FINDING OF NO SIGNIFICANT IMPACT
DWORSHAK PROJECT PROGRAMMATIC
LAND-BASED ACCESS MANAGEMENT PLAN
AHSAHKA, IDAHO
AUGUST 2016

1. INTRODUCTION/PROPOSED ACTION

The U.S. Army Corps of Engineers, Walla Walla District (Corps), proposes to adopt and implement a land-based access management plan for the lands it manages as part of the Dworshak Dam and Reservoir Project on River Mile 1.9 of the North Fork of the Clearwater River near Ahsahka, Idaho. This management plan addresses access-related issues including maintaining the project boundary, developing and maintaining roads, and developing and maintaining both motorized and non-motorized trails. It does not address issuing real estate instruments for access across Corps property. A Programmatic Access Management Plan (AMP), based on the proposed/preferred alternative, is presented in Appendix A of the Environmental Assessment (EA).

2. PURPOSE AND NEED

The purpose of the proposed action is to effectively manage land-based access on Corps lands at Dworshak Project to reduce trespass, control unauthorized access, meet current and future public demand for motorized and non-motorized access and recreation, and facilitate natural resource stewardship actions by the Corps. The Corps proposes to adopt and implement an AMP to manage access while minimizing adverse effects on natural and cultural resources.

An AMP is needed for several reasons. The Dworshak Project boundary is not completely surveyed/defined and owners of the property adjacent to Project lands have different management goals and opportunities for land-based public access that are not always compatible with those of Dworshak Project. Unauthorized access has the potential to damage Project natural resources including soils, vegetation, wildlife and wildlife habitat, cultural resources, water quality, and aesthetics. Motorized recreation has changed since construction of Dworshak was completed, resulting in a change in the types of vehicles used and greater demand by the public for access on Project lands. Public demand for non-motorized trails has changed and the existing hiking trails do not meet the needs of other users such as equestrian and mountain biking groups.

Implementation of an AMP must be consistent with the Resource Objectives identified in the Corps Dworshak Reservoir Project Master Plan, dated June 2015. Access management actions identified in the AMP must be consistent with the Dworshak Master Plan and the Dworshak Operational Management Plan. Resource Objectives related to access include:

- Prevent timber and livestock trespass and other unauthorized use of government property.
- Actively address unauthorized motorized access to reduce impacts to fish and wildlife habitat and conflicts with non-motorized recreation users.
- Manage the road system within the operating project boundaries to meet transportation needs and to prevent resource damage.
- Provide safe and accessible recreation opportunities for all visitors.

3. ALTERNATIVES CONSIDERED

The Corps considered three alternatives for managing access at Dworshak. Each alternative addresses all of the identified needs, but with a different amount of emphasis on the two main themes of providing public access and protecting natural resources. The three alternatives are:

- **Alternative 1 [No action (no change in current access management)]:** This represents a continuation of the Corps' current access management process and levels at Dworshak Project. This alternative focuses on maintenance of existing roads and trails with only limited development of new roads for natural resource management actions.
- **Alternative 2 (Maximize public access):** Under this alternative the Corps would develop roads and trails as demanded by the public, subject to the ability to find a sponsor or the availability of Corps funds for development and maintenance. There would be no set limit on the total number or density of roads or trails that could be developed.
- **Alternative 3 [(Balanced access (proposed alternative)]**. This alternative would balance public access and natural resource protection. It would provide for additional road and trail development, but with provisions and restrictions to protect natural and cultural resources. There would be no set limit on the total number of road or trails that could be developed, but there would be a limit on road/trail density.

Alternative 1, the No Action Alternative prescribed by the Council of Environmental Quality to serve as the baseline against which all other alternatives are analyzed, was carried forward for detailed analysis. Alternative 2 was rejected from detailed analysis as it failed to meet the purpose and need and conflicted with other land/natural resource goals/requirements. Alternative 3 satisfied the purpose and need and was carried forward for detailed analysis and was ultimately identified as the Preferred Alternative.

4. ENVIRONMENTAL EFFECTS

The Proposed Alternative and the No Action Alternative were analyzed for potential effects to the following resources: Geology/Soils, Hydrology/Limnology, Vegetation, Wildlife, Fisheries, Threatened and Endangered Species, Cultural Resources, and Recreation.

Under the Proposed Alternative, pertinent conservation measures, both minimization measures and best management practices (BMPs), would be fully implemented for all specific AMP actions, as appropriate, to minimize environmental effects.

The Corps also considered the cumulative effects of the proposed action along with other past, present, and reasonably foreseeable future actions in the Dworshak Project area. Numerous landowners from other federal, state, local, private, and tribal entities own and manage lands in the Project vicinity and will continue to do so in the future. The Corps focused its cumulative effects analysis of past, present, and reasonably foreseeable future actions on recreation because this resource was determined to be notable for its importance to the area and its potential for cumulative effects.

Environmental analysis and effects of the Proposed Alternative and the No Action Alternative, including cumulative effects, are detailed in Section 3 of the EA. The analysis concluded there may be some short-term adverse effects to some resources (Geology/Soils, Vegetation, Wildlife) from the Proposed Alternative, but overall long-term effects on all analyzed resources would be insignificant or beneficial. The potential effects of the proposed action, when combined with the effects of past, present and reasonably foreseeable future actions, is not expected to result in significant effects to the resources identified above.

5. PUBLIC COMMENT/INVOLVEMENT

Agency and public involvement supporting the development of access management projects has been ongoing since 2008, when public scoping meetings were held during the development of the Dworshak Public Use Plan, a preliminary document developed prior to the recently completed Dworshak Master Plan.

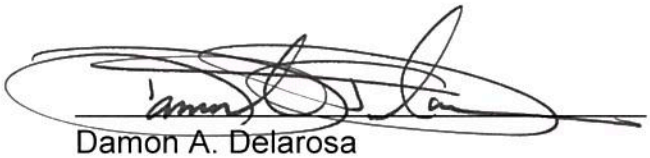
The EA and draft FONSI were made available to individuals, businesses, organizations and agencies for a 30-day review and comment period from June 29, 2016 to July 29, 2016. The District received three comment documents from interested members of the public. The comments were generally in support of the Plan and the potential to increase land-based public access to Dworshak project lands.

6. COMPLIANCE WITH OTHER LAWS AND REGULATIONS

Section 4.0 of the EA provides a discussion of compliance with other laws and regulations. The proposed action complies with other federal laws and applicable regulations. Endangered Species Act consultation was completed when the Corps received letters from U.S. Fish and Wildlife Service in 2011 and 2013 concurring with the Corps' determination of effect on listed species. The Corps sent a letter dated May 17, 2016 to the Nez Perce Tribe offering Government to Government consultation, however, the Corps did not receive a subsequent request for consultation from the Tribe.

7. CONCLUSION/FINDING

Having reviewed the Dworshak Programmatic Land-based Access Management EA, I find the document provides sufficient discussions on the purpose and need for the proposed action, alternatives, the environmental effects of the proposed action and alternatives, and a listing of agencies and persons consulted. I have taken into consideration the technical aspects of the project, best scientific information available and public comments received. These documents provide sufficient evidence and analysis to meet the District's requirements pursuant to the National Environmental Policy Act. Based on this information, I find that implementation of the proposed action would not result in significant impacts on the quality of the human environment and that an environmental impact statement is not required. The District will implement Alternative 3 (Balanced Access-Preferred Alternative) at the earliest opportunity, subject to availability of funding and competing Project priorities.



Damon A. Delarosa
Lieutenant Colonel, Corps of Engineers
District Commander

15 Aug 16
Date

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DWORSHAK PROGRAMMATIC LAND-BASED ACCESS MANAGEMENT PLAN

DWORSHAK DAM AND RESERVOIR
AHSAHKA, IDAHO

ENVIRONMENTAL ASSESSMENT

Project Number PM-EC 2013-0092

June 2016

Dworshak Programmatic Land-based Access Management
Environmental Assessment

Table of Contents

SECTION 1 – INTRODUCTION

1.1 Background 1
1.2 Authorities and Obligations 5
1.2.1 Authority 5
1.2.2 Design Memorandum 15 5
1.2.3 Dworshak Master Plan 6
1.2.4 Dworshak Public Use Plan 6
1.2.5 Dworshak Operational Management Plan 7
1.2.6 Corps Regulations 7
1.3 Purpose and Need 7
1.4 Access Management Goals 9

SECTION 2 – ALTERNATIVES

2.1 Access Management Categories and Actions 10
2.2 Alternative Development 11
2.2.1 Alternative 1 – No Action (No Change in Current Access Management) 12
2.2.1.1 Boundary Management 12
2.2.1.2 Access Control Management 12
2.2.1.3 Road Management 13
2.2.1.4 Trail Management 16
2.2.2 Alternative 2 – Maximum Public Access 22
2.2.2.1 Boundary Management 22
2.2.2.2 Access Control Management 22
2.2.2.3 Road Management 22
2.2.2.4 Trail Management 22
2.2.3 Alternative 3 – Balanced Access (Proposed Alternative) 23
2.2.3.1 Boundary Management 24
2.2.3.2 Access Control Management 24
2.2.3.3 Road Management 24
2.2.3.4 Trail Management 28
2.2 Screening of Alternatives 29

SECTION 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 Introduction 30
3.2 Geology and Soils 30
3.2.1 Affected Environment 30
3.2.2 Environmental Effects 31

