Bayview, barges are used in support of various acoustic testing and evaluation activities, either at the main property or on the lake. Osprey build, or attempt to build, nests on the barges and also on structures at the main property. When operations require the movement of the barges housing an active nest, the military exemption rule can be used as a mechanism to avoid a MBTA violation.

Bayview personnel will contact the USFWS directly or the NRM when a barge containing an active osprey nest needs to move, or other situations arise that could result in take of osprey or any migratory bird. The Navy will cooperate with the USFWS in developing appropriate, reasonable conservation measures to address effects and implement monitoring as determined necessary in consultation with USFWS. Additional details and an example of successful coordination between ARD Bayview and the USFWS are in Appendix C.

U.S. Department of the Interior Solicitor's Opinion

On 22 December 2017 the U.S. Department of the Interior Solicitor released an Opinion (M-37050) concerning "take" of migratory birds and considered specifically whether the MBTA prohibits the accidental or "incidental" taking or killing of migratory birds. The Opinion concludes that the MBTA's prohibition on pursuing, hunting, taking, capturing, killing, or attempting to do the same applies only to direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control.

On February 6, 2018 the DoD issued a memo to clarify that the DOI Solicitor's Opinion does not rescind the military readiness rule. In this memo, the DoD is instructed to continue to follow existing DoD guidance designed to minimize the incidental take of migratory birds to the extent practicable and without diminishing the effectiveness of military readiness activities.

Partners in Flight Strategic Plan for Bird Conservation and Management on Department of Defense Lands - This plan identifies actions that support and enhance military missions while working to secure bird populations. It also provides a scientific basis for maximizing the effectiveness of resource management, enhancing the biological integrity of DoD lands, and ensuring continued use of these lands to fulfill military training requirements.

The Partners in Flight (PIF) strategic plan presents a compilation of current best management practices and suggested focus areas to assist in compliance with the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act, Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds) and its associated Memorandum of Understanding, and the Final Rule on Take of Migratory Birds by the Armed Forces. The PIF strategic plan recognizes that one of the best ways to comply with the above legal requirements is to continue ongoing conservation efforts at the installation level. This helps protect and conserve birds and their habitats via implementation of INRMPs, as well as to build and maintain partnerships with other agencies and conservation entities.

In the strategic plan, DoD established goals to identify key bird conservation priorities and guide the actions of its natural resource management activities, including:

- Bird/Animal Aircraft Strike Hazard (BASH)
- Encroachment Minimization
- Stewardship
- Habitat and Species Management
- Monitoring
- Research
- Partnership/Cooperation
- Communication and Education
- Enhancing the Quality of Life

Further information on the DoD Partners in Flight program is at http://www.dodpif.org.

These goals will be pursued to the extent they are applicable for conservation of birds at ARD Bayview.

4.8 Non-game Wildlife Species

More than 80 percent of Idaho's wildlife is classified as "non-game" (419 species in all), including songbirds, waterfowl, raptors, small mammals, reptiles and amphibians, and threatened and endangered wildlife. Some of these species may occur at ARD Bayview to the extent that suitable habitat exists (See Appendix C. No special management targeting non-game animals is proposed.

4.9 Amphibians and Reptiles

Managing habitat for diversity, protection and enhancement will have the greatest benefit for reptiles and amphibians, on ARD Bayview. Since no amphibians or reptiles were encountered during surveys in 2016, no special management targeting these species is proposed.

4.10 Noise in Water and Air

The nature of the research and testing conducted at ARD Bayview produces sound in the water, and in the air to a far lesser extent. There is increasing concern regarding the effect of human-generated noise on aquatic organisms. While most concern is focused on marine mammals, many of the lower frequency (under 1,000 Hz) sounds are also likely to affect fish (Hastings and Popper 2005).

At ARD Bayview, the NRM or designated staff will review operations and projects for potential impacts to fish and wildlife from sound generated by operations and projects. Some project actions (such as pile driving) may result in elevated sound levels and negatively affect nearby species. The NRM will work with project and program managers to reduce the effects of elevated sound levels on fish and wildlife and will advise the command and project managers in the use of BMPs to reduce or eliminate sound-related impacts

In 2013-2014, the effects of mission-related activities and planned increases in mission-related activities were analyzed extensively in an EA (U.S. Navy 2015) and a Biological Assessment (U.S. Navy 2014). This analysis included a thorough assessment of air-borne and in-water sound generated by Bayview RDT&E mission-related activities. In-water and airborne sound levels were determined to not cause significant impacts to the environment.

4.11 Forest Management

Bayview forested lands consist of about 10 acres of established forest and 1.5 acres of urban forest around buildings and facilities. The majority of trees are 50 to 120 years old which indicates that most of the installation's forest was harvested in the late 19th or early to mid-20th centuries. The reforestation of harvested areas resulted from natural seeding coinciding with favorable environmental conditions. Since western larch, Douglas-fir, and lodgepole pine dominated the acreage adjacent to harvested areas, they were the primary coniferous species available to provide seed. The existing stands of these three species and to a lesser extent, western white pine and ponderosa pine have essentially developed naturally.

Since the Navy acquired the property, there has been little active forest management due to the combination of second growth and the desire to maintain visual and aesthetic buffers between installation facilities and abutting state park lands, public roads and privately-owned properties.

The Navy Forest Management Program is centrally funded and executed through the Naval Facilities Engineering Command. The Forester, Naval Facilities Engineering Command Northwest (NAVFAC NW), will provide professional forestry services to ARD Bayview as needed to manage forest resources for the economical production of forest products and the conservation of related resources, as appropriate for conditions at this location. A more detailed forestry management plan is in Appendix G.

5.0 Implementation

Projects and actions to implement this INRMP are in Appendix A. Projects can be added, modified, or removed in coordination with the regulatory partners to maintain a viable, effective natural resources program.

This INRMP reflects a strategy that addresses legal, regulatory, DoD, DON, and CNO directives and policy requirements regarding funding and manpower. "Implementation" anticipates the execution of all Environmental Readiness Level (ERL) 4 projects and activities within the timeframes identified in the INRMP. However, all projects and actions contemplated 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 must be, construed to be a violation of the Anti-Deficiency Act (31 U.S.C. 1341 *et seq*.)

Summary of Process

The process to implement this INRMP consists of funding and executing specific projects and conducting work with in-house staff, which also requires specific funding. Implementation further includes NRM input to ARD Bayview activities and proposed projects in order to ensure they are consistent with natural resource requirements and with this INRMP.

Per DoD Manual 4715.03 (*Integrated Natural Resources Management Plan (INRMP) Implementation Manual, Nov. 25, 2013*), INRMPs are implemented by:

- Actively requesting and using funds for natural resources management projects, activities and other requirements in support of goals, and objectives identified in the INRMP.
- Ensuring that sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP.
- Inviting annual feedback from the appropriate USFWS and State fish and wildlife agency offices on the effectiveness of the INRMP.
- Documenting specific INRMP action accomplishments undertaken each year.
- Evaluating the effectiveness of past and current management activities and adapting those activities as needed to implement future actions.

Use of Cooperative Agreements

The Navy can enter into cooperative agreements with States, local governments, nongovernmental organizations, and individuals to implement this INRMP through the execution of specific projects. The Navy can also establish interagency agreements with other Federal agencies to do this. Per the Sikes Act, in implementing this INRMP, priority shall be given to Federal and State agencies responsible for the conservation or management of fish and wildlife. Further, the current policy memo from DoD to the Assistant Secretary of the Navy (Energy, Installations and Environment) clarifying of the role of USFWS and state agencies in implementing INRMP objectives will be followed when entering into cooperative agreements, intragency support agreements, or contracts to conduct projects in support of this INRMP.

A cooperative agreement with IDFG was used at ARD Bayview to determine the extent of downwelling along the Bayview shoreline, and an intragency support agreement with USFWS was

used to obtain baseline biological information. Similar agreements will be considered as mechanisms to conduct future surveys and natural resource projects.

Other Agreements

On a larger scale, DoD has entered into partnerships and collaborative agreements to assist with natural resources management:

- January 2006 MOU between DoD, USFWS and the International Association of Fish and Wildlife Agencies for a Cooperative Integrated Natural Resources Management Program on Military Installations.
- July 2014 MOU between the USFWS and DoD to Promote the Conservation of Migratory Birds. This MOU promotes the conservation of migratory bird populations while sustaining the use of military lands and airspace for testing, training, and operations.
- November 2006 MOU between DoD and U.S. Department of Agriculture Natural Resources Conservation Service. Both agencies signed an MOU agreeing to coordinate activities to preserve land and improve water quality on lands surrounding government-owned military bases.
- 1996 MOU between the U.S. Environmental Protection Agency and DoD for coordinating of Integrated Pest Management activities.
- 1996 cooperative agreement between DoD and The Nature Conservancy for conducting natural resources inventories at installations.

Priority Setting and Funding Classification

Project priority within this INRMP is initially determined by funding classification as defined in Department of Defense Instruction 4715.03, *Natural Resources Conservation Program* (DoD 2011). This instruction identifies recurring and non-recurring requirements:

Recurring Requirements:

- Administrative, personnel, and other costs associated with managing the DoD Natural Resources Conservation Program that are necessary to meet applicable compliance requirements in Federal and state laws, regulations, Executive Orders (EO), and DoD policies, or in direct support of the military mission.
- DoD components shall give priority to recurring natural resources conservation management requirements associated with the operation of facilities, installations, and deployed weapons systems. These activities include day-to-day costs of sustaining an effective natural resources management program, as well as annual requirements, including manpower, training, supplies, permits, fees, testing and monitoring, sampling and analysis, reporting and recordkeeping, maintenance of natural resources conservation equipment, and compliance self-assessments.

Non-Recurring Requirements:

Current Compliance - Includes installation projects and activities to support:

a. Installations currently out of compliance (e.g., received an enforcement action from an authorized Federal or state agency or local authority).

b. Signed compliance agreement or consent order.

c. Meeting requirements with applicable Federal or state laws, regulations, standards, EOs, or DoD policies.
d. Immediate and essential maintenance of operational integrity or military mission sustainment.
e. Projects or activities that will be out of compliance if not implemented in the current program year. Those activities include:

i. Environmental analyses for natural resources conservation projects, and monitoring and studies required to assess and mitigate potential impacts of the military mission on conservation resources.
ii. Planning documentation, master plans, compatible development planning, and INRMPs.
iii. Natural resources planning-level surveys.
iv. Reasonable and prudent measures included in incidental take statements of biological opinions, biological assessments, surveys, monitoring, reporting of assessment results, or habitat protection for listed, at-risk, and candidate species so that proposed or continuing actions can be modified in consultation with the USFWS or NMFS.
v. Mitigation to meet existing regulatory permit conditions or written agreements.
vi. Nonpoint source pollution or watershed management studies or actions needed to meet compliance dates cited in approved state coastal nonpoint source pollution control plans, as required to meet consistency determinations consistent with Coastal Zone Management.
vii. Wetlands delineation critical for the prevention of adverse impacts to wetlands, so that continuing actions can be modified to ensure mission continuity.
viii. Compliance with missed deadlines established in DoD-executed agreements.

Maintenance Requirements - Includes those projects and activities needed to meet an established deadline beyond the current program year and maintain compliance. Examples include:
a. Compliance with future deadlines.
b. Conservation, GIS mapping, and data management to comply with Federal, state, and local regulations, EOs, and DoD policy.
c. Efforts undertaken in accordance with non-deadline specific compliance requirements of leadership initiatives.
d. Wetlands enhancement to minimize wetlands loss and enhance existing degraded wetlands.
e. Conservation recommendations in biological opinions issued pursuant to the ESA.

Enhancement Actions - Beyond Compliance. Includes those 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 by law, regulation, or EO, and are not of an immediate nature. Examples include:
a. Community outreach activities, such as International Migratory Bird Day, Earth Day, National Public Lands Day, Pollinator Week, and Arbor Day activities.
b. Educational and public awareness projects, such as interpretive displays, oral histories, Watchable Wildlife areas, nature trails, wildlife checklists, and conservation teaching materials.
c. Restoration or enhancement of natural resources when no specific compliance requirement dictates a course or timing of action.
d. Management and execution of volunteer and partnership programs.

Environmental Readiness Levels (ERL) - To further facilitate project funding, the Navy has developed four Environmental Readiness Levels:

ERL 4 - Legal requirements derived from existing laws and Executive Orders (E.O.) and Final Governing Standards or Overseas Environmental Baseline Guidance Document (OEBGD), as applicable, which apply to Navy activities, platforms and operations. These OMB/EPR Class 0, 1 and 2 EPRs/ongoing efforts include responding to applicable Federal, state and local requirements (e.g., ESA; MMPA; RCRA; CWE; CAA; SDWA; NEPA; TSCA; OPA, APS and Executive orders such as 12088 (Federal Agency Compliance), 12843 (ODS Conversion/replacement), and 13423 (PW, Recycling, ODS, Energy Conservation).
ERL 3 - Requirements derived from DoD policy, Navy Policy, or proactive initiatives that could result in obvious returns on investments and support critical readiness activities by decreasing encumbrances of statutory compliance (e.g. polychlorinated biphenyl [PCB] elimination, regional environmental coordination, candidate conservation agreements, etc.). These project/proposed efforts are not mandated by law or other Federal, state, or local regulations/orders but would minimize current or future impacts (including costs) to the Navy mission.
ERL 2 - Requirements derived from DoD policy, Navy policy, or proactive initiatives that result in speculative returns on investments and uncertain benefits to the Navy mission. These projects/proposed efforts are not mandated by law or other Federal, state, or local regulations/orders and should be based on best available scientific or commercial data; or pending Federal, state, or local regulations under development (where publication is scheduled) using, if available, model state regulations or permit standards.
ERL 1 - Investments in environmental leadership and general proactive environmental stewardship, and provides manpower and recurring cost to support these functions.

Description of Funding Process - Once validated, INRMP projects are entered into EPR-web; the Navy's Environmental Program Requirements website and the correct ERL assigned to each project. Typically, funding for all ERL Level 3 and 4 projects will be programmed in this manner. Projects that are ERL 1 and 2 should seek alternate funding sources (listed below). There are restrictions on how different Navy funding sources for natural resources management can be used. It is important, therefore, that appropriate funding sources are used and that EPR entries clearly justify funding requests so that: (1) natural resource funds are distributed wisely and (2) funding levels are not threatened by the use of funds in ways that are inconsistent with funding program rules. The following are primary funding sources for Navy natural resources programs:

(1) *O&MN Environmental Funds.* The majority of natural resource projects are funded with Operations and Maintenance, Navy (O&MN) environmental funds. These appropriated funds are the primary source of resources to support must-fund, just-in-time environmental compliance (i.e., Navy ERL 4 projects). O&MN funds are generally not available for Navy Environmental Readiness Level 3 - 1 projects. In addition to the restriction to Environmental Readiness Level 4 requirements, there are other limitations placed on the use of O&MN funds:

Only the initial procurement, construction, and modification of a facility or project are considered valid environmental funding requirements. The subsequent operation, modification due to mission requirements, maintenance, repair, and eventual replacement is considered a Real Property Maintenance (RPM) funding requirement. For example, the cost of initially installing a best management practice (BMP) can be funded through O&MN, but future maintenance or repair of that BMP must be paid by RPM funds.

When natural resource requirements are tied to a specific construction project or other action, funds for the natural resource requirements should be included in the overall project costs. For example, if a permit for filling wetlands is required as part of a military construction (MILCON) project, the costs of obtaining the permit and implementing required mitigation should be paid by MILCON funds as part of the overall construction project costs.

(2) *The Legacy Resource Management Program (Legacy Program):* is a special, congressionally-mandated initiative to fund military conservation projects. The program assists DoD in protecting and enhancing resources while supporting military readiness. A Legacy project may involve regional ecosystem management initiatives, habitat preservation efforts, archaeological investigations, invasive species control, Native American consultations, and/or monitoring and predicting migratory patterns of birds and animals. Three principles guide the Legacy program: stewardship, leadership, and partnership. *Stewardship* initiatives assist DoD in safeguarding its irreplaceable resources for future generations. By embracing a *leadership* role as part of the program, the Department serves as a model for respectful use of natural and cultural resources. Through *partnerships*, the program strives to access the knowledge and talents of individuals outside of DoD.

If the installation intends to request Legacy Program funds, the following should be noted:

- The availability of Legacy funds is generally uncertain early in the year.
- Pre-proposals for Legacy projects are due in March and submitted using the Legacy Tracker Website: https://www.dodlegacy.org .
- Project proposals are reviewed by the Navy chain of command before being submitted to the DoD Legacy Resources Management Office for final project selection.
- The Legacy Website provides further guidance on the proposal process and types of projects requested.

(3) *Forestry Revenues.* There are no opportunities for commercial harvest or the sale of other forest products at ARD Bayview so this is not a potential revenue source.

(4) *Agricultural Outleasing.* There are no agricultural outleases at ARD Bayview, so this is not a potential revenue source.

(5) *Fish and Wildlife Fees.* There are no opportunities for fishing or hunting at ARD Bayview so this is not a potential revenue source.

(6) *Strategic Environmental Research and Development Program (SERDP) Funds*.
SERDP is DoD's corporate environmental research and development (R&D) program, planned and executed in full partnership with the Department of Energy (DOE) and Environmental Protection Agency (EPA), with participation of numerous other Federal and non-Federal organizations. SERDP funds for environmental and conservation efforts are allocated through a competitive process. Within its broad areas of interest the SERDP focuses on Cleanup, Compliance, Conservation, and Pollution Prevention technologies. The purpose of the conservation technology program is to use research and development to provide

improved inventory and monitoring capabilities; develop more effective impact and risk assessment techniques; and provide improved mitigation and rehabilitation capabilities. The program solicits Statements of Need for conservation technology proposals to research indicators of stress on threatened and endangered species and to develop techniques to inventory and monitor threatened and endangered species in accessible areas.

(7) *Non-DoD Funds.* Many grant programs are available for natural resources management projects, such as watershed management and restoration, habitat restoration, and wetland and riparian area restoration. When federally funded, these programs typically require non-Federal matching funds. However, installations may partner with other groups to propose eligible projects.

INRMPs should include valid ERL 1 and 2 projects and actions that would enhance an installation's natural resources. Nontraditional sources of funding for natural resources programs include non-appropriated reimbursable funds (i.e., agricultural out-leasing, forestry, hunting and fishing fees), and appropriated reimbursable funds (e.g., DoD Legacy Program, U.S. Department of Agriculture (USDA) Pest Management Program). These accounts are sources of funds for ERL 3 projects. Installations, however, should not depend on reimbursable programs to fund their natural resources management programs.

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APPENDIX A

NATURAL RESOURCES PROJECTS and ACTIONS

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EPR Number/ Project Title	INRMP Section	Funding Source	ERL *	Legal Drivers	Implementation Frequency	Year	Natural Resources/ INRMP Metrics Focus Area	Project Goals	Project Cost Estimate ($)
6218212001		O&MN	4	EO 13112 Sikes Act	Every other year	2019 2020 2022 2024	1. Ecosystem Integrity 7.Support of Installation Mission	Maintain uplands and submerged substrate free of invasive plants	21,362 53,624 55,790 58,044
EO13112 NW **ARD Bayview Invasive Species/Noxious Weed Control** - Surveys for non-native plant species, including aquatic invasive plants. Removal and control actions.									
62182R0001		O&MN	4	Sikes Act; ESA; OPNAV M-5090.1	Annual	2018 2019 2020 2021 2022	4. Sikes Act Cooperation 6. INRMP Implementation 7. Support of Installation Mission	Maintain a current INRMP in compliance with the Sikes Act.	12, 687 12, 941 13,520 13,790 26,837
CHE NW ARD Bayview INRMP – Annual review and update of the INRMP including review for operation and effect at least every five years.									
62182NR003		O&MN	4	Sikes Act; DoD INST 4715.03; OPNAV M-5090.1	Periodic	2023	1. Ecosystem Integrity 4. Sikes Act Cooperation	Determine presence and condition of various biota.	60,000
CHS NW – Bayview Baseline Biological Survey - Determine presence of, and changes in biota; plants, birds, mammals, reptiles, amphibians.									

Additional actions to implement the INRMP:
Meet as needed with the NSE Command, ARD Bayview Director and ESH manager to ensure that proposed new activities or changed operations and missions include bull trout protection measures and methods to reduce or eliminate potential impacts.
Use the Environmental Review process described in Section 1.10 to review proposed actions and projects, and identify adequate protection of bull trout and their habitat.
Work with USFWS and IDFG to identify ways to contribute, as feasible, to the Bull Trout recovery plan, the Idaho Landscape Conservation Strategy, and the State Wildlife Action Plan.
Identify mission operations and infrastructure that could affect water quality and coordinate with the NSE command and ARD Bayview to minimize or eliminate discharges to the lake waters.
Review proposed projects and programs for stormwater or other discharges, and ensure that discharges do not degrade water or sediment quality.
Regularly inspect in-water structures and keep them free of debris or other materials that could hinder bull trout and kokanee movement along the shoreline. Inspect the shoreline for man-made debris and remove it promptly.
Ensure watercraft brought to ARD Bayview are inspected and decontaminated if necessary before entering the lake to reduce the risk of introductions of aquatic invasive species.
Cooperate with state and federal agencies conducting surveys in Lake Pend Oreille for bull trout presence, kokanee spawning activity, and presence of invasive aquatic plants and animals.
Monitor submerged equipment for invasive mussels.

APPENDIX B

NATURAL RESOURCE MANAGER (NRM) DESIGNATION LETTER

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DEPARTMENT OF THE NAVY
NAVAL STATION EVERETT
2000 WEST MARINE VIEW DRIVE
EVERETT, WA 98207-5001

IN REPLY REFER TO:
5090
N4
5 Nov 14

From: Commanding Officer, Naval Station Everett
To: Ms. Linda J. Wagoner

Subj: APPOINTMENT AS INSTALLATION NATURAL RESOURCES MANAGER

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

1. Per reference (a), you are hereby designated as the Installation Natural Resources Manager for all facilities and special areas covered by the Naval Station Everett Area of Responsibility (AOR). 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.

M. J. COURY

Copy to:
NAVSTA Everett (N4)

APPENDIX C

BASELINE BIOLOGICAL INVENTORY

United States Department of the Interior
FISH AND WILDLIFE SERVICE
Idaho Fish and Wildlife Office
11103 East Montgomery Drive
Spokane Valley, Washington 99206

September 15, 2017

Linda Wagoner
NAVFAC PWD, Environmental Division
Naval Station Everett
2000 W Marine Dr.
Everett, WA 98201

Subject: Comprehensive Baseline Species Inventory, Carderock Acoustic Research Detachment, Bayview Property, Bayview, Idaho (01EIFW00-2017-CPA-[0015])

Dear Ms. Wagoner:

In September 2015, the U.S. Fish and Wildlife Service's (Service) Northern Idaho Field Office (NIFO) entered in to an Intra-governmental Support Agreement (ISA)(N68967-15-MP-0011F) with the U.S. Navy to conduct a comprehensive Baseline Inventory of the Carderock Acoustic Research Detachment Bayview Property (Installation), Bayview, Idaho, including Lake Pend Oreille shoreline areas. The inventory report includes the presence of native and invasive aquatic and terrestrial plants, wildlife, and habitats (exclusive of fish and open-water aquatic habitats). Period of performance for this ISA was August 15, 2015 through September 14, 2017.

This comprehensive survey of the Bayview property will provide information to ensure compliance with natural resource laws identified in ISA, section 1.a.(5). The submittal of this Final Report completes the tasks that were necessary to compile the baseline species inventory including: development of survey/assessment methodologies, field surveys, data management, species list compilation, report writing and cost accounting.

Thank you, and please feel free to contact Toni Davidson of my staff at (509) 893-8006.

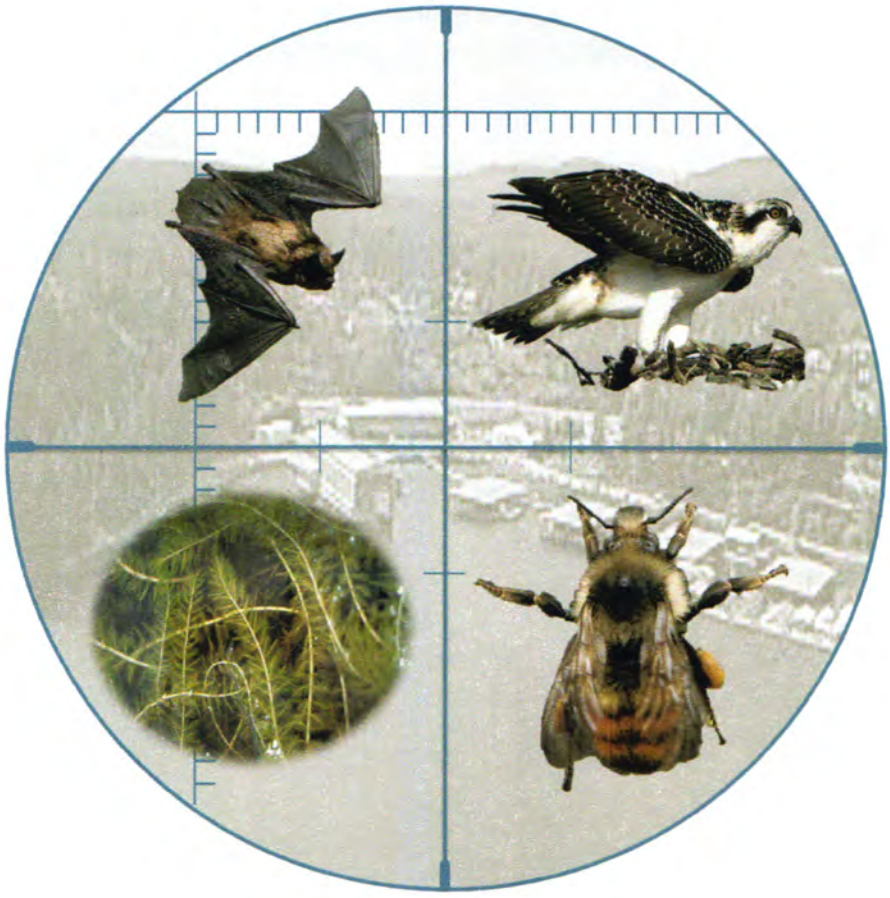
Sincerely,

Karen Cathey

Karen Cathey
Office Lead

Enclosure: Final Report

2016/2017 Comprehensive Baseline Species Inventory
Carderock Acoustic Research Detachment Bayview Property
Bayview, Idaho



September 2017

Prepared for:

Department of the Navy
Commander, Navy Region Northwest
Special Area Bayview, Idaho

Prepared by:

U.S. Fish and Wildlife Service
Northern Idaho Field Office
Spokane Valley, Washington

Special thanks to Steve Armstrong for his on-site assistance, Tony for his excellent boat handling and support for survey work, Derek Holland and Front Gate security for making access to the Installation smooth, Jonathon James for his boat transport and personal interest in bald eagles, Tami Ryley for her patience and assistance with keeping the accounting in order, and Sean Giery for his valuable input on the development of the herpetofauna survey procedures.

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Acronyms

ARD	Acoustic Research Detachment
CBMP	Coordinated Bird Monitoring Plan
DoD	Department of Defense
EDRR	Early Detection Rapid Response
ESA	Endangered Species Act
FY	Fiscal Year
GIS	Geographic Information System
GPS	Geographic Positioning System
INRMP	Integrated Natural Resources Management Plan
ISA	Intra-governmental Support Agreement
ISDA	Idaho State Department of Agriculture
IDFG	Idaho Department of Fish and Game
Installation	Carderock Acoustic Research Detachment Bayview Property
MAPS	Mapping Avian Productivity and Survivorship
MBTA	Migratory Bird Treaty Act
NABat	North American Bat Monitoring Network
NIFO	Northern Idaho Field Office
NRCS	Natural Resources Conservation Service
POAM	Plan of Action Memorandum
PVC	Polyvinyl Chloride
RSF	Remote Storage Facility
Service	U.S. Fish and Wildlife Service
SGCN	Species of Greatest Conservation Need
SOP	Standard Operating Procedure
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WNS	White-nose Syndrome

1.0 Introduction

In September 2015, the U.S. Fish and Wildlife Service's (Service) Northern Idaho Field Office (NIFO) entered in to an Intra-governmental Support Agreement (ISA)(N68967-15-MP-0011F) with the U.S. Navy to conduct a comprehensive Baseline Inventory of the Carderock Acoustic Research Detachment Bayview Property (Installation), Bayview, Idaho, including Lake Pend Oreille shoreline areas (Figure 1), to inventory the presence of native and invasive aquatic and terrestrial plants, wildlife, and habitats (exclusive of fish and open-water aquatic habitats). Period of performance for this ISA was August 15, 2015 through August 14, 2017.

The Service provided all services outlined in the Statement of Work and the Plan of Action Memorandum (POAM) to conduct a general species baseline inventory as required by the Sikes Act as part of the development and implementation of the updated Integrated Natural Resources Management Plan (INRMP). The overall objective of the inventory was to document suspected species present on, or near, the site to ensure adequate protection for species and habitats into the future.

Tasks necessary to compile the baseline species inventory included developing survey/assessment methodologies, field surveys, data management, species list compilation, report writing, and cost accounting. A comprehensive survey of the Bayview property (about 38 acres), which included shoreline, upland, and developed areas, and two outlying shoreline locations was conducted in FY2016-FY2017 to inventory presence of native and invasive aquatic and terrestrial plants, wildlife, and habitats (excluding fish and open-water aquatic habitats). The baseline inventory was designed using information provided in the 2010 INRMP and associated recommendations; 2004 Biological Conditions Assessment for the Acoustic Research Detachment, Bayview, Idaho; relevant information regarding adjacent properties; coordination with local biologists and technical experts; and on-the-ground surveys and assessments. A comprehensive species database (Bayview Species Inventory Data.xlsx) was developed and submitted with this report. Geographic Information System (GIS) spatial data and products were also provided with this report, documenting survey areas and key survey locations. Data collected will provide information to ensure INRMP compliance with natural resource laws identified in ISA section 1.a.(5), the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. §§ 1531 *et seq.*), and the Migratory Bird Treaty Act (MBTA) of 1918 (MBTA)(16 U.S.C. §§ 703–712).

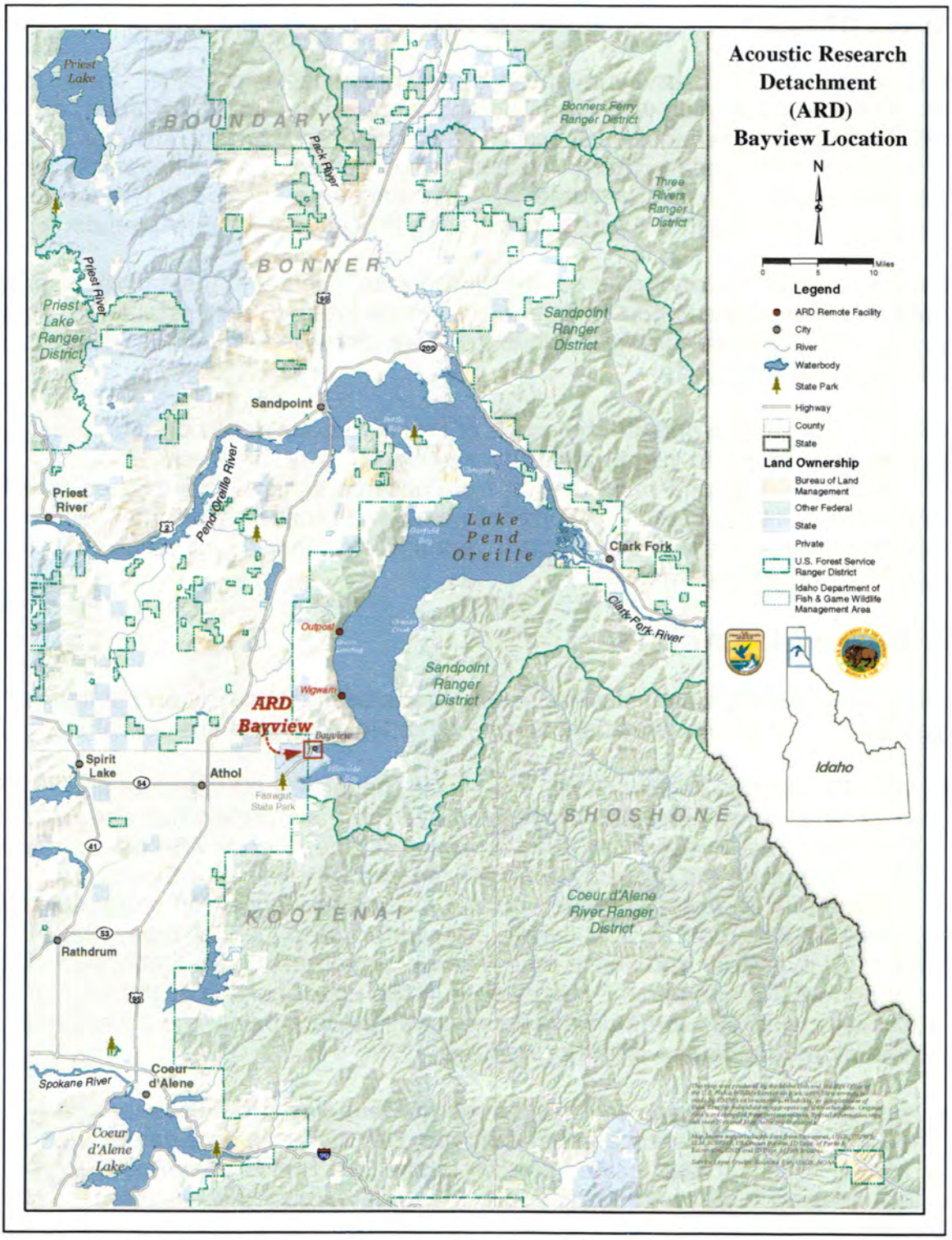

Figure 1. Carderock ARD Bayview Property Installation and Shoreline Areas.

2.0 Methods

Prior to conducting field survey inventories, potential species presence on or adjacent to the Installation was identified and targeted during development of survey protocols and schedules. Species lists or occurrences in the state of Idaho, Farragut State Park, and Northern Rockies were reviewed and local experts were consulted to ensure the most accurate and efficient survey protocols were used. Field surveys followed NIFO Standard Operating Procedures (SOP)(Appendix A).

Fish surveys were not conducted during this species inventory. Instead, fish species documented using Lake Pend Oreille and nearshore areas to the Installation, as well as any species observed during this inventory are discussed in Section 3.6, Opportunistic Observations.

Observations of wildlife outside the scope of this inventory were noted on a data sheet. Evidence included visual, auditory, and sign (e.g., scat, tracks) identifications, and second-hand reports from base personnel. This method greatly enhanced the ability to capture occurrences of species that may not have been detected by the defined surveys of this inventory (e.g., infrequent occurrences, large or semi-aquatic mammals).

2.1 Survey Locations

The Installation was divided into five survey areas based primarily on habitat and usage type. These survey areas are illustrated in Figure 2, and are described below:

- Remote Storage Facility (RSF) – This was the largest survey area and encompassed the forested property above the main Installation site. It is bound by East Hudson Bay Road on the east side, Highway 54 on the north side, and up to the property boundary shared with Farragut State Park for the remainder. Areas surveyed did not include the fenced-off storage areas. This area was typified by a dense, dry conifer forest habitat type, with a mature overstory and dense regeneration and shrubs in the understory. Little to no forest management was evident in the upper portion at the time of surveys, whereas some timber harvest was evident below the access road and along the course of the powerlines.

- Buffer – This area was adjacent to the RSF but was surveyed separately because of the difference in habitat type, the Buffer being a dense, wet conifer forest. It was located directly below East Hudson Bay Road, and was bounded by a fence along the road. This area extended down steeply to the northeast.