3.2.2.1 Alternative 1 - No Action 31
3.2.2.2 Alternative 3 - Balanced Access Management 31
3.3 Hydrology/Water Quality 32
3.3.1 Affected Environment 32
3.3.2 Environmental Effects 33
3.3.2.1 Alternative 1 - No Action 33
3.3.2.2 Alternative 3 - Balanced Access Management 33
3.4 Vegetation 34
3.4.1 Affected Environment 34
3.4.2 Environmental Effects 36
3.4.2.1 Alternative 1 - No Action 36
3.4.2.2 Alternative 3 - Balanced Access Management 36
3.5 Wildlife 37
3.5.1 Affected Environment 37
3.5.2 Environmental Effects 39
3.5.2.1 Alternative 1 - No Action 39
3.5.2.2 Alternative 3 - Balanced Access Management 40
3.6 Fisheries 41
3.6.1 Affected Environment 41
3.6.2 Environmental Effects 42
3.6.2.1 Alternative 1 - No Action 42
3.6.2.2 Alternative 3 - Balanced Access Management 42
3.7 Threatened and Endangered Species 43
3.7.1 Affected Environment 43
3.7.2 Environmental Effects 44
3.7.2.1 Alternative 1 - No Action 44
3.7.2.2 Alternative 3 - Balanced Access Management 45
3.8 Cultural Resources 45
3.8.1 Affected Environment 45
3.8.2 Environmental Effects 48
3.8.2.1 Alternative 1 - No Action 48
3.8.2.2 Alternative 3 - Balanced Access Management 49
3.9 Recreation 50
3.9.1 Affected Environment 50
3.9.2 Environmental Effects 51
3.9.2.1 Alternative 1 - No Action 51
3.9.2.2 Alternative 3 - Balanced Access Management 51
3.10 Cumulative Effects 52

SECTION 4 – COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

4.1 Treaties and Native American Tribes 56
4.2 Federal Laws 57
4.3 Executive Orders 62

SECTION 5 – COORDINATION, CONSULTATION, AND PUBLIC INVOLVEMENT

5.1 Agency Consultation and Coordination 63
5.2 Public Involvement 64

SECTION 6 – REFERENCES

References 64

FIGURES

1-1 Location of Dworshak Dam and Reservoir 2
1-2 Land use classification at Dworshak Project 4
2-1 Existing motorized and non-motorized trails 17
2-2 Examples of ICBEMP Road Density Classes 25
2-3 Elk Habitat Units in Dworshak Project Area 27

TABLES

1-1 Land use classifications for Dworshak Project lands 3
2-1 Trail specifications for ATV's 18
2-2 Trail specifications for motorized vehicles greater than 50 inches wide 19
2-3 Current and Proposed Uses of Existing Project Trail Systems 23
2-4 ICBEMP Road Density Classes 24
2-5 Road Density Classes Acceptability Limits by Project Slope/Aspect Categories 26
2-6 Road and Trail Densities by Elk Habitat Units 28
2-7 Screening of alternatives 29
3-1 Fish species at Dworshak 41
3-2 Alternative 3 Effects on ESA-Listed Species 45
3-3 Projections of participation in activities on developed land 54
3-4 Projection of participation in activities on dispersed land 55

APPENDICES

Appendix A –Dworshak Access Management Plan

Appendix B – Dworshak Natural Resources Land Management Program Activities 2011 Biological Assessment

Appendix C – Dworshak Natural Resources Land Management Program Activities 2013 Amendment to the Biological Assessment

SECTION 1. INTRODUCTION

The U.S. Army Corps of Engineers, Walla Walla District (Corps) is proposing to adopt and implement a land-based access management plan for the lands it manages as part of the Dworshak Dam and Reservoir Project on River Mile 1.9 of the North Fork of the Clearwater River near Ahsahka, Idaho. The Corps manages about 30,000 acres surrounding the reservoir for multiple purposes including recreation and fish and wildlife habitat/mitigation. This access management plan would address access-related issues including maintaining the Project boundary, developing and maintaining roads, and developing and maintaining both motorized and non-motorized trails. It does not address issuing real estate instruments for access across Corps property. A draft Programmatic Access Management Plan (AMP), based on the proposed alternative, is presented in Appendix A.

This Environmental Assessment (EA) addresses potential environmental effects associated with the proposed action and any reasonable alternatives. As required by the National Environmental Policy Act (NEPA) of 1969 and subsequent implementing regulations promulgated by the Council on Environmental Quality, this assessment is prepared to determine whether the proposed action constitutes a major Federal action significantly affecting the quality of the human environment and whether an environmental impact statement is required.

1.1 Background

The Dworshak Dam and Reservoir Project (Project) was authorized in the 1962 Flood Control Act (P.L. 87-874). The 717 foot tall structure is a concrete gravity hydroelectric dam located at River Mile (RM) 1.9 on the North Fork Clearwater River (NFCR) (Figure 1-1). The dam is located 4 miles northwest of the city of Orofino, Idaho and 47 miles east of Lewiston, Idaho. All Dworshak Project lands are within Clearwater County Idaho, and about 6,300 acres of the southern portion of the Project is within the boundaries of the Nez Perce Tribe Indian Reservation. The reservoir drains an area of 2,440 square miles and has a maximum operating pool at 1,600 feet above mean sea level.

The Project covers about 46,000 acres. At normal full pool, the surface area of Dworshak Reservoir is about 17,090 acres, with about 29,318 acres of Project lands surrounding the reservoir and managed for public recreation, wildlife habitat, and wildlife mitigation. These lands include federally owned properties managed by the Corps, as well as easement lands managed by the U.S. Forest Service (USFS) to which the Corps has flowage easement rights.

Figure 1-1. Location of Dworshak Dam and Reservoir.

All Project lands are managed in accordance with land use classifications (Table 1-1; Figure 1-2). These classifications identify the primary management focus of Project lands, while permitting other secondary uses. For example, low density recreation uses, such as hunting, fishing, hiking, backpacking, picnicking, sightseeing, primitive camping, etc. are permitted on most lands as a secondary use.

Table 1-1. Land use classifications for Dworshak Project lands.

Primary Class	Description	Acres
Environmentally Sensitive Areas	Lands where scientific, ecological, cultural, or aesthetic features have been identified	3,101
Mitigation	Lands specifically designated to offset elk habitat losses associated with the development of the Project	6,935
Multiple Resource Management – Future Recreation Areas	Lands where recreation areas are planned for the future, or lands that contain existing recreation areas that are temporarily closed	860
Multiple Resource Management – Low Density Recreation	Lands designated for dispersed or low-impact recreation use	1,930
Multiple Resource Management - Wildlife Management	Lands selected for wildlife management, although all Project lands are managed for fish and wildlife habitat in conjunction with other land uses	15,350
Flowage Easement	USFS lands for which the Corps does not hold fee title, but has acquired the right to enter onto the property in connection with the operation of the Project	1,760
Project Operations	Lands required for the dam and associated structures, administrative offices, maintenance compounds, or other areas used to operate and maintain the Project	231
High Density Recreation	Lands designated for intensive recreational use to accommodate and support the recreational needs and desires of Project visitors	1,087

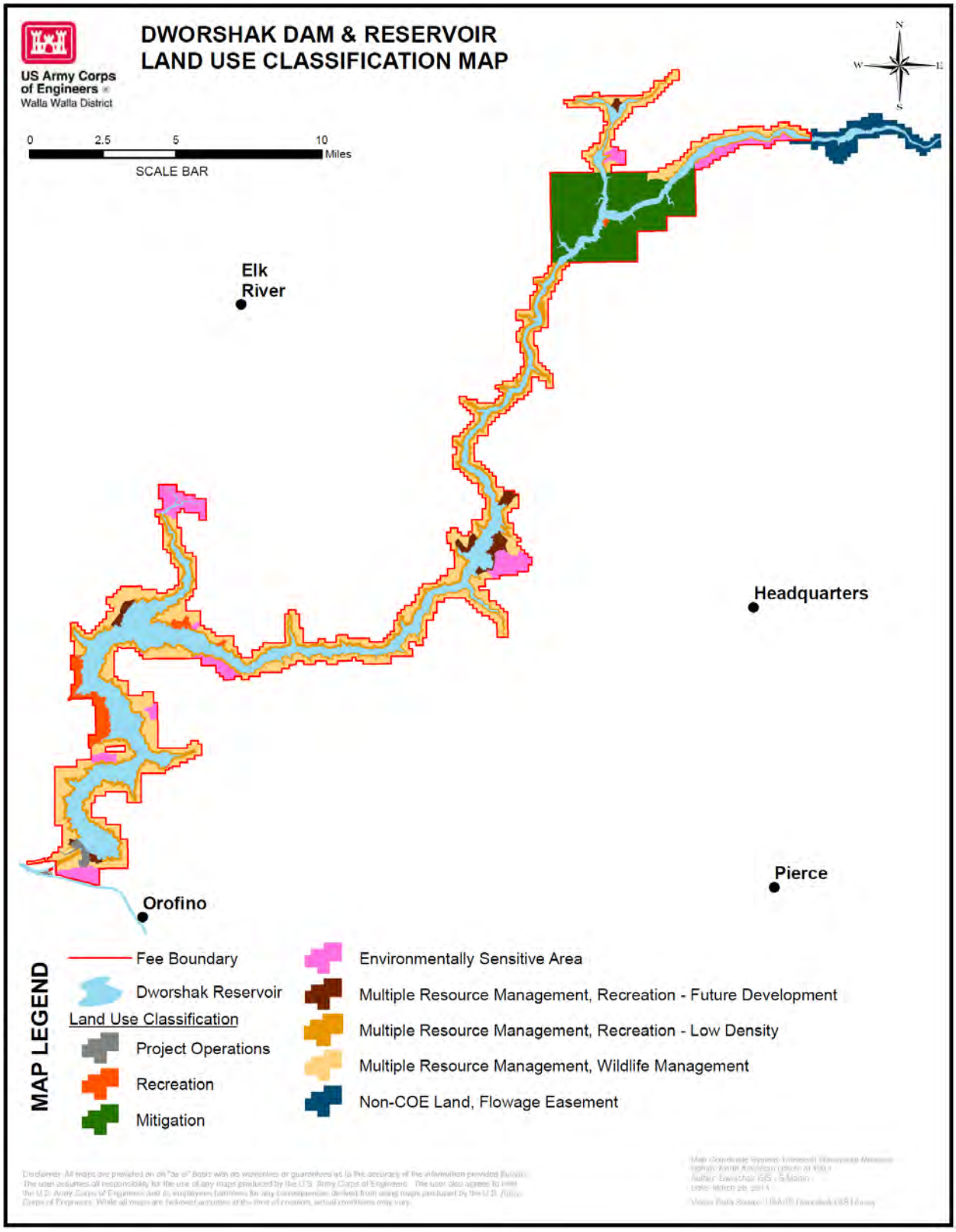

Figure 1-2. Land use classification at Dworshak Project.

1.2 Authorities and Obligations

1.2.1 Authority

Dworshak Project is a multi-purpose water resource project with five congressionally authorized purposes: Navigation, Flood Control, Hydropower, Fish and Wildlife, and Recreation. Construction of the Project was authorized by Section 201 of the 1962 Flood Control Act (P.L. 87-874). Various Federal laws and regulations guide how natural resources are to be managed on Corps projects. The Federal Water Project Recreation Act of 1965 (P.L. 89-72) established recreation as a project purpose.

1.2.2 Design Memorandum 15

The Corps has an ongoing obligation under the Fish and Wildlife Coordination Act (PL 85-624) to mitigate for loss of Rocky Mountain elk winter range caused by the creation of Dworshak Reservoir. The Corps, U.S. Fish and Wildlife Service (USFWS), and Idaho Department of Fish and Game (IDFG) agreed upon an approach to mitigate this habitat loss and in 1977 the Corps prepared a proposed mitigation plan, "Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat* (DM-15) (Corps 1977). The primary purpose of DM-15 was to present a plan for the development and maintenance of winter range for the elk. DM-15 presented a plan for the development of elk habitat on project lands along the upper reservoir. After failing to acquire the 50,800-acre Heezen Block, a block of land along the upper reservoir that the agencies had recommended for elk management, the Corps acquired a total of 5,110 acres at the junction of the Little North Fork and the North Fork of the Clearwater River for elk habitat mitigation (Figure 1-2 above) as well as 3,217 acres of Project lands in the vicinity of the mitigation lands to be committed to wildlife use. In the 1970's and 1980's, the Corps clear-cut and burned several thousand acres of the mitigation lands to increase winter forage production for elk

DM-15 also discusses human disturbance, livestock grazing, and elk number as part of a management scheme for elk on Dworshak Project lands. The implications of human disturbance is the only issue having a potential to affect access on Dworshak Project lands. The DM states: "Consideration will be given to development activities which will minimize the harassment of elk occurring on lands surrounding Dworshak Reservoir. The DM then listed four precautions that should be taken to minimize the disturbance to elk on lands surrounding Dworshak Reservoir:

1. All trails and secondary roads above Grandad Creek Bridge will be closed to off-road vehicles, including snowmobiles.
2. Future recreation development beyond Grandad Creek Bridge will be primitive in nature and constructed in a manner compatible with the natural environment.
3. No roads will be constructed to provide access to the mini-camps[1] surrounding Dworshak Reservoir.

[1] Mini-camps are small, primitive campsites consisting of a picnic table, tent pad, fire ring, and outhouse. They do not have water, electricity, or dumpsters. They are primarily boat-access only. There are over 80 of these located throughout Dworshak project along the reservoir shoreline.

4. Only visitor travel by foot and horseback will be permitted on project and mitigation lands identified for elk management.

The Corps can allow project activities in conflict with these four precautions from DM-15, after consensus with IDFG and USFWS. The consensus/coordination process will be described in a future Memorandum of Understanding (MOU) with IDFG and USFWS.

The Corps continues to enforce the restriction on motorized access on mitigation lands. However, because of the change in reservoir pool operation and the change in recreational needs for access, the Corps is seeking flexibility from IDFG and USFWS on the above four precautions. The AMP may include a provision to consider the effect any access management action might have on elk and make adjustments to minimize potential conflicts. The Corps and IDFG may also collaborate and work cooperatively on land management issues to assess potential effects on the natural resources (wildlife, forest, habitat, etc.) surrounding Dworshak Reservoir when considering access. The Corps, IDFG, and USFWS may develop a MOU and/or Memorandum of Agreement (MOA) when authorities allow the agencies to establish this collaboration and partnership.

To the extent the AMP differs from DM-15, pertaining to the four precautions listed above, the AMP is intended to modify DM-15 to allow consideration of allowing potential access that is in conflict with the four precautions, through consensus with IDFG and USFWS. The consensus/coordination process is to be further described and defined in the MOU with IDFG and USFWS.

1.2.3 Dworshak Master Plan

The Corps prepared the Dworshak Reservoir Master Plan (Corps 2015a) in June 2015. The Master Plan is a strategic land use document that guides the comprehensive management, development, and use for recreation, natural resources, and cultural resources throughout the life of the Dworshak Project. The Master Plan focuses on goals and objectives, but not details of design, management, or implementation. The selected access management plan must be consistent with the access-related Resource Use Objectives identified in the Master Plan:

- Prevent timber and livestock trespass and other unauthorized use of government property.
- Actively address unauthorized motorized access to reduce impacts to fish and wildlife habitat and conflicts with non-motorized recreation users.
- Manage the road system within the operating project boundaries to meet transportation needs and to prevent resource damage.
- Provide safe and accessible recreation opportunities for all visitors.

1.2.4 Dworshak Public Use Plan

The Corps prepared the *Dworshak Reservoir Public Use Plan for the Development and Management of Public Access at Dworshak Reservoir, Supplement to Design*

Memorandum 10 (PUP) in February of 2011. The PUP defined management strategies for acceptable public use and access for lands and waters of Dworshak Reservoir and served as a guide for development and management of water and associated lands. The PUP was incorporated into the June 2015 Master Plan and has been superseded by the Master Plan.

1.2.5 Dworshak Operational Management Plan

Corps policy is for each operating water resource project to have an Operational Management Plan (OMP). The OMP implements the resource objectives and development needs identified in the Master Plan. Project personnel develop and implement the Project OMP in accordance with the Master Plan. The OMP is a 5-year plan that is updated annually to develop work plans for future years. The AMP would be referenced during these updates and planned work would comply with the AMP.

1.2.6 Corps Regulations

Engineering Regulation/Pamphlet 1130-2-540, dated 15 Nov 1996, Environmental Stewardship Operations and Maintenance Policies, contains guidance for forest and woodland management, fish and wildlife management, and wetlands management.

Engineering Regulation/Pamphlet 1130-2-550 dated 15 November 1996, Recreation Operations and Maintenance Polices, established the policy for the management of recreation programs and activities, and for the operation and maintenance of Corps recreation facilities and related structures at civil works water resource projects.

1.3 Purpose and Need

The purpose of the proposed action is to effectively manage land-based access on Corps lands at Dworshak Project to reduce trespass, control unauthorized access, meet current and future public demand for motorized and non-motorized access and recreation, and facilitate natural resource stewardship actions by the Corps. The Corps proposes to adopt and implement an access management plan (AMP) to manage access while minimizing adverse effects on natural and cultural resources.

Implementation of an AMP would be consistent with the Resource Objectives identified in the Corps Dworshak Reservoir Project Master Plan, dated June 2015. Access management actions identified in the AMP must be consistent with the Dworshak Master Plan and the Dworshak Operational Management Plan. Resource Objectives related to access include:

- Prevent timber and livestock trespass and other unauthorized use of government property
- Actively address unauthorized motorized access to reduce impacts to fish and wildlife habitat and conflicts with non-motorized recreation users.

- Manage the road system within the operating project boundaries to meet transportation needs and to prevent resource damage.
- Provide safe and accessible recreation opportunities for all visitors.

An AMP is needed for several reasons. The Dworshak Project boundary is not completely surveyed/defined. Most of the property adjacent to Project lands is owned by the state of Idaho, private landowners, or other federal agencies, each of which have different management goals and opportunities for and restrictions to land-based public access. These access requirements are not always compatible with those of Dworshak Project. About 32 miles of the exterior Project boundary have been fenced and unauthorized off-highway vehicle (OHV)[2] intrusions have been responsible for some of the damage to segments of this fencing. As of the date of this EA, about 166 miles of the 184 miles of Dworshak boundary have been surveyed, marked, and posted. About 18 miles have not been surveyed or monumented, which contributes to unintentional trespass and negative effects associated with timber and livestock trespass and other unauthorized use of Project land.

Unauthorized access has the potential to damage Project natural resources including soils, vegetation, wildlife and wildlife habitat, cultural resources, water quality, and aesthetics. Poorly sited or constructed trails can contribute to soil erosion and create turbidity in streams. They can also disturb wildlife or alter wildlife habitat. An AMP with provisions to limit or control public access could reduce this potential for adverse effects and allow the Corps to meet its stewardship responsibility for these resources.

The Corps has an obligation to manage for elk winter range on the Project elk mitigation lands. The Corps needs the ability to access these lands for management purposes while preventing unauthorized public access. Unauthorized public access can physically damage the lands and human presence can disturb the elk, potentially causing stress to the animals and possible causing them to leave the area.