- Facility – This area included all of the developed areas of the main site, including the landscaped areas surrounding buildings and the general picnic and lawn areas surrounding the upper parking lot. This area was generally defined by the fence along East Hudson Bay Road on the upper side, and by the pavement of both upper and lower parking lots. It was directly adjacent

to the Buffer area, with a clear delineation between the two where the natural forest habitat abruptly transitioned to an open, landscaped area. This area was subject to recurring maintenance such as lawn mowing and/or weed-eating, which hampered some identification of the vegetation.

- Wigwam/Outpost – These two small remote locations were located on the west shore of Lake Pend Oreille (Figure 1), approximately 5.5 and 8.7 nautical miles from the main site, respectively, and are leased allotments on US Forest Service property. Access to both sites was by boat. The survey area of both sites was limited to the immediate surrounding area of the buildings on site.

- Aquatic – The lakeshore edge from the seawall outward to approximately three feet at low pool (littoral zone). Birds on the lake were observed and recorded en route to the Wigwam and Outpost.

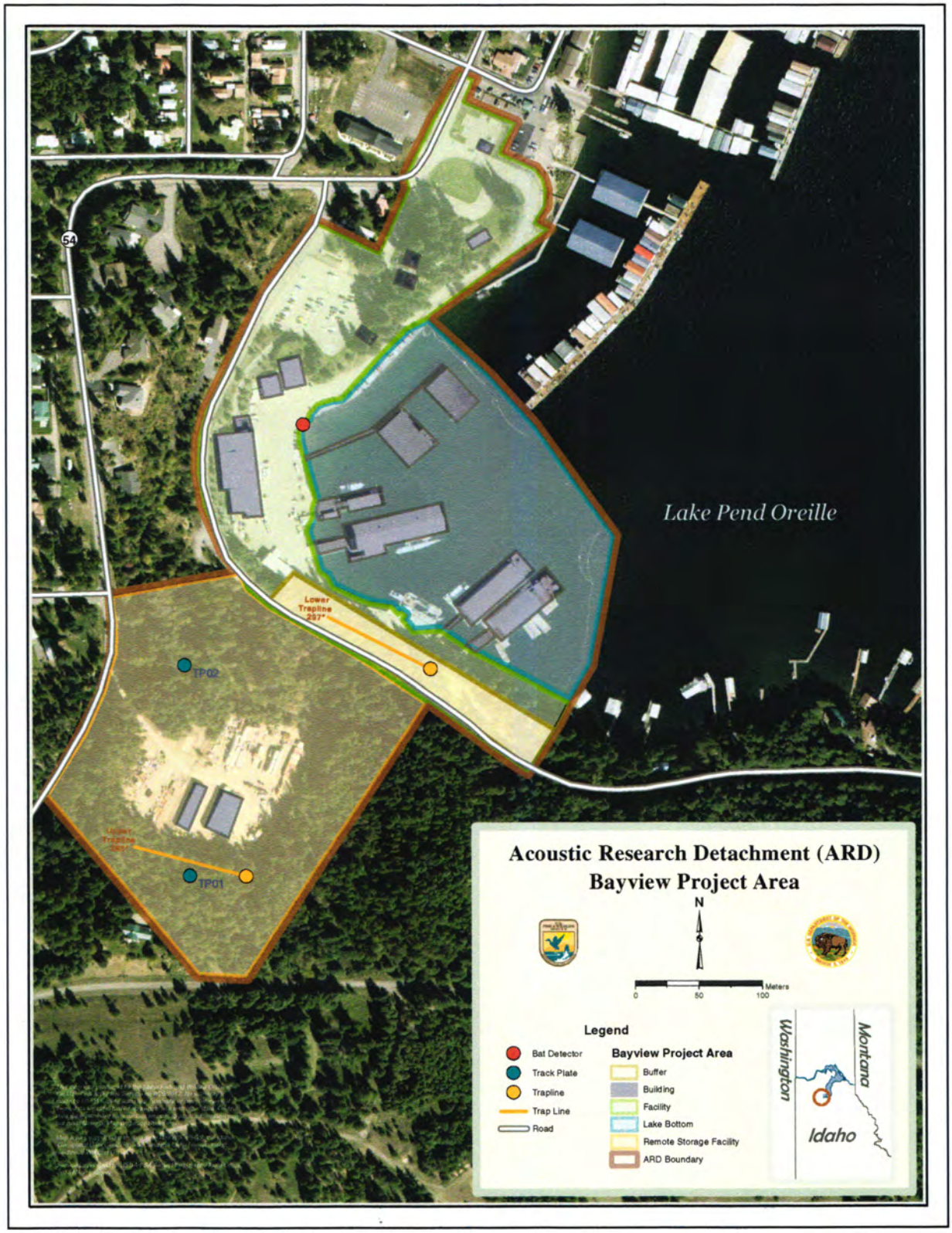

Figure 2. Survey Areas within the Installation

Figure 3. Bald Eagle Nest and Bat Detector Locations at the Wigwam.

2.2 Birds

Bird surveys were conducted throughout the year by two experienced bird surveyors to identify the presence of summer breeding birds, spring and fall migrants, and winter residents. Four surveys were conducted in summer 2016, one in early fall 2016, one in late fall/early winter 2016, one in late winter 2017, and two in spring 2017. Nine surveys, rather than the proposed 12, were deemed sufficient to achieve a baseline, and survey dates deviated from the POAM based on the anticipated level of bird activity and surveyor availability.

Surveys occurred in the morning (no later than five hours after sunrise) to capture the highest, most stable singing rate. During each survey, the observers recorded all bird species seen or heard and documenting whether they were detected inside, outside, and flying over the survey areas. Two defined routes were established to survey the RSF and the Facility/Buffer. The first survey conducted along each route was timed. That time became fixed for future surveys, 40 minutes for the RSF and 20 minutes for the Facility/Buffer. The Wigwam and Outpost were surveyed by boat for 10 minutes each. Birds observed during the boat transit to/from the Wigwam and Outpost were also recorded. Species richness and bird community composition by survey area and season were determined using observation data. To assist with identification of potential migratory bird conservation best practices and guide Installation planning, steps as outlined in the 2017 Guidance for Addressing Migratory Bird Management in INRMPs (MBTA Guidance)(DoD 2017) were followed/implemented. Bird survey observation data will be uploaded into eBird, per guidance provided in the Coordinated Bird Monitoring Plan (CBMP): Technical Recommendations for Military Lands Report (Bart et al. 2012), and as recommended in Step 4 of the MBTA Guidance.

2.3 Vegetation

Comprehensive terrestrial vegetation surveys were conducted in late June 2016, at the RSF, Buffer, and Facility survey areas, as well as the two remote locations (Wigwam and Outpost). After conducting a pre-survey site visit in May 2016, it was determined that a walk-through survey would provide the most complete assessment of plant species present at the Installation rather than the proposed quadrat plots. All survey areas, except the Aquatic area, were systematically walked by two experienced surveyors who identified and recorded each unique plant species encountered.

The information collected using the proposed quadrat plots, as described in the POAM, presented the likelihood of not documenting plant species that either occurred infrequently or were located in small, discrete areas. This was a significant concern given the primary objective of determining overall species presence for the entire site. More detailed information, such as structure, relative abundance, and coverage, could be obtained at a later date by using quadrat plots initially proposed in the POAM. Other measurement techniques identified in the POAM, such as

canopy coverage, plot photos, and GPS coordinates for invasive plants, were similarly deemed non-essential for the purposes of this inventory.

Aquatic vegetation was surveyed in mid-November 2016, when the lake elevation had been lowered to near minimum levels. A single surveyor waded throughout the littoral zone of the lake, from waist-depth to the shoreline, collecting all unique aquatic plants for identification using a metal rake or bare hands.

For plants that were not identified in the field (including all aquatics), specimens were collected and later identified in the lab. Each plant species was then categorized into its respective taxonomic group (i.e., aquatic, bryophyte, grass, forb, shrub, tree), as well as assigned to a general strata category (i.e., ground cover, under-, mid-, or upper-story). These category definitions were adopted from the Mapping Avian Productivity and Survivorship (MAPS) Habitat Structure Assessment protocol (Nott et al. 2003).

Each species was classified referencing the U.S. Department of Agriculture (USDA) Natural Resources Conservation Services' (NRCS) comprehensive plant database (USDA 2017), as native or non-native to Idaho, as well as invasive or non-invasive. A noxious plant classification was determined for those listed as such by the Idaho State Department of Agriculture (ISDA) (ISDA 2017).

2.4 Mammals

Small

Small mammals are defined as any mammal smaller than the largest rodents (i.e. beaver) and lagomorphs (i.e. rabbits) (Hoffman et al. 2010). Small mammals were surveyed in June 2016 utilizing trapline transects with Sherman live traps (Figure 4), following NIFO SOP #2016.1032. Two transects were established: one in the upper forested section of the RSF, and one within the Buffer (Figure 2); the third trapline proposed was omitted due to difficult access and close proximity to the RSF trapline. Two individual traps were also placed in separate locations near the lawn edge within the picnic area of the Facility. Small mammal surveys were not conducted at the remote sites, given the logistical challenge of using live traps.

Figure 4. Example of a deployed Sherman live trap

Each transect consisted of 10 ground stations spaced 10 meters (m) apart with two large (3" x 3.5" x 9") folding Sherman live traps placed at each station. Size constraints of the site resulted in a reduced sampling effort compared to the originally proposed 15 stations spaced 15 m apart. Traps were baited with a

mixture of oats, millet, and sunflower seeds. Traplines were run for three consecutive nights in mid-June. Traps were set between 18:00 and 20:00 hours and subsequently checked and closed the following morning before ambient air temperatures began to rise. A small amount of polyester fiberfill was also added to each trap to provide thermal protection for animals trapped overnight. Trapped animals were transferred from the trap into a large plastic bag for safe handling and identification, and were then released live at the same location.

As arboreal mammals (e.g. squirrels) were unlikely to be captured in the ground-based traps, timed auditory surveys were conducted during each trapline work session. The observer listened and looked for any tree-dwelling mammalian species for 5 minutes after completing each trapline check, noting each occurrence heard or seen.

Medium-Large

Medium-sized mammals refers to small carnivores, large rodents, lagomorphs, and other species not able to be surveyed by techniques used for small mammals (Hoffman et al. 2010). This group of mammals was surveyed using track plates with visual and scent lures. Tracks plates are 1/16" thick aluminum sheets partially covered in carbon soot that, when baited with an appropriate attractant, record species' tracks as they walk first on the carbon-covered portion plate and then onto white contact paper, recording identifiable tracks (Figure 5). This survey method was selected for its inherent simplicity and reliability, as well as to address security concerns associated with using modern camera trap surveys.

Figure 5. Baited and sooted track plate with tracks

Two track plate box assemblies were constructed following standard instructions provided by the U.S. Forest Service's Pacific Southwest Research Station (Zielinski 1995). One assembly was placed in the upper RSF and the other was placed in the lower RSF below the access road (Figure 2). Each assembly was placed with the open end directly against a tree to allow for a single entry point at the other end. Logs and branches were placed on top of and around the sides of each assembly to provide additional strength and cover. An aluminum pie plate was suspended from a nearby branch to provide a visual lure. Small opened cans of wet cat food (salmon and chicken flavors) were used as scent lures by securing one can in the back end of the box. Extra liquid from the cat food was applied to nearby vegetation to enhance the range of the scent.

Surveys began in early May 2016 and lasted for 2 weeks. Each station was checked every 2 days, with track plates (regardless if any tracks were left) and bait being replaced at each visit. Track plates were not checked on weekends, which left them

in place for 3 days over the weekends. Upon track plate recovery, the contact paper was removed from the plate and immediately placed in a protective plastic sleeve, identified, and labeled accordingly. To provide additional evidence, negative track prints were then carefully lifted from the sooted portion of the plate using packing tape, which was then applied to white copy paper and stored alongside the contact paper records.

Scat surveys were not conducted due to the lack of specimens noted while scouting the area and the challenges of accurately attributing scat to specific species, particularly for carnivores.

No large mammal (e.g., ungulate, bear) survey was conducted due to the small area of the property and the large ranges associated with most large mammals common to the region.

Bats

Acoustic bat surveys were conducted at the Facility (Figure 2) and the south end of the Wigwam survey (Figure 3) areas using a Song Meter SM3BAT ultrasonic detector (detector)(Figure 6) and following NIFO SOP #2016.1030. Detectors were deployed unmanned for one week during August 2016, when detection rates were predicted to be high (i.e., when young bats were capable of flight), and another week during fall migration in September 2016. Because lakes are highly productive environments for foraging bats (insects), the detector was placed near lake shore, with the microphone mounted 10 feet above ground. The detector was calibrated to record echolocation calls at night using settings outlined in the Montana Bat and White-Nose Syndrome Surveillance Plan and Protocols 2012-2016 (Montana Protocols)(Maxell 2015). Data was processed according to Montana Protocols and analyzed using both Kaleidoscope Pro 4.3.0 and SonoBat 4.0 software. At least one call from every species per sample site and week, and all calls from species that were out of known range, were vetted by viewing diagnostic call signatures. Vetted call files and confirmed species were provided to the Idaho Department of Fish and Game (IDFG) for upload into the Idaho Fish and Wildlife Information System.

Figure 6. Song meter deployment example

2.5 Amphibians and Reptiles

Amphibian and reptile (herpetofauna) presence was assessed using evening call surveys for frogs, and time-constrained visual surveys for terrestrial and aquatic herpetofauna, following NIFO SOP #2016.1031. These survey techniques were deemed best suited for the habitat on site, and were much less labor-intensive than other available techniques (S. Giery 2016, pers. comm.). These techniques were adopted from protocols developed by the U.S. National Park Service (Fellers and Freel 1995) and the Iowa Department of Natural Resources (Kinkead 2006).

Call surveys were conducted on three occasions at three sites during the breeding season (April–May), beginning 30 minutes after sunset. Two survey locations were at each end of the shoreline, and one was within the RSF. Each location was surveyed for ten minutes each, with five minutes devoted specifically to listening for northern leopard frogs. Call surveys required a basic familiarity of calls produced by each local species of frog and two frog-call smartphone applications were used to aid in identification: Collective Croak (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwj5t-OUr5PWAhWBzIMKHaKxCl4QFggoMAA&url=http%3A%2F%2Fcollective-croak.soft112.com%2F&usg=AFQjCNF-aTO_S5x7mPupYQMGuCfnrzuRxg) and Frog Calls (http://lockerapk.com/Download_Frog-Calls_APK-latest-version.html). Once the survey period began, the observer listened intently and recorded any frog calls in the area and also noted any vehicle or other ambient noise. For major noise disturbances, the listening period was temporarily halted until the disturbance was gone. After each call survey, the time, sky condition (e.g. cloudiness), air temperature, and general wind speed were recorded.

Visual surveys were conducted during the daytime. The entire lakeshore within the Installation property boundary, extending approximately six feet into the lake from the waterline, and the wooded areas of the RSF were surveyed. The swale within the RSF was dry at all times, and thus was not surveyed.

The lakeshore visual surveys were conducted in the spring and fall when lake levels were low enough to facilitate safe access along the sea wall; the proposed mid-summer survey was not conducted due to high water levels along the sea wall. The observer began at the north end of the property and proceeded by wading slowly through the water, scanning for any movement or visible signs of frogs, turtles, or other species. Eggs, larvae, and tadpoles were searched for by overturning rocks and other settled debris, combined with occasional sweeps through water with a fine-mesh dip net. This procedure was continued to the opposite end of the site for approximately 30 minutes.

For the three terrestrial visual surveys, a single observer randomly walked throughout the wooded portion of the RSF, carefully overturning logs, rocks, and other cover objects for 60 minutes and recording any observations of herpetofauna. The survey time was increased from the proposed 30 minutes to account for one observer performing the survey.

2.6 Bumble Bees

Bumblebees can be found anywhere with abundant flowers in bloom. Bumblebee surveys were conducted on July 18, 2017, between 09:30 and 16:00 hours following NIFO SOP #2017.1033. Air temperatures were between 77 and 87 degrees Fahrenheit, with negligible wind. Sky conditions were clear, and no rain event had recently occurred. Areas surveyed included the cleared areas surrounding the fenced portion of the RSF, which have plenty of flowering knapweed, St. John's wort, hawkweed, and other forbs; landscaped areas around buildings at the Facility that contain numerous flowering plants, including peavines and vetches; the Buffer area below East Hudson Bay Road, with abundant flowering shrubs; and the Outpost and Wigwam.

Survey procedures were adapted from the recently released Survey Protocols for the Rusty Patched Bumble Bee *(Bombus affinis)* (USFWS 2017), as well as the National Protocol Framework for the Inventory and Monitoring of Bees (Droege et al. 2016). Surveys were conducted by walking through the specific areas noted above, and opportunistically collecting bumble bees with a polyester aerial hand net. Netted bees were transferred to a clear glass holding jar and placed in a cooler with ice. Photo vouchers were taken for each specimen to aid identification. Once identified and documented, bees were released near the area from which they were captured. If bees were chilled, then the holding vial was opened and placed in a shaded area to allow the bee to warm up and fly away.

3.0 Results and Discussion

3.1 Birds

Developing knowledge of migratory bird habits and life histories, including their migratory paths and stopover sites, and their feeding, breeding, and nesting habits is the most important factor in minimizing effects of Installation activities to migratory birds (DoD 2017). In 2016 and 2017, 73 bird species were observed during nine surveys at the Installation and on the lake between survey locations. A full list of documented bird species is in Appendix B, along with other birds known to, or may potentially, occur in area.

Violet-green swallow (*Tachycineta thalassina*)

Mixed conifer forest and shrubby understory at the Installation provide foraging and nesting habitat for numerous neo-tropical migrants in spring and summer, and resident birds throughout the year. Number of individual passerine (songbirds and flycatchers) and near-passerine (hummingbirds and woodpeckers)

species observed was highest at the RSF, and at all sites during the breeding season (late spring and summer). During summer 2016 surveys, belted kingfisher, osprey, and swallows were consistently documented along the shoreline at the Facility/Buffer, and spotted sandpiper along the shorelines of the Wigwam and Outpost. In June 2016, a harlequin duck was observed in the Bay near the floating houses immediately adjacent to the Installation. During the May 2017 survey, a common loon and a nesting pair of bald eagles, with at least one fledgling, were observed near the Wigwam; the bald eagle nest was located in a leaning Douglas fir approximately 125 m north of the Wigwam remote location (Figure 3).

Bald eagles, waterfowl, and gulls were the most commonly observed species during the fall 2016-early spring 2017 surveys. In late November 2016, 44 bald eagles were observed, three of which were perched in a tree near the edge of the Facility along the Buffer. Another 41 bald eagles were counted along the lakeshore during the boat ride to the Remote Facilities. Migrating bald eagles typically peak in December to feed on spawning kokanee in Lake Pend Oreille. In December 2016, observations on the lake peaked at 103 bald eagles, whereas 13 were counted at the Facility/Buffer (J. James 2017, pers. comm.). The previous December (2015), as many as 27 bald eagles were seen roosting in the tree at the Facility/Buffer (J. James 2017, pers. comm.). In late November 2016, a total of approximately one hundred bufflehead, Barrow's goldeneye, and horned grebes were congregating in the bay near the Installation, and 45 common mergansers were counted on the Lake. In mid-February 2017, 200 western grebes and several red-necked grebes were also counted on the Lake. While solitary ring-billed gulls were observed year-round, clusters of dozens of California gulls interspersed with a few herring gulls were counted in the fall 2016.

Western grebe (*Aechmophorus occidentalis*)

Following Step 1 in the MBTA Guidance, Bird Species of Concern were identified and listed below (Table 1). The following sources were used to determine bird species of concern that may occur at the Installation and Remote Facilities, and may require special management consideration.

DoD Partners in Flight database
http://www.dodpif.org/resources/bcrmap.php

IDFG Species of Greatest Conservation Need
https://idfg.idaho.gov/species/taxa/list/sgcn

DoD Partners in Flight Mission Sensitive Priority Species fact sheet at
http://www.dodpif.org/downloads/factsheet11_priority-species.pdf

Table 1. Bird Species of Concern: Observed (**bold**) and Potentially at Installation

Common Name	Scientific Name	Priority List
Bald eagle	***Haliaeetus leucocephalus***	9
Barrow's goldeneye (B, W)	***Bucephala islandica***	5a,6a
Black-billed magpie (W)	***Pica hudsonia***	6b
Bufflehead	***Bucephala albeola***	5a
California gull (B)	***Larus californicus***	4,8
California quail	***Callipepla californica***	3
Calliope hummingbird (B)	***Stellula calliope***	6a
Canada goose	***Branta canadensis***	5a
Cassin's vireo (B)	***Vireo cassinii***	6b
Common loon	***Gavia immer***	8
Dusky flycatcher (B)	***Empidonax oberholseri***	6b
Flammulated owl (B)	*Otus flammeolus*	1,6a
Hammond's flycatcher (B)	***Empidonax hammondii***	6a
Harlequin duck	***Histrionicus histrionicus***	2,5b,8
Killdeer	*Charadrius vociferus*	7
MacGillivray's warbler (B)	***Geothlypis tolmiei***	6b
Mallard	***Anas platyrhynchos***	2,5a
Mountain bluebird (B)	*Sialia currucoides*	6b
Mountain chickadee (B)	***Poecile gambeli***	6c
Mourning dove	*Zenaida macroura*	2
Northern goshawk (B)	*Accipiter gentilis*	6a,9
Northern pygmy owl (W)	*Glaucidium gnoma*	6b
Olive-sided flycatcher (B)	*Contopus cooperi*	6b,8,9
Pygmy nuthatch (W)	*Sitta pygmaea*	1,6a
Red crossbill (B)	***Loxia curvirostra***	6c
Red-breasted nuthatch (B)	***Sitta canadensis***	6c
Ring-billed gull (B)	***Larus delawarensis***	8
Ruffed grouse	*Bonasa umbellus*	3
Townsend's solitaire (B)	*Myadestes townsendi*	6a
Townsend's warbler (B)	***Setophaga townsendi***	6b
Western grebe	***Aechmophorus occidentalis***	4,8
Western tanager (B)	***Piranga ludoviciana***	6b

1 - Birds of Conservation Concern
2 - Game Birds Below Desired Condition
3 - Non-migratory Bird Species of Concern
4 - North American Waterbird Conservation Plan – Moderate Concern
5a - North American Waterfowl Management Plan – High
5b - North American Waterfowl Management Plan – Moderately High
6a - Partners in Flight – High Overall Priority
6b – Partners in Flight – High Regional Priority
6c – Partners in Flight – Additional Watch Species
7 – Shorebird Conservation Plan
8 – Idaho Species of Greatest Conservation Need
9 – Mission Sensitive Species

B–Breeding
W–Wintering

The bald eagle, northern goshawk, and olive-sided flycatcher are considered Department of Defense (DoD) Partners in Flight Mission Sensitive Priority Species. Bald eagles were observed throughout the year at both the Installation and Remote Facilities. Fish are their primary food source, and winter die-offs of kokanee salmon attract hundreds of wintering bald eagles to roost in mature trees along Lake Pend Oreille. Nest sites are also usually located in mature (tall) trees adjacent to the lake. Eagles generally use the same nests year after year, and pairs may remain on their territories year-round. Females lay one to four eggs (usually just one or two) in late February to early April. After 35 days of incubation, eaglets hatch in mid-April or early May. Despite the successful recovery of bald eagle populations over the last decades, habitat destruction and human-related disturbance of wintering and nesting eagles are still major contributors to decline.

Bald eagle (*Haliaeetus leucocephalus*)

Even though the mixed conifer forests along the edge of Lake Pend Oreille may provide habitat for northern goshawk and olive-sided flycatcher, these species were not observed during 2016/2017 surveys. However, both species have previously been documented in the vicinity.

Goshawks nest in a variety of forest types, which are typically characterized by mature trees with relatively high canopy cover and open understories. Vegetation management is the primary human-related activity that impacts goshawk populations; it may improve or degrade habitat (Squires and Kennedy 2006). Since the habitat of many prey species are linked to structural habitat components such as snags, downed wood, and vegetative diversity in the understory, maintaining a diversity of components may be important (USFWS 1998).


Northern goshawk (*Accipiter gentilis*)

Olive-sided flycatcher (*Contopus cooperi*)

Olive-sided flycatchers typically breed in mid- to high-elevation mixed conifer forests along edges and openings, including burns and clear-cuts. They require tall, prominent trees and snags, and unobstructed air space for hunting. There is increasing concern that this species, along with other flying insect feeding birds, are being impacted by chemical control of insect populations.

3.2 Vegetation

There were 118 plant species identified on the entire Installation, including near-shore submerged aquatic areas (Appendix C). Of these species, 27 were non-native (introduced) plants, 14 were invasive (introduced and harmful to environment), and 10 species were considered noxious (harmful or injurious) in the state of Idaho (Table 1). There were no rare, threatened, or endangered plants found during this survey. The Wigwam and the RSF generally had the highest proportions (14.3% and 12.5%, respectively) of invasive species (based on presence/absence), whereas no invasive species were found within the Buffer area. The facility survey area contained the highest proportion of non-native species (29.7%), which is expected given that much of the area around the buildings is landscaped. It is important to note that these proportions are not indicative of the overall abundance and composition of non-native and invasive species within the entire vegetative community, but rather simply point to the relative presence of unique plant species (i.e. species richness) at each site.

Table 2. Vegetation Richness

SITE	TOTAL	Non-native	Invasive	Noxious	Tree	Shrub	Forb	Grass	Bryo
RSF	72	16	9	7	5	16	38	6	7
Buffer	34	4	0	0	6	17	10	1	N/A
Facility	37	11	4	3	7	11	16*	-*	3
Wigwam	29	8	4	2	4	10	14	1	N/A
Outpost	26	5	3	2	3	12	11*	-*	N/A
Aquatic	6	1	1	1	-	-	-	-	-
ALL	**119**	**27**	**14**	**10**	**11**	**29**	**56**	**7**	**10**

*Note: at the time of the survey, much of the grasses and forbs had been recently cut within the Facility area and Outpost, therefore these plants were not accounted for in the survey.

Terrestrial

Much of the surveyed naturally vegetated areas typified a dense, dry conifer habitat type, common in low-elevation forested areas in the region. Western larch (*Larix occidentalis*), Douglas-fir (*Pseudotsuga menziesii*), and lodgepole pine (*Pinus contorta*) were the most commonly encountered tree species, with lesser amounts of western white (*Pinus monticola*) and ponderosa pine (*Pinus ponderosa*) scattered throughout.

The Buffer survey area vegetation is unique amongst the rest of the property in that it harbored a wet conifer habitat type, including western red cedar (*Thuja plicata*), western hemlock (*Tsuga*

Striped coralroot
(Corallorhiza striata)

heterophylla), and grand fir (*Abies grandis*), with the aforementioned species lightly interspersed within. The only deciduous tree species found were black cottonwood (*Populus trichocarpa*) and quaking aspen (*Populus tremuloides*), along with one domestic fruit tree (likely apple) found adjacent to East Hudson Bay Road, within the Buffer area.

White bog orchid (*Plantanthera dilatata*)

The shrub layer was comprised of 28 different species accounted from all survey areas, of which only one was non-native (an unidentified ornamental rose). Twice as many forb species were identified, including two species of orchids and two species of ferns; 21 forb species were non-native. Six grass species were found, half of which were non-native. Ten distinct native non-vascular species (e.g. mosses and lichens) were documented, though the probability of additional mosses or lichens being present is high, given the relative difficulty of capturing every occurrence and high level of expertise required to accurately identify these types of plants. However, all but two of those species found on-site were common to the region, and were not overly difficult to identify.

Invasive Terrestrial Plants

A detailed description of invasive plant species identified at the Installation can be found in Appendix C. Visual observations at each survey site suggest that the relative abundance of invasive species remains low, and most appear to be under control. Only one species, yellow devil hawkweed (*Hieracium glomeratum*), is in the Idaho Early Detection Rapid Response (EDRR) category; one individual plant was found near the upper fence in the RSF. As with all hawkweeds, this plant is an aggressive competitor, and can spread quickly and displace native vegetation in a short time. Making this particular hawkweed species especially concerning is its ability to produce allelopathic pollen, which contains toxins that inhibit seed germination and growth of other plants (Pierce County Noxious Weed Control Board 2017). Western dwarf mistletoe (*Arceuthobium campylopodum*), a native parasitic plant that is considered invasive, was present in much of the upper forest canopy, as evidenced by numerous "witches' brooms" in western larch and Douglas-fir trees. Mistletoe can occasionally hamper the growth and vigor of infected trees, and will diminish the timber value of individual trees as well. Cheatgrass (*Bromus tectorum*) was the only invasive grass species found on the Installation, at the Wigwam survey area. Recommendations for control options for invasive plant species can be obtained from the Kootenai County Noxious Weed Control Department.

Aquatic

Only six aquatic plant species were documented in the near-shore littoral zone (Appendix C). Most prominent was also the only invasive and non-native aquatic species, Eurasian watermilfoil (*Myriophyllum spicatum*). Although many of these plants had recently been removed by a team of divers in September 2016, a moderate amount still persisted, particularly near over-water structures. In summer of 2017, only a few Eurasian watermilfoil plants were observed around the docks. The remaining aquatic plants are all common and native to the Lake Pend Oreille system.

3.3 Mammals

Surveys for small and medium mammals and bats were conducted in 2016 and 2017. Observed or detected mammals are presented in the sections below and listed in Appendix D along with mammals known to inhabit the area.

Small

Deer mice (*Peromyscus maniculatus*) were the only species of small mammals detected during the live-trapping survey. One mouse was trapped at each transect location during each nightly survey. Mice were not marked or otherwise uniquely identified, so it is not known if these were repeat trappings of the same individual.

Deer mouse
(*Peromyscus maniculatus*)

Incidental observations documented the presence of additional small mammal species. Red squirrels were frequently observed and heard throughout the RSF, though none were documented during the dedicated observation times that ran concurrently with the live-trapping survey. Additionally, a single vole species was observed traversing the ground in the eastern portion of the RSF, approximately 100 feet from the trapline.

Red squirrel
(*Tamiasciurus hudsonicus*)

Medium

Track plate surveys detected the presence of both raccoons *(Procyon lotor)* and domestic cats (*Felis catus*) within the RSF; both detections occurred at track plate 1 (TP01) in the upper RSF. Small, unidentifiable rodent tracks were left on two occasions at TP02. Given the verifiable presence of deer mice on site, it is likely these tracks were left by this species.

Incidental observations yielded further evidence of raccoons and additional species. A family of raccoons (mother and four kits) was observed crossing Highway 54 directly from the road entrance into the RSF. Numerous base personnel also indicated having frequently observed raccoons on site. A river otter (*Lontra canadensis*) was observed near shore in the lake on two occasions, both times near the southern corner of the property. A cottontail rabbit (*Sylvilagus nuttallii*) was also observed once within the lower RSF near the paved area. A night-time security guard also indicated having observed skunks (*Mephitis mephitis*) on the property in the past, though none had been observed recently.

Large

No survey was conducted for large mammals, given the relatively small survey area of the property and large ranges usually associated with larger mammals common to the region. However, white-tailed deer (*Odocoileus virginianus*) were observed numerous times throughout the property during the entire survey season, with group sizes ranging from one to three. A small herd (approximately 15) of elk (*Cervus canadensis*) was observed once outside the property near the roundabout on Highway 54 within Farragut State Park. Installation personnel indicated that black bears (*Ursus americanus*) have been observed within the greater community in the past as well.

Bats

Silver-haired bat (*Lasionycteris noctivagans*)

Nine bat species were documented during August and September 2016, seven species at the Facility and Wigwam: silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), California myotis (*Myotis californicus*), western small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), little brown myotis (*Myotis lucifugus*), and Yuma myotis (*Myotis yumanensis).* Two species were detected only at the Wigwam: big brown bat (*Eptesicus fuscus*) in August and September, and fringed myotis (*Myotis thysanodes*) in September. Bats present or known to occur in the area are listed in Appendix D. There were several call sequences recorded that fit possible characteristics of long-legged myotis (*Myotis volans*)(e.g., relatively steep calls that dropped as low as 38 kilohertz (kHz)). However, this species is very difficult to acoustically differentiate from other *Myotis* species with search calls at 40kHz, and would need to be captured by mist-net to verify its identification.

Yuma myotis (*Myotis yumanensis*)

Bat activity was higher at the Wigwam than at the Facility, and higher at both sites during August than September. Guano and bat noises observed during the day at the Wigwam confirmed that the buildings are providing roost habitat.

Overall, the two most commonly detected species were Yuma myotis and little brown myotis (57% and 11% of total auto-identified call sequences, respectively). Both species are habitat generalists and are closely associated with open water. Roost sites include buildings, bridges, trees, rocks crevices, caves, and mines. Little brown myotis has been identified by IDFG as a Species of Greatest Conservation Need (SGCN).

3.4 Amphibians and Reptiles

Visual and call surveys for reptiles and amphibians did not detect the presence of these species at the Installation. A night-time security guard indicated he may have heard frog calls during the night, but this could not be corroborated by this survey; it is possible that insect (e.g. cricket) sounds could have been mistaken for frog calls. However, potential suitable habitat for some species does exist on the Installation, and so the results of these surveys should not be interpreted as definitive indication that herpetofauna is not present in the area. Species with the potential to occur at the Installation are listed in Appendix E.

Northern Leopard Frog

Northern leopard frog (Lithobates pipiens)

No evidence was found indicating the presence of northern leopard frogs (*Lithobates pipiens*). This species typically occupies habitat that includes still or slow-moving permanent water with abundant vegetation, but can also be found in moist meadows, forests, and even developed areas (Hayes et al. 2002). The Installation could feasibly provide marginal habitat for a population of northern leopard frogs, although it is highly unlikely that this species will naturally inhabit the habitat on the property. No known observations of this species have been documented in northern Idaho since 1955 (IDFG 2017). A recent intensive survey of northern Idaho conducted by IDFG (Lucid et al. 2016) did not detect the presence of this species in this region.

Half-black bumble bee (*Bombus vagans*)

3.5 Bumble Bees

Bumble bees were observed at all locations surveyed. At least five distinct species were suspected, although only two were positively identified to the species level. Nearly all captured bees were female workers, but male bumble bees were also occasionally encountered. No queens were captured, as their peak activity generally occurs in mid-spring to early summer.

The two most commonly encountered bumble bee species were the central bumble bee (*Bombus centralis*), found at all locations except the Wigwam, and the half-black bumble bee (*Bombus vagans*), found at all sites except at the Outpost. Both species are common throughout the region, and are not thought to be threatened beyond the levels of bees in general. These species were most frequently observed pollinating plants such as St. John's wort, snowberry, fireweed, tansy, and sweet clover.

Central bumble bee (*Bombus centralis*)

Three other distinct individual bumble bees were captured that were not able to be identified in the field. Upon further effort to identify them, two were likely male bumble bees of two separate species (most probable *Bombus balteatus* and *Bombus huntii*), while the third could not be positively identified.

3.6 Opportunistic Observations

A few species from non-targeted groups were encountered incidentally during species surveys. Two mollusk species were identified: three Idaho forestsnails (*Allogona ptychophora*) were observed on the forest floor in the upper RSF, and a Physa snail (*Physa spp.*) was found on a sample of aquatic vegetation. Two arboreal burying beetles (*Nicrophorus defodiens*), a common species in North America and one of two species of burying beetle that breed in the forest canopy, were observed near the upper track plate (TP01) station within and around a decaying stump. Burying beetles are important forest nutrient recyclers, as they expedite the breakdown of dead and decaying organisms.

During the aquatic vegetation survey (November 8, 2016), large amounts of spawning kokanee salmon (*Oncorhynchus nerka*) were observed throughout much of the near-shore area. Other fish species known to inhabit Lake Pend Oreille and the nearshore area of the Installation are listed in Appendix G.

Arboreal burying beetles (*Nicrophorus defodiens*)

Idaho forestsnail (*Allogona ptychophora*)

4.0 Recommendations

The 2016/2017 species inventory observer notes and data collected, conversations with Installation personnel, events that occurred on or adjacent to the Installation, and steps set forth in the MBTA Guidance prompted the following ideas and recommendations for conservation practices of future Installation operations for potential inclusion in the INRMP.