Motorized recreation has changed since construction of Dworshak was completed, resulting in a change in the types of vehicles used and greater demand by the public for access on Project lands. Early development plans addressed motorized access as a way to access large developed campgrounds and focused on highway vehicles (e.g. passenger cars). Other forms of motorized recreation, such as the use of OHV's and all-terrain vehicles (ATV's) were not popular or did not exist. With the increase in ownership and use of these vehicles, the public has been illegally creating their own trails (user-defined trails) on Project lands. These user-defined trails are not designed or sited to minimize soil erosion, avoid sensitive natural or cultural resource areas, comply with wildlife management objectives, or avoid conflict with other road or trail users. Access control structures have been designed to prevent full size vehicles from entering non-motorized areas and OHV's/ATV's can often pass around the structures. These factors have contributed to the need for changes in the treatment of motorized access on Dworshak Project lands.

[2] OHV: The class of vehicles specifically designed for use off developed roads; these include motorized dirt bikes, All Terrain Vehicles (ATV) and other high clearance vehicles designed for off road use.

The ability to access some of the recreational sites at the Project has also changed. For the first 20 years of reservoir operation, the Corps normally kept the reservoir level at or near the full pool elevation from July through September to provide for summer recreation. The Corps developed recreation facilities along the shoreline, many of which were designed to be operational at full pool and accessible only by boat. However, starting in the early 1990's, the Corps has been required to release water from Dworshak reservoir to improve salmon migration conditions in the lower Snake River. The Corps typically starts drawing down the reservoir after July 4 each year, lowering the water level by about 80 feet. This annual drawdown adversely affects access to many of the shoreline recreation sites as boaters must climb a steep, muddy slope to reach the sites. Development and maintenance of overland access routes under an AMP would improve the ability of the public to use the Project for recreation. This would be consistent with national objectives and regional goals.

An AMP would also address road and trail development and maintenance. The Project currently has about 126 miles of roads, about 24 miles of non-motorized trails, and about 6 ½ miles of motorized trail within its boundaries. These roads and trails require different levels of maintenance depending on the type of use. Some roads may no longer be needed and could be decommissioned (closed) and considered for trail development to meet demand for both motorized and non-motorized trails. Some of the roads are also needed to access vegetation management sites and wildlife management areas (such as the elk mitigation area) for monitoring and maintenance.

Public demand for non-motorized trails has changed. Most of the existing non-motorized trails on the Project were designed for day hikes or short duration backpacking trips. These trails do not meet the needs of other non-motorized user groups, specifically equestrian and mountain biking groups. An AMP would include provisions for this type of recreation.

An AMP would further resource objectives and balance the growing demand for recreational access with the Corps' obligation to appropriately manage natural and cultural resources. Unauthorized access has the potential to result in damage to Project resources including soils, vegetation, wildlife and wildlife habitat, cultural resources, and water quality. A plan to limit or control public access could reduce this potential and allow the Corps to meet its stewardship responsibility for these resources.

1.4 Access Management Goals

The Corps identified the following goals for access management:

1. Provide the framework for a comprehensive trail network for all types of recreational users. The Project's trail network would provide a myriad of opportunities for differing types of roaming recreational activities.
2. Reduce negative effects to fish and wildlife habitat, cultural resources, and non-motorized recreational users from unauthorized motorized access.

3. Seek new opportunities for alternative access and recreational trail activities including but not limited to motorized, equestrian, and biking opportunities where natural resource ecology, cultural resources, and the public are not in conflict.
4. Prevent unintentional trespass and negative effects associated with timber trespass, livestock trespass, and other unauthorized use of government property.
5. Continue efforts to monument Project boundary and cooperate with adjacent landowners to create opportunities for the sharing of data and costs for common boundary surveys.
6. Describe the current condition of all existing roads and spatially define those roads in GIS.
7. Establish and implement a road system and maintenance schedule that meets Project transportation needs and prevents resource damage.

SECTION 2. ALTERNATIVES

2.1 Access Management Categories and Actions

Land-based access management includes boundary management, access control management, road management, and trail management. An AMP needs to accommodate changes in public use at the Project and to fulfill the intent of the Master Plan and the Corp's obligation for environmental stewardship. Access management falls into the interrelated categories of boundary management, access control management, road management, and trail management (motorized and non-motorized). These categories cross and relate to the various land classifications discussed in Table 1-1 on page 3 above.

Boundary Management: Boundary management is administrative in nature and is used to ensure the integrity of federal lands and resources. The Corps uses surveying, marking, and posting the Project boundary to visually identify Corps property ownership. The Corps performs the surveys under a cooperative boundary agreement with the adjacent landowner whenever possible. Establishing identified markings help facilitate land management and trespass/encroachment enforcement. Boundary information in the form of GIS data is also shared with other land managers. Boundary management also includes repairing damaged survey monumentation.

Access Control Management: Access control management is used to manage motorized public access on Corps managed lands. Control methods used by the Corps include physical structures such as gates, barricades, fences, and other physical barriers; and administrative actions such as signage, education, and Title 36 enforcement (36 CFR 327, Rules and Regulations Governing Public Use of Water Resource Development Projects Administered by the Chief of Engineers). Access control is important for protecting soils, vegetation, wildlife, wildlife habitat, cultural resources, water quality, and air quality and for minimizing conflicting use of roads and trails. Access control actions include installing and maintaining access control structures (gates, barricades, fences) and posting signs and notices. Access control also includes removal of these structures and signs when appropriate. Dworshak Project has about 34 miles of fencing, most of which is along the

Project boundary, but about 3 ½ miles are located inside the Project to provide security, guidance, and barriers. The Corps is in the process of preparing an inventory of existing and abandoned fencing.

Road Management: Road management is used to meet current and future transportation needs and prevent resource damage from the roads themselves and the access they provide. The Project currently has about 16 miles of paved roads, 27 miles of gravel roads, and 95 miles of dirt roads. Some roads are designed primarily to provide public access to recreation sites while others are for official use (administrative use) only such as providing access to vegetation management areas. The Corps manages and maintains most of the roads, but some are outgranted and maintenance is the responsibility of the grantee. Road management provides safe movement of vehicles while protecting resources including soils, water quality, and fish and wildlife habitat. Road management is used to schedule maintenance for existing roads; determine when existing roads need to be closed, obliterated, or considered for conversion into trails; and determine when and where new or reconstructed roads may be needed and what design criteria should be used for the roads. The road management program focuses primarily on the maintenance of existing roads and associated drainage structures. However, it also addresses construction of new roads when needed to access areas that have no current or historic roads suitable for use.

Trail Management: Trail management is similar to road management and is used to meet current and future public demand for primarily non-motorized recreation and provide limited motorized recreational access. Presently, there are about 24 miles of non-motorized trails and about 6 ½ miles of motorized recreational trail at the Project. Snowmobile use is allowed on all open motorized trails, but the Corps does not develop or maintain trails for snowmobile use. Snowshoeing and skiing are allowed on all open non-motorized trails, but the Corps does develop or maintain trails for this use. Management actions include maintaining existing trails; constructing new trails; closing or re-routing existing trails; and changing the use or design of existing trails to meet changing public demand and minimize user conflicts. Trail management provides recreational opportunities for a variety of users while protecting resources including soils, water quality, fish and wildlife habitat, and cultural resources.

2.2. Alternative Development

The Corps considered three alternatives for an AMP at Dworshak. Each alternative is described and evaluated in terms of how it addresses the four access management categories and ability to balance recreational and natural resources. The three alternatives are:

1) No action (no change in current access management);
2) Maximize public access
3) Balance public access and natural resource protection (proposed alternative);

2.2.1 Alternative 1: No Action (No Change in Current Access Management)

The no action/no change alternative, Alternative 1, represents a continuation of the Corps' current access management process and levels. Access management is currently developed under an annual work plan in which Project staff review previous progress on access management objectives and plan current and future year projects to meet access management goals, subject to available funding. These projects focus on maintenance of existing roads and trails with only limited development of new roads for natural resource management actions.

The Corps uses several monitoring efforts to determine when actions may be warranted. The Corps has an ongoing inventory of all Dworshak Project roads that includes an assessment of purpose, condition, future needs, and the expected level of maintenance. The Corps performs an annual review of trails to assess issues requiring immediate attention within the following recreation season and a longer term inventory to assess condition and determine priorities for any management maintenance work needed during the next five years. The Corps also considers reports from Corps personnel, other agencies, or the public of needed maintenance or access control actions.

2.2.1.1 Boundary Management

Under Alternative 1, the Corps would continue to perform two types of actions for boundary management – surveying/marking unsurveyed portions of the Project boundary, and repairing damaged survey monumentation, subject to availability of funding. The Corps would continue to perform surveys under a cooperative agreement with the adjacent landowner whenever possible and share respective surveys. Surveyors would travel by foot or by OHV on established roads and trails. When performing the surveys, they may need to trim vegetation to clear a line of sight. Monumentation would be set in accordance with the Bureau of Land Management (BLM) Manual of Surveying Instructions, with aluminum posts driven or dug into the ground within sight of the next or at a maximum of 200 feet between boundary posts. All work would be accomplished with the use of hand tools.

2.2.1.2 Access Control Management

Under Alternative 1, the Corps would continue to use administrative actions and structural methods to control access on Corps managed lands.

Administrative Actions

Sign Installation/Maintenance: The Corps would continue to install and maintain signs as needed. Sign installation would include digging a post hole with hand tools up to 42 inches deep and placing the post. Post placement would be accomplished through tamping dirt, and may include filling the hole with concrete to prevent the post from falling, or being removed.

Education: The Corps would continue to use public education, either via direct outreach, signage or providing educational materials (maps, brochures) in an effort to reduce effects of trails and trail use on wildlife and reduce user conflicts. The Corps would continue to perform maintenance on the structures and signs as needed and remove structures or signs when appropriate.

Enforcement: The Corps would continue to inventory unauthorized trail use and inform unauthorized users of use restrictions. The Corps may also implement Title 36 enforcement for encroachment and trespass issues.

Structural Methods

Fencing: The Corps would continue to inventory existing and abandoned fences. The Corps would continue to repair and maintain the existing fences, including replacing metal t-posts or wooden posts, if warranted and subject to funding. Because of the types of fencing used at the Project, and the type of terrain, fencing would be installed primarily with hand tools. However, some fence installation or repair may be done with heavy equipment such as a skid steer with auger attachment or a dozer for clearing the fence line area of brush and materials. Incidental to normal fence repair/maintenance the Corps would remove old fence that is no longer needed. For new fence construction or replacement (if warranted) the Corps would utilize wildlife-friendly fence designs that reduce entanglement risk and minimize travel impediment for young ungulates.

Gates and Barricades: The Corps would continue to use gates at various locations on the Project boundary as well as within Project lands to block vehicle access to lands not open to vehicle use and to provide security. Gates or barricades would be installed in previously disturbed areas using either equipment or hand tools. Gates would be placed into a hole dug with hand tools or machinery. Dirt would be tamped in place around the gate, and the hole would likely be filled with concrete to set the gate in position. The Corps would continue to perform routine repairs and modifications to the gates/barricades such as welding on a wing, sanding, painting, and hanging signs.

2.2.1.3 Road Management

Under Alternative 1, the Corps would continue to manage roads on Dworshak Project lands using the three elements of road maintenance, road access closure, and road access development for natural resources management. The Corps would continue to inventory all roads and assess them for purpose, condition, future needs, and expected level of maintenance. The Corps would continue to place seasonal and/or temporary restrictions on any roads for a variety of resource management reasons, including:

- To reduce damage to wildlife habitat and/or reduce disturbance to wildlife during nesting or rearing season.
- To reduce road damage during periods of inclement weather. Often fall and spring rains and runoff leaves the road surface too wet and soft for vehicle travel.

Continued vehicle traffic could cause unnecessary and excessive soil disturbance and possibly compromise water quality.

- Snow depth and conditions in the winter months render the road impassible.
- A particular environmental event renders the road impassible for its intended use. In this case the road may be closed indefinitely until either repairs can be executed or the road is reassessed with a lower target maintenance level.
- To execute planned roadwork.

Road Maintenance

Under Alternative 1, the Corps would continue to maintain existing secondary and primitive roads used for recreation, wildlife management, forest management and those roads not open to the public (administrative roads). Roads that are authorized under real estate agreements (e.g., easements) would continue to be maintained by the grantee as described in the applicable real estate instrument. Road maintenance work could include adding gravel, grading, brushing, and ditch and culvert clean-out. It also includes maintenance of the road's associated ditches and other surface drainage, and may include placing new layer of crushed gravel. Road maintenance requires use of heavy equipment (e.g. dozers, tractors, excavators, road graders) as well as hand tools (e.g. shovels, rakes, hand saws, chainsaws).

The level of road maintenance would depend on the expected type of vehicle traveling on the road. Vehicles using Project roads include passenger cars with low clearance, trucks, and 4-wheel drive vehicles with high clearance. Roads would not need to provide access to all types of vehicles. The target maintenance levels are:

Low Clearance Vehicles: These roads would be maintained to provide for travel by any vehicle legal for highway travel. Roads in this category typically have a surface comprised of crushed gravel or better. Roads within this category have a minimum target road surface width of 14 feet.

High Clearance Vehicles: These roads would be maintained to provide for full sized high clearance (typically four-wheel drive) vehicles. They may have obstacles and/or potholes that require vehicles with higher ground clearance or may have loose or unstable material requiring four-wheel drive to safely and efficiently traverse. The target maintenance level is to maintain a 12 foot wide road surface at a minimum.

Road Access Closure

Under Alternative 1, the Corps would continue to close road access when the Corps determines access is not currently needed.

Road Closure: If the Corps determines a particular road is not currently needed, but would likely be needed in the future, the Corps would temporarily close the road by changing the road status to inactive, taking actions such as grass seeding or culvert

removal to stabilize the soil or reduce erosion, and implementing appropriate access controls to minimize unauthorized access.

Road Obliteration: If the Corps determines a road will not be needed again, the Corps would close the road by obliterating it. Road obliteration would include removing culverts, constructing drainage dips, seeding all disturbed and exposed soil with a native grass seed mix, placing woody material (brush, slash, logs) on the finished surface to reduce erosion, removing fill, and re-contouring the road surface to match the contour of the adjacent slopes. This work would generally be done with heavy equipment such as a rubber tired backhoe, an excavator, dozer, etc. Heavy equipment or explosives could be used to remove specific road sections to prevent vehicle passage.

New Road Construction

Under Alternative 1, the Corps would construct new roads only when needed for natural resource management actions. When the Corps identifies a need for road access, it would determine if any existing roads are available and suitable, and use them to the maximum extent possible. This includes active roads, closed roads, and historic road beds. Closed or historic road beds would likely need to be recommissioned (opened)/reconstructed. Road reconstruction consists of reconditioning and preparing the roadbed and shoulders, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning, repairing, and upgrading the drainage structures of existing roads. It also includes work on associated ditches, other surface drainage, and culvert installation. Roadbed surfaces in Riparian Habitat Conservation Areas (RHCA's) would be graveled to limit suspended sediment. Sediment capture devices would be installed between work areas and streams to prevent escapement of sediment into the streams.

The Corps would construct a new road if an existing road is not available to support natural resource management actions. The construction of new roads would follow the process described in the Dworshak Five Year Vegetation Management Plan (FY 2015-2020) (Corps 2015b) and would be limited to vegetation or wildlife management areas. Road construction would include the felling of timber up to 20 feet on either side of the road centerline, if needed, and clearing and grubbing to remove all trees, logs, brush, stumps, roots, slash, and other woody debris and materials embedded in the ground. Road construction would be performed primarily by using heavy equipment and hand tools, but could include limited blasting if needed. The road width (running surface) would be no greater than 14 feet. Roads for timber treatment would be one lane with pullouts for log trucks. Cut slopes would be cut down and leveled out to form the subgrade width with a proper fill slope ratio (approximately 1.5:1). Pit run rock would be applied to the native surface in areas that are steep or poorly drained and at all live water crossings. New construction would include work associated with associated ditches, other surface drainage and culvert installation.

2.2.1.4 Trail Management

Under Alternative 1, the Corps would continue to manage existing trails to provide access for primarily non-motorized users with limited access for motorized users. The Corps would maintain existing trails to the appropriate standards and close or re-route existing trails as needed to protect natural or cultural resources and provide for safe use of the trails. The Corps would not construct any new trails.

Motorized Trails

The Corps would continue to manage the three existing motorized access trail systems, Elk Creek Meadows OHV, Little Meadow Creek OHV, and Camp L6.0 Full-Size Vehicle (FSV). (Figure 2-1). These trails would be maintained to meet the specifications for Class 3 and Class 4 motorized trails as outlined in the Master Plan and shown in Tables 2-1 and 2-2.