Migratory Birds

Surveys conducted in 2016/2017 provide a baseline status of migratory birds that utilize the Installation. Almost all bird species that may occur in the area are protected under the MBTA, and are vulnerable to human disturbances that reduce habitat and disrupt nesting, including in-water activities. Potential impacts to birds that use the Installation, or nearby habitat, such as the northern goshawk and the olive-sided flycatcher are largely related to human disturbance, vegetation and snag removal, and pesticide use. To reduce the likelihood of direct mortality to nesting birds, we recommend minimizing potential disturbances between April 1st and August 1st.

Bald Eagle

Although bald eagles are no longer protected under the Endangered Species Act of 1973, the bald eagle remains protected under the Eagle Protection Act of 1940 and Migratory Bird Treaty Act of 1918. Bald Eagle monitoring such as occupancy and productivity monitoring including known nesting territories with active or alternative nests on or adjacent to the Installation and remote shoreline areas should occur annually. Any new nesting territories identified during surveys to locate new nests should continue to be monitored annually following applicable methods and scheduling in management plans such as:

AVISTA Corporation's 2010 Bald Eagle Management Plan
https://www.myavista.com/-/media/myavista/content-documents/our-environment/river-documents/bald-eagles/2010-0177.pdf?la=en

National Bald Eagle Management Guidelines, 2007
https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf

Montana Bald Eagle Management Plan, July 1994
http://fwp.mt.gov/fwpDoc.html?id=44181

Osprey Nesting

On May 18, 2016, while conducting the species inventory, the Service was contacted by Navy personnel regarding the presence of an active osprey (*Pandion haliaetus*) nest located on top of the maintenance barge. The barge had recently been moved from the upper lake to Scenic Bay, just offshore of the Installation. Another active nest was subsequently discovered on top of another mobile structure (hoist) located nearshore and adjacent to the southernmost over-water building. The Navy requested information regarding the proper procedure for dealing with active osprey nests that may conflict with mission-related activities at the Installation.

Ospreys typically arrive in north Idaho in mid-March. They readily co-exist near humans, and often build their nests on human-made structures with various materials such as sticks, grass, bark, or even flotsam and jetsam. Active nests are defined as those containing eggs or dependent young; not included are nests under construction, unoccupied nests, or nests outside of the nesting season (USFWS and NGPC 2011). Eggs are typically laid in April or May. The incubation period lasts 36-42 days, and after hatching, the nestling period will last another 50-55 days.

The Service provided an email correspondence dated June 17, 2016, outlining the provisions set forth in the MBTA and associated Executive Orders pertaining to take of migratory birds incidental to military readiness activities (Appendix H).

In the future, the Service recommends following the guidance set forth in the June 17, 2016 correspondence and considering the following measures to minimize and/or mitigate impacts to nesting ospreys, in coordination with the Service's NIFO:

1. Physical deterrents – These include PVC or fiberglass devices that act to minimize or eliminate available space for perching and nest building; these are commonly deployed on utility line poles and may be modified for use with other applications. Commercial examples include the "OFF"-Sprey Raptor Deterrent (http://www.offsprey.com/) and the Power Line Sentry Distribution Nest Excluder (https://powerlinesentry.com/distribution-nest-excluder/). Half-round plastic or metal tubing may also be installed directly on affected flat surfaces to inhibit accumulation of nest materials. Metal spike perch-discouragers are not recommended, as they may instead provide a secure nest attachment point.

2. Replacement nesting platforms – These can be constructed to provide an alternative nesting site for osprey. Osprey exhibit strong nesting site fidelity (i.e., return to same nest site year after year) and will continue to rebuild at a chosen site in spite of repeated attempts to remove nest materials. However, when presented with a nearby (20-100 m) attractive alternative nesting site that is "baited" with nesting materials, they can likely be persuaded to adopt the new platform (USFWS and APLIC 2005, APLIC 2006). The effectiveness of dedicated platforms is enhanced when used in conjunction with physical deterrents, as described above.

Osprey Monitoring:

If either barge or hoist is required to be moved and/or operated in pursuit of the regular military readiness operations at the Installation and has an active nest at the time of use, the Service requests that Installation staff monitor and document any perceived or actual impacts to the adult and juvenile (if present) birds. Monitoring impacts to migratory birds is a requirement of the take exemption given to the Armed Forces under section 315 of the 2003 National Defense Authorization Act. Examples of impacts might include abandonment of the nest, brood failure (mortality of juveniles), damage to the nest, or any behavior change related to the movement of the structure and associated nest.

Invasive Plants

During the 2016 vegetation surveys, nine terrestrial and one aquatic invasive plant species were observed. Executive Order No. 13751 (2016) defines invasive species as "a non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health." In Idaho, noxious plants are defined as being injurious to public health, agriculture, recreation, wildlife, or property (ISDA 2017). The ISDA has created three response categories for noxious plants, based on the relative threat they pose: (a) Early Detection Rapid Response (EDRR) – for the most egregious of invasive plants, these should be eradicated during the same growing season as identified; (b) Control – reduction or elimination of new or expanding weed populations; and (c) Containment – concentration of weeds where control and/or eradication may be possible (http://invasivespecies.idaho.gov/aquatic-plants/).

Appendix G provides a description, ISDA designated response category, photos, and reasons for concern for each invasive plant identified at the Installation. In addition to the invasive plant species observed on the Installation, and of local concern, information about Flowering Rush (*Butomus umbellatus*) is provided. The Service recommends consideration of early response, control, and/or containment of the plants described in Appendix G.

Bats

The little brown myotis has been identified by IDFG as a SGCN, with the primary threat being White-nose Syndrome (WNS), a fungal disease. Although WNS has not yet been detected in Idaho, it was recently confirmed in western Washington (2016), eastern Nebraska (2017), and northern Texas (2017) (https://www.whitenosesyndrome.org/). Concern that WNS may reach Idaho is high due to the devastating potential impact of the disease. Since the discovery of WNS in New York in 2006-2007, mortality rates of little brown myotis have exceeded 90% in and around the New York area. The little brown myotis is predicted to be extirpated from the northeastern U.S. by 2026. Western small-footed myotis may also be susceptible to WNS, and likewise, is considered an SGCN in Idaho. Other SGCNs include the Townsend's big-eared bat due to potential loss of roost habitat from cave and mine disturbances, and the silver-haired bat and hoary bat due to direct mortality at wind energy facilities. Bats provide important

ecological services by consuming large quantities of insects, including forest and crop pests. Despite their importance and the many threats they face, bat populations are currently under-surveyed. Recent efforts including the development of an Idaho statewide strategic conservation plan for WNS and the North American Bat Monitoring Program (NABat) are emphasizing the need to assess distribution and monitor trends to effectively manage bat populations and detect early warning signs of population declines. Data collected during this inventory contribute to these efforts, and future data collection at the Installation could be valuable.

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6.0 Appendices

Appendix A: NIFO - Standard Operating Procedures

2016.1030 Procedures for Bat Acoustic Surveys

2016.1031 Procedures for Time-Constrained Visual Surveys for Herpetofauna and Call Surveys for Frogs

2016.1032 Mammal Survey Techniques

2017.1033 Procedures for the Collection of Bumble Bees

North Idaho Field Office (NIFO)
Standard Operating Procedure (SOP)

NIFO 2016.1030: Bat Acoustic Survey

Prepared: 7/13/2016

I. General

This protocol outlines methodology for stationary detection of bat species and associated activity using a passive bioacoustic recorder and ultrasonic microphone. Procedures are adopted from the Montana Bat and White-Nose Syndrome Surveillance Plan and Protocol 2012-2016 (Maxell 2015).

II. Equipment

Wildlife Acoustics Song Meter SM3BAT bioacoustic recorder
User guide for SM3BAT
Ultrasonic microphone (SMM-U1) w/ windscreen
Microphone cable (10-meter)
SD cards (128GB Class 10 SDXC)
Batteries (4 new high quality D size alkaline or NiMH)
3/4" electrical conduit pipe
- 2 – 5ft straight sections
- 1 – 90° elbow
- 2 – connectors w/ screws

Screwdriver (Philips or flathead)
5 gallon bucket partially filled with sand (optional)
Metal fencing T-post
Post pounder (optional)
3" piece of ½" PVC
Weather resistant container (e.g. plastic tub) large enough to accommodate the recorder
Zip ties/duct tape/hose clamps (or similar fastening system)
Lightweight rope
Tent stakes (optional)
GPS unit
Analysis software (e.g., Kaleidoscope Pro, SonoBat)

III. Procedure

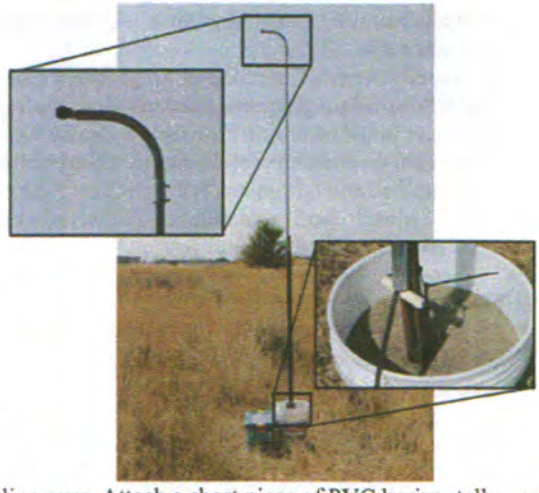
A. Field Deployment

Identify suitable monitoring locations likely to support bat activity. This could include foraging habitat (near surface water) or roosting habitat (buildings, cave entrances). Avoid sources of potential ultrasonic interference, such as whitewater, electrical power lines, dense vegetation or buildings. Once the location is identified, locate a spot to set up

the recorder so that it is secure and unlikely to be disturbed, and clear of any potential sources of interference.

Program the recorder by following the instructions in the User's Manual and using settings identified on pages 19 and 20 of the Montana Protocol (Settings and Checklist for SM3Bat Detector/Recorders with SMM-U1 or SM3-U1 Microphones; Maxell 2015). Obtain a GPS waypoint for programming the recorder. Be sure the batteries are fresh and the SD cards are empty. It is helpful to conduct a dry run prior to deployment in the field, as there are many settings and parts that require accurate input.

To assemble the recorder for monitoring connect the three conduit sections and pass the microphone cable through the conduit so that the microphone-end of the cable comes out the end of the elbow. Attach the ultrasonic microphone to the cable, install the wind shield, and slide the microphone back into the conduit so that only the end of the microphone remains outside of the conduit, and ensure it is secure. A small piece of bubble wrap taped around the microphone shaft before sliding it back into the conduit will help stabilize microphone.



The method for securing the T-post end of the conduit depends on the ground surface. It may be pounded into the ground, secured by piling rocks around the post, or sunk into the bucket of sand that will act as a weighted base. Attach guy lines with the light rope and tent stakes (or other heavy/stationary objects), so that the post does not risk toppling over. Attach a short piece of PVC horizontally near the bottom of the post with a zip tie; this will provide support for the microphone pole assembly. Use as many zip ties as necessary to attach the conduit and cable to the T-post resting the bottom of the conduit on the horizontal PVC. Connect the microphone cable to the recorder, and ensure the recorder is on and ready to operate as programmed. Place the recorder inside a plastic tub, and place the tub next to the microphone assembly. Be sure any extra cable length is coiled up and secured inside the plastic tub with the recorder.

Retrieve the assembly once it has run for the desired length of time. Download the .WAC files off of the SD cards onto a secure drive; these files will be extremely large and will likely require a significant amount of time to download.

B. Data Analysis

Identifying bat calls can be challenging, therefore it is recommended that whoever conducts the identification analysis has experience and/or sufficient training in bat acoustic species identification. Analysis of acoustic recordings should be conducted by combining automatic species identification (auto-ID) software and manual identification. Currently, SonoBat and Kaleidoscope Pro are the only two auto-ID programs that can be used to identify western species. A general procedure for determining bat species presence using acoustic analyses is as follows:

1) Convert .WAC files to .WAV files with Kaleidoscope Pro 3.0 or later using the following settings: Time expansion factor = 1, Split to max duration seconds = 5, Filter noise files = checked, Keep noise files = unchecked, Signal of interest = 16-128 kHz, 2-500 ms, Minimum number of calls = 2, Advanced signal enhancement = checked.
2) Eliminate non-bat noise files using SonoBat Batch Scrubber.
3) Conduct auto-ID using SonoBat 4, which appends species codes to the filename.
4) Conduct auto-ID using Kaleidoscope Pro 4 on SonoBat 4 output files.
5) Manually verify at least one call from every species, targeting files that are identified by both software programs to be the same species. All calls from species not known to occur in the recording area should also be manually verified. Resources to aid in the manual verification of diagnostic call signatures include the Montana Bat Acoustic Key and Montana Bat Call Identification training materials (Appendices 6 and 7; Maxell 2015) and Wildlife Conservation Society Canada bat species ID materials developed by Cori Lausen.

IV. References

Maxell, B.A. Coordinator. 2015. Montana Bat and White-Nose Syndrome Surveillance Plan and Protocols 2012-2016. Montana Natural Heritage Program. Helena, MT.

Prepared by: Brittany Morlin 07/13/2016

Approved by: 7/13/2016

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North Idaho Field Office (NIFO)
Standard Operating Procedure (SOP)

NIFO 2016.1031 **Procedures for Time-Constrained Visual Surveys for Herpetofauna and Call Surveys for Frogs**

Prepared: 04/14/2016

I. General

This protocol outlines simple and time-efficient techniques used to assess presence of herpetofauna (herps; i.e. amphibians and reptiles) on selected landscapes. Time-constrained visual surveys to detect the presence of terrestrial and aquatic species are used, while additional call surveys are used to further aid in detecting the presence of frog species. Techniques described in this protocol are derived from protocols developed by the U.S. National Park Service (Fellers and Freel 1995) and the Iowa Department of Natural Resources (Kinkead 2006).

II. Equipment

Fine-mesh dip net
Waders and wading boots
Binoculars (optional)
Timer or stopwatch
Data sheets
Pencils
Camera
Field guide(s)
Frog call identification app(s) (if surveyor is not expert on local species' calls)
- "Collective Croak" (On the Case Apps 2014)
- "Frog Calls" (Nielsen Family Creations 2016)

III. Procedure

Surveys should be conducted at the beginning of the main breeding season for most herps, typically April thru May, and extend until late summer/early fall, to best detect all life stages. This is particularly important for the frog call surveys, as this is the time when most frog species will be the most vocally active.

A. Identify priority survey areas within the landscape of interest. This should include all permanent and ephemeral aquatic sites, and any terrestrial areas deemed as potential habitat for target species. If the survey area is small, all aquatic habitats should be surveyed. If the survey area is too large to be completely surveyed, then a sample survey will have to be used (not covered in this protocol).

B. **Time-constrained visual surveys**

Conduct at least three time-constrained visual surveys (aquatic and terrestrial), once each in spring (concurrent with frog call surveys, if possible), summer, and fall. Additional surveys are helpful, particularly if targeted species are found initially or known to occur. Determine the amount of survey person-hours acceptable for the purpose of the survey, and conduct each successive survey for this defined time constraint. For example, if a 30 minute survey effort if deemed sufficient, each survey should not exceed this time limit. If more than one surveyor is working a particular site, divide the time limit by the number of surveyors, and use this result as the survey time limit. Visual surveys should not be conducted when it is raining and/or cold.

Aquatic – Beginning at one end of the water body standing either on the bank or in the water near the shore, start the timer and begin by scanning with binoculars approximately 15 meters ahead for any amphibian on or near the water surface; this allows the surveyor to find frogs that my jump into the water before the surveyor can locate and identify them. Be sure to thoroughly scan obvious places of shelter, such as overhanging banks, holes in the bank, dense vegetation, and under raised logs. After scanning ahead, begin walking slowly through water or along the adjacent bank while visually searching for eggs, larvae, tadpoles and adults, overturning rocks or other settled debris along the way. Regularly sweep the dip net through the water in all habitat types (e.g. riffles, pools, vegetation) to collect larvae, tadpoles and adults, and record your findings after each sweep. Record the species and number of individuals encountered. Repeat this process every 15 meters as you work your way along the water body.

Terrestrial – The process for terrestrial visual surveys is similar to the techniques for aquatic surveys. If surveying in a wet meadow where visibility is greatly reduced, constant use of the dip net is crucial. If the survey area is large or undefined, walking in a zig zag pattern with 10 meter sweeps is effective. When surveying drier sites for reptiles and/or salamanders, walk through the survey area and carefully overturn logs, rocks and other cover objects as you encounter them. Record any observations, and return cover objects to their original placement.

C. **Call Survey** - Decide where each frog call survey point will be located. Each listening point should feasibly cover all identified potential frog habitats. Conduct call surveys on at least three occasions during the spring breeding season. Start each survey at least 30 minutes after sunset. The observer should listen intently for 10 minutes, making note of any distinctive frog call, in addition to any ambient or disturbance noise (e.g. passing vehicles). For major noise disturbances, the survey should be paused until the disturbance subsides. After each survey, record the time, relative cloudiness, wind speed and air temperature.

IV. **Photographs**

Take representative photographs of each species and life stage encountered, if possible, and record any relevant information on the datasheet. Photos provide additional data and can help with further identification.

V. **References**

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Prepared by: Sean Sweeney

Approved by: 4/14/2016

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North Idaho Field Office (NIFO)
Standard Operating Procedure (SOP)

NIFO 2016.1032 Mammal Survey Techniques

Prepared: 6/13/2016

I. General

This protocol outlines standardized methods for capturing and/or surveying small (live traps) and medium (track plates) sized mammals. This protocol was developed with guidance from the U.S. Army Engineer Research Center (Martin 2009). The purpose of this protocol is to outline techniques for simple species presence and relative abundance surveys.

II. Equipment

Small Mammals (e.g. mice)
Sherman Live Traps (3"x3.5"x9" collapsible)
Bait (oats and birdseed mix)
Polyester fiber fill
Ground flagging
1 qt. Ziplock bags or Ziplock sandwhich bags
GPS unit
Digital camera
Data sheets
Field guide
SOP

Medium Mammals (e.g. raccoons)
Track plate assemblies (see Zielinski 1995)
- Track plate boxes
- Sooted aluminum plates
- Contact paper
- Wet cat food (small cans; 1 per track plate per day)

Aluminum pie plates (1 per track plate)
String or light rope
Duct tape
Plastic report sleeves (for 3-ring binders)

III. Small Mammal Live Trapping

Identify the number and location of 90 meter transects needed to survey targeted habitats are surveyed. Set up 10 stations with two traps each along the transect at 10 meter intervals. Place ground flagging at each station and number accordingly. Bait all traps with a small amount of rolled oats and bird seed mix. To reduce temperature-related trap mortalities, place polyester fiberfill in the back of each trap to provide thermal cover for trapped animals.

Open and bait traps between 18:00 and 20:00 hours daily for three consecutive nights. Check traps each subsequent morning before ambient air temperatures begin to rise for the day, and close them down until the evening. Transfer trapped animals into a large plastic bag so that they can be easily handled and identified. Once all data has been recorded, release the animal at the capture site.

IV. Track Plate Survey

Prepare aluminum track plates with fresh soot and clean contact paper. To soot the plates, wrap a scrap piece of cotton cloth on an insulated, non-flammable rod (short piece of rebar with a heavy glove works well), soak the cloth in kerosene, and ignite it in a safe area far from any flammable material. Have all the plates nearby and readily accessible before beginning this process. Hold the torch closely underneath a track plate and move the torch around until the entire area to be sooted has a sufficient layer of soot. It is easiest if the plate can be laid flat on a sturdy object, such as a metal garbage can, leaving the area of the plate to be sooted overhanging the edge of the support object. It is helpful to place a weight on the non-sooted end to hold the plate in place.

Identify the location(s) where the assemblies will be deployed, assuring they are in inconspicuous locations with low potential for being disturbed. If dens, feeding areas or travel routes have been previously identified, it is good practice to locate a track plate assembly nearby. Place each track plate box with one open end directly against a tree or other solid object, and cover it with heavy branches or other material to provide some degree of camouflage and to help secure the assembly in place. Secure an open can of wet cat food bait at the non-sooted end of the plate using the duct tape, and insert the plate into the box with the baited end towards the back. If available, liquid from the cat food can be applied to adjacent vegetation to enhance the range of the bait. Suspend a pie plate nearby to provide a visual lure.

Track plate surveys should be conducted for two weeks. Check each station every two days, and replace the track plate with a fresh plate and bait. Be extremely careful to not smudge or otherwise disturb any tracks that may have been left on the old plate and contact paper. As soon as possible, remove the contact paper, label with the date and location ID and place it in a protective plastic sleeve. If warranted, tracks can also be lifted from the sooted portion of the plate, by carefully applying packing tape over each track, then lifting the tape and transferring it to a white piece of paper, and label accordingly. Identify tracks in the lab using measurements, guides, experts and/or other sources.

Prepared by: Sean Sweeney

Approved by: _____ 6/13/16

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North Idaho Field Office (NIFO)
Standard Operating Procedure (SOP)

NIFO 2017.1033 Procedures for the Collection of Bumble Bees

Prepared: 07/14/2017

I. General.

This protocol outlines bumble bee sampling techniques used to identify and monitor species presence/absence of bumblebees. General procedures follow recommendations provided in the USFWS Survey Protocols for the Rusty Patched Bumble Bee (*Bombus affinis*) (USFWS 2017) and the National Protocol Framework for the Inventory and Monitoring of Bees (Droege 2016).

II. Equipment

Aerial insect hand net
: Use cloth or polyester aerial hand nets. Do not use sweep, beater, or wire nets. Netting should be fairly transparent.

Clear lidded jars (or vials or baggies) - 100-230 mL size work best
: If using vials, make sure vials allow for clear photographing of specimens inside (test before you go into the field). If using plastic bags, bring extra bags in case moisture builds up or bags get wet. There will be sufficient air in any of these containers while taking photographs.

Cooler with ice
Camera
GPS unit
Data sheets
Pencils
Timer or stopwatch
Hand lens or loupe
Field guides
Permits, if applicable

III. Procedure

A. Sampling should occur between early June and mid-August for the highest detection probability. Surveys should be conducted at least two hours after sunrise and three hours before sunset. Optimal weather conditions are when temperatures are above 60°F (15.5°C) and not during wet conditions. If necessary, wait at least one hour after rain subsides. Sunny days with low wind speeds are optimal, but surveys may still be conducted during partially cloudy or overcast days, as long as shadows are present.

B. Start your timer when you begin surveying. Collect bumblebees directly from flowers, either with a net or by collecting them directly into a jar/vile (see *Netting Techniques* below). Once the bee is captured in the net, bunch the net together in one hand to prevent escape, and carefully move the bee from the net to a clear vial, jar, or plastic bag.

   Pause your timer while you are not actively searching for bees (e.g., while you are putting bees in your cooler, walking between habitat patches, or taking photographs).

C. Do not hold a bee in a container for longer than 15 minutes, or no longer than five minutes if the air temperature is above 90°F (32°C), unless you place it in a cooler with ice to later identify and photograph the bee. Do not hold bees in a cooler with ice for more than two hours and do not place bees directly onto ice. Bumble bees can easily overheat, so do not keep vials/bags in direct sunlight. Keep the bees in the shade, if possible.

D. If possible, identify bee while in the field, and record relevant data on datasheet. Photograph each bumble bee before releasing (see *Photographs* below).

E. Release bumble bees back on or near flowers from which they were found. If you held bees in a cooler with ice, first transfer bees to a warm container after being in the cooler (the original container will fog up when it hits the warm humid air). Place the open vials (or bags) in a shaded area to allow the bee time to warm up and fly away.

IV. Netting technique

Always hold the net in a "swing-ready" position. One hand should be below the head and the other towards the back or middle of the pole, with the rearward end being held higher than the net end. Hold the end (tip) of the net lightly against the pole with the hand nearest the head so that it does not drag on the ground or in vegetation. Drop the tip of the net as you start your swing. For example a right handed netter usually holds the pole towards the middle or just above the bottom with their dominant sweeping hand (or right hand); while the left hand lightly holds the tip of the net against the pole just below the head (or net end) – ready to release it quickly.

When swinging a net, speed is important as well as follow-through. Bees are very visual and very fast. If you are timid in your swing or cut your swing short bees will evade the net. Center your net on the bee if at all possible even if it means having to plow through some vegetation. When a bumble bee is flying low to the ground, it is better to slap the net over the bee and onto the ground, and quickly lift the tip or end of the net bag up while keeping the rim of the net on the ground. The bumble bee will instinctively fly upwards rather than trying to sneak under the rim. Often this can take several seconds, so patience should be applied.

When looking at a clump of flowers that could contain bees, stand 4 to 8 feet away and try not to let your shadow fall across the flowers, which can scare away some of the bees you are interested in. In this way you can view a large area of flowers, spot a bumble bee, and lean or take one step forward to capture that bee in your net. If you have to take two steps or more, you are too far away.

Once a bumble bee has been targeted for capture, approach with the net in the "swing-ready" position. Let go of the tip of the net being held in your forward hand while you simultaneously snap the net through the target area. Swing the net rapidly in a figure eight motion for a few seconds to ensure the bumble bee falls to the bottom of the net. Quickly gather the net together in one hand to prevent the bumble bee from escaping, and then work a collection jar down into the net and allow the bumble bee to enter the jar, then slip the lid or cover onto the container.

A brief video demonstration of this technique can be found here:

https://www.youtube.com/watch?v=SwYbv5bySPQ

V. Photographs

Take several photographs of each specimen, and make note of the photo numbers corresponding to each specimen. Representative photographs of each bumble bee species in each sampling location are highly preferred.

If using a jar to hold the bumble bee, carefully remove the lid and cover the jar with the lens of the camera, and take as many photos of the bumble bee from the top as necessary. This allows at least one unobstructed view of the specimen. Photos from the top of the thorax, the front and side of the face, side of thorax, and top of the abdomen should be taken as well, if possible. These views will likely need to be photographed through the wall of the jar. It may be easier to obtain these photos if the bumble bee has been chilled and is not active inside the jar. Hair color patterns can vary with lighting, so examine the photos to ensure that coloration is clear and shadows are not creating deceptive color patterns. If necessary, record the GPS location with each associated photo or collection point.

VI. References

Droege, S, JD Engler, E Sellers and LE O'Brien. 2016. U.S. National Protocol Framework for the Inventory and Monitoring of Bees. Inventory and Monitoring, National Wildlife Refuge System, U.S. Fish and Wildlife Service, Fort Collins, CO.

USFWS. 2017. Survey Protocols for the Rusty Patched Bumble Bee (*Bombus affinis*). Version 1.2, June 6, 2017. U.S. Fish and Wildlife Service, Bloomington, MN.

Prepared by: Sean Sweeney

Approved by: 7/14/17

Toni Davidson Date
Resource Contaminant Specialist
Northern Idaho Field Office

Appendix B: Bird Species by Survey Area

(List derived from Idaho Department of Fish & Game's species catalog (IDFG 2017) and the Farragut WMA Management Plan (IDFG 2014))

Birds- Observed (bold) and Potentially at Installation

Common Name	Scientific Name	Documented (# surveys where species was observed)					Native	Presence	Conservation Rank
		RSF	Facility	Lake	Wigwam	Outpost			
American coot	***Fulica americana***		1	1			Yes	Year-round	S4B,S4N/G5
American crow	***Corvus brachyrhynchos***	3	4	1			Yes	Year-round	S5/G5
American goldfinch	*Spinus tristis*						Yes	Year-round	S5/G5
American kestrel	*Falco sparverius*						Yes	Year-round	S4/G5
American robin	***Turdus migratorius***	7	3				Yes	Year-round	S5/G5
Audubon's warbler	***Setophaga auduboni***	5			4	3	Yes	Summer	S5/G5
Bald eagle	***Haliaeetus leucocephalus***		1	3	2	1	Yes	Year-round	S5/G5
Barn swallow	***Hirundo rustica***		4	1	1	4	Yes	Summer	S5B/G5
Barred owl	*Strix varia*						Yes	Year-round	S4/G5
Barrow's goldeneye	***Bucephala islandica***		1	1			Yes	Year-round	S3B,S3N/G5
Belted kingfisher	***Megaceryle alcyon***	1	4				Yes	Year-round	S4/G5
Black-billed magpie	*Pica hudsonia*						Yes	Year-round	S5/G5
Black-capped chickadee	***Poecile atricapillus***	9	6		2	4	Yes	Year-round	S4/G5
Black-chinned hummingbird	*Archilochus alexandri*						Yes	Summer	S5B/G5
Black-headed grosbeak	***Pheucticus melanocephalus***	2	1			1	Yes	Summer	S5B/G5
Brewer's blackbird	*Euphagus cyanocephalus*						Yes	Year-round	S4/G5
Brown creeper	*Certhia americana*						Yes	Year-round	S4/G5
Brown-headed cowbird	***Molothrus ater***	3	1				Yes	Summer	S5B/G5
Bufflehead	***Bucephala albeola***		1	2	1		Yes	Year-round	S1B,S1N/G5
California gull	***Larus californicus***		2	1		1	Yes	Winter	S3B,S2N/G5

Birds- Observed (bold) and Potentially at Installation

Common Name	Scientific Name	Documented (# surveys where species was observed)					Native	Presence	Conservation Rank
		RSF	Facility	Lake	Wigwam	Outpost			
California quail	***Callipepla californica***	1					No	Year-round	SNA/G5
Calliope hummingbird	***Stellula calliope***	2	1				Yes	Summer	S4B/G5
Canada goose	***Branta canadensis***	1	4	4	1		Yes	Year-round	S5B,S5N/G5
Cassin's vireo	***Vireo cassinii***					1	Yes	Summer	S5/G5
Cedar waxwing	***Bombycilla cedrorum***	2	2			1	Yes	Year-round	S5/G5
Chestnut-backed chickadee	***Poecile rufescens***	3	2				Yes	Year-round	S5/G5
Chipping sparrow	***Spizella passerina***	2					Yes	Summer	S5B/G5
Cliff swallow	***Petrochelidon pyrrhonota***		3				Yes	Summer	S5B/G5
Common goldeneye	***Bucephala clangula***			2			Yes	Year-round	S5B,S5N/G5
Common loon	***Gavia immer***				1		Yes	Summer	S1B,S2N/G5
Common merganser	***Mergus merganser***			4	1		Yes	Year-round	S3/G5
Common raven	***Corvus corax***	4			1	1	Yes	Year-round	S5/G5
Common yellowthroat	***Geothlypis trichas***		1				Yes	Summer	S5B/G5
Cooper's hawk	*Accipiter cooperii*						Yes	Year-round	S4/G5
Dark-eyed junco	***Junco hyemalis***	8	2		2		Yes	Year-round	S5/G5
Downy woodpecker	*Picoides pubescens*						Yes	Year-round	S4/G5
Dusky flycatcher	***Empidonax oberholseri***					1	Yes	Summer	S4B/G5
Eastern kingbird	***Tyrannus tyrannus***	1					Yes	Summer	S5B/G5
European starling	***Sturnus vulgaris***		3				No	Year-round	SNA/G5
Evening grosbeak	***Hesperiphona vespertina***	1				1	Yes	Year-round	S4/G5
Flammulated owl	*Otus flammeolus*						Yes	Summer	S3B/G4
Golden-crowned kinglet	***Regulus satrapa***	9	3		3		Yes	Year-round	S5/G5
Gray catbird	***Dumetella carolinensis***	3	3				Yes	Summer	S5B/G5

Birds- Observed (bold) and Potentially at Installation

Common Name	Scientific Name	Documented (# surveys where species was observed)					Native	Presence	Conservation Rank
		RSF	Facility	Lake	Wigwam	Outpost			
Gray jay	*Perisoreus canadensis*						Yes	Year-round	S2/G5
Great horned owl	*Bubo virginianus*						Yes	Year-round	S5/G5
Hairy woodpecker	***Picoides villosus***	1					Yes	Year-round	S4/G5
Hammond's flycatcher	***Empidonax hammondii***	3				2	Yes	Summer	S5B/G5
Harlequin duck	***Histrionicus histrionicus***			1			Yes	Summer	S1B/G4
Herring gull	***Larus argentatus***		1	1			Yes	Non-breeding	S2N/G5
Horned grebe	***Podiceps auritus***		2	2	1		Yes	Winter	S2N/G5
House finch	***Carpodacus mexicanus***	1	2				Yes	Year-round	S4/G5
House wren	*Troglodytes aedon*						Yes	Summer	S4B/G5
Killdeer	*Charadrius vociferus*						Yes	Summer	S4B,S4N/G5
MacGillivray's warbler	***Geothlypis tolmiei***			1	1	1	Yes	Summer	S5B/G5
Mallard	***Anas platyrhynchos***		3	3			Yes	Year-round	S4B,S4N/G5
Mountain bluebird	*Sialia currucoides*						Yes	Summer	S5B/G5
Mountain chickadee	***Poecile gambeli***	2	2				Yes	Year-round	S4/G5
Mourning dove	*Zenaida macroura*						Yes	Year-round	S5/G5
N. rough-winged swallow	***Stelgidopteryx serripennis***	1	2				Yes	Summer	S4B/G5
Nashville warbler	***Leiothlypis ruficapilla***	3	2		3	4	Yes	Summer	S4B/G5
Northern flicker	***Colaptes auratus***	5	3		2		Yes	Year-round	S5/G5
Northern goshawk	*Accipiter gentilis*						Yes	Year-round	S3/G5
Northern pygmy owl	*Glaucidium gnoma*						Yes	Year-round	S3/G4G5
Northern saw-whet owl	*Aegolius acadicus*						Yes	Year-round	S4/G5
Olive-sided flycatcher	*Contopus cooperi*						Yes	Summer	S3B/G4
Orange-crowned warbler	***Leiothlypis celata***	3				1	Yes	Summer	S4B/G5

Birds- Observed (bold) and Potentially at Installation

Common Name	Scientific Name	Documented (# surveys where species was observed)					Native	Presence	Conservation Rank
		RSF	Facility	Lake	Wigwam	Outpost			
Osprey	***Pandion haliaetus***	1	2	3		1	Yes	Summer	S4B/G5
Pacific wren	***Troglodytes pacificus***	1			3		Yes	Year-round	S5/G5
Pileated woodpecker	***Dryocopus pileatus***				1		Yes	Year-round	S4/G5
Pine grosbeak	*Pinicola enucleator*						Yes	Year-round	S4/G5
Pine siskin	***Carduelis pinus***	7	4		2	2	Yes	Year-round	S4/G5
Pygmy nuthatch	*Sitta pygmaea*						Yes	Year-round	S4/G5
Red crossbill	***Loxia curvirostra***	7	1			1	Yes	Year-round	S4/G5
Red-breasted nuthatch	***Sitta canadensis***	9	3		2	1	Yes	Year-round	S4/G5
Red-eyed vireo	***Vireo olivaceus***	2					Yes	Summer	S4B/G5
Red-necked grebe	***Podiceps grisegena***			1	1		Yes	Summer	S2B/G5
Red-tailed hawk	***Buteo jamaicensis***					2	Yes	Year-round	S4/G5
Ring-billed gull	***Larus delawarensis***	1	2	3		1	Yes	Winter	S2B,S2N/G5
Ruby-crowned kinglet	*Regulus calendula*						Yes	Year-round	S4/G5
Ruffed grouse	*Bonasa umbellus*						Yes	Year-round	S4/G5
Sharp-shinned hawk	***Accipiter striatus***		2				Yes	Year-round	S4/G5
Song sparrow	***Melospiza melodia***	6	8		1	4	Yes	Year-round	S5/G5
Spotted sandpiper	***Actitis macularius***		1		4	3	Yes	Summer	S3B/G5
Spotted towhee	***Pipilo maculatus***					3	Yes	Summer	S4/G5
Steller's jay	*Cyanocitta stelleri*						Yes	Year-round	S5/G5
Swainson's thrush	***Catharus ustulatus***	4	3		4	3	Yes	Summer	S5B/G5
Townsend's solitaire	*Myadestes townsendi*						Yes	Year-round	S5/G5
Townsend's warbler	***Setophaga townsendi***	2			1	1	Yes	Summer	S5B/G5
Tree swallow	***Tachycineta bicolor***	2	4	1			Yes	Summer	S5B/G5

Birds- Observed (bold) and Potentially at Installation

Common Name	Scientific Name	Documented (# surveys where species was observed)					Native	Presence	Conservation Rank
		RSF	Facility	Lake	Wigwam	Outpost			
Turkey vulture	***Cathartes aura***	2	1				Yes	Summer	S5B/G5
Varied thrush	*Ixoreus naevius*						Yes	Year-round	S4/G5
Violet-green swallow	***Tachycineta thalassina***	2	5			2	Yes	Summer	S5B/G5
Warbling vireo	***Vireo gilvus***	3	2		2	1	Yes	Summer	S5B/G5
Western bluebird	*Sialia mexicana*						Yes	Summer	S3B/G5
Western flycatcher	***Empidonax difficilis/occid.***	4	4		4	4	Yes	Summer	S5B/G5
Western grebe	***Aechmophorus occidentalis***		1	1			Yes	Summer	S2B/G5
Western meadowlark	*Sturnella neglecta*						Yes	Summer	S5B/G5
Western tanager	***Piranga ludoviciana***	3	2		2	3	Yes	Summer	S5B/G5
Western wood-peewee	***Contopus sordidulus***	1			1		Yes	Summer	S5B/G5
White-breasted nuthatch	*Sitta carolinensis*						Yes	Year-round	S4/G5
White-crowned sparrow	*Zonotrichia leucophrys*						Yes	Summer	S5/G5
Willow flycatcher	***Empidonax traillii***	1					Yes	Summer	S4B/G5
Wild turkey	*Meleagris gallopavo*						No	Year-round	SNA/G5
Wilson's warbler	***Cardellina pusilla***				1		Yes	Summer	S4B/G5
Yellow warbler	***Setophaga petechia***	2	1			3	Yes	Summer	S5B/G5

***Species Conservation Ranks:** Obtained from IDFG's Idaho Species website (https://idfg.idaho.gov/species/taxa/ranks), using the ranking system developed by the NatureServe network (http://www.natureserve.org/conservation-tools/conservation-status-assessment). Ranking primarily based on the number of known occurrences of individual species.
G = Global rank indicator; denotes rank based on rangewide status. **S** = State rank indicator; denotes rank based on status within Idaho.
1 = Critically imperiled-extreme rarity or some factor of its biology makes it especially vulnerable to extinction (typically 5 or fewer occurrences); **2** = Imperiled-rarity or other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences); **3** = Rare or uncommon but not imperiled (typically 21 to 100 occurrences); **4** = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences); **5** = Demonstrably widespread, abundant, and secure.
NA = Conservation status rank is not applicable.
State Ranks Specific to Long Distance Migrants (Bats and Birds): B = Breeding population; **N** = Non-breeding population.