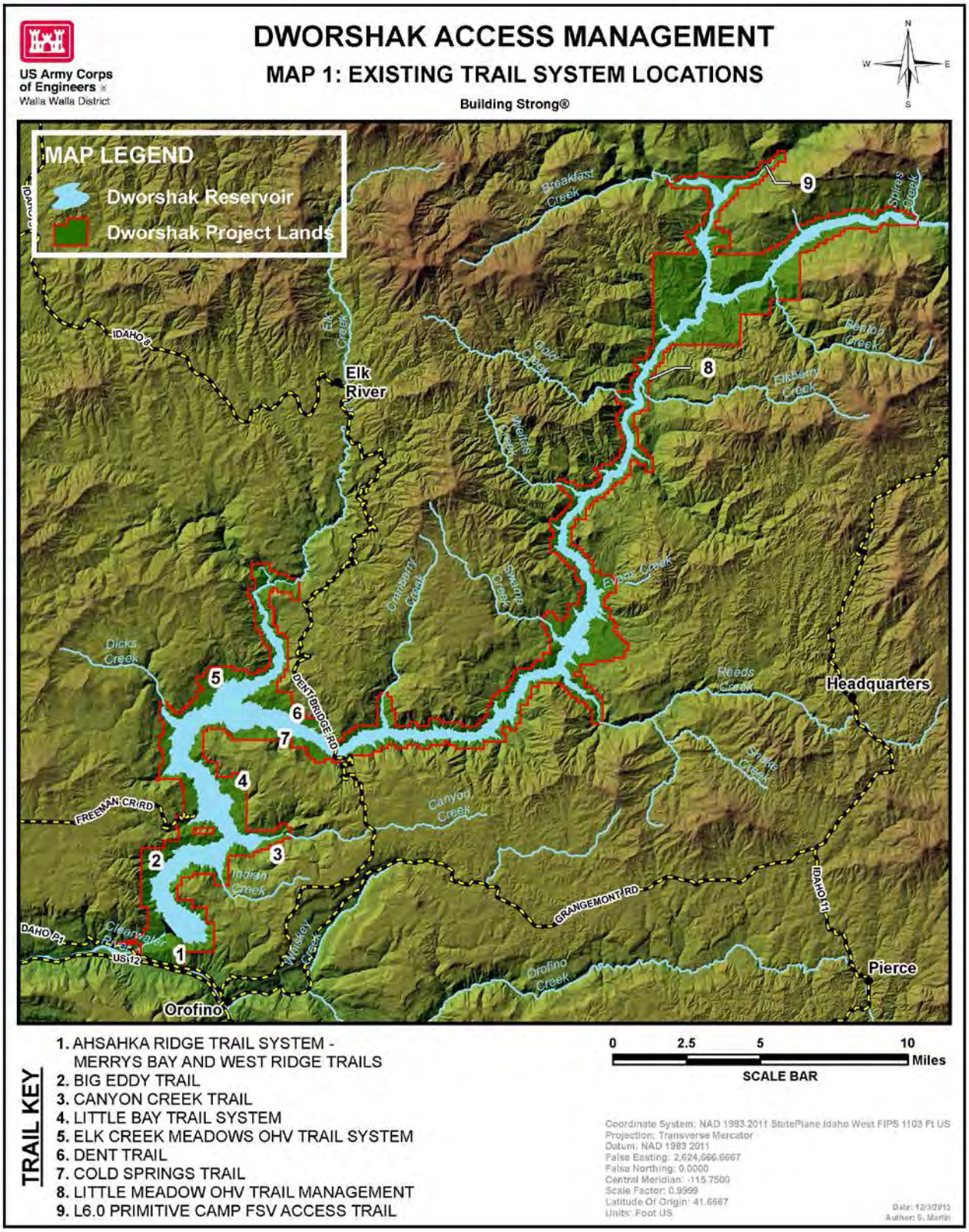

Figure 2-1 Existing motorized and non-motorized trails

Table 2-1 Trail specifications for ATV's

TRAIL SPECIFICATIONS FOR ATVs

Designed Use ALL TERRAIN VEHICLE		Trail Class 3	Trail Class 4
Design Tread Width	**Single Lane**	60 inches	60–72 inches
	Double Lane	96–108 inches	96–120 inches
	Structures (Minimum Width)	60 inches	60 inches
Design Surface	**Type**	• Native with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 3 inches May be common, not continuous	≤ 3 inches Uncommon, not continuous
	Obstacles (Maximum Height)	6 inches May be common, left for increased challenge	3 inches Uncommon
Design Grade	**Target Grade**	5–15%	3–10%
	Short Pitch Maximum	25%	15%
	Maximum Pitch Density	15–30% of trail	10–20% of trail
Design Cross Slope	**Target Cross Slope**	3–8%	3–5%
	Maximum Cross Slope	10%	8%
Design Clearing	**Height**	6–8 feet	8–10 feet
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")	60–72 inches	72-96 inches
	Shoulder Clearance	6–12 inches	12–18 inches
Design Turn	**Radius**	8–10 feet	8–12 feet

Table 2-2 Trail specifications for motorized vehicles greater than 50 inches wide

TRAIL SPECIFICATIONS FOR MOTORIZED VEHICLES GREATER THAN 50 INCHES WIDE

Designed Use FOUR-WHEEL DRIVE VEHICLE > 50"		Trail Class 3	Trail Class 4
Design Tread Width	Single Lane	72–96 inches	96–120 inches
	Double Lane	16 feet	16 feet
	Structures (Minimum Width)	96 inches	96 inches
Design Surface	Type	• Native, with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native, with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 8 inches May be common and continuous	≤ 4 inches May be common and continuous
	Obstacles (Maximum Height)	24 inches Common, left for increased challenge	12 inches Uncommon
Design Grade	Target Grade	5–18%	5–12%
	Short Pitch Maximum	20%	15%
	Maximum Pitch Density	10–20% of trail	5–10% of trail
Design Cross Slope	Target Cross Slope	5–12%	5–8%
	Maximum Cross Slope	12%	8%
Design Clearing	Height	6–8 feet	8–10 feet
	Width (On steep side hills, increase clearing on uphill side by 6–12")	72–96 inches	96–144 inches
	Shoulder Clearance	6–12 inches	12–18 inches
Design Turn	Radius	15–20 feet	20–30 feet

Typical maintenance activities for the motorized trails would consist of:

- Clearing of vegetation within the trail corridor using chainsaws and hand tools. The width of the corridor depends upon the managed use of the trail. In general, the width of the corridor would range between three feet to four feet of the trail center line and the height of the corridor would range between eight to ten feet tall; these dimensions are dependent upon the terrain.

- Grooming of the tread surface using equipment and hand tools. Typical equipment used for tread maintenance typically includes the use of a trail dozer and backhoe.

- Construction and replacement of water bars. Water bars are typically constructed from on-site materials, usually small diameter trees, and placed at a 30 to 45 degree angle. Lengths of water bars would vary based upon topography and tread width.

- Construction and replacement of retaining walls. Retaining walls used in trail applications at Dworshak are typically constructed of dimensional lumber or stone materials and range in size from 1 foot high by 1 foot long to 3 feet high by 50 feet long.

- Construction and maintenance of bridges. Bridges would be constructed based upon the managed use of a trail with consideration given to the terrain and vegetation of the site. As each bridge site is a unique structure, it is impractical to try to capture the variety of designs, load bearing characteristics, and aesthetic values associated with each. In general, bridges would be constructed of wood materials and set upon a rock or cement structure base. Bridges would be of a type and style to support OHV use.

The trails would be open to any OHV less than 50 inches wide, and the Camp L6.0 FSV trail would also be open to full size 4-wheel drive vehicles.

The Corps would continue to implement seasonal closures of motorized trails, as necessary, to protect natural resources including wildlife habitat and select wildlife species.

OHV trails would continue to be monitored and evaluated annually and may be closed at any time based on, but not limited to, environmental degradation, adverse effects to wildlife, adverse effects to non-motorized users, the presence of threatened or endangered species, adverse effects to cultural resources, failure of the user group to properly maintain trails, and/or abuse of the OHV trail system.

Non-Motorized Trails

The Corps would continue to manage/maintain the existing six systems of non-motorized trails (Figure 2-1 on page 17 above) for pedestrian activities consisting of primarily day hikes and short duration backpacking trips. Trails would be maintained to the characteristics of Class 2 and Class 3 non-motorized trails as adapted from the U.S. Forest Service Trail Class Matrix (2005) and summarized below:

Class 2 Non-Motorized Trails
-Trail discernible, continuous, and rough with few or no allowances for passing.
-Tread is constructed from native materials.
-Vegetation may encroach into trail corridor.
-Blockages cleared to define route and protect resources.
-Drainage functional.
-Primitive foot crossings and fords.
-Few destination signs present.

-Minimum number of signs required for basic direction.

Class 3 Non-Motorized Trails

-Tread obvious and continuous with occasional allowances for passing.

-Tread is generally constructed from native materials, but may have segments containing aggregate.

-Tread surface is generally smooth with only small protrusions.

-Vegetation is fully cleared within the trail corridor.

-Trail structures may be common and substantial, such as:

- Bridges
- Retaining walls
- Steps
- Causeways

-Crossings are typically either hardened or armored or a substantial bridge.

-Trails have frequent markers and are easily followed.

-Directional signs are typically present.

-Informational and interpretive signs may be present.

Typical maintenance activities for the non-motorized trails would consist of:

- Clearing of vegetation within the trail corridor using chainsaws and hand tools. The width of the corridor would be two feet to either side of the trail center line and the height of the corridor would be eight feet high.

- Grooming of the tread surface using hand tools. 12 – 24 inches wide.

- Construction and replacement of water bars. Water bars are typically constructed from on-site materials, usually small diameter trees, and placed at a 30 to 45 degree angle. Length of water bars would vary based upon topography, tread width, and availability of materials.

- Construction and replacement of retaining walls. Retaining walls used in trail applications at Dworshak are typically constructed of dimensional lumber or stone materials and range in size from 1 foot high by 1 foot long to 3 feet high by 50 feet long.

- Construction and maintenance of bridges. Bridges would be constructed based upon the managed use of a trail with consideration given to the terrain and vegetation of the site. In general, bridges would be constructed of wood materials and set upon a rock or cement structure base. Bridges would be designed to support equestrian use. Handrails would be installed on all bridges having a deck height of greater than 24 inches from the bottom of the bridge decking to the lowest vertical point below the bridge.

The Corps would continue to manage all of the trails for day hiking and one trail, Big Eddy, would also be managed for backpacking. All forms of non-motorized use including

mountain biking and horseback riding would be allowed on all of the trails, but the Corps would not manage the trails for these uses. Presently, all trails are open yearlong to any non-motorized activity and this use is not expected to change unless resource damage occurs or un-resolvable user conflicts develop.

2.2.2 Alternative 2: Maximize Public Access

Alternative 2 would maximize public access. As with Alternative 1, access management would be developed under an annual work plan. However, under this alternative the Corps would develop roads and trails as demanded by the public, subject to the ability to find a sponsor or the availability of Corps funds for development and maintenance. There would be no set limit on the total number or density of roads or trails that could be developed.

2.2.2.1 Boundary Management

Boundary management under Alternative 2 would be the same as for Alternative 1.

2.2.2.2 Access Control Management

Access control management under Alternative 2 would use the same methods as for Alternative 1, but likely at an increased level to address the increase in access.

2.2.2.3 Road Management

Road management under Alternative 2 would address road maintenance similar to Alternative 1, but the road closure and new road elements would allow for more public access. For road closure, the Corps would allow the road to be used as a trail, either motorized or non-motorized, rather than closing or obliterating the road. For new road construction, the Corps would construct roads for natural resource management (as in Alternative 1), but also develop new roads to meet public demand for full size vehicles, both low clearance and high clearance, subject to the ability to find a sponsor or the availability of project funds. There would be no limit to the number or density of roads that could be constructed. The only area in which new roads would not be considered would be the elk mitigation area.

2.2.2.4 Trail Management

Trail management under Alternative 2 would address trail maintenance similar to Alternative 1, but would provide for more trail development. Most of this trail development would be to support the demand for motorized trail access, including OHV's and FSV's. In general, designated OHV trails would follow existing primitive roads and some user-defined trails, although some segments of these existing user-defined OHV trails would be realigned to decrease erosion potential and to enhance user safety. Potential OHV trails would be permitted in the following land classification areas according to the 2015 Master Plan: Multiple Resource Management (MRM) Future Recreation Management, MRM – Recreation Low-Density, and MRM – Wildlife Management. OHV trails would not be

allowed in areas classified as Project Operations, Environmentally Sensitive or Mitigation, unless trail segments use existing public roads through those areas. Recreational OHV use would only be allowed on designated trails with no cross-country travel permitted. To provide access for 4-wheel drive vehicles, the Corps would re-commission suitable existing roads to create FSV trails.

Under Alternative 2, the Corps would modify the existing non-motorized trails systems to multiple use to provide more opportunities for mountain biking and equestrian use and would develop additional trails for all users. The Corps would change how some of the non-motorized trail systems are managed to enable use of these trails for additional types of non-motorized recreational trail users (Table 2-3).

Table 2-3 Current and Proposed Uses of Existing Project Trail Systems

Trail Name	Trail Length (miles)	Current Managed Uses	Proposed Managed Uses
Big Eddy	9.27	Day hiking/backpacking	Day hiking/backpacking
Canyon Creek	1.21	Day hiking	Horseback riding
Cold Springs	5.00	Day hiking	Horseback riding
Dent	1.65	Day hiking	Day hiking
Merry's Bay	1.24	Day hiking	Day hiking
West Ridge	2.38	Day hiking	Mountain biking

New non-motorized trails would be developed similar to motorized trails. In general, new trails would follow existing primitive roads and some user-defined trails, although some segments of these existing user-defined trails would be realigned to decrease erosion potential and to enhance user safety.

For both motorized and non-motorized trails, the Corps would consider developing established trails to replace user-defined trails, providing a sponsor is identified to support the development and maintenance of the trails or project funds are available. The Corps would make trail development a high priority when determining which actions to implement each year using project funds. There would be no set limit for the number of trails or the density of trails that could be developed. The only area in which new motorized trails would not be considered would be the elk mitigation area. The Corps would continue to close motorized trails, as needed, on a seasonal basis to protect natural resources.

2.2.3 Alternative 3: Balanced Access (Proposed Alternative)

Alternative 3 (Balanced Access), similar to Alternative 2, would provide for additional road and trail development, but with provisions and restrictions to protect natural and cultural resources. As with Alternative 2, new road and trail development would be subject to the ability to find a trail sponsor or the availability of Corps funds for development and maintenance. There would be no set limit on the total number of road or trails that could be developed, but there would be a limit on road/trail density. The density of proposed roads and/or trails would be evaluated based on site-specific local conditions

including slope percent, soil characteristics, and wildlife concerns to ensure adequate protection of natural and cultural resources.

2.2.3.1 Boundary Management

Boundary management under Alternative 3 would be the same as for Alternatives 1 and 2.

2.2.3.2 Access Control Management

Access control management under Alternative 3 would use the same methods as for Alternative 1, but likely at a level higher than Alternative 1 and less than Alternative 2. This difference in levels is because Alternative 3 would provide for a greater amount of access than Alternative 1, but a lesser amount of access than Alternative 2.

2.2.3.3 Road Management

Under Alternative 3 road maintenance would be the same as for Alternatives 1 and 2. Road closure under Alternative 3 would be similar to Alternative 2 as the Corps could allow the road to be used as a trail, either motorized or non-motorized, rather than closing or obliterating the road. However, under Alternative 3, the Corps could choose to close inactive roads to all uses and not consider allowing them to be used as trails either in the interim or permanently. New road construction under Alternative 3 would also be similar to Alternative 2. The Corps would develop roads as described under Alternative 1 to access natural resource management action areas. The Corps could also consider developing new roads to meet public demand for full size vehicles, both low clearance and high clearance. The density of existing and proposed roads would be evaluated based on the Interior Columbia Basin Ecosystem Management Project (ICBEMP) road density classes (U.S. Forest Service, 1996) to ensure adequate protection of natural/cultural resources. The only area in which new roads would not be considered would be the elk mitigation area.

The ICBEMP developed the following road density classes (Table 2-4) to assess potential effects to biological and physical resources. Figure 2-2 shows examples of ICBEMP road density classes within typical watersheds. Within the Dworshak area, roads and trails can affect conditions for elk, primarily security cover, and for water quality, primarily potential erosion and sedimentation from road/trail surfaces.

Table 2-4 ICBEMP Road Density Classes

Classification	Road Density (miles/mile^2)
Very Low	0.02-0.1
Low	0.1-0.7
Moderate	0.7-1.7
High	1.7-4.7
Extremely High	>4.7

The ICBEMP density classes in Table 2-4 identify general categories of road/trail density used to evaluate road conditions within watersheds, and would be used by the Corps in conjunction with the percent slope, soil characteristics, and wildlife concerns in determining if proposed new roads or trails are suitable for a specific area. Table 2-5 shows acceptable road density limits for various combinations of aspects and slope classes within the Dworshak Project. These limits are based primarily on watershed considerations such as protecting water quality by preventing soil erosion, but other factors, such as elk vulnerability and safety concerns for road/trail users, may also be considered by the Corps when evaluating if additional roads and/or trails would be suitable in a specific area.

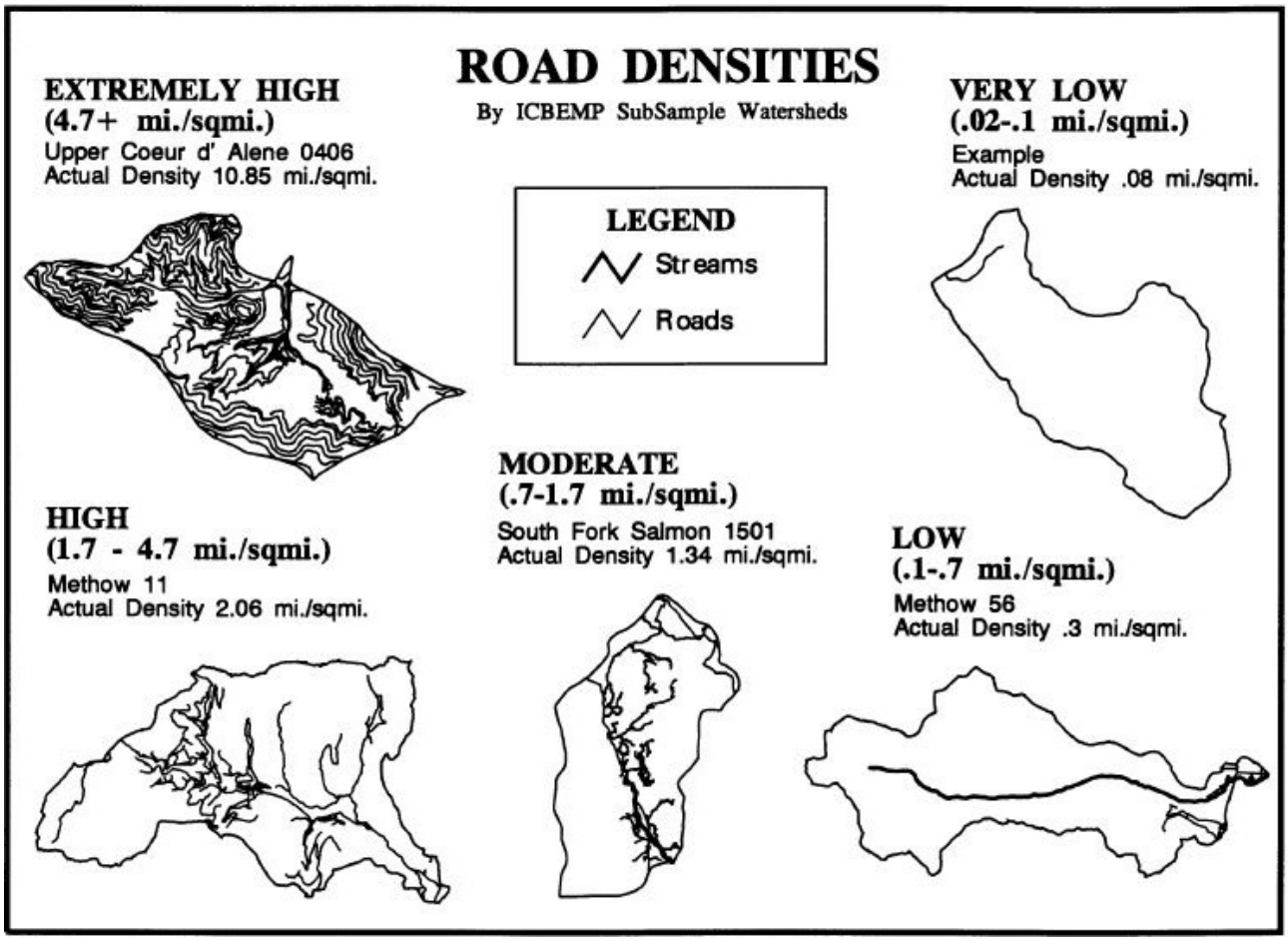

Figure 2-2. Examples of ICBEMP Road Density Classes.