Appendix C: Plant Species by Survey Area

Remote Storage Facility-Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 21-22, November 8, 2016

	Scientific Name	Common Name	Taxa	Native	Invasive	Noxious
Upper Story	*Pseudotsuga menziesii*	Douglas-fir	tree	X		
	Abies grandis	grand fir	tree	X		
	Larix occidentalis	western larch	tree	X		
	Arceuthobium campylopodum	western dwarf mistletoe	shrub	X	X	
Mid Story	*Populus trichocarpa*	black cottonwood	tree	X		
	Abies grandis	grand fir	tree	X		
	Populus tremuloides	quaking aspen	tree	X		
	Acer glabrum	Rocky Mountain maple	shrub	X		
Understory	*Pseudotsuga menziesii*	Douglas-fir	tree	X		
	Holodiscus discolor	oceanspray	shrub	X		
	Cornus sericea	redosier dogwood	shrub	X		
	Ceanothus sanguineus	redstem ceanothus	shrub	X		
	Acer glabrum	Rocky Mountain maple	shrub	X		
	Salix scouleriana	Scouler's willow	shrub	X		
	Amelanchier alnifolia	serviceberry	shrub	X		
	Salix sitchensis	sitka willow	shrub	X		
	Rubus parviflorus	thimbleberry	shrub	X		
	Spiraea betulifolia	white spirea	shrub	X		
	Salix sp.	willow (general)	shrub	X		
	Hieracium albiflorum	white hawkweed	forb	X		
	Hieracium glomeratum	yellow devil hawkweed	forb		X	X
Groundcover	*Rosa nutkana*	nootka rose	shrub	X		
	Holodiscus discolor	oceanspray	shrub	X		
	Berberis aquifolium	Oregon-grape	shrub	X		
	Rubus idaeus	red raspberry	shrub	X		
	Shepherdia canadensis	russet buffaloberry	shrub	X		

Remote Storage Facility-Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 21-22, November 8, 2016

Scientific Name	Common Name	Taxa	Native	Invasive	Noxious
Amelanchier alnifolia	serviceberry	shrub	X		
Symphoricarpos albus	snowberry	shrub	X		
Medicago sativa	alfalfa	forb		X	
Medicago lupulina	black medic	forb			
Viola adunca	blue violet	forb	X		
Pteridium aquilinum	brackenfern	forb	X		
Cirsium arvense	Canada thistle	forb		X	X
Streptopus amplexifolius	clasping twisted-stalk	forb	X		
Achillea millefolium	common yarrow	forb	X		
Taraxacum officinale	dandelion	forb			
Lathyrus latifolius	everlasting peavine	forb			
Maianthemum stellatum	false Solomon's seal	forb	X		
Chamerion angustifolium	fireweed	forb	X		
Galium triflorum	fragrant bedstraw	forb	X		
Claytonia perfoliata	miner's lettuce	forb	X		
Polystichum lonchitis	northern hollyfern	forb	X		
Hieracium aurantiacum	orange hawkweed	forb		X	X
Leucanthemum vulgare	oxeye daisy	forb		X	X
Adenocaulon bicolor	pathfinder	forb	X		
Anaphalis margaritacea	pearly everlasting	forb	X		
Viola glabella	pioneer violet	forb	X		
Anemone piperi	Piper's anemone	forb	X		
Antennaria sp.	pussytoes (general)	forb	X		
Trifolium arvense	rabbit-foot clover	forb			
Chondrilla juncea	rush skeletonweed	forb		X	X
Prunella vulgaris	self-heal	forb	X		
Mitella stauropetala	smallflower miterwort	forb	X		
Hypericum perforatum	St. John's wort	forb			

Remote Storage Facility-Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 21-22, November 8, 2016

Scientific Name	**Common Name**	**Taxa**	**Native**	**Invasive**	**Noxious**
Corallorrhiza striata	stiped coralroot	forb	X		
Osmorhiza berteroi	sweet-cicely	forb	X		
Senecio jacobaea	tansy ragwort	forb		X	X
Linnaea borealis	twinflower	forb	X		
Clematis occidentalis	western blue virginsbower	forb	X		
Thalictrum occidentale	western meadow-rue	forb	X		
Platanthera dilatata	white bog orchid	forb	X		
Fragaria virginiana	wild strawberry	forb	X		
Hieracium caespitosum	yellow hawkweed	forb		X	X
Tragopogon dubius	yellow salsify	forb			
Phleum pratense	common timothy	grass			
Festuca idahoensis	Idaho fescue	grass	X		
Poa pratensis	Kentucky blue grass	grass	X		
Dactylis glomerata	orchard grass	grass			
Calamagrostis purpurascens	purple reedgrass	grass	X		
Festuca rubra	red fescue	grass	X		
Cladonia spp.	club lichen	non-vascular	X		
Rhytidiadelphus loreus	goose neck moss	non-vascular	X		
Parmelia sulcata	powdered shield lichen	non-vascular	X		
Hylocomium splendens	splendid feather moss	non-vascular	X		
unknown moss 1	unknown moss 1	non-vascular	X		
unknown moss 2	unknown moss 2	non-vascular	X		
Alectoria sarmentosa	witch's hair lichen	non-vascular	X		

Buffer- Plant Species Observed

Habitat Type: Dense Wet Conifer

Survey Dates: June 21, 2016

	Scientific Name	**Common Name**	**Taxa**	**Native**	**Invasive**	**Noxious**	**Control**
Upper Story	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Abies grandis	grand fir	tree	X			
	Tsuga heterophylla	western hemlock	tree	X			
	Larix occidentalis	western larch	tree	X			
	Thuja plicata	western red cedar	tree	X			
Mid Story	*Malus domesticus*	apple	tree				
	Pseudotsuga menziesii	Douglas-fir	tree	X			
	Abies grandis	grand fir	tree	X			
	Thuja plicata	western red cedar	tree	X			
	Acer glabrum	Rocky Mountain maple	shrub	X			
Understory	*Crataegus douglasii*	black hawthorn	shrub	X			
	Rhamnus purshiana	Cascara buckthorn	shrub	X			
	Physocarpus malvaceus	mallow ninebark	shrub	X			
	Holodiscus discolor	oceanspray	shrub	X			
	Cornus sericea	redosier dogwood	shrub	X			
	Shepherdia canadensis	russet buffaloberry	shrub	X			
	Amelanchier alnifolia	serviceberry	shrub	X			
	Symphoricarpos albus	snowberry	shrub	X			
	Philadelphus lewisii	syringa (mockorange)	shrub	X			
	Salix sp.	willow (general)	shrub	X			
Groundcover	*Rosa nutkana*	nootka rose	shrub	X			
	Holodiscus discolor	oceanspray	shrub	X			
	Lonicera ciliosa	orange honeysuckle	shrub	X			
	Berberis aquifolium	Oregon-grape	shrub	X			
	Rosa acicularis	prickly rose	shrub	X			
	Rubus parviflorus	thimbleberry	shrub	X			

Buffer- Plant Species Observed

Habitat Type: Dense Wet Conifer

Survey Dates: June 21, 2016

Scientific Name	**Common Name**	**Taxa**	**Native**	**Invasive**	**Noxious**	**Control**
Spiraea betulifolia	white spirea	shrub	X			
Vicia americana	American vetch	forb	X			
Streptopus amplexifolius	clasping twisted-stalk	forb	X			
Plantago major	common plantain	forb				
Tanacetum vulgare	common tansy	forb				
Lathyrus latifolius	everlasting peavine	forb				
Chamerion angustifolium	fireweed	forb	X			
Trifolium pratense	red clover	forb	X			
Heuchera cylindrica	round-leaved alumroot	forb	X			
Veronica serpyllifolia	thymeleaf speedwell	forb	X			
Fragaria virginiana	wild strawberry	forb	X			
Festuca idahoensis	Idaho fescue	grass	X			

Facility-Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 21, November 8, 2016

	Scientific Name	**Common Name**	**Taxa**	**Native**	**Invasive**	**Noxious**	**Control**
Upper Story	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Abies grandis	grand fir	tree	X			
	Pinus ponderosa	ponderosa pine	tree	X			
	Larix occidentalis	western larch	tree	X			
Mid Story	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Pinus contorta	lodgepole pine	tree	X			
	Pinus ponderosa	ponderosa pine	tree	X			
	Pinus monticola	western white pine	tree	X			
Understory	*Populus trichocarpa*	black cottonwood	tree	X			
	Larix occidentalis	western larch	tree	X			
	Crataegus douglasii	black hawthorn	shrub	X			
	Sambucus nigra ssp. cerulea	blue elderberry	shrub	X			
	Holodiscus discolor	oceanspray	shrub	X			
	Rosa sp.	ornamental rose	shrub				
	Physocarpus capitatus	Pacific ninebark	shrub	X			
	Acer glabrum	Rocky Mountain maple	shrub	X			
	Sorbus sitchensis	western mountain-ash	shrub	X			
	Verbascum thapsus	mullein	forb				
Groundcover	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Abies grandis	grand fir	tree	X			
	Pinus monticola	western white pine	tree	X			
	Spiraea douglasii	Douglas spirea	shrub	X			
	Berberis aquifolium	Oregon-grape	shrub	X			
	Ceanothus sanguineus	redstem ceanothus	shrub	X			
	Amelanchier alnifolia	serviceberry	shrub	X			
	Vicia americana	American vetch	forb	X			

Facility-Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 21, November 8, 2016

Scientific Name	Common Name	Taxa	Native	Invasive	Noxious	Control
Sonchus oleraceus	annual sowthistle	forb		X		
Medicago lupulina	black medic	forb				
Cirsium arvense	Canada thistle	forb		X	X	Contain
Plantago major	common plantain	forb				
Achillea millefolium	common yarrow	forb	X			
Linaria dalmatica	Dalmation toadflax	forb		X	X	Contain
Lathyrus latifolius	everlasting peavine	forb				
Collomia linearis	narrow-leaved collomia	forb	X			
Leucanthemum vulgare	oxeye daisy	forb		X	X	Contain
Trifolium arvense	rabbit-foot clover	forb				
Trifolium pratense	red clover	forb	X			
Erodium cicutarium	redstem stork's bill	forb	X			
Parthenocissus quinquefolia	Virginia creeper	forb				
Fragaria virginiana	wild strawberry	forb	X			
Ceratodon purpureus	ceratodon moss	non-vascular	X			
Polytrichum juniperinum	juniper haircap moss	non-vascular	X			
Tortula ruralis	tortula moss	non-vascular	X			

Wigwam- Plant Species Observed

Habitat Type: Dense Dry Conifer

Survey Dates: June 30, August 12, 2016

	Scientific Name	Common Name	Taxa	Native	Invasive	Noxious	Control
Upper Story	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Pinus ponderosa	ponderosa pine	tree	X			
Mid Story	*Populus trichocarpa*	black cottonwood	tree	X			
	Pseudotsuga menziesii	Douglas-fir	tree	X			
	Acer glabrum	Rocky Mountain maple	shrub	X			
Understory	*Pseudotsuga menziesii*	Douglas-fir	tree	X			
	Abies grandis	grand fir	tree	X			
	Holodiscus discolor	oceanspray	shrub	X			
	Rubus idaeus	red raspberry	shrub	X			
	Amelanchier alnifolia	serviceberry	shrub	X			
	Philadelphus lewisii	syringa (mockorange)	shrub	X			
	Salix sp.	willow (general)	shrub	X			
Groundcover	*Populus trichocarpa*	black cottonwood	tree	X			
	Berberis aquifolium	Oregon-grape	shrub	X			
	Symphoricarpos albus	snowberry	shrub	X			
	Rubus parviflorus	thimbleberry	shrub	X			
	Toxicodendron rydbergii	western poison ivy	shrub	X			
	Sonchus oleraceus	annual sowthistle	forb		X		
	Pteridium aquilinum	brackenfern	forb	X			
	Castilleja miniata	common red paintbrush	forb	X			
	Tanacetum vulgare	common tansy	forb				
	Achillea millefolium	common yarrow	forb	X			
	Verbascum thapsus	mullein	forb				
	Heuchera cylindrica	round-leaved alumroot	forb	X			
	Phacelia hastata	silver-leaf scorpion-weed	forb	X			
	Centaurea stoebe ssp. micranthos	spotted knapweed	forb		X	X	Contain

Wigwam- Plant Species Observed

Habitat Type: Dense Dry Conifer
Survey Dates: June 30, August 12, 2016

Scientific Name	Common Name	Taxa	Native	Invasive	Noxious	Control
Hypericum perforatum	St. John's wort	forb				
Senecio jacobaea	tansy ragwort	forb		X	X	Contain
Fragaria virginiana	wild strawberry	forb	X			
Sedum stenopetalum	wormleaf stonecrop	forb	X			
Tragopogon dubius	yellow salsify	forb				
Bromus tectorum	cheatgrass	grass		X		

Outpost- Plant Species Observed

Habitat Type: Dense Dry Conifer
Survey Dates: June 30, 2016

	Scientific Name	Common Name	Taxa	Native	Invasive	Noxious	Control
Upper Story	*Populus trichocarpa*	black cottonwood	tree	X			
	Pseudotsuga menziesii	Douglas-fir	tree	X			
	Arceuthobium campylopodum	western dwarf mistletoe	shrub	X	X		
Mid Story	*Populus trichocarpa*	black cottonwood	tree	X			
	Pinus ponderosa	ponderosa pine	tree	X			
	Sambucus nigra ssp. cerulea	blue elderberry	shrub	X			
Understory	*Prunus emarginata*	bitter cherry	shrub	X			
	Sambucus nigra ssp. cerulea	blue elderberry	shrub	X			
	Rhamnus purshiana	Cascara buckthorn	shrub	X			
	Holodiscus discolor	oceanspray	shrub	X			
	Ceanothus sanguineus	redstem ceanothus	shrub	X			
	Acer glabrum	Rocky Mountain maple	shrub	X			
	Symphoricarpos albus	snowberry	shrub	X			
Groundcover	*Physocarpus malvaceus*	mallow ninebark	shrub	X			
	Rosa nutkana	nootka rose	shrub	X			
	Holodiscus discolor	oceanspray	shrub	X			

Outpost- Plant Species Observed

Habitat Type: Dense Dry Conifer
Survey Dates: June 30, 2016

Scientific Name	Common Name	Taxa	Native	Invasive	Noxious	Control
Rubus idaeus	red raspberry	shrub	X			
Rubus parviflorus	thimbleberry	shrub	X			
Tanacetum vulgare	common tansy	forb				
Achillea millefolium	common yarrow	forb	X			
Galium triflorum	fragrant bedstraw	forb	X			
Stellaria calycantha	northern starwort	forb	X			
Centaurea stoebe ssp. micranthos	spotted knapweed	forb		X	X	Contain
Hypericum perforatum	St. John's wort	forb				
Osmorhiza berteroi	sweet-cicely	forb	X			
Senecio jacobaea	tansy ragwort	forb		X	X	Contain
Viola sp.	violet (general)	forb	X			
Fragaria virginiana	wild strawberry	forb	X			
Tragopogon dubius	yellow salsify	forb				

Aquatic- Plant Species Observed

Habitat Type: Submerged aquatic
Survey Dates: November 8, 2016

Scientific Name	**Common Name**	**Taxa**	**Native**	**Invasive**	**Noxious**	**Control**
Elodea Canadensis	Canada waterweed	aquatic	X			
Myriophyllum spicatum	Eurasian watermilfoil	aquatic		X	X	Control
Chara spp.	muskgrass	aquatic	X			
Potamogeton richardsonii	Richardson's pondweed	aquatic	X			
Potamogeton gramineus	variableleaf pondweed	aquatic	X			
Ranunculus aquatilis	whitewater crowfoot	aquatic	X			

Appendix D: Invasive Plant Species- Installation

Yellow devil hawkweed (*Hieracium glomeratum*)

EDRR

Key Features: Basal rosette of narrow pointed leaves; top of leaf is smooth, while underside has bristly hairs, particularly along the mid-rib (see photo); single flowering stem up to 32 inches tall, covered with dark bristly hairs; flowers in mid to late spring
Reasons for Concern: All non-native hawkweeds are aggressive competitors of native vegetation. Yellow devil hawkweed is particularly concerning due to its allelopathic pollen; that is, pollen produced by this plant contains toxins that inhibit seed germination and seedling growth of surrounding native plants.

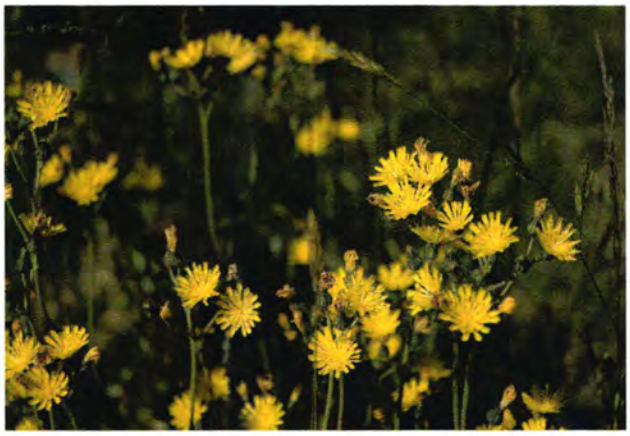

Photo Credits: Pierce Co., WA Noxious Weed Control Board

Orange hawkweed (*Hieracium aurantiacum*)
Yellow hawkweed (*H. caespitosum*)
CONTROL

Key Features: Basal rosette of narrow, pointed leaves, which may be smooth or bristly, but not wooly underneath; leaves contain a milky sap; leafless, stiffly hairy flowering stems up to 24 inches tall
Reasons for Concern: Hawkweeds are prolific seed producers, and are capable of hybridizing with native hawkweeds. They are aggressive competitors, particularly on poor acidic soils that are well drained and coarsely textured.

Pierce Co., WA Noxious Weed Control Board

Stock Photo

Rush skeletonweed (*Chondrilla juncea*)

CONTAIN

Key Features: Basal rosettes resemble dandelion; one or more flowering stems of which lower portion is covered in downward-pointing reddish, bristly hairs (upper portion non-hairy), up to 48 inches tall; stems and leaves exude milky sap; rosette leaves fall off during flowering stage yielding skeleton-like appearance of plant

Reasons for Concern: Roots grow up to 8 feet down, making it highly competitive with native plants and extremely difficult to remove.

Invasive Species Council of British Columbia

Eric Coombs, Oregon Dept. of Agriculture

Idaho Public Television

Canada thistle (*Cirsium arvense*)

CONTAIN

Key Features: Stems up to 48 inches tall; extensive, creeping root system; purple flowerheads are urn-shaped, often clustered on upper stems; dark green leaves deeply divided with spiny margins; hollow stems

Reasons for Concern: Once established, Canada thistle can spread quickly and aggressively and displace native vegetation. It reproduces by creeping roots (up to 20 feet across and 15 feet deep), root fragments, and by seed (up to 40,000 seeds per plant).

Stock Photo

Oregon State University

Purdue University

Oxeye daisy (*Leucanthemum vulgare*)

CONTAIN

Key Features: Glossy green leaves toothed and spatula-shaped, decreasing in size as they grow up the stem; solitary flower heads (1-1 1/2 inches wide) at end of branches composed of white ray and yellow disk petals; up to 36 inches tall

Reasons for Concern: Aggressive invader that forms dense populations and out-competes native vegetation.

Gavin Graham

Tansy ragwort (*Senecio jacobaea*)

CONTAIN

Key Features: Grows between 24 and 72 inches high; stout taproot up to 12 inches deep; upper stem highly branched bearing many yellow daisy-like flowers; each flower has 13 petals

Reasons for Concern: Very invasive and difficult to control. Tansy ragwort is **highly toxic** to livestock, deer and elk, and is a threat to human health through food chain contamination.

Leslie J. Mehrhoff, University of Connecticut

Stevens Co, WA, Noxious Weed Control Board

King Co., WA Noxious Weed Control Program

Eric Coombs, Oregon Dept. of Agriculture

Dalmatian toadflax (*Linaria dalmatica*)

CONTAIN

Key Features: Grows between 30 to 60 inches tall; thick, waxy, heart-shaped blueish-gray leaves that clasp stems; flowers resemble snapdragons; root system up to 72 inches deep and up to 10 feet wide

Reasons for Concern: This plant will aggressively out-compete native plants, and is toxic to livestock. It will hybridize with yellow toadflax, another invasive plants species that was not observed on the Bayview site, however is present in the region. Dalmatian toadflax is capable of producing up to 500,000 windborne seeds per plant.

King Co., WA Noxious Weed Control Program

Stock Photo

King Co., WA Noxious Weed Control Program

Spotted knapweed (*Centaurea stoebe ssp. micranthos*)

CONTAIN

Key Features: Grows up to 36 inches tall; leaves deeply lobed, not stalked; solitary flower heads at end of branches; bracts under flowers have comb-like fringe with black triangular tips, lending to spotted appearance; large, stout taproots

Reasons for Concern: Spotted knapweed is a very aggressive invasive plant, and is one of the most dominant weeds in the western US. It can infest large areas very quickly, and diminishes wildlife habitat and plant diversity, while increasing soil erosion and wildfire hazards. It also contains compounds (sesquiterpene lactones) that inhibit germination and root growth of nearby native plants.

Lincoln Co, WA, Weed and Pest

Sublette Co., WY, Weed and Pest District

Eurasian watermilfoil (*Myriophyllum spicatum*)
CONTROL

Key Features: Feather-like leaves arranged in whorls of four that tend to collapse around stem when removed from the water; small flowers on short, leafless red stems that appear above the water; grow in water up to 25 feet deep; reproduces by seed, roots, and fragments.

Reasons for Concern: Eurasian watermilfoil forms dense mats that exclude native vegetation, reduce available oxygen in the water, and can increase sedimentation rates. It is not considered a good food source for waterfowl. Dense mats near the surface can provide habitat for mosquitos. Eastern watermilfoil will impede boat movement and use, and can clog water intakes. The species is widely distributed and difficult to control.

Tip of the Mitt Watershed Council

Gordon Keyes

Flowering Rush (*Butomus umbellatus*)
CONTAINMENT

Key Features: Up to 5 feet tall, rush-like marsh plant, showy white or pale pink flowers in a large umbel, stems are triangular in cross-section, resembles a large sedge, emergent plant or submerged, buoyant rhizome fragments, grows along lake shores up to 20'-30' water depth.

Reasons for Concern: Displaces native riparian plants, source of plants/rhizomes/seeds is Clark Fork River, blocks canals and tributaries, fowls boat props, provides habitat for non-native predator fish, spreads by rhizomes and fragmentation of root system, ideal habitat for Great Pond Snails (host for swimmer's itch), control of established populations difficult and requires extensive physical/chemical methods of control.

Appendix E: Mammal Species – Installation

(List derived from Idaho Department of Fish & Game's species catalog (IDFG 2017) and the Farragut WMA Management Plan (IDFG 2014))

Mammals- Observed (bold) and Potentially at Installation

	Common Name	Scientific Name	Documented		Native	Conservation Rank*
			RSF	Incidental		Idaho/Global
Small	**Deer mouse**	***Peromyscus maniculatus***	X		Yes	S5/G5
	Vole spp. (meadow and red-backed)	***Microtus spp.***		X	Yes	S5/G5
	Masked shrew	*Sorex cinereus.*			Yes	S5/G5
	Red squirrel	***Tamiasciurus hudsonicus***		X	Yes	S5/G5
	Red-tailed chipmunk	*Tamias ruficaudus*			Yes	S4/G5
	Yellow-pine chipmunk	*Tamias amoenus*			Yes	S5/G5
	Northern flying squirrel	*Glaucomys sabrinus*			Yes	S4/G5
	Golden-mantled ground squirrel	*Callospermophilus lateralis*			Yes	S5/G5
	Columbian ground squirrel	*Urocitellus columbianus*			Yes	S5/G5
	Bushy-tailed woodrat	*Neotoma cinerea*			Yes	S5/G5
	Norway rat	*Rattus norvegicus*			No	SNA/G5
Medium	**Common raccoon**	***Procyon lotor***	X	X	Yes	S5/G5
	Striped skunk	***Mephitis mephitis***		X	Yes	S4/G5
	Mountain cottontail	***Sylvilagus nuttallii***		X	Yes	S4/G5
	Snowshoe hare	*Lepus americanus*			Yes	S3/G5
	North American porcupine	*Erethizon dorsatum*			Yes	S5/G5
	Northern river otter	***Lontra canadensis***		X	Yes	S4/G5
	American mink	*Vison vison*			Yes	S3/G5
	Pine Marten	*Martes americana*			Yes	S5/G5
	Ermine	*Mustela erminea*			Yes	S4/G5
	Long-tailed weasel	*Mustela frenata*			Yes	S5/G5
	Domestic cat	***Felis catus***	X		No	N/A
	Bobcat	*Lynx rufus*			Yes	S4/G5

Mammals- Observed (bold) and Potentially at Installation

	Common Name	Scientific Name	Documented			Native	Conservation Rank*
			RSF		Incidental		Idaho/Global
	Coyote	*Canis latrans*				Yes	S5/G5
	Red fox	*Vulpes vulpes*				Yes	S4/G5
Large	**White-tailed deer**	***Odocoileus virginianus***			X	Yes	S5/G5
	Mule deer	*Odocoileus hemionus*				Yes	S4/G5
	Elk	***Cervus canadensis***			X	Yes	S4/G5
	Moose	*Alces americanus*				Yes	S3/G5
	Black bear	***Ursus americanus***			X	Yes	S4/G5
	Mountain lion	*Puma concolor*				Yes	S5/G5
Bats			Facility	Wigwam			
	Townsend's Big-eared Bat	*Corynorhinus townsendii*				Yes	S3/G4
	Big Brown Bat	***Eptesicus fuscus***		X		Yes	S3/G5
	Silver-haired Bat	***Lasionycteris noctivagans***	X	X		Yes	S3/G3G4
	Hoary Bat	***Lasiurus cinereus***	X	X		Yes	S3/G3G4
	California Myotis	***Myotis californicus***	X	X		Yes	S3/G5
	Western Small-footed Myotis	***Myotis ciliolabrum***	X	X		Yes	S3/G5
	Long-eared Myotis	***Myotis evotis***	X	X		Yes	S3/G5
	Little Brown Myotis	***Myotis lucifugus***	X	X		Yes	S3/G3
	Fringed Myotis	***Myotis thysanodes***		X		Yes	S3/G4
	Long-legged Myotis	***Myotis volans***	?	?		Yes	S3/G4G5
	Yuma Myotis	***Myotis yumanensis***	X	X		Yes	S3/G5

***Species Conservation Ranks:** Obtained from IDFG's Idaho Species website (https://idfg.idaho.gov/species/taxa/ranks), using the ranking system developed by the NatureServe network (http://www.natureserve.org/conservation-tools/conservation-status-assessment). Ranking primarily based on the number of known occurrences of individual species.
G = Global rank indicator; denotes rank based on rangewide status. **S** = State rank indicator; denotes rank based on status within Idaho.
3 = Rare or uncommon but not imperiled (typically 21 to 100 occurrences); **4** = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences);
5 = Demonstrably widespread, abundant, and secure.
NA = Conservation status rank is not applicable.

Appendix F: Reptiles and Amphibians - Installation

(list derived from Idaho Department of Fish & Game's species catalog (IDFG 2017))

Herpetofauna- Potentially at Installation

	Common Name	*Scientific Name*	Native	Conservation Rank Idaho/Global
Reptiles	Northern alligator lizard	Elgaria coerulea	Yes	S4/G5
	Western skink	*Eumeces skiltonianus*	Yes	S4/G5
	Western (terrestrial) garter snake	*Thamnophis elegans*	Yes	S5/G5
	Common garter snake	*Thamnophis sirtalis*	Yes	S3/G5
	Rubber boa	*Charina bottae*	Yes	S5/G5
	Racer	*Coluber constrictor*	Yes	S5/G5
	Gophersnake	*Pituophis catenifer*	Yes	S5/G5
	Painted turtle	*Chrysemys picta*	Yes	S3/G5
	Red-eared slider (turtle)	*Trachemys scripta*	No	SNA/G5
	Snapping turtle	*Chelydra serpentine*	No	SNA/G5
Amphibians	Long-toed salamander	*Ambystoma macrodactylum*	Yes	S5/G5
	Idaho giant salamander	*Dicamptodon aterrimus*	Yes	S4/G3G4
	Coeur d'Alene salamander	*Plethodon idahoensis*	Yes	S3/G4
	Western toad	*Anaxyrus boreas*	Yes	S2/G4
	Columbia spotted frog	*Rana luteiventris*	Yes	S4/G4
	Sierran treefrog	*Pseudacris sierra*	Yes	S5/G5
	Pacific treefrog (chorus frog)	*Pseudacris regilla*	Yes	S?/G5
	Northern leopard frog	*Lithobates pipiens*	Yes	S2/G5
	American bullfrog	*Lithobates catesbeianus*	No	SNA/G5

***Species Conservation Ranks:** Obtained from IDFG's Idaho Species website (https://idfg.idaho.gov/species/taxa/ranks), using the ranking system developed by the NatureServe network (http://www.natureserve.org/conservation-tools/conservation-status-assessment). Ranking primarily based on the number of known occurrences of individual species.

G = Global rank indicator; denotes rank based on rangewide status. **S** = State rank indicator; denotes rank based on status within Idaho.

2 = Imperiled-rarity or other factors demonstrably make it very vulnerable to extinction (typically 6 to 20 occurrences); **3** = Rare or uncommon but not imperiled (typically 21 to 100 occurrences); **4** = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences); **5** = Demonstrably widespread, abundant, and secure.

NA = Conservation status rank is not applicable.

Appendix G: Fish Species - Lake Pend Oreille

Fishes- Known to Occur

Common Name	*Scientific Name*	Native	Conservation Rank
			Idaho/Global
Bull trout	*Salvelinus confluentus*	Yes	S4/G4
Lake trout	*Salvelinus namaycush*	No	SNA/G5
Kokanee	*Oncorhynchus nerka*	Yes	SNR/G5
Cutthroat trout	*Oncorhynchus clarki*	Yes	SNA/G4
Westslope cutthroat trout	*Oncorhynchus clarki lewisi*	Yes	S4/G4T4
Rainbow trout	*Oncorhynchus mykiss*	Yes	SNA/G5
Brown trout	*Salmo trutta*	No	SNA/G5
Mountain whitefish	*Prosopium williamsoni*	Yes	S5/G5
Yellow perch	*Perca flavescens*	No	SNA/G5
Smallmouth bass	*Micropterus dolomieu*	No	SNA/G5
Largemouth bass	*Micropterus salmoides*	No	SNA/G5
Walleye	*Sander vitreus*	No	SNA/G5
Northern pike	*Esox Lucius*	No	SNA/G5
Black crappie	*Pomoxis nigromaculatus*	No	SNA/G5
Bluegill/pumpkinseed/sunfish	*Lepomis spp.*	No	SNA/G5
Bullhead	*Ameiurus spp.*	No	SNA/G5
Sucker	*Catostomus spp.*	Yes	S4/G5
Sculpin	*Cottus spp.*	Yes	S3S4/G5
Northern pikeminnow	*Ptychocheilus oregonensis*	Yes	S4/G5
Longnose dace	*Rhinichthys cataractae*	Yes	S4/G5
Redside shiner	*Richardsonius balteatus*	Yes	S5/G5
Tench	*Tinca tinca*	No	SNA/G5

***Species Conservation Ranks:** Obtained from IDFG's Idaho Species website (https://idfg.idaho.gov/species/taxa/ranks), using the ranking system developed by the NatureServe network (http://www.natureserve.org/conservation-tools/conservation-status-assessment). Ranking primarily based on the number of known occurrences of individual species.

G = Global rank indicator; denotes rank based on rangewide status. **S** = State rank indicator; denotes rank based on status within Idaho. **T** = Trinomial rank indicator; denotes global status of infraspecific taxa (i.e. sub-species).

3 = Rare or uncommon but not imperiled (typically 21 to 100 occurrences); **4** = Not rare and apparently secure, but with cause for long-term concern (usually more than 100 occurrences); **5** = Demonstrably widespread, abundant, and secure.

NA = Conservation status rank is not applicable. **NR** = Not ranked.

Appendix H: Nesting Osprey Email to Navy from USFWS

DEPARTMENT OF THE INTERIOR Mail - osprey nests

Sweeney, Sean <sean_sweeney@fws.gov>

osprey nests

Sweeney, Sean <sean_sweeney@fws.gov> Fri, Jun 17, 2016 at 3:38 PM
To: steven.l.armstrong@navy.mil
Cc: Toni Davidson <toni_davidson@fws.gov>, Brittany Morlin <brittany_morlin@fws.gov>, "Wagoner, Linda J CIV NAVFAC NW, PRE41" <linda.wagoner@navy.mil>

Hi Steve,

Upon further investigation and review of the Migratory Bird Treaty Act (MBTA) federal code, we have determined that pursuant to 50 CFR §21.15 2007, the Armed Forces are indeed authorized to "take" migratory birds incidental to military readiness activities. Military readiness activities are defined as "all training and operations of the Armed Forces that relate to combat, and the adequate and realistic testing of military equipment, vehicles, weapons and sensors for proper operation and suitability for combat use," of which the necessary use of the maintenance barge would be considered. This rule was developed under Section 315 of the 2003 National Defense Authorization Act (Authorization Act), which required the Secretary of Interior to exercise their authority under Section 704(a) of the MBTA to prescribe regulations to exempt the Armed Forces for incidental take of migratory birds during military readiness activities.

As a condition of this authorization, under the authority of the MBTA and in accordance with Section 315 of the Authorization Act, the Armed Forces will consult with the U.S. Fish and Wildlife Service to identify measures to minimize and mitigate the adverse effects of authorized military readiness activities on migratory birds, and to identify techniques and protocols to monitor the impacts of such activities.

As we continue this consultation, no action is required at this time in regards to the active osprey nest at Bayview ARD and the associated use of the maintenance barge. The barge may be moved and/or operated as needed. In the instance that it is moved or operated, we request that the nest be monitored during and after the process so that we may assess the level of effect on the adult and juvenile osprey. We will coordinate with you at a later time to develop appropriate monitoring and mitigation measures, as this issue is likely to persist in the future.

Thank you for your patience and concern with this matter, and we look forward to working together to develop a mutually agreeable monitoring and mitigation plan. I have attached the federal register document that details this authorization. In the meantime, please feel free to contact me if you have any further concerns or comments.

Regards,

Sean Sweeney

50 CFR Part 21_MBTA_Armed Forces_take provisions.pdf
222K

Appendix I: Potential Invasive Species - Installation

(List formed from ISDA Invasive Species with known occurrences in Kootenai County and surrounding areas)

Plants
Flowering rush
Brazilian elodea
Phragmites (common reed)
Curleyleaf pondweed
Yellow flag iris
Yellow devil hawkweed
Policeman's helmet
Black henbane
Bohemian/giant/Japanese knotweeds
Common crupina
Musk thistle
Perennial sowthistle
Meadow knapweed
Scotch broom
Small/Viper's bugloss
Leafy spurge
Field bindweed
Hoary alyssum
Houndstongue
Jointed goatgrass
Perennial pepperweed
Puncturevine
Purple loosestrife
Saltcedar
Scotch thistle
White bryony (kudzu)
Whitetop
Yellow starthistle
Yellow toadflax

Herpetofauna
Bullfrogs
Rough skinned newt
Red-eared slider
Snapping turtle

Invertebrates
Zebra mussels
Quagga mussels
New Zealand mud snails
Asian clams
Crayfish spp. (red claw, yabby, marron, marbled, rusty)

APPENDIX D

ENVIRONMENTAL ASSESSMENT AND FONSI

FINAL

ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

for

ACOUSTIC RESEARCH DETACHMENT NAVAL SURFACE WARFARE CENTER BAYVIEW, IDAHO

Prepared for:

Naval Surface Warfare Center, Carderock Division

West Bethesda, MD

Prepared by:

Geo-Marine, Inc.

11846 Rock Landing Drive, Suite C

Newport News, Virginia

October 2003

ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR ACOUSTIC RESEARCH DETACHMENT NAVAL SURFACE WARFARE CENTER, BAYVIEW, IDAHO

FINAL

Prepared for:

Naval Surface Warfare Center, Carderock Division

West Bethesda, MD

Prepared by:

Geo-Marine, Inc.

Newport News, Virginia

October 2003

EXECUTIVE SUMMARY

ENVIRONMENTAL ASSESSMENT FOR DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR ACOUSTIC RESEARCH DETACHMENT NAVAL SURFACE WARFARE CENTER BAYVIEW, IDAHO

The U.S. Department of the Navy proposes to develop and implement an Integrated Natural Resources Management Plan (INRMP) for a 5-year period (2004-2008) on the Naval Surface Warfare Center's (NSWC) Acoustic Research Detachment in Bayview, Idaho (ARD Bayview). In accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] Parts 1500-1508, Section [§] 1502.13) and the statutory requirements under the Sikes Act Improvement Act (SAIA) of 1997 (U.S. Code [USC], Title 16, Conservation, § 670 (a) et seq.), this Environmental Assessment (EA) presents the potential environmental impacts that would result from the development and implementation of the proposed action.

ARD Bayview (38 acres) is located in Kootenai County and is bounded on the north and west by the town of Bayview, on the south by Farragut State Park, and Lake Pend Oreille on the east. The installation also maintains outlying parcels (approximately one acre each) on U.S. Forest Service (USFS) property that are operated under a Special Use Permit.

In preparing the INRMP, as required by the SAIA, ARD Bayview has worked in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Idaho Department of Fish and Game (IDFG) so that the plan reflects the mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources on the installation. Final agreement letters from USFWS and IDFG are included in Appendix B of the INRMP that accompanies this EA. Also, as required by the SAIA, the INRMP was provided for public comment and ARD Bayview has taken those comments into account in preparing the INRMP.

The proposed action is to modify the existing natural resources management plan and practices at ARD Bayview by implementing an ecosystem-based conservation program consistent with the military use of the property and the goals and objectives established in the SAIA. Ecosystem

management would include a shift from single species management to management of ecosystems, developing partnerships with stakeholders to achieve shared goals, public involvement in decision making, using the best scientific information available in decision making, and implementing adaptive management techniques.

This EA analyzes, evaluates, and compares three alternatives. Under the no action alternative (Alternative 1), ARD Bayview will continue implementation of the objectives and practices outlined in the 1997 natural resources plan. The proposed action (Alternative 2) is to implement an INRMP that emphasizes compliance and stewardship projects using an ecosystem management approach. Alternative 3 is to implement primarily activities necessary to achieve legal compliance with environmental laws and regulations (compliance only projects). The alternatives must integrate natural resources management with the installation's military use in a manner that ensures military preparedness and provides for sustainable multipurpose uses and conservation of the natural resources.

This EA presents a programmatic assessment of the environmental consequences of the alternatives. The intent of this EA is to evaluate the overall impacts of implementing the management approaches rather than individual projects discussed in the three alternatives. Ecological resources (soils, water, wetlands, wildlife, threatened and endangered species, and vegetation), cultural resources, air quality, and socioeconomics are evaluated in this EA.

The no action alternative (Alternative 1) does not meet SAIA requirements and does not effectively provide for integrated management planning because individual plans were prepared for natural resources components and site-specific management actions were not planned for all management concerns. Alternative 2 satisfies the requirements of the SAIA and INRMP objectives to support the military mission at ARD Bayview, sustain healthy ecosystems, and provide public access for outdoor recreational opportunities. Although consistent with the SAIA and INRMP requirements, Alternative 3 would restrict the ability to properly utilize natural resources on Navy-administered lands because no stewardship activities (or limited stewardship activities) would be implemented.

None of the activities currently being conducted at ARD Bayview or any of the project

recommendations in the proposed action or action alternative would result in significant

environmental impacts. The natural resources management actions listed under each alternative would be implemented in compliance with all applicable Navy regulations and federal, state, and local laws. The overall scope of this assessment includes natural resources management activities that protect and enhance soil and water resources through land management, including protection of urban forests and control of invasive species; fish and wildlife, including rare, threatened, and endangered species; and environmental education. These activities would provide long-term benefits to natural resources by maintaining ecosystem integrity for support of biological diversity; consequently, these activities would have very little potential for negative environmental impacts. Coordination with IDFG, USFWS, and USFS as primary stakeholders would ensure that implementation of the INRMP at ARD Bayview provides positive benefits for the protection and management of natural resources. In addition, implementing any of the alternatives analyzed in this EA would not result in adverse cumulative impacts to the resources evaluated when added to past, present, and reasonably foreseeable future actions.

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ACRONYMS AND ABBREVIATIONS

ARD	Acoustic Research Detachment
BA	Biological Assessment
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DoD	Department of Defense
EA	Environmental assessment
EFA	Engineering Field Activity
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
IDFG	Idaho Department of Fish and Game
INRMP	Integrated Natural Resources Management Plan
INST	Instruction
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities
NEPA	National Environmental Policy Act
NSWC	Naval Surface Warfare Center
OPNAVINST	Operational Naval Instruction
SAIA	Sikes Act Improvement Act
SHPO	State Historic Preservation Officer
R,T,&E	Rare, Threatened, and Endangered
USC	U.S. Code
USFWS	United States Fish and Wildlife Service

1.0 PURPOSE AND NEED

1.1 Introduction

In accordance with the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] Parts 1500-1508, Section [§] 1502.13) and the statutory requirements under the Sikes Act Improvement Act (SAIA) of 1997 (U.S. Code [USC], Title 16, Conservation, § 670 (a) et seq.), this chapter of the Environmental Assessment (EA) briefly specifies the purpose and need for the proposed action. The Navy proposes to develop and implement an Integrated Natural Resources Management Plan (INRMP) for Naval Surface Warfare Center's (NSWC) Acoustic Research Detachment located at Bayview, Idaho (ARD Bayview).

1.2 Purpose and Need for Action

The action is necessary to meet statutory requirements under the SAIA. In November 1997, the SAIA was amended to require the Secretary of the Department of Defense (DoD), to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the military to prepare and implement INRMPs for each military installation in the United States unless the absence of significant natural resources on a particular installation makes preparation of a plan for that installation inappropriate.

The principal use of military installations is to ensure the preparedness of the Armed Forces. The SAIA requires each installation to prepare an INRMP that provides for the following management activities, to the extent that such activities are consistent with use of the installation for military preparedness:

- Conservation and rehabilitation of natural resources on the installation;
- Sustainable multipurpose use of the resources, to include hunting, fishing, trapping, and nonconsumptive uses; and

- Subject to safety requirements and military security, public access to the installation to facilitate such uses.

As required by the SAIA, the INRMP must, to the extent appropriate and applicable, provide for:

- Fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation;
- Fish and wildlife habitat enhancement or modifications;
- Wetland protection, enhancement, and restoration, where necessary, for support of fish, wildlife, or plants;
- Integration of, and consistency among, the various activities conducted under the plan;
- Establishment of specific natural resources management goals and objectives and time frames for a proposed action;
- Sustainable use of natural resources by the public to the extent that the use is consistent with the needs of fish and wildlife resources;
- Public access to the military installation that is necessary or appropriate, subject to any requirements necessary to ensure safety and military security;
- Enforcement of applicable natural resource laws (including regulations);
- No net loss in the capability of the installation lands to support the military mission of the installation; and
- Such other activities as the Navy determines appropriate to implement natural resources management.

In preparing the INRMP, as required by the SAIA, ARD Bayview has worked in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Idaho Department of Fish and Game (IDFG) so that the plan will reflect the mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources on the installation. The USFWS commented that the threatened bald eagle (*Haliaeetus leucocephalus)* and the bull trout (*Salvelinus confluentus*) may occur in the vicinity of the project. The USFWS encouraged the preparation of a Biological Assessment (BA) for all major construction projects. Though no major construction projects are proposed, the potential impacts from proposed projects are

discussed in this EA. The IDFG identified additional species that may be present in the project area, including the gray wolf (*Canis lupus*), Canada lynx (*Lynx canadensis*), westslope cutthroat trout (*Oncorhyncus clarki lewisi*), and least bladdery milk vetch (*Astragalus microcystus*). The State of Idaho lists the least bladdery milk vetch as Critically Imperiled and the westslope cutthroat trout is a Species of Special Concern. These comments and responses are presented in Appendix B. Final agreement letters from USFWS and IDFG are also included in Appendix B. Also, as required by the SAIA, the INRMP has been provided for public comment and ARD Bayview has taken those comments into account in preparing the INRMP.

In addition to meeting the SAIA requirements, the INRMP is developed in accordance with the Environmental Conservation Program, DoD Instruction (INST) 4715.3 (DoD 1996) and Operating Naval Instruction (OPNAVINST) 5090.1B CH 3, Environmental and Natural Resources Program Manual (U.S. Department of the Navy 1999).

1.3 Description of the Proposed Action

The proposed action is to modify the existing natural resources management plan and practices at ARD Bayview by implementing an INRMP consistent with the military use of the property and the goals and objectives established in the SAIA. The goal of the INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner that is consistent with the military mission. The modified INRMP will integrate, coordinate and provide for all natural resources management activities, sustainable multipurpose uses and public access for use of natural resources. Implementation of this goal is subject to safety and military security considerations. The management objectives are to integrate fish and wildlife management, land management, and management for outdoor recreation opportunities, as practicable and consistent with the military mission and established land uses.

The proposed INRMP is to be a five-year planning document that would guide natural resources management activities. Ecosystem management would include a shift from single species management to management of ecosystems, developing partnerships with stakeholders to achieve shared goals, public involvement in decision making, using the best scientific information available in decision making, and implementing adaptive management techniques.

The ARD Bayview Environmental, Safety and Health Department Manager and/or NSWD Natural Resources Manager would reevaluate the INRMP annually for areas that require additional improvement or alteration. A formal review or revision would occur at least every five years.

ARD Bayview is located in Kootenai County in the northern panhandle of Idaho, approximately 75 miles from the Canadian Border (Figure 1-1). The site encompasses approximately 38 acres and is bounded on the north and west by the town of Bayview, on the south by Farragut State Park, and on the east it adjoins Lake Pend Oreille. The installation contains industrial and administrative buildings, wooded areas, urban forest, parking lots and other paved areas, recreational areas, landscaped areas, and submerged lake bottom.

The installation also maintains outlying parcels on the western shore of Lake Pend Oreille. These parcels are approximately one acre each and are located in Bonner County. They are on U.S. Forest Service property and are operated under a Special Use Permit. Additional resources include floating mobile barges anchored in Lake Pend Oreille.

1.4 Scope of this Environmental Assessment

This EA presents the potential environmental impacts that would result from the development and implementation of a modified INRMP for ARD Bayview. Analyses of the potential environmental consequences for each alternative action are based on a collaborative assessment with the ARD Bayview, Environmental, Safety and Health Manager, NSWC Natural Resources Manager, government agencies, and public comments regarding the scientific facts and resource assessment methodologies.

This EA presents a programmatic assessment of the environmental consequences of the proposed action and the reasonable alternatives. The management approaches are assessed individually, not by individual management projects discussed in the three alternatives. The intent of this EA is to evaluate the overall impacts of implementing the proposed action rather than individual projects that are included under the proposed action and management alternative.

Figure 1-1. Location of ARD Bayview, Kootenai County, Idaho.

Site-specific environmental analyses for future natural resource projects would be tiered to this EA. If the anticipated impacts of a specific natural resource project, project components, knowledge of the affected resources, or circumstances differ substantially from those evaluated in this EA, a supplemental or broader environmental analysis (including possible preparation of an environmental impact statement [EIS] if impacts are significant) would be conducted.

1.4.1 Resources Evaluated

Resources that were evaluated in this EA include ecological resources, cultural resources, air quality, and socioeconomics. The assessment of potential impacts to these resources for each management action and alternative included in the INRMP, described in Section 4.0, was based on the planning criteria outlined in Section 1.4. The resources addressed include:

- Ecological Resources - Management actions could impact soils, water resources including wetlands, wildlife including threatened and endangered species, and vegetation;
- Cultural Resources - Management actions could impact previously identified and/or undocumented cultural resources that occur in the area;
- Air Quality - Potential impacts to air quality could result from management actions, especially prescribed burning in forests and grassland areas; and
- Socioeconomics - Management actions could impact localized populations and/or income and employment. These effects may include impacts to minority and/or low-income populations.

1.4.2 Resources Eliminated from Further Study

Noise generated from the research and development activities conducted for the military mission at ARD Bayview do not limit or constrain conservation and rehabilitation of natural resources. No activities proposed in the INRMP or current management activities generate noise above ambient levels that would pose a concern at ARD Bayview; therefore, the issue was eliminated from further study. Potential impacts to land use resulting from implementation of the proposed action or alternatives were eliminated from further study. Whereas mission activities at ARD Bayview must consider protection measures for natural resources as part of standard operating procedures, implementation of the natural resources program does not formally constrain mission activities or dictate land use. Mission security and safety and/or regulatory requirements are

primary considerations for imposing land use restrictions at the installation. Implementation of the natural resources program at ARD Bayview would not reduce the capability of the installation's lands to support the military mission.

1.5 Regulatory Drivers and Guidance

A list of pertinent laws, executive orders (EOs), regulations, and DoD directives for environmental management, available on the World Wide Web site www.fws.gov/laws/federal/summaries/index.html, is presented in Appendix A. These regulatory drivers and guidances help to avoid negative impacts to the natural resources. The requirements set forth in the laws, regulations, and EOs may be used as appropriate mitigation measures for implementation of projects under the INRMP.

2.0 DESCRIPTION OF ALTERNATIVES

This chapter of the EA describes and compares three alternatives. These alternatives consist of modifications in the level of effort to implement the management objectives for forestry, fish and wildlife, land management, and outdoor recreation. Issues that relate to the military use of the property and affect natural resources management include a limited amount of undeveloped area and future construction requirements for military operations. Future development of facilities to accomplish the military mission could constrain natural resources management opportunities; however, integration of natural resources and mission requirements could improve the natural resources base by reutilization of structure or paved areas to offset potential habitat losses.

The current mission of ARD Bayview is to provide:

- Research, development, testing, and evaluation, fleet support, and in-service engineering for surface and undersea vehicle hull, mechanical, and electrical systems and propulsions;
- Logistics research and development; and
- Support to the maritime administration and maritime industry.

Existing land use and the possibility of future development in support of the military mission are the primary constraints to implementation of the INRMP. Currently, there are small amounts of mature woodland, which act as buffer zones and provide numerous benefits to wildlife and visual buffers. The forested areas and various other natural habitats would be compromised in productivity and resilience by a reduction in size. The INRMP recognizes the value of such areas and recommends maintenance and enhancement of these areas through replanting of degraded sites and control of invasive plant species. Since the Natural Resource Management (NRM) program at ARD Bayview has a strong track record of coordinating natural resources issues with mission requirements, the overall spirit and intent of the INRMP is compatible with the military mission.

Under the no action alternative (Alternative 1), ARD Bayview will continue with the implementation of the objectives and practices outlined in the 1997 natural resources plan. The proposed action (Alternative 2) is to implement an INRMP that emphasizes compliance and

stewardship projects using an ecosystem management approach that is consistent with the military use of the property and the goals and objectives established in the SAIA. Alternative 3 is to implement an INRMP with a lower priority for stewardship projects. Under this alternative, primarily only activities necessary to achieve legal compliance with environmental laws and regulations would be implemented. Therefore, the priority for compliance and stewardship projects represents an alternative to implementing an INRMP for ARD Bayview. The selected alternative would serve as the natural resources management guideline that would be applied through implementation of the INRMP. This EA analyzes, evaluates, and compares the three alternatives.

2.1 Process Used to Formulate the Alternatives

The management approaches that were considered to formulate the alternatives are based on SAIA and the Chief of Naval Operations guidance that installations shall develop and implement an INRMP using an ecosystem management approach. The Navy Environmental and Natural Resources Program Manual (OPNAVINST 5090.1B CH-3) provides program requirements, guidelines, and standards for managing natural resources. The 1997 Integrated Natural Resources Plan for ARD Bayview was prepared in accordance with OPNAVINST 5090.1B CH-3 and Naval Facilities (NAVFAC) P-73 Vol. II, Natural Resources Management Procedural Manual. The SAIA provides guidelines for development and implementation of an INRMP using an ecosystem management approach. The no action alternative is carried forward for analysis in accordance with NEPA 1502.14 (d).

The Environmental Conservation Program (DoDINST 4715.3) provides detailed guidance on programming and budgeting for conservation programs. It defines four classes of conservation programs (Class 0, I, II, III); compliance activities fall into the first three classes; Classes 0, I, and II, and stewardship activities fall into Class III. These criteria are used to make recommendations for management actions under the selected management approach.

Compliance. Classes 0 through II represent projects that are associated with a legal requirement for protection and management of natural resources. Failure to implement these projects would result in disruption of military mission activities.

- Class 0, Recurring Natural and Cultural Resources Conservation Management Requirements. This includes activities needed to cover the recurring administrative, personnel, and other costs associated with managing DoD's conservation program that are necessary to meet applicable compliance requirements or that are in direct support of the military mission.

- Class I, Current Compliance. This includes projects and activities needed because an installation is currently out of compliance; has a signed compliance agreement or has received a consent order; or has not met requirements based on applicable federal or state laws, regulations, standards, EOs, or DoD policies; and/or are immediate and essential to maintain operational integrity or sustain readiness of the military mission.

- Class II, Maintenance Requirements. This includes those projects and activities 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 beyond the current program year.

Stewardship. Class III, Enhancement Actions, Beyond Compliance. This includes those 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 any regulation or EO and are not of an immediate nature.

2.2 Alternative Selection Criteria

The selected action must integrate natural resources management with the installation's military use in a manner that ensures military preparedness and provides for sustainable multipurpose uses and conservation of the natural resources. The selected action must comply with all applicable laws and regulations and identify site-specific management actions.

2.3 No Action (Alternative 1)

The no action alternative involves the continued implementation of the objectives and practices outlined in the existing Integrated Natural Resources Management Plan (U.S. Department of the Navy 1997). On-going practices used for management of natural resources at ARD Bayview would continue and there would be no change to the objectives outlined under the current Natural Resources Management Plan. The current plan is technically not a viable alternative and

does not meet SAIA requirements because specific project costs and implementation schedules were not provided in the plan. However, the no action alternative is being carried forward as a baseline for comparison to the other alternatives.

The 1997 Natural Resources Plan was developed as a broad planning tool. ARD Bayview's Environmental, Safety, and Health Manager plays the major role in accomplishing the goals set forth in the plan. Various installation offices, naval personnel, federal and state agencies, and contractors provide support to the natural resources manager. General recommendations are suggested; however, the recommendations are not clearly developed into specific well-defined projects. Project costs and time lines are not included, thus limiting the utility of the 1997 plan. Much effort has been required by the installation natural resources personnel to estimate project costs and develop implementation time lines.

The 1997 natural resources plan was developed as three distinct sections (land management, fish and wildlife, forestry management). Each of these sections stands alone and little effort is made to discuss multiple benefits of management actions. Recommended actions are very general and included:

- Control of noxious weeds;
- Landscaping and erosion control measures for new land disturbances;
- Review of capital development for inclusion into stormwater management plans;
- Use of temporary erosion and sediment control measures during construction;
- Scheduling construction to avoid kokanee spawning and incubation; and
- Monitoring of bald eagles during capital construction projects.

Recommended actions were chosen to target specific goals, rather than developing recommendations with larger scale ecosystem benefits. Furthermore, recommended actions are not discussed in terms of compliance and stewardship level actions and subsequent prioritization. Only these six specific recommendations were made in the 1997 plan.

2.4 Proposed Action (Alternative 2)

In addition to continuing the current management practices, ten projects will be implemented in order to meet compliance and stewardship objectives for the natural resources at ARD Bayview. This alternative focuses on projects that directly relate to mission support, meet legal and Navy requirements for natural resources management, and support regional ecosystem management initiatives. This alternative gives equal consideration to compliance and stewardship actions to produce an ecosystem approach for natural resources management.

There are seven primary goals in the INRMP:

- Implement land management practices that reduce grounds maintenance costs, conserve soil and water, improve real estate values, protect floodplains, abate nonpoint source water pollution, control noxious weeds, and prevent erosion and sedimentation;
- Identify and protect floodplains and rare and endangered species;
- Manage fish, wildlife, and plant resources within ecological limits;
- Support non-consumptive use of non-game fish and wildlife resources;
- Develop an urban forest management plan;
- Manage natural resources to provide opportunities for outdoor recreation; and
- Identify floral and faunal resources present.

These seven primary management goals and the objectives are addressed under three primary management issues: land use management, including urban forest resources and wetlands/floodplain protection; fish and wildlife management, including rare, threatened, and endangered species protection; and outdoor recreation and environmental education.

Land Use Management. Proper land use management provides the foundation for the conservation of all other natural resources components and serves as the basic land use and conservation management guide. Land management encompasses soil and water conservation, wetlands/floodplain protection, protection of specific ecological areas, water quality protection, erosion and sediment control, grounds management, urban forestry, and stormwater management. The primary objectives for land use management include the following:

- Conserve, manage, maintain, and enhance all natural resources in accordance with proven scientific methods, procedures, and techniques;
- Protect real estate from depreciation by implementing appropriate land use practices based upon soil capabilities;
- Minimize or eliminate pollution through proper waste disposal and erosion and sedimentation practices;
- Improve the appearance and ecosystem function of ARD Bayview through the preservation of the natural terrain and vegetation;
- Improve the general health of the forest ecosystem while maintaining ecological balance; and
- Protect known RT&E species and critical habitat.

Fish and Wildlife Management. This section offers concepts and recommendations for protecting, conserving, and managing the fish and wildlife resources at ARD Bayview under the principles of ecosystem management. Fish and wildlife management encompasses nuisance wildlife control, projects to minimize human/wildlife conflict, maintenance of bird nesting sites, threatened and endangered species management, and biodiversity enhancement. The primary objectives for fish and wildlife management include the following:

- Provide sufficient suitable habitat at ARD Bayview to support the habitat requirements for indigenous, threatened, or endangered species using the property. These habitats should be monitored to assess the conservation benefits of the management actions;
- Protect, conserve, and manage ARD Bayview wildlife to achieve balanced species populations within sustainable ecosystem parameters to ensure that habitat degradation does not result;
- Monitor ARD Bayview's wildlife populations, habitat quality and human activities to determine habitat protection needs and improvement opportunities; and
- Improve the biodiversity of resident and migrant species by identifying, protecting, or developing a diversity of habitats.

Outdoor Recreation and Environmental Education. Management activities in this section identify and evaluate outdoor recreation and environmental education opportunities at ARD

Bayview. Outdoor recreation opportunities are limited because of the small size of the installation. Environmental education includes a network of educational signs to increase awareness of natural resources and the impacts that base activities may have on these resources. The primary objectives for outdoor recreation and environmental education include the following:

- Optimize the outdoor recreational and environmental education benefits afforded military and civilian personnel and their families within the capability of the existing resources and the constraints of the military mission;
- Identify potential natural resources and recommend enhancement or preservation actions;
- Ensure ecosystem-level management of natural resources for outdoor recreation, fish and wildlife, forestry, and other purposes.

Projects that will be conducted under the proposed action are presented in Table 2-1. Specific information for these projects is presented in the INRMP that accompanies this EA.

Table 2-1. 2002 ARD Bayview Project Summary.

Project Number	Management Issue Project Name	Compliance or Stewardship	Funding Priority Class
	Land Use Management		
1	Invasive Species Survey	C	II
2	Invasive Species Control	C/S	II,III
3	Reforestation/Demolition Site Restoration	C/S	II,III
4	Urban Forest Management Plan	S	III
	Fish and Wildlife Management		
5	Osprey Nest Platforms	C	I
6	Baseline Survey of Biological Resources	C	II
7	Fish Monitoring & Coordination	S/C	III, I
8	Native American Fishing & Hunting Rights	S	III
	Outdoor Recreation and Environmental Education		
9	Educational Sign Placement	S	III
10	2007 INRMP Update and EA	C	I

C = Compliance
S = Stewardship

2.5 Management for Compliance (Alternative 3)

The alternative to develop and implement the INRMP with emphasis on project management recommendations for compliance activities (legal requirements) subordinates many of the project management recommendations in the proposed action. Projects that support or provide participation in regional ecosystem initiatives and other stewardship activities that represent the Navy's commitment to conservation of natural resources are given a low priority for implementation. Although the project list is the same as for the proposed action, the prioritization of management activities favors projects that are associated with a legal requirement for protection and management of natural resources in order to avoid disruption of military mission activities. The stewardship activities that would be conducted under the no action alternative will not be conducted under Alternative 3 unless project funding in excess of compliance requirements are available. Projects will be implemented in the following order for priorities:

- Osprey Nest Platforms;
- Rare, Threatened, and Endangered (R,T,& E)Species Survey;
- Invasive Species Survey;
- Invasive Species Control;
- Reforestation/Demolition Site Restoration;
- Urban Forest Management Plan;
- Fish Monitoring & Coordination;
- Native American Fishing & Hunting Rights; and
- Educational Sign Placement.

2.6 Alternatives Considered but Eliminated from Further Analysis

An alternative to updating the modified INRMP (proposed action) by implementing only stewardship projects was eliminated from further consideration. Implementation of compliance projects is a legal requirement.

2.7 Comparison of Alternatives

The comparison of alternatives presented in Table 2-2 is based on the information and analyses presented in Chapter 3.0 (Affected Environment) and Chapter 4.0 (Environmental Consequences). Each of the management issues was considered in assessing the decision factors under each alternative and is the basis for providing choices for the decisionmaker and the public.

The no action alternative (Alternative 1) does not meet SAIA requirements and does not effectively provide for integrated management planning because individual plans were prepared for natural resources components and site-specific management actions were not planned for all management concerns. In addition, the No Action Alternative does not include implementation schedules, cost breakdowns for projects, and manpower/staff requirements. Alternative 2 satisfies the requirements of the SAIA and INRMP objectives to support the military mission at ARD Bayview, sustain healthy ecosystems, and provide public access for outdoor recreational opportunities. Although consistent with the SAIA and INRMP requirements, Alternative 3 would restrict the ability to properly utilize natural resources on Navy-administered lands because no stewardship activities (or limited stewardship activities) would be implemented.

Table 2-2. Comparison of Alternatives.

Resource/ Issue	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3 Management for Compliance
Soil	Benefits from environmental awareness efforts for erosion and sediment control	Benefits from environmental awareness and enhanced soil stability from re-vegetated slopes	Benefits from environmental awareness efforts for erosion and sediment control, but less than Alternative 2
Water	Benefits from review of permitting requirements and stormwater management review	Benefits from compliance actions and enhanced soil stability from re-vegetated slopes	Benefits from review of permitting requirements
Vegetation	No effect	Benefits from reforestation, invasive species, and environmental education management actions	Benefits from invasive species control, but less than Alternative 2
Wildlife	No effect	Benefits from forest, wildlife, and environmental education management actions	Benefits from high priority for osprey nesting management actions, but less than Alternative 2
Cultural	Minimal disturbance from landscaping activities	Minimal ground disturbance from landscaping and installation interpretive sign posts; benefits from investigation of traditional cultural resources	Minimal disturbance from landscaping activities
Air Quality	No effect due to *de minimis* emissions	No effect due to *de minimis* emissions	No effect due to *de minimis* emissions
Socioeconomics	No adverse effect to population or income and employment	No adverse effect to population or income and employment, positive benefits to quality of life for installation personnel	No adverse effect to population or income and employment

3.0 AFFECTED ENVIRONMENT

This chapter describes the affected environment that would be potentially impacted by implementation of any of the alternatives. General physical and biological characteristics are presented in the INRMP for ARD Bayview that is being prepared concurrently with this EA. In accordance with CEQ regulations (40 CFR § 1502.15), the descriptions presented below are no longer than necessary to understand the potential effects of the proposed action and alternatives.

3.1 Ecological Resources

ARD Bayview is located in the northern panhandle of Idaho in the northern Rocky Mountains. The site is a mere 38 acres and includes both terrestrial and aquatic habitats. Elevations range from lake shoreline (2,051 feet, winter; 2,062.5 feet, summer) to 2,290 feet. The minimum elevation on ARD Bayview operations area is approximately 2,051 feet.

Terrestrial resources are typical of the region, and include forested slopes dominated by Douglas fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) with minor representation of western red cedar (*Thuja plicata*), western larch (*Larix occidentalis*), and western hemlock (*Tsuga heterophylla*).

Aquatic resources are represented by seasonally flooded shoreline and submerged lake bottom. The lake bottom substrate composition ranges from finer sediments in the northwest to small, coarse cobble-sized (gravel rock) substrate in the east. The cobbles are appropriately sized for kokanee spawning areas and are heavily used for this purpose (Maiolie et al. 2003).

3.1.1 Soil Resources

Soils resources at ARD Bayview are described in the Soil Survey of Kootenai County Area, Idaho (Soil Conservation Service 1981). The three soils identified at ARD Bayview are Bonner silt loam, Bonner gravelly silt loam, and Kootenai gravelly silt loam. A fourth soil type, Dystrochreptic Arents, is also included based on the intensive development at the site. Dystrochreptic Arents represent human disturbance over Bonner soils. Bonner soils are deep, well-drained glacial outwash soils that form the gentler slopes. The origin of the Kootenai series

is similar to Bonner soils, however, they occur on much steeper slopes (20-45%). Kootenai soils are present on the steep slope between the developed waterfront area and the remote storage area.

3.1.2 Water Resources

No streams or wetlands are located at ARD Bayview. Surface water on the installation is limited to Lake Pend Oreille. There are no floodplains at ARD Bayview, but the shoreline of Lake Pend Oreille fluctuates approximately 12 feet from the winter months to late spring. The lake water level is lowered during winter months to accommodate snow melt in the spring. Lake Pend Oreille is the largest and deepest lake in Idaho (and the fifth deepest lake in the U.S.), encompassing 148 square miles (94,500 acres) and reaching a depth of 1,152 feet. Because of the great size and depth of Lake Pend Oreille, the effects of surrounding land use practices on water quality are likely to be gradual long-term changes. Conversely, the benefits of improved land use practices may be slow to show effect.

Lake Pend Oreille is located in Hydrologic Unit Code 17010214 (Lake Pend Oreille Watershed). Watershed area upstream of Lake Pend Oreille includes part of northern Idaho, most of western Montana, and a small portion of Canada.

3.1.3 Vegetation

Though most of ARD Bayview is developed, three areas still support native forest cover. The first area located near the main gate supports a mature forest canopy including ponderosa pine and Douglas fir. While the canopy is mature forest, the understory and shrub layer have been cleared. This site is used as a picnic area.

The second forested area is located in the southeastern area of the installation. Native forest is present on the slope between Bayview Road and the developed installation. This slope provides a noise and visual buffer as well as slope stabilization. Lastly, the largest forested area surrounds the Remote Storage Area on the southern part of the installation. This is the largest contiguous patch of forest at ARD Bayview (approximately 7 acres). This forest also functions as a buffer to Highway 54 and Bayview Road. Tree species occurring in the forested areas include Douglas-fir, ponderosa pine, and western larch. Understory species include false Solomon's seal

(*Smilacina spp*.), creeping Oregon grape (*Mahonia repens*), and oceanspray (*Holodiscus spp*.) (U.S. Department of the Navy 1997).

The remaining vegetation at ARD Bayview is typical of disturbed sites and includes a mix of native and non-native invasive species. Common plants include common tansy (*Tanacetum vulgar*), spotted knapweed (*Centaurea maculosa*), and Canada thistle (*Cirsium arvense*). Surveys for rare, threatened, and endangered and invasive plant species are both proposed in the INRMP. Two state-listed plant species, Bladdery milk vetch (*Astragalus microcystis*) and black snakeroot (*Sanicula marilandica*), have been identified at Farragut State Park, adjacent to ARD Bayview.

3.1.4 Wildlife

ARD Bayview supports both aquatic and terrestrial wildlife, but because of the small size of the installation, it cannot provide the complete habitat requirements of most species.

Aquatic species include kokanee (*Oncorhynchus nerka*), kamloops trout (*Oncorhynchus mykiss*), bull trout (*Salvelinus confluentus*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), lake trout (*Salvelinus namaycush*), westslope cutthroat trout , lake whitefish *(Coregonus clupeaformis)*, mountain whitefish (*Prosopium williamsoni*), northern pike (*Esox lucius*), northern pikeminnow (*Ptychocheilus oregonensis*), smallmouth bass (*Micropterus dolomieui*), largemouth bass (*Micropterus salmoides*), and various catastomids, sculpins, chubs, dace, and warmwater panfish. The bull trout is federally-threatened, while the westslope cutthroat trout is a Idaho Species of Special Concern. The westslope cutthroat trout was under review by the USFWS to determine if federal protection is warranted; a final decision was issued on 8 August 2003 and concluded that the westslope cutthroat trout should not be listed as a threatened species.

The USFWS proposed to designate critical habitat for the Klamath River and Columbia River distinct population segments of bull trout in the Federal Register on February 11, 2003 (Volume 68, Number 28). The proposed critical habitat designation includes approximately 29,720 kilometers (18,471 miles) of streams and 215,585 hectares (532,721 acres) of lakes, reservoirs, and marshes in Oregon, Washington, Idaho, and Montana. Designation would apply only to the waterways, not the adjacent lands.

Terrestrial species include elk (*Cervus elaphus*), moose (*Alces alces*), black bear (*Ursus americanus*), and white-tailed deer (*Odocoileus virginianus*). Because of the small size and extensive development of the installation, the white-tailed deer is the most frequent large mammal currently inhabiting the property. However, discussions with neighboring landowners confirmed the occasional presence of black bear. The IDFG identified the gray wolf and Canada lynx as possibly occurring within the project area. Smaller mammals that utilize the grounds include the raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), river otter (*Lutra canadensis*), mink (*Mustela vison*), and chipmunk (*Eutamias spp*.). According to the USFWS, the threatened bald eagle may occur in the vicinity of the project.

3.2 Cultural Resources

A survey was conducted in 1996 to identify significant archaeological resources at ARD Bayview and review buildings for eligibility for the National Register of Historic Places (Archaeological/National Historic Survey 1996). The only finding was a small scatter of mid-twentieth century cans near the access road to the Remote Storage Area. No significant archaeological resources were identified and the potential for such resources was determined to be low; nor were any buildings determined to be eligible for inclusion on the National Register of Historic Places (Archaeological/National Historic Survey 1996). Based on the lack of findings, an Integrated Cultural Resources Management Plan is not required.

Historically, several groups of Native America Indians inhabited the Bayview area and depended on the resources present for sustenance. These included the Coeur d'Alene, Kalispel, Kootenai, Pend Oreille, and Salish Indians. The reservation, established in the 1873, originally included the Bayview area and Lake Pend Oreille. Through later treaties, the reservation size was greatly reduced, but still exists in Benewah County to the south. The presence of traditional cultural resources has not been investigated with respect to the ARD Bayview property (i.e. traditional fishing or hunting grounds).

3.3 Air Quality

ARD Bayview is located within Region 10 of the U.S. Environmental Protection Agency (EPA). EPA uses six "criteria pollutants" as indicators of air quality: ozone, carbon monoxide, nitrogen

dioxide, sulfur dioxide, particulate matter, and lead. For each of these, EPA has established "primary" standards to protect public health and "secondary" standards to protect other aspects of public welfare, such as preventing materials damage, preventing crop and vegetation damage, or assuring visibility. These standards are called the National Ambient Air Quality Standards (NAAQS). Areas that do not meet NAAQS are called non-attainment areas. Kootenai County is classified as in attainment for all criteria pollutants (EPA 2000). To ensure that federal actions do not interfere with the state's maintenance of the NAAQS, the Clean Air Act (CAA) requires that federal agencies demonstrate that their actions in non-attainment and maintenance areas do not produce emissions above *de minimis* levels for annual criteria pollutant emissions. The General Conformity Rule under the CAA does not apply to attainment areas.

3.4 Socioeconomics

Kootenai County is located in the northwest portion of Idaho, near the Washington border, and includes 1,245 square miles of land area. Coeur d'Alene, the county seat, is the sixth largest city in Idaho (2000 census) and is situated on the shores of Lake Coeur d'Alene. Coeur d'Alene represents about one-third of the county population.

3.4.1 Population

The population estimate for Kootenai County, ID is 112,297 (July 2001 estimate). This is approximately 8.5 percent of the total state population. This population estimate indicates a 3.3 percent increase during the period from April 2001 to July 2001. During the same period, the population statewide increased 2.1 percent. The population is almost equally composed of males and females, with 27.1 percent under the age of 18. The 2000 racial profile consists of White (95.8 percent), American Indian or Alaska Native (1.2 percent), Asian (0.5 percent), Black (0.2 percent), and Other (0.1 percent). The population density is 87.3 persons per square mile (U.S. Census Bureau 2000).

3.4.2 Income and Employment

According to 2000 census data, 41,208 households were reported in Kootenai County with a median household income using the 1997 model-based estimate of $36,123 (7.5 percent greater than the statewide average). The percentage of persons below the poverty level was 11.5 percent

(the statewide average was 13 percent). The number of people employed in the private non-farm sector in the county was 33,728 (an increase of 76 percent from the 1990 data), while 4,440 people were employed in local government.

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA presents a programmatic assessment of the potential environmental impacts from implementation of the three alternatives. None of the activities currently being conducted at ARD Bayview or any of the project recommendations in the proposed action or alternatives would result in significant environmental impacts. The natural resources management actions listed under each alternative would be implemented in compliance with all applicable Navy regulations and federal, state, and local laws. Management projects that are designed to avoid negative environmental impacts, including planning measures for compliance with the requirements of applicable laws and regulations (see Section 1.5), are covered in this EA. The overall scope of this assessment includes natural resources management activities that protect and enhance soil and water resources through land management, including protection of urban forests and control of invasive species; fish and wildlife, including rare, threatened, and endangered species; and environmental education. These activities would provide long-term benefits to natural resources by maintaining ecosystem integrity for support of biological diversity; consequently, these activities would have very little potential for negative environmental impacts.

The proposed action (Alternative 2) would provide greater environmental benefits than either continuing the current management program (No Action Alternative) or implementation of management for the compliance alternative (Alternative 3). Implementation of the INRMP to meet compliance and stewardship objectives would fulfill the requirements in the SAIA and would advance the natural resources management program at ARD Bayview. In comparison, implementation of Alternative 3 would subordinate many of the beneficial natural resources management actions proposed and ultimately could result in decline of the natural resources management program at ARD Bayview. However, this alternative could fulfill the minimal requirements of the SAIA.

4.1 No Action (Alternative 1)

There would be no change in the way natural resources are currently managed with implementation of the no action alternative (Alternative 1). The current plan is based on

multiple use and sustained yield of natural resources. Management actions for individual resources would continue to be nonintegrated and would not be in compliance with the SAIA and Navy guidance. Furthermore, site-specific management actions and implementation schedules would not be provided. Although the current management plan provides recommendations for compliance and stewardship actions, specific natural resources projects are not identified.

4.1.1 Ecological Resources

The current plan would continue to provide some benefits to soils, water resources, vegetation, and wildlife. However, the benefits would be limited due to the lack of specific management actions and lack of integration of actions among resources. Land management actions would be conducted in accordance with state and federal regulations for protection of water quality, wetlands, erosion and sediment control, and noxious weed control. Forest management activities would be limited to firewood collection and timber sales based on management, silvicultural, and resource planning criteria. The Engineering Field Activity (EFA) Northwest Forester would provide technical forestry guidance for forest management actions. Fish and wildlife managements would include temporary stormwater pollution prevention measures, avoidance of major construction during kokanee spawning and incubation periods, and bald eagle monitoring during construction activities. Most recommendations provided in the 1997 plan are intended to minimize the impact of capital improvement construction activities. There are no recommended management actions that would negatively impact ecological resources on ARD Bayview.

4.1.2 Cultural Resources

Protection and management of cultural resources under the no action alternative would continue to be nonintegrated with natural resources management activities. The implementation of the no action alternative would provide minimal disturbance of surface strata during landscaping activities, but would not be likely to adversely impact cultural resources at ARD Bayview.

4.1.3 Air Quality

Under this alternative, there would be no change in air quality as a result of implementing the current plan. There are no natural resources management activities proposed in the current plan that would generate measurable impacts to air quality. Prescribed burning is the only

management activity that could potentially impact air quality. However, the small size of the installation would likely preclude prescribed burning for natural resources management as an effective management practice. Any air emissions from minor construction activities would be negligible for criteria pollutants. Since the area is in attainment for all criteria pollutants, the General Conformity Rule under the CAA does not apply to the current natural resources management activities and impacts to air quality will not be significant.

4.1.4 Socioeconomics

Under this alternative, there would be no change in the potential effects of natural resources management on socioeconomics. The general public does not have access to the natural resources at ARD Bayview because of security limitations. The no action alternative would not adversely impact the human health or the environment of any of the area's populations, including any low-income or minority populations. The no action alternative would not have a disproportionately high and adverse impact on minority or low income populations nor pose environmental health risks and safety risks that would disproportionately affect children (EO 12898, Federal Actions to Address Environmental Justice in Minority Population and Low Income Population, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks). The only income or employment to impact the regional economy would be very limited work contracted for the noxious weed control management recommendation.

4.2 Proposed Action (Alternative 2)

The implementation of an INRMP with compliance and stewardship project recommendations (Alternative 2) would focus on maintaining and improving native biological diversity, conservation of natural resources, and environmental education. The most important aspect for determining the environmental consequences is that this alternative includes integrated management actions for natural resources activities. Similar to the no action alternative, this alternative would be implemented in compliance with all Navy regulations and federal, state, and local laws.

4.2.1 Ecological Resources

Implementation of the proposed action would result in positive benefits to ecological resources by effectively using an ecosystem approach for implementation of the INRMP. Coordination with the IDFG, USFWS, and the USFS as primary stakeholders in the protection and management of natural resources would ensure that implementation of the natural resources program at ARD Bayview provides positive benefits to ecological resources. The installation will continue to work cooperatively with IDFG and USFWS to monitor impacts to kokanee spawning activity and habitat critical for bull trout. The resource-specific management activities provided in the INRMP would result in long-term positive benefits to soil, water, vegetation, and wildlife by involving the various stakeholders to achieve the optimal management of ecological resources. For example, a rare, threatened and endangered species survey conducted in cooperation with the IDFG would help to identify sensitive species and important habitat resources at ARD Bayview. A partial list of project objectives that would benefit ecological resources is presented below.

- Conserve, manage, maintain, and enhance all natural resources in accordance with proven scientific methods, procedures, and techniques.
- Minimize or eliminate pollution through proper waste disposal and erosion and sedimentation practices.
- Improve the appearance and ecosystem function of ARD Bayview through the preservation of the natural terrain and vegetation.
- Monitor ARD Bayview's wildlife populations, habitat quality and human activities to determine habitat protection needs and improvement opportunities.
- Protect known R,T,&E species and critical habitat.

4.2.2 Cultural Resources

Implementation of the proposed action would provide minimal disturbance of surface strata during landscaping activities, but would not likely cause adverse impacts cultural resources at ARD Bayview. Minor land disturbance would also result from restoration and replanting of demolition sites and from post holes excavated for placement of educational signs. Traditional cultural resources would benefit from investigation to determine if areas of traditional

importance exist on the installation. When necessary, Section 106 Consultations would be conducted with the Idaho State Historic Preservation Office (SHPO) prior to implementing ground-disturbing activities.

4.2.3 Air Quality

Implementation of the INRMP would not impact the air quality at ARD Bayview. Emissions from proposed management activities would be negligible because of the small areas involved and the short-term operations. Minor, short-duration impacts may occur from welding efforts during construction of the osprey nest platform and from equipment used to dig post holes for sign placement. The benefits to air quality by maintaining existing vegetation (that absorbs air contaminants) throughout the installation and restoring vegetation on disturbed sites would be positive but negligible in terms of the air quality control region. Similar to the no action alternative, project activities proposed in the INRMP would produce negligible air emissions for criteria pollutants.

4.2.4 Socioeconomics

Implementation of the proposed action would not impact population or income and employment in the region. The criteria for assessment is similar to the criteria used for the no action alternative. The proposed action would not have a disproportionately high and adverse impact on minority or low-income populations nor pose environmental health risks and safety risks that would disproportionately affect children (EO 12898, Federal Actions to Address Environmental Justice in Minority Population and Low Income Population, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks). Implementation of the natural resources program at ARD Bayview would not require relocation of personnel to the area, and the total annual cost for operation of the program would not significantly impact the regional economy. Minor positive benefits would result from the contracting of invasive species control tasks and from the purchase of plants for site restoration/enhancement efforts. Implementation of stewardship activities conducted to enhance environmental education opportunities, such as installing educational signs, would provide positive benefits to the quality of life for installation personnel.

4.3 Management for Compliance (Alternative 3)

Whereas implementation of compliance activities addresses the legal requirements for natural resources management under an INRMP, the policy of the Navy is to act responsibly in the public interest to restore, improve, preserve, and properly utilize natural resources on Navy-administered lands. Stewardship activities represent the conscious and active concern for the inherent value of natural resources in all Navy plans, actions, and programs. The environmental consequences of implementing an INRMP without stewardship project management recommendations would include reduced opportunities for environmental education, urban forestry, fisheries management, and research into Native American fishing and hunting rights. Projects such as these would not be conducted, or would only be conducted if funding in excess of compliance projects is available, under this alternative. Projects requiring compliance-level funding would be implemented, such as threatened and endangered species surveys, construction of osprey nest platforms, invasive species survey and control, and site restoration following demolition. Similar to the proposed action (Alternative 2), this alternative would be implemented in compliance with all Navy regulations and federal, state, and local laws. Similar to the proposed action, Alternative 3 would integrate management actions for natural resources activities.

4.3.1 Ecological Resources

Implementation of Management for Compliance (Alternative 3), would have overall positive benefits for ecological resources by maintaining compliance with regulations protecting migratory bird species, identifying and protecting threatened and endangered species, prompt replanting of demolition sites, and controlling invasive species. However, many of the proposed management actions designed to meet ecosystem objectives would not be conducted or would be conducted at minimal levels. The benefits from noncompliance projects such as fish monitoring efforts coordinated with IDFG, preparation of an urban forestry management plan, and environmental awareness and education would not be realized. Optimal integration of natural resources for protection and management of ecological resources at ARD Bayview would not be achieved under implementation of Alternative 3.

4.3.2 Cultural Resources

Implementation of Alternative 3 would provide minimal disturbance of surface strata during site restoration and stabilization activities following building demolition, but would not likely cause adverse impacts cultural resources at ARD Bayview. The considerations for cultural resources protection prior to conducting natural resources activities under the management for compliance alternative would be similar to the proposed action. When necessary, Section 106 consultations would be conducted with the Idaho SHPO prior to implementing ground-disturbing activities.

4.3.3 Air Quality

Implementation of the INRMP would not impact the air quality at ARD Bayview. Emissions from proposed management activities would be negligible because of the small areas involved and the short-term operations. Negligible, short-duration impact may occur from welding efforts during construction of the osprey nest platform. The benefits to air quality by maintaining existing vegetation (that absorbs air contaminants) throughout the installation would be positive but negligible in terms of the air quality control region. Similar to the no action alternative and Alternative 2, project activities proposed in the INRMP would produce negligible air emissions for criteria pollutants.

4.3.4 Socioeconomics

Implementation of Alternative 3 would not significantly impact socioeconomics at ARD Bayview or in the vicinity of the installation. Impacts would be similar to Alternative 2. Alternative 3 would not have a disproportionately high and adverse impact on minority or low income populations nor pose environmental health risks and safety risks that would disproportionately affect children (EO 12898, Federal Actions to Address Environmental Justice in Minority Population and Low Income Population, and EO 13045, Protection of Children from Environmental Health Risks and Safety Risks). Reductions in stewardship management activities because of management for compliance requirements would not impact population or income and employment in the region. The magnitude of projects implemented under Alternative 3 would be insignificant to affect the regional economy. The associated benefits to quality of life for installation personnel from development of environmental education opportunities would not be realized under Alternative 3.

4.4 Cumulative Impacts

Implementing any of the alternatives analyzed in this EA would not result in cumulative impacts to the resources evaluated when added to past, present, and reasonably foreseeable future actions. The integration of natural resources management issues and concerns is the primary basis for determining no cumulative impacts. The incremental impact of the proposed action on the environment over the next five years would result in overall positive benefits to the resources at ARD Bayview. Actions that occur directly or indirectly as a result of natural resources management would tend to benefit the environment by design because natural resources management is first and foremost consistent with the military use of the property. Annual reviews and updates of the INRMP (every five years) allow revisions (adaptive management) to be made to avoid undesirable cumulative impacts. Additionally, coordination with federal, state, and local agencies is required by the SAIA and would further reduce the potential for cumulative impacts.

5.0 PUBLIC INVOLVEMENT AND COORDINATION

In preparing the INRMP in accordance with the SAIA, ARD Bayview has worked in cooperation with the USFWS, and IDFG so that the plan would reflect the mutual agreement of these parties concerning conservation, protection, and management of fish and wildlife resources. The USFWS commented that the threatened bald eagle (*Haliaeetus leucocephalus)* and the bull trout (*Salvelinus confluentus*) may occur in the vicinity of the project. The USFWS encouraged the preparation of a Biological Assessment (BA) for all major construction projects. Though no major construction projects are proposed, the potential impacts from the proposed projects are discussed in this EA. The IDFG identified additional species that may be present in the project area, including the gray wolf (*Canis lupus*), Canada lynx (*Lynx canadensis*), westslope cutthroat trout (*Oncorhyncus clarki lewisi*), and least bladdery milk vetch (*Astragalus microcystus*). The State of Idaho lists the least bladdery milk vetch as Critically Imperiled and the westslope cutthroat trout is a Species of Special Concern. These comments are presented in Appendix B. Final agreement letters from USFWS and IDFG are also included in Appendix B. Also as required by the SAIA, the INRMP has been provided for public comment and ARD Bayview has taken those comments into account in preparing the INRMP.

The following persons and agencies were consulted for preparation of the INRMP:

Supervisor
U.S. Fish and Wildlife Service, Upper Columbia Fish and Wildlife Office

Ray Henneky/Greg Tourtlotte
Idaho Department of Fish and Game

6.0 LIST OF PREPARERS

Name/Affiliation/Title	Qualifications/Experience	Contribution
Joseph J. Campo, Ph.D. Geo-Marine, Inc. NEPA Project Manager	17 Years Natural Resources Management	Proposed Action and Description of Alternatives
Bobby Clontz, M.S. Geo-Marine, Inc. INRMP Project Manager	INRMP Preparation 10 Years Natural Resources Management	Affected Environment
Nancy Parrish Geo-Marine, Inc. Cultural Resources Manager	5 Years Cultural Resources Management	Cultural Resources Analysis
Bill Spicer NSWC Natural Resources Manager	7 Years Natural/Cultural Resources and NEPA	Technical Review

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APPENDIX A
Applicable Environmental Laws and Compliance Regulations

Antiquities Act of 1906 [16 USC 431]
Archeological Resources Protection Act of 1979 [16 USC 470]
Bald Eagle Protection Act of 1940, as amended [16 USC 668 et seq.]
Clean Air Act (CAA) of 1970, as amended [42 USC 7401-7671]
Clean Water Act (CWA) of 1972, as amended 1977 (CWA) [33 USC 1251-1376]
Conservation Programs on Military Reservations of 1960 (Sikes Act) [16 USC 670a-670o]
Determination of Eligibility for Inclusion in the National Register of Historic Places [36 CFR § 63]
Emergency Wetlands Resources Act of 1986 [16 USC 3901]
Endangered Species Act (ESA) of 1973 [16 USC 1531-1544], amended 1988
Environmentally Beneficial Landscaping, April 1994 (EO 50737)
Environmental and Natural Resources Program Manual (OPNAVINST 5090.1B CH-3)
Environmental Conservation Program (DoD DIR 4715.3)
Environmental Protection and Enhancement: Subpart H Historic Preservation [32 CFR § 650]
Erosion Protection Act [33 USC 426]
Exotic Organisms (EO 11987)
Federal Environmental Pesticide Control Act of 1972 [7 USC 136-136y]
Federal Land Policy and Management Act (FLPMA) of 1976 [43 USC 1701 et seq.]
Federal Noxious Weed Act of 1974, as amended [7 USC 2801]
Fish and Wildlife Conservation Act of 1980 [16 USC 2901]
Fish and Wildlife Coordination Act 1934, amended in 1946 [16 USC 661-667e]
Floodplain Management (EO 11988)
Migratory Bird Treaty Act of 1918 [16 USC 703-712]
Multiple-Use Sustained Yield Act of 1960 [16 USC 528]
National Environmental Policy Act (NEPA) of 1969 [42 USC 4321]
National Historic Preservation Act of 1966, as amended [16 USC 470] through 1992
Natural Resources Management Procedure Manual (NAVFAC P-73)
North American Wetlands Conservation Act (of 1989) [16 USC 4401-4412]
Noxious Plant Control Act of 1968 [43 USC 1241 et seq.]
Preservation of American Antiquities [43 CFR § 3]
Protection and Enhancement of Environmental Quality (EO 11514)
Protection and Enhancement of the Cultural Environment (EO 11593)
Protection of Historic and Cultural Properties [36 CFR § 800]
Protection of Wetlands (EO 11990)
Recreational Fisheries (EO 12962)
Sikes Act Improvement Act (SAIA) of 1997 [16 USC § 670 (a) et seq.]
Soil and Water Resources Conservation Act of 1977 [16 USC 2001]
Timber Sales on Military Lands [10 USC 2665]
Wild Bird Conservation Act of 1992 [16 USC 4901 et seq.]

APPENDIX B
Regulatory Coordination on the INRMP

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Upper Columbia Fish and Wildlife Office
11103 E. Montgomery Drive
Spokane, WA 99206

May 22, 2002

Robert B. Clontz, Project Manager
Geo-Marine, Inc.
11846 Rock Landing Drive, Suite C
Newport News, Virginia 23606

Subject: Species List for Updating the Integrated Natural Resources Management Plan for the U.S. Navy's Acoustic Research Detachment in Bayview, Idaho

Reference Number: 1-9-02-SP-335

Dear Mr. Clontz:

This responds to your April 17, 2002, request for a list of threatened and endangered species that may occur in the vicinity of the proposed actions associated with the U.S. Navy's Acoustic Research Detachment located along the southern shore of Lake Pend Oreille near Bayview, Idaho. Your letter was received in our office on April 22, 2002. Please use the above reference number for all future correspondence regarding this project.

We have reviewed the information you provided. Our records indicate that the following listed, proposed, and candidate species, and designated and proposed critical habitat, may occur in the vicinity of the project and could potentially be affected by it:

Listed Species

Endangered
None

Threatened
Bald eagle (*Haliaeetus leucocephalus*)
Bull trout (*Salvelinus confluentus*)

Proposed

None

Candidate

None

Federal agencies must meet their responsibilities under section 7 of the Endangered Species Act of 1973, as amended (Act), as outlined in Enclosure A. Enclosure A includes a discussion of the contents of a Biological Assessment (BA), which provides an analysis of the impacts of the project on listed and proposed species, and designated and proposed critical habitat. Preparation of a BA is required for all major construction projects. Even if a BA is not prepared, potential project effects on listed and proposed species should be addressed in the environmental review for this project. Federal agencies may designate, in writing, a non-federal representative to prepare a BA. However, the involved federal agency retains responsibility for the BA, its adequacy, and ultimate compliance with section 7 of the Act.

Preparation of a BA would be prudent when listed or proposed species, or designated or proposed critical habitat, occur within the project area. Should the BA determine that a listed species is likely to be affected by the project, the involved federal agency should request section 7 consultation with the U.S. Fish and Wildlife Service (Service). If a proposed species is likely to be jeopardized by the project, regulations require conferencing between the involved federal agency and the Service. If the BA concludes that the project will have no effect on any listed or proposed species, we would appreciate receiving a copy for our information.

If you would like information concerning state listed species or species of concern, you may contact the Idaho Department of Fish and Game, at (208) 334-3402.

This letter fulfills the requirements of the Service under section 7 of the Act. Should the project plans change significantly, or if the project is delayed more than 90 days, you should request an update to this response.

Thank you for your efforts to protect our nation's species and their habitats. If you have any questions concerning the above information, please contact Bryon Holt at (509) 893-8014.

Sincerely,

Suzanne Chadet

for Supervisor

Enclosure

cc: IDFG, Region 1

IDAHO FISH & GAME
PANHANDLE REGION
2750 Kathleen Avenue
Coeur d'Alene, Idaho 83815

Dirk Kempthorne/Governor
StevenM.Huffaker/Director

May 22, 2002

Mr. Robert Clontz, Project Manager
Geo-Marine, Inc.
11846 Rock Landing Drive, Suite C
Newport News, VA 23606

Dear Mr. Clontz:

REFERENCE: REQUEST FOR PRESENCE OF THREATENED, ENDANGERED SPECIES FOR USN ACCOUSTIC RESEARCH DETACHMENT, BAYVIEW

Idaho Fish and Game received your request for information regarding the presence of Federal threatened, endangered or proposed plants or animals within the area of the Navy's Acoustic Research Detachment in Bayview, Bonner County, Idaho. Your letter also states that the proposed action will include "outlying parcels." The location of those parcels is not identified.

Based on records from the IDFG Conservation Data Center, Canada lynx (*Lynx Canadensis*), bald eagle (*Haliaeetus leucocephalus*), and gray wolf (*Canis lupus*) are among the federally listed species that may be present in the Bayview area.

In addition to the wildlife species listed above, the CDC also lists the least bladdery milk vetch (*Astragalus microcystus*) as potentially present in the project area. This plant is classified by the state as Critically Imperiled.

The CDC does not list fish species. However, Lake Pend Oreille supports bull trout (*Salvelinus confluentus*), a threatened species, and westslope cutthroat trout (*Oncorhyncus clarki lewisi*), an Idaho species of special concern. Also, numerous Lake Pend Oreille tributaries in your project area are critical bull trout and westslope cutthroat trout spawning and rearing habitat. Activities in or near tributaries, particularly in unidentified "outlying parcels," may affect bull trout and/or cutthroat trout. We can provide greater detail about potential fish species impacted if outlying parcels are identified.

Please note, that the state's species list does not include all of the species listed by the US Fish and Wildlife Service for our region. If you have not done so already, we recommend that you contact the Fish and Wildlife Service, Upper Columbia Office, 11103 East Montgomery Drive, Spokane WA 99206 for a complete list of federally threatened and endangered species.

Sincerely,

Greg Tourtlotte
Regional Supervisor

GIT:RH:kh

C: Tracey Trent, IDFG Boise

File: geomarine bayview species request

Enclosure A

Responsibility of Federal Agencies Under Section 7 of the Endangered Species Act

Section 7(a) - Consultation/Conferencing

Requires: 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2) Consultation with the U.S. Fish and Wildlife Service (Service) when a federal action may affect a listed species to ensure that any action authorized, funded, or carried out by a federal agency will not jeopardize the continued existence of listed species, or result in destruction or adverse modification of critical habitat. The process is initiated by the federal agency after determining that the action may affect a listed species; and

3) Conferencing with the Service when a federal action may jeopardize the continued existence of a proposed species, or result in destruction or adverse modification of proposed critical habitat.

Section 7(c) - Biological Assessment for Major Construction Activities

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for major construction activities[1]. The BA analyzes the effects of the action, including indirect effects and effects of interrelated or interdependent activities, on listed and proposed species, and designated and proposed critical habitat. The process begins with a request to the Service for a species list. If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the list should be verified with the Service. The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable between the Service and the involved federal agency).

We recommend the following for inclusion in a BA: an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if listed or proposed species are present; a review of pertinent literature and scientific data to determine the species' distribution, habitat needs, and other biological requirements; interviews with experts, including those within the Service, state conservation departments, universities, and others who may have data not yet published in scientific literature; an analysis of the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; and an analysis of alternative actions considered. The BA should document the results of the impacts analysis, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not any listed species may be affected, proposed species may be

jeopardized, or critical habitat may be adversely modified by the project. Upon completion, the BA should be forwarded to the Service.

Major concerns that should be addressed in a BA for listed and proposed animal species include:

1. Level of use of the project area by the species, and amount or location of critical habitat;

2. Effect(s) of the project on the species' primary feeding, breeding, and sheltering areas;

3. Impacts from project construction and implementation (*e.g.*, increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to the species and/or their avoidance of the project area or critical habitat.

Major concerns that should be addressed in a BA for listed or proposed plant species include:

1. Distribution of the taxon in the project area;

2. Disturbance (*e.g.*, trampling, collecting) of individual plants or loss of habitat; and

3. Changes in hydrology where the taxon is found.

Section 7(d) - Irreversible or Irretrievable Commitment of Resources

Requires that, after initiation or reinitiation of consultation required under section 7(a)(2), the Federal agency and any applicant shall make no irreversible or irretrievable commitment of resources with respect to the action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives which would avoid violating section 7(a)(2). This prohibition is in force during the consultation process and continues until the requirements of section 7(a)(2) are satisfied.

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[1] A major construction activity is a construction project, or other undertaking having similar physical impacts, which is a major action significantly affecting the quality of the human environment as referred to in the National Environmental Policy Act [42 U.S.C. 4332 (2)(c)].

DEPARTMENT OF THE NAVY
COMMANDER, NAVY INSTALLATIONS
2000 NAVY PENTAGON
WASHINGTON, D.C. 20350-2000

5090
Ser CNI N45/4616
15 March 2005

From: Commander, Naval Installations Command
To: Commander, Navy Region Northwest (N45)

Subj: FINDING OF NO SIGNIFICANT IMPACT FOR THE ADOPTION AND IMPLEMENTATION OF THE 2005-2009 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AT ACOUSTIC RESEARCH DETACHMENT BAYVIEW, BAYVIEW, IDAHO

Ref: (a) Navy Region Northwest ltr dtd 10 Jan 05, Ser N45/493
(b) OPNAVINST 5090.1B

Encl: (1) Finding Of No Significant Impact (FONSI)

1. An Environmental Assessment (EA) dated October 2003 for the subject action was forwarded by reference (a) for review in accordance with reference (b). It has been determined that preparation of an Environmental Impact Statement (EIS) is not required. Accordingly, it is considered that, with implementation of the following paragraph and any mitigation measures described in enclosure (1), compliance with the National Environmental Policy Act has been effected and, in this regard, the project may be initiated.

2. Per OPNAVINST 5090.1B, the action proponent is responsible for publishing a Notice of Availability (NOA) in the appropriate local newspaper(s) upon receipt of the signed FONSI. The purpose of the NOA is to provide public notification of the FONSI while avoiding the cost of publishing the entire FONSI. As such, the NOA should be a succinct, one-page or less, synopsis of the FONSI. The NOA should include the name of the agency, action proponent, title of EA, statement of the proposed action, list of alternatives considered, conclusion, and point of contact with name, telephone number, address, and e-mail address to request copies of the FONSI and/or EA. The NOA should be published for three consecutive days. If the EA/FONSI includes a signed Conformity Determination, the action proponent must publish the NOA within 30 days of signature.

Subj: FINDING OF NO SIGNIFICANT IMPACT FOR THE ADOPTION AND IMPLEMENTATION OF THE 2005-2009 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AT ACOUSTIC RESEARCH DETACHMENT BAYVIEW, BAYVIEW, IDAHO

3. Questions regarding this FONSI may be directed to Dan Hayes at 202-433-4482.

R. SCOTT MARKERT
By direction

DEPARTMENT OF DEFENSE
DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT FOR THE ADOPTION AND IMPLEMENTATION OF THE 2005-2009 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AT ACOUSTIC RESEARCH DETACHMENT BAYVIEW, BAYVIEW, IDAHO

Pursuant to section 102 (2) (c) of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) implementing the procedural provisions of NEPA, the Chief of Naval Operations (N45), Department of the Navy, gives notice that an Environmental Assessment (EA) has been prepared for the adoption and implementation of the updated 2005-2009 Integrated Natural Resources Management Plan (INRMP) at Acoustic Research Detachment (ARD) Bayview, located in Bayview, Idaho. Based on the EA it has been determined that an Environmental Impact Statement (EIS) is not required for the proposed action.

Purpose and Need: The proposed action is to fully adopt and implement the updated INRMP, covering the Fiscal Years 2005-2009, pursuant to Sikes Act Improvement Amendments (SAIA) of 1997, 16 U.S.C. § 670a. The purpose and need of the proposed action is to meet statutory requirements imposed by the SAIA, provide management requirements for species listed under the Endangered Species Act, and also meet the requirements of various DOD and Navy instructions.

Alternatives Analyzed: The EA analyzes, evaluates, and compares three alternatives. Under the no action alternative (Alternative 1), ARD Bayview will continue implementation of the objectives and practices outlined in the 1997 natural resources plan. The proposed action (Alternative 2) is to implement an INRMP that emphasizes compliance and stewardship projects using an ecosystem management approach. Alternative 3 is to implement primarily activities necessary to achieve legal compliance with environmental laws and regulations (compliance only projects).

Proposed Action: The proposed action (Alternative 2) is to adopt and implement an updated INRMP for ARD Bayview in a manner that is consistent with the military use of the property and the goals and objectives established in the Sikes Act (as amended). The updated INRMP will be implemented in FY 2005 and remain in effect through FY 2009, with annual updates as needed. The goal of the updated INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner that is consistent with the military mission; integrates and coordinates all natural resources management activities; provides for sustainable multipurpose uses of natural resources; and provides for public access for use of natural resources subject to safety and military security considerations. The management objectives are to integrate fish and wildlife management, land management, and management for outdoor recreational opportunities, as practicable and consistent with the military mission and established land uses.

There are some specific changes in the updated INRMP over the existing 1997 INRMP. These changes are:

1. Threatened and endangered species: the updated INRMP establishes management criteria for one additional species listed as threatened under the Endangered Species Act (ESA); bull trout. This species was listed in 1999 and was not addressed adequately in the INRMP of 1997.
2. Ten natural resources projects have been identified to meet compliance and stewardship needs. These are:
    - Invasive Species Survey;
    - Invasive Species Control;
    - Reforestation/Demolition Site Restoration;
    - Urban Forest Management Plan (note: this has been completed and is found in Appendix J of the INRMP);
    - Osprey Nest Platform Relocation;
    - Baseline Survey of Biological Resources (this has been partially completed and is found in Appendix K of the INRMP);
    - Fish Monitoring and Coordination;
    - Native American Fishing and Hunting Rights;
    - Educational Sign Placement;
    - 2009 INRMP Update.

Findings: Based on the analysis in the EA, the Navy has concluded that adopting and implementing the updated INRMP would pose no significant risk to human health and the environment, and will be beneficial to threatened and endangered species that may occasionally be found there. A Finding of No Significant Impact (FONSI) is recommended for the adoption and implementation of the updated INRMP for ARD Bayview under the Preferred Alternative.

The EA addressing this action may be obtained from: Commander, Navy Region Northwest, 1103 Hunley Road, Silverdale, Washington 98315-1103 [Attn: Mr. Robert Campagna].

3-15-2005
Date

C. E. WEAVER
Rear Admiral, U. S. Navy
Commander, Navy Installations Command

APPENDIX E

USFWS BULL TROUT RECOVERY PLAN 2015 EXCERPT

Lake Pend Oreille (LPO-B) - Portions of north Idaho contiguous with the basin of LPO

Recovery tasks that address primary threats are bolded.

1. Actions to Address Habitat Threats

1.1. Upland/Riparian Land Management

1.1.1 **Revegetate deficient riparian areas.** Revegetate to restore shade and canopy, riparian cover, and native vegetation. Priority watersheds include Lightning Creek and Pack River.

1.1.2 **Continue to Implement Appendix A of Avista CFSA to Acquire and Protect Upland/Riparian Habitat.** Continue to implement annual WRTAC recommended and MC approved Annual Implementation Plans to protect key riparian/upland habitat through acquisitions and easements to protect critical bull trout spawning and rearing habitat in tributaries to Lake Pend Oreille.

1.2. Instream Impacts

1.2.1 Continue to Implement Appendix A of the Avista CFSA to Improve and Restore Instream Habitat. Continue to implement WRTAC recommended and MC approved Annual Implementation Plans to improve and restore degraded instream habitat to protect bull trout spawning and rearing areas in tributaries of Lake Pend Oreille.

1.3. Water Quality

2. Actions to Address Demographic Threats

2.1. Connectivity Impairment

2.2. Fisheries Management

2.3. Small Population Size

3. Actions to Address Nonnatives

3.1 Nonnative Fish

4. Research, Monitoring, and Evaluation

4.1 Habitat

4.1.1 Evaluate and prioritize persistency and resiliency of cold water patches. The Lake Pend Oreille adfluvial bull trout population is robust despite the

limited extant amount of cold water SR habitat. Projections for likely persistence in the future from direct tributaries to Lake Pend Oreille are marginal (see Climate Shield discussion). The existing high quality cold water rearing habitat in the lake as well as groundwater sources are not adequately accounted for in the current version of the Climate Shield model. In order to maximize the persistence of functioning SR habitats, additional investigations should be conducted to inform priorities for maintaining the status quo in the face of changing climate.

4.2 Demographic

4.3 Nonnatives

Conservation Recommendations

1.3.1 Reduce reservoir operational impacts. Review reservoir operational concerns (*e.g.*, water level manipulation) in Lake Pend Oreille and provide operating recommendations through the Federal Energy Regulatory Commission license (Cabinet Gorge Dam) and/or Federal consultation for Lake Pend Oreille (Albeni Falls).

1.3.2 Avista will work to reduce gas entrainment which causes supersaturation. Total dissolved gas reduction and monitoring will continue at Cabinet Gorge Dam as recommended by the WRTAC and approved by the MC in Annual Implementation Plans under Appendix F5 of the CFSA.

1.3.3 Maintain and supplement sources of cold water. Investigate and pursue any additional sources to enhance cold water. A possible cold water source is under study to supplement flows in the Priest River (and potentially downstream in the Pend Oreille River) by siphoning the colder hypolimnial waters of Priest Lake to discharge into the Priest River. Strengthen connectivity and consolidate habitat gains in headwater SR tributaries while seeking to direct more sources of cold water into the SR tributaries, through acquisition, irrigation efficiency, or development of new sources.

2.1.1 Implement Federal Power Act mitigation through BPA for Albeni Falls Dam. Fully mitigate fish losses related to construction and operation of federally licensed and operated hydropower projects.

2.2.1 Minimize bull trout bycatch mortality. IDFG and contractors will minimize bull trout by-catch mortality related to the lake trout netting

program through use of adopted best management practices; evaluate impacts of the netting program on the bull trout population.

2.2.2 Partners will conduct education and outreach. Educate anglers on fish identification to reduce unintentional harvest of bull trout. Increase enforcement to reduce intentional harvest (Appendix D).

2.2.3 IDFG will seek to restore bull trout angling opportunity in Lake Pend Oreille. Restore a bull trout harvest fishery of at least 200 fish annually while meeting recovery plan criteria.

2.3.1 Incorporate survey data into Lake Pend Oreille core area threats assessment for LPO-B area. Evaluate whether a self-reproducing migratory population is established or maintained in Lake Pend Oreille (connected to and spawning in all suitable tributary streams, and sufficiently robust to maintain demographic and genetic viability).

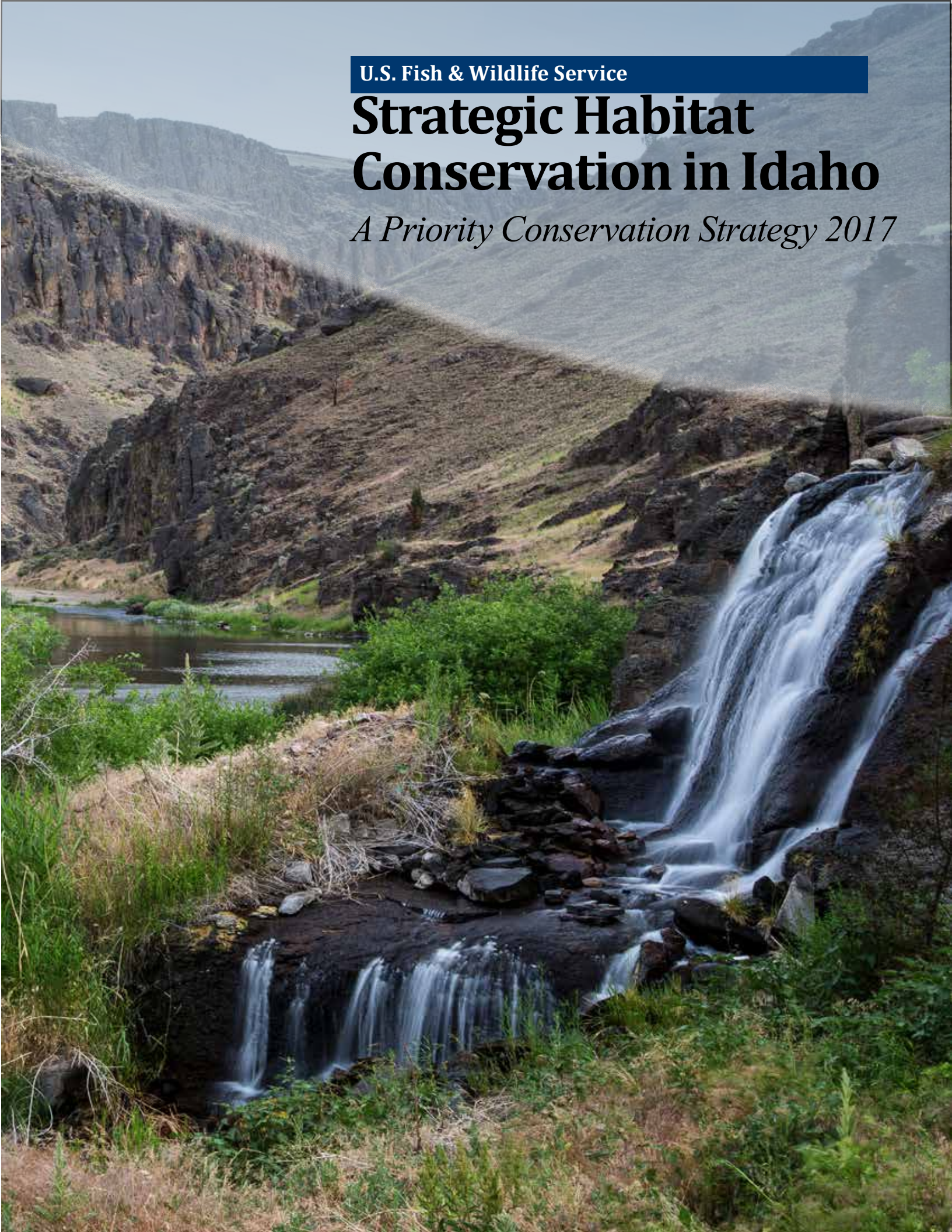
3.1.1 Suppress lake trout in Lake Pend Oreille. Continue assessment of predator–prey interactions in mainstem reservoirs and Lake Pend Oreille. In Lake Pend Oreille, continue to evaluate the threat of lake trout and adaptively adjust methodology, using commercial-type fishing gear, to reduce lake trout numbers.

4.2.1 IDFG and partners will conduct redd counts. Maintain annual bull trout redd counts in 20 tributary streams to monitor the status and health of the population and the ability to meet recovery plan criteria. Monitor juvenile abundance in tributary streams to evaluate effectiveness of tributary protection and enhancement efforts.

4.2.2 Evaluate bull trout stock diversity. Gather additional biological information on bull trout where stock specific differences in age or size at maturity may influence harvest regulations or meeting recovery plan goals.

APPENDIX F

USFWS PRIORITY CONSERVATION STRATEGY 2017 EXERPT



U.S. Fish & Wildlife Service

Strategic Habitat Conservation in Idaho

A Priority Conservation Strategy 2017

Table of Contents

EXECUTIVE SUMMARY

In recent years, the Fish and Wildlife Service has emphasized a need to focus our efforts at larger geographic scales if we are to more successfully address conservation challenges such as changing land use and climate. Placing greater effort in areas of strategic conservation importance will better ensure that our investments are meaningful and long lasting. The agency has also emphasized a need to better employ a science-based adaptive approach to ensure that we are effective in meeting our conservation objectives. The Idaho Fish and Wildlife Office (IFWO) used this guidance to identify four Priority Conservation Areas in the State of Idaho where there are compelling conservation interests for Federal Trust resources, the habitats in which they dwell, and associated natural resources that are valued by the public. The IFWO identified 39 Priority Species that utilize habitats within these areas and serve as habitat indicators, icons, keystone, or umbrella species. Lastly, we drafted Conservation Strategies that provide stated goals, objectives, and Conservation Actions that focus on high profile targets (habitats or Priority Species) within each Priority Conservation Area. These Conservation Strategies address important conservation activities, and are designed to improve habitat health and ecological integrity for all native species that rely on its associated Priority Conservation Area. This version of the IFWO Statewide Conservation Strategy incorporates input solicited from our partners, in recognition of the fact that large-scale efforts will require willing collaborations between multiple partners, including Idaho State, Federal, and Tribal agencies, as well as private conservation and user groups, as we shift to strategy implementation.

Appendices: Priority Conservation Area Strategies

The appendices include a brief description of the conservation strategies developed by each of the four Conservation Teams. Conservation Strategies are meant to provide a step-down outline of the most pressing conservation issues in which the Service is engaged within the identified Priority Conservation Areas. Maps of each of these areas are provided at the beginning of each appendix: Blue Mountains, Middle Rockies, Owyhee Uplands, and Selkirk Cabinet-Yaak. The list of Conservation Actions, located immediately following the strategy goals and supporting Conservation Objectives, do not contain great detail, but identify the primary needs or threats that will be necessary to address the stated objectives. Each Conservation Team will develop more detailed accounts to help guide the planning and implementation of these Conservation Strategies with partners.

Canada lynx © David Moskowitz

Appendix IV: Selkirk Cabinet-Yaak Priority Conservation Area

The boundaries of the Selkirk Cabinet-Yaak Priority Conservation Area encompass the northern Idaho Panhandle from the Canada-Montana-Washington borders to the Pend Oreille Basin to the south. Diverse forests, cool temperatures and abundant precipitation support diverse assemblages of fish and wildlife species. The Selkirk Cabinet-Yaak Conservation Team identified four conservation strategies to conserve and restore: 1) native salmonids in the Priest and Pend Oreille Basins, 2) terrestrial species in the Selkirk Mountain ecosystem, 3) Kootenai Basin ecosystems and watersheds, and 4) riparian and wetland habitats (Figure 5). The area contains 14 species identified by the IFWO as priorities, six of which are federally listed as threatened or endangered. Numerous glacial lakes occur within the area, including Lake Pend Oreille, the largest lake in Idaho. Remnant wetlands, riparian habitat and dry conifer forest along the Kootenai River Valley provide important wildlife corridors between the flanking mountain ranges.

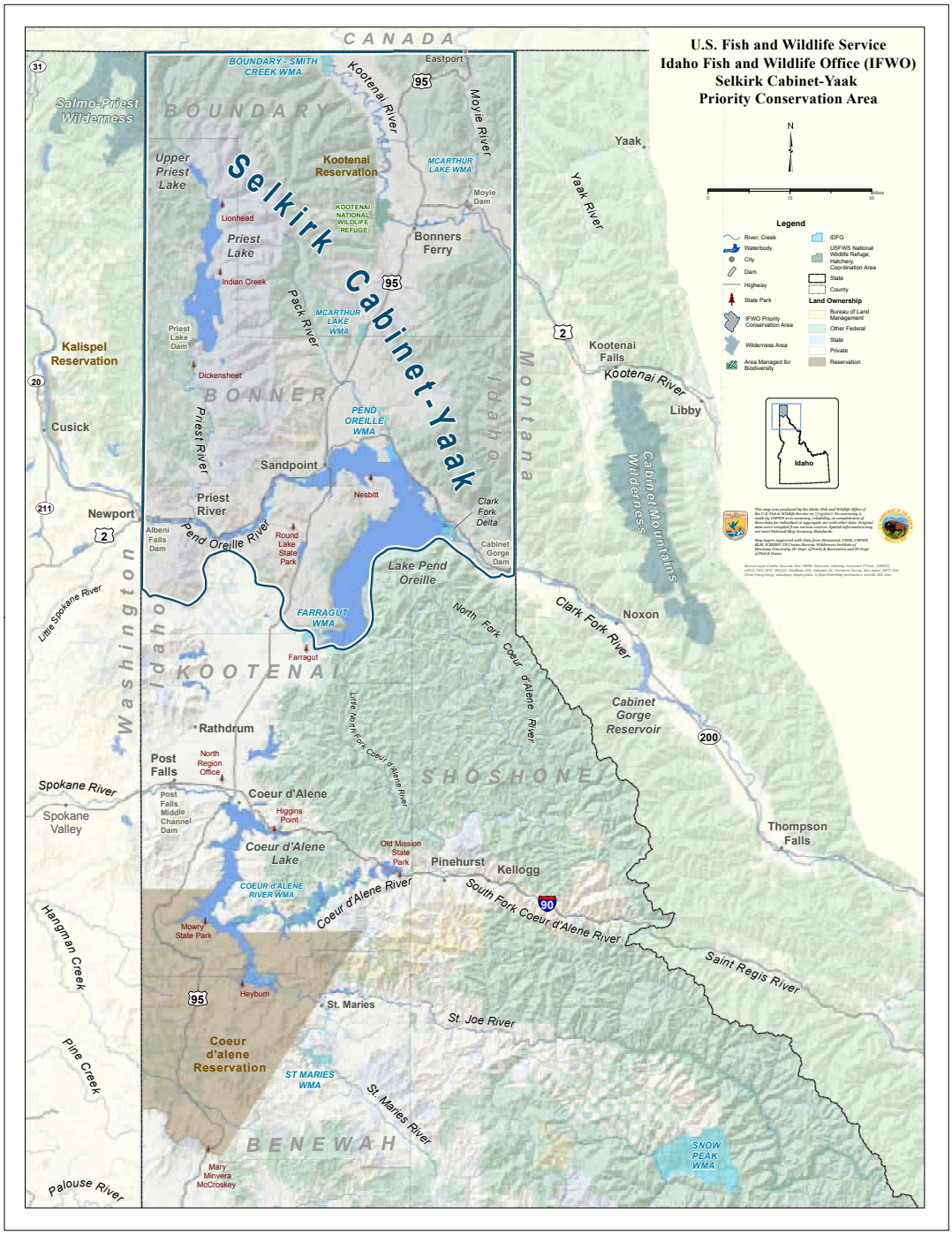


Figure 5. The Selkirk Cabinet-Yaak Priority Conservation Area occupies an estimated 3.3% of the state. It contains unique wet and mesic forest, as well as large lake and aquatic systems unique in Idaho.

Conservation Strategy 1: Enhance native salmonid populations within the Priest and Pend Oreille Basin.

Priority Species: Bull Trout *(Salvelinus confluentus),* Westslope Cutthroat Trout *(Oncorhynchus clarkia lewisi).*

Goal 1a: Ensure resilient, ecologically functioning ecosystems capable of supporting native aquatic species and habitats in the Priest and Pend Oreille Basins.

Conservation Objectives

i. Conserve remaining functional blocks of streams and rivers supporting aquatic Priority Species.

ii. Identify and restore impacted aquatic habitats to ensure their use by aquatic Priority Species. Maintain and enhance the resilience of these habitats.

iii. Promote connectivity between existing functional networks of aquatic habitat within the Priest and Pend Oreille Basins.

iv. Identify and address threats to aquatic habitats and their surrounding terrestrial and riparian habitats to ensure aquatic integrity.

v. Protect and restore mosaics of aquatic habitat types (lakes, rivers, streams, and associated wetland and riparian areas) to ensure habitats for all life-history needs of aquatic Priority Species are available and connected.

Actions: 1, 2, 3, 4, 5, 6, 7 (see complete list of Actions below).

Goal 1b: Ensure abundant, diverse, and resilient populations of native aquatic species within the habitats of the Priest and Pend Oreille River basin.

Conservation Objectives

i. Protect or restore native habitats that support key life history components of Priority Species.

ii. Identify and address threats to aquatic Priority Species and their habitat.

iii. Promote connectivity between important habitat patches for aquatic Priority Species within the Priest and Pend Oreille Basins.

iv. Promote genetic diversity of Priority Species in the aquatic habitats.

v. Promote recovery of Priority Species.

Actions: 3, 4, 5, 6, 7, 8, 9 (see below).

Goal 1c: Ensure that key aquatic systems within the Priest and Pend Oreille Basins are biologically connected to other river systems and adjacent to the Selkirk Cabinet-Yaak Priority Conservation Area.

Conservation Objectives

i. Identify existing and potential aquatic corridors to existing functional blocks of aquatic habitats in the Priest and Pend Oreille River systems that will provide connectivity to aquatic Priority Species.

ii. With partners, promote connectivity between important habitat patches adjacent to the Selkirk Cabinet-Yaak Priority Conservation Area.

iii. With partners, focus restoration and/or mitigation efforts on aquatic habitats that connect functional blocks of aquatic habitat within the Selkirk Cabinet-Yaak Priority Conservation Area to adjacent habitats as appropriate.

Actions: 3, 9 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Conservation Strategy 1:

Action 1: Protect, enhance, and restore key riparian habitats and their ecological function so that they support or contribute to sustainable population levels of Priority Species.

Action 2: Improve channel complexity within focal drainages.

Action 3: Restore fish passage at key dams.

Action 4: Restore and provide passage to migratory fish by removing potential human-caused barriers, i.e. impassable culverts, hydraulic head-cuts, water diversion blockages, landslides, and impassable deltas.

Action 5: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 6: Work with partners to prevent, identify, contain, and control invasive species, and to restore affected native habitats.

Action 7: Reduce threats from introduced fish species.

Action 8: Maintain or increase the total number of identified local populations of Priority Species, and maintain the broad distribution of local populations.

Action 9: Identify additional areas for connectivity between aquatic habitats within and adjacent to the Selkirk Cabinet-Yaak Priority Conservation Area.

Conservation Strategy 2: Enhance the viability of the Selkirk Mountains ecosystem for the continuing benefit of native species.

Priority Species: Woodland Caribou *(Rangifer tarandus),* Canada Lynx *(Lynx canadensis),* Grizzly Bear *(Ursus arctos),* Fisher *(Martes pennanti),* Whitebark Pine *(Pinus albicaulis),* Little Brown Bat *(Myotis lucifugus),* Western Bumble Bee *(Bombus occidentalis).*

Goal 2a: Ensure resilient, ecologically functioning Selkirk Mountains ecosystem capable of supporting native terrestrial species and habitats.

Conservation Objectives

i. Conserve and enhance remaining functional habitat blocks or mosaics that support Priority Species.

ii. Identify and address threats to habitats to ensure ecosystem integrity.

iii. Identify and restore habitat blocks large enough to support native and Priority Species, and focus efforts on maintaining and enhancing the resiliency of these native habitats.

iv. Promote connectivity between important habitat patches to sustain all life history stages of native terrestrial species.

v. Protect mosaics of habitat at multiple scales.

Actions: 1, 2, 3, 4, 7, 8, 9, 10, 13 (see complete list of Actions below).

Goal 2b: Ensure abundant, diverse, and resilient populations of native Selkirk Mountains species within their habitats.

Conservation Objectives

i. Protect or restore native habitats that support key life history components of Priority Species.

ii. Identify and address threats to Priority Species and their habitats.

iii. Promote connectivity between important habitat patches for Priority Species within the Selkirk Mountains Ecosystem.

iv. Promote genetic diversity of Priority Species within the Selkirk Mountains Ecosystem.

v. Promote recovery of Priority Species.

Actions: 5, 6, 7, 10, 11, 12, 13, 14, 15 (see below).

Goal 2c: Ensure the Selkirk Mountains are biologically connected to habitats within and adjacent to the Selkirk Cabinet-Yaak Priority Conservation Area.

Conservation Objectives

i. Identify existing and potential wildlife corridors that will provide connectivity for Priority Species.

ii. With partners, promote connectivity between important habitat patches adjacent to the Selkirk Mountains Ecosystem.

iii. With partners, focus restoration and/or mitigation efforts on habitats that connect functional blocks of habitat between the Selkirk Cabinet-Yaak Priority Conservation Area and adjacent areas.

Actions: 4, 8, 9, 10, 11 (see below).

Actions for Selkirk Cabinet-Yaak Conservation Strategy 2:

Action 1: Work with partners to conserve, protect, and enhance forest mosaics that contribute to sustainable populations of Priority Species.

Action 2: Continue to coordinate with partners on developing and implementing a wildland fire use plan to allow for non-suppression of naturally ignited fires when appropriate, and the implementation of a prescribed fire program to maintain suitable habitats for Priority Species.

Action 3: Improve function and complexity of mainstem riparian habitats to levels that support or contribute to sustainable population levels of Priority Species.

Action 4: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 5: Work with partners to reduce human-caused mortalities of Priority Species, particularly in the wildlife-urban interface.

Action 6: Working with partners, identify the current distribution and abundance of Priority Species within the Selkirk Mountains Ecosystem.

Action 7: Update and expand the population viability analysis (PVA) for trans-boundary woodland caribou in southern British Columbia.

Action 8: Help partners identify and prioritize areas for conservation, acquisition, and/or restoration.

Action 9: Work with partners to protect, restore, or enhance existing wildlife corridors within the Selkirk Mountains Ecosystem.

Action 10: Assess and restore genetic connectivity for Priority Species between the Selkirk Mountains Ecosystem and adjacent ecosystems.

Action 11: Begin scoping efforts to provide a wildlife corridor between the Selkirk and Cabinet Mountains at McArthur Lake.

Action 12: Work with partners to implement standardized monitoring programs for Priority Species within the Selkirk Mountains Ecosystem.

Action 13: Work with Partners to create pollinator habitat and minimize the use of pesticides where practical.

Action 14: Work with partners and stakeholders to develop and implement a statewide strategic plan for white-nose syndrome (WNS), including protocols for surveillance and response to the introduction of WNS in Idaho.

Action 15: Assist our partners with conducting bat surveys, identifying summer roosts and winter hibernacula, and developing/implementing the North American Bat Monitoring Program (NABat)[13].

Conservation Strategy 3: Maintain and restore healthy ecosystems and watersheds within the Kootenai Basin to ensure the continued persistence, health, and diversity of native species.

Priority Species: Kootenai White Sturgeon *(Acipenser transmontanus),* Bull Trout *(Salvelinus confluentus),* Westslope Cutthroat Trout *(Oncorhynchus clarkia lewisi),* Interior Redband Trout *(Oncorynchus mykiss gairdneri),* Little Brown Bat *(Myotis lucifugus),* Western Bumble Bee *(Bombus occidentalis).*

Goal 3a: Ensure resilient, ecologically functioning aquatic habitats capable of supporting native aquatic species and their habitats within the Kootenai Basin.

Conservation Objectives

i. Conserve remaining functional blocks of streams and rivers supporting aquatic Priority Species.

ii. Restore functional blocks of impacted aquatic habitats capable of supporting native and Priority Species. Maintain and enhance the resiliency of these habitats.

iii. Promote connectivity between existing functional blocks of aquatic habitat within the Kootenai Basin.

iv. Identify and address threats to aquatic habitats and their surrounding terrestrial and riparian habitats to ensure aquatic integrity.

v. Protect and restore all aquatic habitat types (lakes, rivers, streams, and associated wetland and riparian areas) to ensure habitats for all life-history needs of aquatic Priority Species are available and connected.

Actions: 1, 2, 3, 4, 5, 6, 7, 8, 13 (see complete list of Actions below).

Goal 3b: Ensure abundant, diverse, and resilient populations of native Kootenai Basin species within their habitats.

Conservation Objectives

i. Protect or restore native habitats that support key life history components of Priority Species.

ii. Identify and address threats to aquatic Priority Species and their habitat.

iii. Promote connectivity between important aquatic habitat patches within the Kootenai Basin.

iv. Promote genetic diversity in the aquatic habitats.

v. Promote recovery of Priority Species.

Actions: 1, 2, 7, 8, 9, 10, 11, 12, 13, 14, 15 (see below).

Goal 3c: Ensure that aquatic habitats within the Kootenai Basin are connected to other aquatic systems within and adjacent to the Selkirk Cabinet-Yaak Priority Conservation Area.

Conservation Objectives

i. With partners, promote connectivity between important aquatic habitat patches within the Kootenai Basin.

ii. With partners, focus restoration and/or mitigation efforts on aquatic habitats that connect the Kootenai Basin to adjacent functional blocks of habitat within and outside of the Selkirk Cabinet-Yaak Priority Conservation Area.

Action: 10 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Conservation Strategy 3:

Action 1: Protect and maintain prime, functioning tributary habitat.

Action 2: Restore and provide passage to migratory fish by removing human-created barriers, i.e. impassable culverts, hydraulic headcuts, water diversion blockages, landslides, and impassable deltas.

Action 3: Working with Action Agencies, bring Libby Dam operations closer to normal hydrograph conditions during summer and spring while providing flood control.

Action 4: Improve riparian function and complexity to levels that support or contribute to sustainable population levels of Priority Species.

Action 5: Improve channel complexity and habitat function within focal drainages.

Action 6: Establish a more normative mainstem thermal regime to be more within the tolerance range of all life stages of Priority Species and their prey.

Action 7: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 8: Restore and enhance spawning and rearing habitat for Priority Species.

Action 9: Reduce threats from introduced species.

Action 10: Work with partners to maintain connectivity between the Kootenai Basin and important spawning stocks in British Columbia.

Action 11: Characterize, conserve, and monitor genetic diversity and gene flow among local populations of Priority Species, and maintain or increase the total number of genetically pure local populations.

Action 12: Maintain or increase the total number of identified local populations of Priority Species, and maintain the broad distribution of local populations across all existing core areas within recovery units.

Action 13: Work with Partners to create pollinator habitat and minimize the use of pesticides where practical.

Action 14: Work with partners and stakeholders to develop and implement a statewide strategic plan for white-nose syndrome (WNS), including protocols for surveillance and response to the introduction of WNS in Idaho.

Action 15: Assist our partners with conducting bat surveys, identifying summer roosts and winter hibernacula, and developing/implementing the North American Bat Monitoring Program (NABat)[13].

Conservation Strategy 4: Restore riparian and wetland habitats within the Selkirk Cabinet-Yaak Priority Conservation Area to ensure the continued persistence, health, and diversity of native species.

Priority Species: American Beaver *(Castor canadensis)*, Willow Flycatcher *(Empidonax traillii)*, Western Bumble Bee *(Bombus occidentalis)*, Northern Leopard Frog *(Rana pipiens)*.

Goal 4a: Ensure resilient, ecologically functioning riparian and wetland habitats capable of supporting native species and their habitats.

Conservation Objectives

i. Conserve and enhance remaining functional riparian and wetland habitats that support Priority Species.

ii. Restore large functional blocks of riparian and wetland habitats capable of supporting native and Priority Species. Maintain and enhance the resiliency of these habitats.

iii. Identify and address threats to riparian and wetland habitats and their surrounding terrestrial and aquatic habitats to ensure ecosystem integrity.

iv. Protect and restore all riparian and wetland habitat types (floodplain, vernal pool, peat, etc.) to ensure habitats for all life history needs of Priority Species are available and connected.

v. Protect mosaics of riparian and wetland habitat at multiple scales.

Actions: 1, 2, 3, 4, 5, 6, 10 (see complete list of Actions below).

Goal 4b: Ensure abundant, diverse, and resilient populations of native species within riparian and wetland habitats.

Conservation Objectives

i. Protect or restore riparian and wetland habitats that support key life history components of Priority Species.

ii. Identify and address threats to Priority Species and their habitats.

iii. Promote connectivity between important habitat patches for Priority Species.

iv. Promote genetic diversity of Priority Species within riparian and wetland habitats.

v. Promote recovery of Priority Species.

Actions: 5, 6, 7, 8, 9, 10 (see below).

Goal 4c: Ensure that riparian and wetland habitats within the Selkirk Cabinet-Yaak Priority Conservation Area are biologically connected to adjacent functional blocks of habitat.

Conservation Objectives

i. Identify existing and potential wildlife corridors that will provide connectivity for Priority Species.

ii. With partners, promote connectivity between important riparian and wetland habitat patches within the Selkirk Cabinet-Yaak Priority Conservation Area.

iii. With partners, focus restoration and/or mitigation efforts on habitats that connect functional blocks of riparian and wetland habitat within the Selkirk Cabinet-Yaak and adjacent areas.

Actions: 4, 9 (see below).

Conservation Actions for Selkirk Cabinet-Yaak Conservation Strategy 4:

Action 1: Work with partners to restore, protect, and enhance prime, functioning, and rare riparian and wetland habitats that support or contribute to sustainable population levels of Priority Species.

Action 2: Work with action agencies to reduce impacts to riparian and wetland habitat from development, agriculture, and hydrologic alteration.

Action 3: Reduce threats to riparian and wetland habitats by controlling for non-native species.

Action 4: Work with partners to reconnect functional blocks of riparian and wetland habitat.

Action 5: Restore and maintain the broad habitat diversity of riparian and wetland habitat types across the Selkirk Cabinet-Yaak Priority Conservation Area.

Action 6: Incorporate climate adaptive planning when identifying key areas for conservation and restoration.

Action 7: Work with partners to maintain or increase the distribution and abundance of Priority Species that utilize riparian and wetland habitats.

Action 8: Work with partners to implement standardized monitoring programs for Priority Species within riparian and wetland habitats.

Action 9: Work with partners in surrounding areas to ensure connectivity of riparian and wetland habitats that provide wildlife corridors between the Selkirk Cabinet-Yaak Priority Conservation Area and adjacent areas.

Action 10: Work with Partners to create pollinator habitat and minimize the use of pesticides where practical.

APPENDIX G

NAVFAC FORESTRY PLAN

4.4.1 Introduction

Detachment Bayview forest lands extend over about 10 acres of established forest and approximately 1.5 acres of urban forest around buildings and facilities. The recent history of forest management on the installation can be surmised from the existing timber stands as shown in Figure 4.1. The majority of existing trees are 50 to 120 years old. This indicates that most of the installation's forest was harvested in the late 19th or early to mid 20th centuries. The subsequent reforestation on areas harvested resulted from natural seeding coinciding with favorable environmental conditions for the establishment of new stands of timber. Since ponderosa pine and Douglas-fir dominated the acreage adjacent to harvested areas, they were the primary coniferous species available to provide seed. The existing stands have essentially developed naturally.

Since the Navy acquired the property, there has been little active forest management due to the combination of second growth and the desire to maintain visual and aesthetic buffers between installation facilities and abutting state park lands, public roads and privately-owned properties.

In accordance with DOD and DON requirements, the Navy Forest Management Program is centrally funded and executed through the Naval Facilities Engineering Command. The Forester, Naval Facilities Engineering Command Northwest (NAVFAC NW), will provide professional forestry services to manage and develop the forest resources for the economical production of forest products and the conservation of related resources. The Forester will prepare, and review with the Detachment Bayview, the forestry Annual Increments for the Detachment Bayview.

4.4.2 Authority and Requirement

The authority and requirement to have a Forest Management Plan is contained in an array of laws and DOD, DoN and NAVFACENGCOM instructions and directives cited elsewhere in this INRMP. For example, 32 CFR 190 "prescribes policies and procedures for an integrated program for multiple-use management of natural resources on property under DOD control." Title 10 U.S. Code, Section 2665 authorizes the sale of forest products as well as reimbursement for the costs of managing forest resources for timber production. This is administered in accordance with DODINST 7310.5 Accounting for Production and Sale of Forest Products. The NAVCOMPT Manual, Volume 3, paragraphs 07150 and 035475-79 provide guidance on funding, accounting, and fiscal reporting procedures. The Timber Conservation and Shortage Relief Act of 1990 prohibits export of unprocessed timber originating from federal lands west of the 100th meridian. OPNAVINST 5090.1C Environmental and Natural Resources Program Manual discusses requirements, responsibilities and policy for natural resources management for Navy ships and shore activities.

Annual Navy Forestry Program expenditures will normally not exceed annual income from the sale of forest products. In the case of the forest on the Detachment Bayview, restoration and enhancement efforts in any one given year might exceed income from the property in that same year. This is not to be a cause of alarm, since deposits from other forested Naval activities will generate sufficient funds to cover approved expenses, and planning and budgeting constraints will enforce economic investment of available funds for production and sale of forest products. Detachment Bayview may also provide appropriated funds for forestry projects if it so desires.

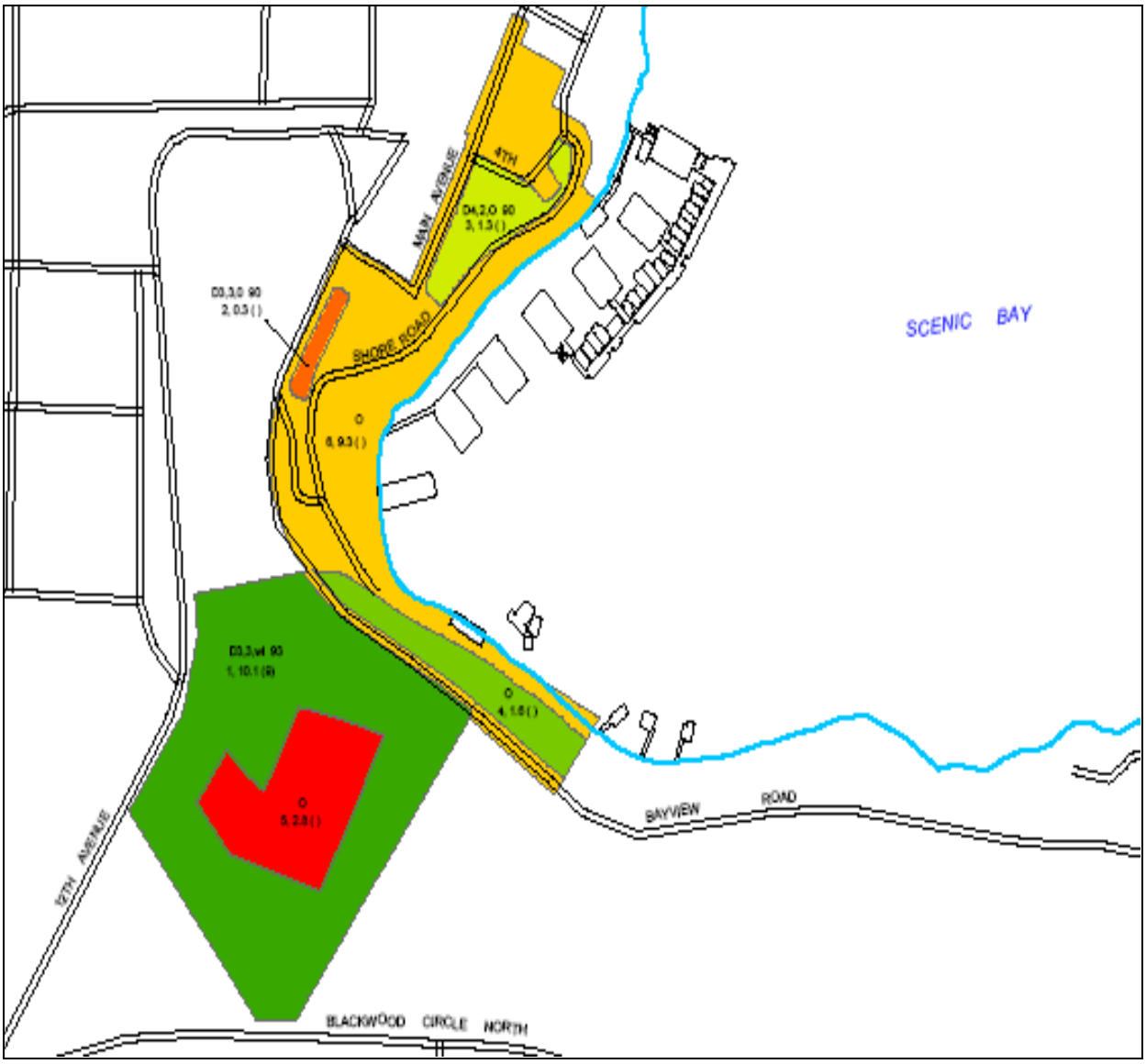


Figure 4.1 Forest Stand Map

4.4.3 Purpose and Objectives

The purpose of this forestry plan is to provide programmatic and silvicultural policy for management of forest resources at Detachment Bayview. It outlines procedures, projects and silvicultural prescriptions to restore, enhance, conserve and protect the health, vigor, productivity and associated resources of the forested areas. Forest stands are shown in Figure 4.1.

This plan's policies address existing forest stands as well as opportunities for planting additional trees. While base facilities and functions may constrain the location and size of forest stands, this plan will improve and enhance existing and nascent forests. The silvicultural and programmatic

policies herein are consistent with DOD policy that forest lands suitable for timber production shall be intensively managed for restoration and improvement of forest resources and economical production of commercial forest products, based on soil-site capabilities and integrated with the total natural resources program, and in consonance with military uses. Given the relatively small size of the forest stands on Detachment Bayview, commercial harvest will be infrequent except for construction clearing and removal of diseased or dead trees.

Detachment Bayview forests will be managed on a multi-disciplinary, multi-use watershed basis. This means that other natural resources programs and uses, such as military training, wildlife management, endangered species protection, wetlands protection, etc will be incorporated on a reciprocal basis to assure that all natural resources programs and the military mission are truly integrated. This approach will facilitate the greatest good for the greatest array of uses over the longest period of time without diminishment of future productivity and land use options. Specific management strategies and prescriptions are presented below in the appropriate management sections.

The forest management objectives at Detachment Bayview are: (1) continue to maintain the existing forest stands in a healthy, productive condition through selective thinning that will increase tree and stand vigor and health and enhance structural diversity; (2) support the military mission by maintaining land availability, use options and slope stability; (3) prevent Navy land management activities from impacting water resources; (4) generate forest products and income through timber sales contracts if and when compatible with other mission requirements; (5) integrate forest management with other natural resources disciplines and programs to protect natural resource attributes associated with the forested acreage on the Detachment

Navy forest management programmatic and silvicultural policies protect the real estate investment, conserve and enhance both consumptive and non-consumptive natural resources, maintain high soil and water quality and provide financial returns to the Government, as well as contributing forest products to the local economy. Management of Navy forests will be coordinated in an integrated, balanced natural resources program to furnish soil and watershed protection, enhance wildlife habitat, promote natural beauty and other natural resource values while providing operating, training and buffer areas for the military mission. These policies and plan will guide the preparation of annual increments and the selection of silvicultural techniques and projects used on Navy forests. Annual increments will be reviewed with the installation prior to implementation to assure compatibility with mission requirements. When implemented, the projects and prescriptions of this plan will improve the condition of the forested acreage, and enhance the horizontal and vertical structural diversity of forest stands to create habitat structure and opportunities for biological diversity.

4.4.4 Schedule for Review

This plan will be reviewed annually. The greatest needs in forestry on Detachment Bayview lie in the reforestation of open areas; commercial thinning of dense second growth stands to encourage development of understory vegetation and to enhance forest health and structural diversity; precommercial timber stand improvement (TSI) cuts to reduce competing vegetation; and interplanting of existing stands to encourage restoration of coniferous cover. This plan will provide stand by stand prescriptions tailored to achieve these goals. Thus, the plan will need review when:

(1) the prescriptions have been fully implemented and regulated forest stands are achieved; (2) when sufficient time has passed and, in the absence of plan implementation, natural processes have so changed forest conditions that the plan no longer reflects existing conditions; or (3) when sufficient land use changes have occurred as a result of mission requirements that the plan is outdated. Given recent types and intensities of mission uses, it is anticipated that a 5 year review schedule is appropriate.

4.4.5 Policies

The Navy Forest Management Program will be administered in consonance with applicable law and regulation. Planning, budgeting, fiscal management, reporting and implementation will be in accordance with DOD program requirements, including forest management initiatives, mission support, positive community relations and public affairs, ecosystem forest management on a watershed basis and environmental protection.

The Navy is committed to conserving and managing soil, water, forests, fish and resources. Our primary purposes in managing these natural resources are to support our national defense mission, maximize multiple land use benefits and fulfill land stewardship responsibilities required by applicable Laws, Executive Orders, administration initiatives and DOD directives. In order to achieve these purposes, this forestry plan will: provide for sustainable yield production, conservation and management of quality forests and wood fiber; fish and wildlife habitat; endangered species conservation and recovery; watershed and wetlands protection; and development and maintenance of desirable structural diversity and biological balance in the forest consistent with proven scientific practices.

Stand prescriptions are interdisciplinary and ecosystem oriented in approach, and considerate of watershed conditions. This means, for example:

~ forest management will be holistic to include a wide array of natural resource uses, values and functions

~ that wildlife and fisheries issues are incorporated into forest management planning, project criteria and operations

~ that wildlife trees, snag retention and wetlands protection are integral parts of forest management and timber sales;

~ that thinning prescriptions will achieve vertical and horizontal structural diversity to foster greater opportunities for biological diversity;

~ stand prescriptions will contribute positively to enhancement of wildlife habitat and corridors, and endangered species protection, conservation and recovery

~ that wetlands will be protected not only within jurisdictional boundaries, but including hyporrheic zones.

~ adjacent land conditions will be considered in prescriptions and implementation schedules

4.4.6 Implementation

The Navy Forest Management Program is centrally funded and executed through the Naval Facilities Engineering Command. The Forester, Naval Facilities Engineering Command Northwest (NAVFAC NW) will provide professional forestry services to manage and develop the forest resources for the economical production of forest products and the conservation of related resources. The Forester will prepare, and review with Detachment Bayview, the forestry annual

work increments and budget requests. Annual increments are Forest Plan addenda which describe all forest management work to be completed during a fiscal year. Planned work and expenditures are itemized by cost account codes. Upon approval of the annual increment and receipt of funding, the year's forestry work will be implemented.

Reimbursement for the cost of managing forest resources for timber production is authorized by 10 USC 2665 from the sale of forest products. Forest products sale income and reimbursement of forestry expenses are planned, budgeted and administered by the Forester at NAVFAC NW.

Forest product sales are a disposal of government real property, accomplished in accordance with NAVFAC P-73 Real Estate Procedures Manual, Volume II. Service contracts used to acquire forestry services are processed per FAR. Sales of forest products and forestry services are not combined under one contract. The Forester will provide technical specifications, funding and contract administration for all forestry contracts. The installation may provide its own funds to NAVFAC NW for forestry projects and services.

4.4.7 Forest Description and Inventory

Vegetation Characteristics

Detachment Bayview forest lands extend over approximately 10.1 acres owned by the Navy. The recent history of forest management on the installation can be surmised from the existing timber stands. The majority of existing trees are 70 to 120 years old. This indicates that most of the acreage was harvested by homesteading pioneers prior to Navy acquisition of the property. Over the last few years, silvicultural treatments have focused on removal of hazard trees. Some land has also been cleared of all timber for military construction projects.

Reforestation of areas harvested in the 1870s and subsequent decades resulted from natural seeding coinciding with favorable environmental conditions for the establishment of new stands of timber. Since ponderosa pine, Douglas-fir, larch and true fir dominated the area, they were the primary species available to provide seed. The existing stands have essentially developed naturally.

Forest Soils

Soil characteristics can be used to predict the probable impact of various forest management practices on individual soil map units. Probable impacts can be predicted for: woodland suitability, soil compaction, slope stability, competing vegetation and tree windthrow. Refer to Section 2.4 and the USDA Soil Conservation Service (sic) “Soil Survey of Kootenai County Area, Idaho (April 1981)” for specific soils mapping units, profile descriptions and pertinent land use information. Most of the soils on Detachment Bayview have adequate nutrients, available water holding capacity and internal drainage for tree production. The exceptions are soils that have been severely compacted by construction.

Inventory

A detailed forest inventory for Detachment Bayview is given in Appendix F. It includes:

Table 1: Stand Data reports volume data by stand number

Table 2: Stand Data by Decade of Origin reports volume data by decade of origin,

Table 3: Habitat Data by Cruised Stand provides the percentage of ground cover by primary species,
Table 4: Type Group Summary reports volume data by type group,

A variable sub plot was taken at each inventory plot point to measure snags. A fixed length transect was taken at each measure point to measure down woody material to a 4-inch diameter.

On the forest stand map, the stands are identified by stand number, species, size class, stocking and decade of origin. A summary of the type symbols used follows:

Species

D	Douglas fir
H	Western hemlock
RC	Western red cedar
WP	Western white pine
LP	Lodgepole pine (shore pine)
PP	Ponderosa pine
WL	Western larch
TF	True fir (Grand fir, Silver fir)
SS	Sitka spruce
RA	Red alder (includes aspen, cherry)
BLM	Bigleaf maple
BC	Black Cottonwood
Md	Madrone
Q	Aspen
Hd	Mixed hardwoods

Lower case letter species designations indicate a secondary species which comprises 20% or more of the stand volume as estimated from the aerial photographs or cruisers judgment. The secondary call is useful to indicate that individual stands are somewhat different from the type group in which it is included.

Non-Forest Types

A	Agriculture
Br	Brush
G	Grass
O	Open (developed)

Size Class

4	21” dbh and larger
3	11-21” dbh
2	5-11” dbh
1	0-5” dbh

Occasionally a size class is difficult to determine because of the broad range of diameters present. In this case, the diameter class may be shown as 4/3 indicating a mixture of size class 4 and 3 trees.

Stocking

Stocking is represented by percent of crown closure, based on aerial photo examination.

3 70-100 percent
2 40-69 percent
1 10-39 percent

Decade of Origin

Decade of origin is shown as a two-digit number following the type call. For instance, 92 indicates that the stand began in the decade of the 1920s, between 1921 and 1930.

For volume compilation purposes, cruise data from individual stands is combined with other similar stands into type groups. The groups contain stands with minor species variances that are unique to that stand, however the volume sample is too small to report individual stand volumes. Occasionally, an individual stand may not receive plots or may be too small to be reported separately. In that case, a judgment is made as to the most appropriate type group. When type groups are indicated with an "a", this means that the cruiser chose a different basal area factor for that stand, though the group is the same as other stands.

Type Groups

0 non-timber stands
1 D3,3,wl
2 D3,3,O
3 D4,2,O

Site Index

Site quality is a term used to describe the relative productivity of a land area for a particular tree species. It is usually defined in terms of capacity to produce wood fiber. The most common expression of site quality is site index. Site index is based on tree growth patterns and refers to the height of dominant or dominant and co-dominant trees in even-aged stands at some index age, usually 100 years. The height growth of such trees is considered to be independent of stand density over a wide range of soil/site types.

Due to prior land management practices, including base construction that significantly disturbed the soils, many stands on Detachment Bayview have not been actively managed to maximize tree growth. Thus, the use of site indices may not always reflect actual site productivity potential. One goal of this plan is to achieve well stocked, regulated stands in order to take advantage of site productivity and to restore the coniferous forest cover previously found on these lands. Thus, site indices based on existing stand characteristics may increase with management and time. Site Indices are given in Table 1 for the dominant tree species in each stand.

4.4.8 Forest Management System

A forest management system of area control will be used to foster desirable forest age classes, stand structure, species composition and to enhance wildlife habitats. This will assure sustainable production of the most desirable timber and other forest products, functions and values while protecting water quality, structural and biological diversity and aesthetics. Due to small forest size, it is inappropriate to fragment the forest into a number of stands equal to a rotation age. Rather, existing stand delineations will be the planning base for future age classes.

Tree planting and plantation maintenance, interplanting existing stands, and commercially thinning some areas will be the major forest management considerations for the next two decades. Most of the forest land is poorly to medium-well stocked second growth. The typical planting prescription will be 10 to 12 feet on center for plantations and when interplanting existing stands.

The typical thinning prescription will specify that 100 of the best commercial species "Leave Trees" will be left uncut and undamaged on each acre, spaced consistently and uniformly throughout the thinning area. In addition to the specified Leave Trees, all thinnings will leave intact all small non-commercial sized trees. The purposes of this approach include:

~ sustainable forest management without diminution of future diversity and productivity
~ minimizing stand disturbance while opening up the canopy sufficiently to allow more sunlight to hit the forest floor and establish understory vegetation
~ preserving and enhancing both horizontal and vertical structural diversity through retention of shade tolerant understory trees and development of grasses, forbs and woody brush species
~ providing a population of understory and suppressed trees that are recruitment for snags in future decades
~ providing botanical and structural diversity that will enhance forest stands for wildlife species.

Snags, Hollow Logs and Wildlife Trees

Snags and hollow logs play a very important role in forest ecology. Forest management will protect snags and downed large organic debris. In addition, trees deemed unique or of special interest for wildlife, such as advanced second growth specimens, isolated relict old growth, trees with large limbs or cavities, or less prevalent species will also be protected.

Snags and downed hollow logs, important to cavity-nesting birds and other animals, will be left uncut except when determined by the NAVFAC NW Forester, in consultation with the installation, to present a safety hazard and no alternatives are available for working around the snag. All naturally downed logs will be left on the forest floor, unless inadvertently moved as part of the logging process, to provide habitat for wildlife including small mammals, salamanders, insects and other arthropods. Slash left from cutting the tops and branches off of harvested trees will be left on the forest floor to allow it to decompose naturally and contribute to nutrient cycling.

Species to be Grown

Bigcone Douglas-fir, lodgepole pine, larch and ponderosa pine are the main species of this area. Superior to other local species in strength, growth and disease resistance, they are the most useful and therefore the most valuable species adapted to Detachment Bayview. For biological diversity,

reforestation will use a mix of native species, tailored to site specifics. Natural regeneration of other native tree species is expected to diversify stands thinned or replanted, resulting in a species mix that will be more resistant to insect and disease attack through the synergistic effects of species and wildlife habitat diversities.

Reforestation

Reforestation will use a mixture of site-adapted native coniferous species. Plantings will be conducted the first planting season after harvest to achieve full stocking, which is defined as 302 live stems of commercial species per acre. This equates to a 12 foot on center spacing. Hand planting conifer seedlings will be the method used to reforest areas cleared for base construction, forest disease or to fully stock deficient stands. Hand planting is more expensive than seeding, but affords more rapid and dependable stand establishment and can provide positive influence on stand species composition. Hand planting will be funded by either the installation or the NAVFAC NW Forest Management Program and accomplished by service contract. Some planting areas may be cleared and scarified mechanically prior to planting. In areas of heavy grass and/or brush competition, spot application of herbicides may be used as part of the pre-planting site treatment. These plantings will continue until all available areas are fully stocked with live coniferous trees.

Rotation and Cutting Cycle

It is not appropriate to set a rotation and cutting cycle at this time for Detachment Bayview. Thus, this Plan will focus on intermediate silvicultural treatments that will promote structural diversity and protect endangered species habitats and water quality. However, it is anticipated that precommercial and commercial thinnings will be followed by a final harvest at a rotation age significantly in excess of 100 years. It is anticipated that rotations will be at ages 150 to 300 years. Some species such as western red cedar may have longer rotation ages. This will allow for development of high quality forest products and forest stands, which will provide superior structural and biological diversity supporting a mixture of consumptive and non-consumptive products, values and functions over multiple centuries.

Allowable Annual Harvest

The annual growth on Detachment Bayview will improve as the stands are stocked and treated. Allowable annual cut will not be determined for this plan since the remedial and developmental treatments are considered intermediate. When the Plan is revised subsequent to full stocking of all forest lands and completion of all intermediate thinnings, the stands may be in a condition favorable to determination of cutting cycle, rotation age and allowable annual cut. It is not anticipated that an allowable final cut would involve harvests every year.

Silvicultural Treatments

(1) Methods of Cutting Small patch cutting or thinning will be the preferred harvest method. Except in cases of timber salvage, it is anticipated that clearcutting will not be used under this Plan.

Selective cutting will be the system used in both precommercial and commercial thinnings for the foreseeable future. Intermediate selective cutting will be used to thin stands for the concentration of growth, development of horizontal and vertical structural diversity, increase in value of the residual trees and to salvage mortality losses. Thinning will improve stands by removing diseased trees, inferior species and damaged trees.

In riparian areas, special care and restrictions will be used, such as machinery exclusion, to maintain understory integrity, assure development of a healthy and vigorous stand of trees that will provide ample opportunity for wildlife uses while shading riparian areas to maintain slope and bank and preferred water temperature regimes. Raptor perch or nest trees discovered in field surveys will be protected by buffer zones and off-season timing of silvicultural treatments.

(2) Insect and Disease Control Insect and disease problems have not reached epidemic proportions on Detachment Bayview in recent years. A variety of indigenous forest pests, both fungal and insectivorous, are common to the area. Detachment Bayview forest stands will be monitored for presence of fungal and insect pests. Detection may result in silvicultural treatment to control the outbreak if the extent so warrants. Silvicultural treatments may include patch cutting to remove diseased or infected trees plus an appropriate buffer, planting of an alternate native conifer species less susceptible to attack, tipping over stumps, etc.

(3) Wildlife Damage Control Deer browsing the growing tips of young conifers cause reduced height growth and in extreme cases may stop height growth completely. Individual trees or plantations may be treated with repellants to dissuade deer from browsing the seedlings. Small mammals such as mice, moles, squirrels, rabbits and mountain beavers also inhibit reforestation by eating seed and seedlings. Seeding is not anticipated as a means of regeneration. Raptor predation helps keep small mammal populations under control. Snags and perch trees will be retained as roosts and hunting perches. Further small mammal discouragement is not anticipated beyond that which can be achieved by using surficial repellants.

(4) Fire Suppression There have been no forest fires at Detachment Bayview. Forest fire detection would be by base personnel or from adjacent lands. Suppression of wildfire would probably be accomplished by local fire departments. Timber sale contracts require spark arrestors, fire tools, fire watchman during fire season, as well as suppression and reporting of any fire on the sale area. During periods of high fire danger, additional equipment such as a water buffalo or tank truck with pump, hose and nozzle is also required. Service contracts for silvicultural treatments also contain fire prevention and suppression requirements, although this is not the same threat because of the lack of machinery in most cases.

(5) Slash Treatment Logging slash will be treated after thinnings or clearcut harvest by lopping and scattering. Slash will decay over a period of years while slowly releasing organic nutrients back to the soils. Concentrations of slash will be removed to a minimum of 25 feet from roads and structures.

Firewood Cutting Program

A noncommercial firewood cutting program may be established at the base. This is an opportunistic program, with the suitable material and areas available and dependent upon logging slash, removal of hazard trees and natural occurrences such as storm damage and windthrow in accessible areas. This is not a year-round program. It may be implemented only in areas with suitable material and access. Many avian species are protected under the Migratory Bird Treaty Act. To avoid injury or mortality to nesting migratory birds, removal of vegetation should *not* occur during avian nesting season, typically April 1 through August 1 each year.

In accordance with law and regulation, timber is government property that may be disposed of through prescribed, legally sufficient and compliant methods. For the firewood cutting program, this means that a cutting permit/bill of sale must be issued. Fees are collected for woodcutting at the rate of $15/pickup truck load of 64 cubic feet (= ½ cord). These fees are collected via a special permit provided by the NAVFAC NW Forest Management Program, serially numbered and tracked for deposits to the U. S. Treasury. The funds received for firewood are deposited to the Navy Timber Sales Receipts Account pursuant to "Detachment of Defense Instruction 7310.5: Accounting for production and sale of forest products" (U.S. Navy 1988). The NAVFAC NW Forester will cooperate with Detachment Bayview to identify suitable and available material.

4.4.9 Natural Resources Protection Considerations in Forest Management

In accordance with The Sikes Act requirements, this Forest Management plan will be implemented upon approval. The NRM or designated staff will implement forest management in a coordinated manner to achieve prescriptions and goals. While Detachment Bayview has overall responsibility for the INRMP, NAVFAC NW administers the Navy's centrally-managed Forest Management Program. As such, NAVFAC NW is responsible for planning, budgeting and executing forest management activities in coordination with the installation. The NAVFAC NW Forest Management Program is staffed, funded and equipped to carry out any and all forestry consultations, operations and projects in furtherance of this INRMP's objectives.

4.4.10 Control of Non-point Sources of Water Pollution

(1) Pesticides Currently, the only anticipated use of herbicides would be possible spot applications for planting trees in areas of heavy grass sod, or the control of exotic vegetation. Historically, however, mechanical grubbing has been used instead when planting in wildland areas. If the installation desires to reduce grounds maintenance costs in developed areas, additional tree plantings may be undertaken to convert mowed grass areas to nascent forest. Because of the fierce competition the grass poses to the seedlings, herbicides will be used in these situations. If and when pesticides are used, they will be applied by trained and certified personnel in accordance with DOD, EPA and installation rules and regulations.

(2) Erosion Control Erosion in forest areas has not been a problem on Detachment Bayview because of the minimal disturbance to soils, the good vegetative cover and infrequency of silvicultural treatments. Natural development of the forest, timing of silvicultural treatments, choices of low-impact technologies and improving understory vegetation will protect the soils. Skid trails on slopes steeper than 10% will be water-barred to prevent gullying. Wind erosion has not been a problem due to consistent vegetative cover. The risk of erosion during the exposed period of logging and early regeneration is greatly reduced by limiting the size of cuts, careful planning of cutting unit boundaries, the use of uncut buffer strips, early planting or seeding and the use of water bars on roads and skid trails steeper than 10%. Erosion from temporary forest access roads or skid trails will be absolutely minimal to nonexistent since existing graded roads will be used to the maximum extent possible. Under most circumstances, yarding will be between leave trees, with no clearing of temporary skid trails. No new permanent roads are anticipated to be constructed for forestry operations. Erosion control requirements are included in timber sale contracts, so additional funds and projects should not be required.

(3) Logging Debris Logging slash will be treated as described above or in special cases will be treated or disposed of in a manner to reduce, trap or repair historic erosion. In general, slash will be lopped to lie below 24 inches above grade.

(4) Riparian Zones The restoration and enhancement of coniferous forest cover along riparian or shore areas will be a direct benefit to wildlife, most importantly fish. It is anticipated that this zone will contain permanent trees managed for wildlife and buffer purposes. Selective thinning may be used to enhance the health, vigor, ultimate size, distribution, species composition, etc of trees in riparian zones.

(5) Horses Due to their very low impact on the forest floor, certain logging or other silvicultural treatments might be accomplished using draught horses instead of machinery such as skidders. This is dependent on the availability of horse and mule loggers in the area.

(6) Wetlands Protection Wetlands will be protected in accordance with applicable law and regulation. The erosion control and buffer strip requirements included in this section and in timber sale and forestry services contracts will protect wetlands from damage by forestry operations.

(7) Endangered Species Protection There are no known federally listed threatened or endangered plant species on Detachment Bayview.

(8) Cultural and Historic Site Protection Prior to silvicultural treatments, the project area will be examined for surficial cultural and historic artifacts. Any items or sites discovered will be evaluated and protected in accordance with law and regulation. There are no known historic or archeological sites on the Detachment. If sites or artifacts are discovered during presale investigations or other field inspections, they will be evaluated and protected from logging activity through restriction of treatments, machinery and skidding in such areas. The activities under this plan will comply with pertinent law and regulation.

(9) Aesthetics As with any question involving beauty, the question of forest aesthetics may be viewed from several perspectives. The common public view of the Navy property at Detachment Bayview is from adjacent public roads and parks, Lake Pend Oreille or private lands. For base employees and visitors, the view is from the immediate foreground. From a distance, this affords a vista of evergreen and deciduous trees interspersed with base facilities. Overall, it presents a semi-pastoral scene that cannot, however, be construed as “natural”. It is not "natural" since it is the result of considerable land disturbance and a conversion of forest to an industrial facility. However, it does create a relatively open space for adjacent residents and passers-by.

In forest areas thinned pursuant to this Plan, it is not so much what is done to encourage structural and biological diversity, as the rate at which it is done that might upset some viewers. Up close, reforestation efforts may appear somewhat harsher than from a distance. Trees cut or pushed over will appear less attractive as they turn brown and lose their leaves than they did when green and upright. Lopped, piled or windrowed slash will look better from afar than up close. This can be kept in mind when writing a prescription for silvicultural treatments.

Aesthetic considerations in forest management are intended to reduce visual impacts of silvicultural treatments, tree removal and site preparation. They include clean logging, placement and layout of cutting areas, and buffer strips to create visual barriers, when possible, between work sites and adjacent off-station areas.

(10) Wildlife Habitat The silvicultural methods used for reforestation, timber stand improvement and harvest will be supportive of wildlife. Dense timber stands shade out the understory plants that provide food and cover for wildlife. Thinnings and reforestation will provide young forest stands with a wide diversity of grass, forbs, woody shrubs and trees for food and cover. This will encourage a diversity of animal species. Treatments to improve the stands will help open up the forest canopy to allow sunlight to reach the forest floor so that the understory will be stimulated, developed and perpetuated as foraging, nesting and thermal cover for all wildlife species. Timber harvest might temporarily displace wildlife from the operation area to adjacent undisturbed forest while operations are underway. Quite frequently, browsing and avian species will visit thinning areas during nonworking hours to take advantage of the foliage and insects available.

Following patch sanitation salvage clearcuts, as the area seeds or sprouts to brush, weeds and young trees, the rapidly growing young forest and decaying logging residues will provide increased forage for deer, granivores and insectivores. Consequently, predators will benefit. Some species preferring closed canopy habitat will be displaced until the young trees reestablish a closed canopy. All wildlife management is subject to habitat manipulation and management for security requirements.

(11) Multiple Use Within the constraints of mission and safety requirements, the forests are managed for multiple use to produce sustained yields of wildlife, timber and other forest products, clean water, military training and recreational opportunity.

(12) Road Construction The roads developed for historic logging, construction and operation of Detachment Bayview are sufficient for forestry activities. To implement silvicultural treatments, it may be necessary to place crushed rock on existing roads, or to develop temporary haul spurs. Haul spurs will be developed using old grades where possible. Where these do not exist or present unacceptable risks, new spurs will be created by meandering between Leave Trees. Road construction will be minimized in order to retain as much land as possible in production and to minimize land disturbance and costs. Reforestation will be up to within 6 to 10 feet of road edges to reduce occluding ruderal vegetation and to fully stock the site. Full stocking will eventually function as a protector of the road corridor. Within cutting areas, road construction will be limited to temporary spurs as narrow as possible. These temporary spurs will be waterbarred or otherwise treated (seeding, cross ditching, etc) to prevent erosion.

4.4.11 Work Objectives and Thinning Criteria

The long term Detachment Bayview forest management goal is to achieve fully stocked, healthy, productive, mixed conifer stands of timber for sustainable yield of quality forest products and other compatible forest uses and benefits; and to provide land use opportunities for military training, installation security and natural resources education. In order to avoid injury and mortality

to nesting birds protected under the MBTA, forest thinning and tree removal should occur outside the avian nesting season (April 1 through August 1).

Over the span of this plan, this will involve thinnings, plantings, selective cuts and, in the case of natural disaster or pest infestation, small patch clearcuts. The actual stands and projects will be spelled out in the annual increment addenda to this plan, which is reviewed and approved by the installation. Since the bulk of the prescriptions are remedial silvicultural treatments to improve the health, vigor and structural diversity of the stands and forest as a whole, it is desirable that some work be accomplished each year under this plan. Specific recommendations on a stand-by-stand basis are given below.

Sales Procedures

The NAVFAC NW Forester provides professional forestry services to the installation to manage and develop the forest resources within the facility for the economical production of forest products and the conservation of all forest resources. In cooperation with the installation, the Forester: chooses the areas to be treated based on overall goals, silvicultural needs, resource protection considerations and stand inventory data below; analyzes the potential for environmental impacts of proposed silvicultural treatments; completes the field work, including volume and value estimates, project or sale boundary establishment, snag and wildlife tree marking, and access spur layout and design; and prepares and administers the contract. Projected sales are outlined for the fiscal year in the annual increment addenda to this Plan. All logging activities shall be carried out under contract issued by Naval Facilities Engineering Command Northwest (NAVFAC NW). The Forester will prepare timber sale contracts and administer them from advertisement and award through operations and completion. The installation will be kept advised of the schedule and progress of all forestry operations. Following award, the Forester will inspect timber sales to assure contract compliance and protection of the forest environment. Forestry services contracts will follow similar procedures.

Forestry Consultations and Support

The Forester will mark project boundaries, wetlands and riparian buffers prepare and administer contracts, and coordinate forestry projects for commercial and precommercial thinnings, plantings and other forestry work as needed. This includes forestry consultations in support of base operations, maintenance, repair and construction projects.

Public Relations

The Navy's natural resources management has generated significant interest over the years. As requested by the installation, the Forester will provide docent tours, consultations and support for natural resources education events, tours with VIPs, school groups, governmental agencies, conservation organizations, media and freelance writers. All such events will be coordinated through the installation Public Affairs Officer (PAO).

Thinning Criteria

A forest thinning will leave at least 100 stems/acre of merchantable trees. Additionally, less frequent species, wildlife trees, snags and unique specimens will be marked or identified in the contract for retention in furtherance of our goal of improving biological and structural diversity. The following are typical but not exclusive contract provisions governing selection of Leave Trees.

These criteria apply to all thinnings and will be adjusted as needed in light of specific stand conditions.

"LEAVE TREE SELECTION AND CUTTING. On the coniferous thinning areas, one hundred (100) of the best live Douglas-fir or other conifer species shall be left uncut and undamaged as Leave Trees on each acre of the sale area. This equates to a spacing of approximately 20 feet on center between Leave Trees, which are to be uniformly and consistently spaced over the entire sale area. Trees marked with yellow or blue paint and/or signs are designated as wildlife and structural diversity trees, and are to be left uncut and undamaged. Live trees greater than 8 inches DBH so marked may be included in the 100 trees per acre. Dead wildlife trees may not be included in the 100 trees per acre count.

Leave trees shall be Purchaser selected on the following basis and criteria:

(1) Preferred coniferous species in the following order: Douglas-fir, lodgepole pine, ponderosa pine, larch
(2) Deciduous trees may not be selected as Leave Trees.
(3) No cedar, black cottonwood or aspen trees may be cut.
(4) All holly or other invasive species trees will be cut.
(5) Coniferous trees free of defects, disease or damage.
(6) Fastest growth as evidenced by larger relative diameter breast high (DBH), greatest height, and light colored bark with active, buff colored crevices.
(7) Good form and straightness of the bole, and lack of forked tops.
(8) Spacing as near as possible to 20 feet by 20 feet, on centers, for a uniform and consistent distribution of 100 Leave Trees per acre.
(9) Dead trees, non merchantable culls, and understory trees less than 6 inches diameter on the stump are not to be selected as Leave Trees, but are to be left uncut when possible.
(10) Pitch bleeding western white pine and dwarf mistletoe infected trees shall not be selected as Leave Trees. Live wildlife and structural diversity trees marked with yellow signs and/or paint may be selected as Leave Trees.
(11) Less abundant and disease-free tree species such as madrona, dogwood, wild cherry, willow, bigleaf maple, western yew and holly may not be counted as Leave Trees and are to be left uncut and undamaged in the residual stand. Such trees do not have to comply with spacing requirements.

Trees to be cut and removed shall be Purchaser selected and cut so as to avoid damage to all Leave Trees. Trees smaller than 6 inches stump diameter and not selected as Leave Trees shall be left uncut when possible. Dead trees and non-merchantable culls shall be left uncut. Trees cut along sale area boundaries shall be felled into the sale area so as to contain slash and debris on the site. Stumps shall be cut as low as practicable and shall not exceed 12 inches or one DBH in height, whichever is greater. Limbs and tops are to be cut from merchantable stems and left in the woods. The Purchaser shall exercise care and use directional felling to minimize damage to residual trees. All felled trees shall be utilized to 6" DIB at the small end by 24 feet in length. Bucking to reduce length or diameter is not allowed. If the Purchaser bucks felled trees to reduce diameter or length, the spoiled merchantable portion will be scaled as though it were whole and the Purchaser will pay for such material at the unit prices bid."

Preferred yarding technology will be, in order of preference: draft horses or mules, skidders or excavators. No cable logging is anticipated. When compared to the other methods, the use of draft horses minimizes soil disturbance, compaction and churning, and impacts to forest floor organic matter, large organic debris and vegetation.

The only clearcutting permitted will be small cuts for construction projects or salvage due to fire, insect infestation, disease, blowdown or other natural causes. Such clearcutting is not expected every year. No tree-planting will be necessary in thinning cuts, because regeneration is by natural seeding from the remaining trees and by the seeds remaining in the soil.

4.4.12 Silvicultural Prescriptions

Because of the small forest acreage, no stand silvicultural prescriptions will be given under this plan. Rather, an iterative and adaptive approach will be taken to create projects and prescriptions as the needs arise. Management will be adjusted in light of any unforeseen circumstances that pose new situations for forest and land management. Changing or evolving mission requirements and natural disasters may require some adjustment of the location, sequence and timing of silvicultural treatments. However, the silvicultural policies described elsewhere in this plan are considered ecologically sound and will be adhered to in the absence of urgent and compelling alternative land use requirements documented and adopted through established programmatic and project planning processes.

Detachment Bayview - Table 1 Stand Data

Type Group	Stand No.	Acres	Type	Dec. Origin	Site Index	Species	# Trees	Basal Area s.f.	Ave DBH In.	Cubic Volume Gross C c.f.	Cubic Volume p.a.i. C.c.f.	Cubic Volume Net C. c.f.	Cubic Volume Gross M b.f.	Scr
8	1	10.1	D3,3,wl	93	83	TOTAL	1,293	1,176	11.4	373	6	330	117	
						D	730		13.3	197		177	63	
						H	0			0		0	0	
						RC	16		13.0	3		2	0	
						WP	0			0		0	0	
						LP	24		17.0	10		9	3	
						TF	100		14.2	53		43	18	
						PP	24		17.0	6		5	2	
						RA	0			0		0	0	
						LARCH	397		11.4	104		94	30	
						BC	0			0		0	0	
0	2	0.3	D3,3,O	90	80									
0	3	1.3	D4,2,O	90	80									
0	4	1.6	0											
0	5	2.8	0											
0	6	8.5	0											

TOTALS - FOREST LAND

# Stands	1	10.1

NON-FOREST LAND

# Stands	5	14.6

GRAND TOTAL

# Stands	6	24.7

Detachment Bayview - Table 2 - Stand Data by Decade of Origin

Acres	Type	Dec. Origin	Species	# Trees	Basal Area s.f.	Ave DBH In.	Cubic Volume Gross C c.f.	Cubic Volume p.a.i. C.c.f.	Cubic Volume Net C. c.f.	Scribner Volume Gross M b.f.	Scribner Volume p.a.i. M b.f.	Scribner Volume p.a.i. %	Scribner Volume Net M b.f.
12.91		0											
1.6	90	housing											
10.1	93	83	TOTAL	1,293	1,176	11.4	373	6	330	117	2	2.1%	104
			D	730		13.3	197		177	63			57
			H	0			0		0	0			0
			RC	16		13.0	3		2	0			0
			WP	0			0		0	0			0
			LP	24		17.0	10		9	3			3
			TF	100		14.2	53		43	18			15
			PP	24		17.0	6		5	2			2
			RA	0			0		0	0			0
			LARCH	397		11.4	104		94	30			27
			BC	0		0.0	0		0	0			0
													0
TOTALS - FOREST LAND													
10.1				1,293	1,176	11.4	373	6	330	117	2	2.1%	104
NON-FOREST LAND													
14.51													
GRAND TOTAL													
24.7													

Detachment Bayview - Table 3 - Habitat Data By Cruised Stands

Type Group	Stand No.	Acres	Type	Dec. Origin	Vol/ac M b.f.	Dominant Understory*		Vol. Down Woody cu.ft/ac	Ave Dia. Down Woody	Ave. Dia. Snags	# Snags Acre
8	1	10.1	D3,3,wl	93	9	V.M. /NB	60%	670	12.8	11.9	2.52
0	2	0.3	D3,3,O	90		Snowberry	70%				
0	3	1.3	D4,2,O	90		Lawn	100%				
0	4	1.6	0								
0	5	2.8	0								
0	6	8.5	0								
TOTALS - FOREST LAND		10.1						670	12.8	11.9	2.52
NON-FOREST LAND		14.5									
GRAND TOTAL		24.7									

VM/NB = Vine Maple and Ninebark

Detachment Bayview - Table 4 - Type Group Summary

GROUP	CALL		# Trees per ac.	Basal Area/ac s.f.	Ave DBH In.	Net VOLUME PER ACRE b.f.	Cu. Feet	# Plots	SE %
							Compartment All Stands Combined	20	9.0%
8	D3,3,wl	TOTAL	115.2	116		8,525	2,744	20	9.0%
		D	72		13.3	5,630	1,746		
		H							
		IC	1.6		13	42	22		
		WP							
		LP							
		TF							
		PP	2.4		17	162	51		
		RA							
		LARCH	39.2		11.4	2,691	925		
		BC							