Table 2-5 Road Density Class Acceptability Limits by Project Slope/Aspect Categories

Road Density Class (miles/mile^2)	Slopes < 10% All Aspects	Slopes 10-30% South Aspects	Slopes 10-30% North Aspects	Slopes 30-60% All Aspects	Slopes > 60% All Aspects
Very Low (0.02-0.1)	Yes	Yes	Yes	Yes	Yes
Low (0.1-0.7)	Yes	Yes	Yes	Yes	Yes
Moderate (0.7-1.7)	Yes	Yes	Yes	Yes	No
High (1.7-4.7)	Yes	No	Yes	No	No
Extremely High (>4.7)	No	No	No	No	No

Yes = acceptable, No = not acceptable

The combined density of roads and trails available for public use would be evaluated by Elk Habitat Unit (EHU) and would be calculated only for the portion of the EHU within the Dworshak Project boundary. EHUs are aggregations of watershed areas developed by the Corps to evaluate elk habitat and aquatic conditions, based on the Federal Guide for Watershed Analysis (Regional Ecosystem Office, 1995). EHUs within the Dworshak Project are shown in Figure 2-3. The current road and trail densities (mile/mile^2) by EHUs within the Dworshak Project for Corps lands only are shown in Table 2-6.

When a new road or trail is proposed for public use, the Corps would calculate the road/trail density for the affected EHU with the new road or trail in place on Corps land and compare that to the ICEBMP density limits in Table 2-5. The Corps would also consider site specific conditions and road/trail densities on adjacent ownerships in conjunction with the density limits to determine whether a new road or trail would be appropriate on Corps land. The Corps recognizes that effects from trails, particularly from a soil erosion/sedimentation perspective, are generally less than those associated with roads because of the narrower travel prisms, but would combine both uses for evaluation purposes.

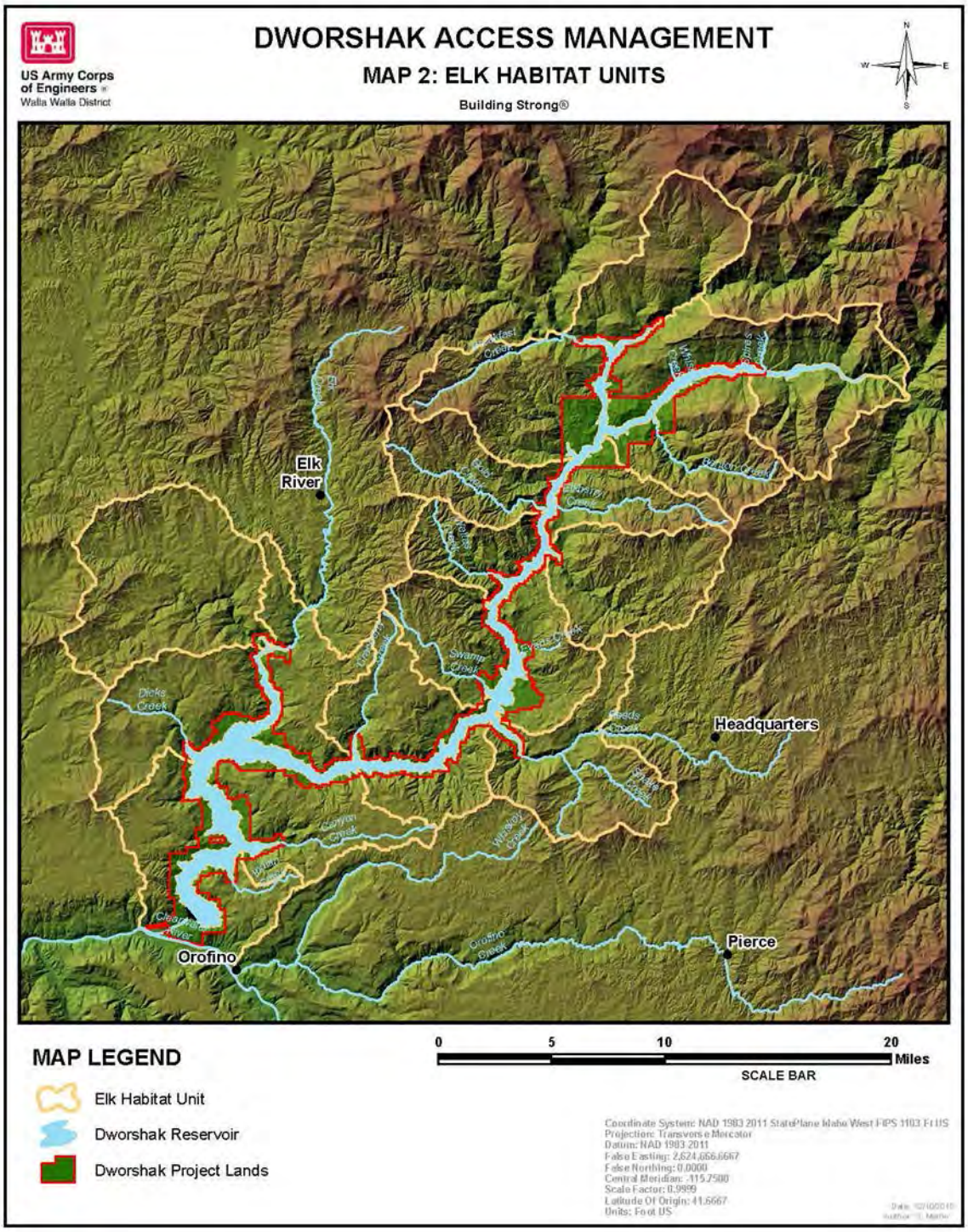

Figure 2-3. Elk Habitat Units in Dworshak Project Area.

Table 2-6 Road and Trail Densities by Elk Habitat Units

Elk Habitat Unit	Roads Open to Public (miles/mile^2)	Motorized Use Trails (miles/mile^2)	Non-Motorized Use Trails (miles/mile^2)	Total Roads and Trails (miles/mile^2)
Benton Creek	0.60	0.00	0.00	0.60
Breakfast Creek	0.95	0.00	0.00	0.95
Butte Creek	0.00	0.00	0.00	0.00
Canyon Creek	0.24	0.00	2.11	2.35
Cedar Creek	0.00	0.00	0.00	0.00
Cranberry Creek	0.00	0.00	0.00	0.00
Dick's Creek	0.00	2.05	0.00	2.05
Elkberry Creek	1.84	0.58	0.00	2.42
Freeman Creek	2.07	0.00	2.00	4.08
Gold Creek	0.00	0.00	0.00	0.00
Hodson Creek	0.00	0.00	0.00	0.00
Indian Creek	0.91	0.00	1.16	2.07
Long Meadow Creek	0.00	0.00	0.00	0.00
Lower Elk Creek	0.87	0.00	0.54	1.41
Lower Reeds Creek	0.00	0.00	0.00	0.00
Magnus Bay	0.00	0.00	0.00	0.00
Silver Creek	0.00	0.00	0.00	0.00
Smith Ridge	0.37	0.00	0.00	0.37
Swamp Creek	0.00	0.00	0.00	0.00
Weitas Creek	0.00	0.00	0.00	0.00
Overall	**0.87**	**0.19**	**0.72**	**1.78**

As with Alternatives 1 and 2, annual access management actions would be developed under the existing annual work plan system. Work would be dependent on budgets to implement possible actions.

2.2.2.4 Trail Management

Under Alternative 3 trail maintenance would be the same as for Alternatives 1 and 2, but trail development, both motorized and non-motorized, would be similar to Alternative 2. As under Alternative 2, most of this trail development would be to support the demand for motorized trail access, including OHV's and FSV's. Potential OHV trails would be permitted only in specific land classification areas identified in the 2015 Master Plan. As under Alternative 2, the Corps would change some of the existing non-motorized trail systems to multiple use to provide more opportunities for mountain biking and equestrian use and would develop additional trails for all users. However, Alternative 3 would differ from Alternative 2 in two ways. Under Alternative 3, the Corps would not emphasize trail development when determining how to prioritize actions to implement each year using project funds. Under Alternative 3 the Corps would use road/trail density, as described

above for road development, to limit trail development and would evaluate the density of existing and proposed trails based on the ICBEMP road density limits to ensure adequate protection of natural/cultural resources.

2.2 Screening of Alternatives

The Corps identified screening criteria to determine which alternatives to consider further. Because an AMP must be consistent with the Dworshak Master Plan, the screening criteria are based on applicable resource use objectives and recommendations from the Master Plan. These criteria are:

- Must provide for recreational trail use by both motorized and non-motorized users
- Must meet transportation needs
- Must protect fish and wildlife habitat and cultural resources

Table 2-7 lists the screening criteria and indicates if the three alternatives met the criteria.

Table 2-7 Screening of Alternatives

Alternative	Provide for trail use	Meets transportation needs	Protects fish and wildlife habitat and cultural resources	Retain for further evaluation
1.No Action	partial	yes	partial	yes
2.Maximize access	yes	yes	no	no
3.Balanced access	yes	yes	yes	yes

The no action alternative does not meet the purpose and need as it does not fully address the need to meet changing demands for public recreation, but was carried forward as required by NEPA to set the baseline from which to compare all other alternatives. Alternative 2 would maximize access, which would respond to the demand for public access, but it would do this by adversely affecting natural and cultural resources, and was therefore not carried forward for further consideration. Alternative 3 would provide for the changing demand for public access, but would place limits on the amount of trail and road development and would include provisions to guide road and trail development to minimize potential adverse effects on fish, wildlife, and cultural resources. Alternative 3 was carried forward for additional analysis.

The Corps, after consideration of potential environmental effects (Section 3); compliance with other applicable environmental laws/regulations (Section 4) and any required coordination, consultation and public involvement (Section 5) has, subject to additional public comment on this EA, identified Alternative 3, Balanced Access

Management, as its preferred alternative and has prepared a draft AMP based on this alternative. The draft AMP is in Appendix A of this EA.

SECTION 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 Introduction

This section describes the environmental resource areas the Corps determined are relevant to the two alternatives being considered and evaluates the effects of the alternatives on those resources. The Corps considered, but did not identify, any potential effects to air quality, climate change, hazardous/toxic materials, or socio-economics.

The Corps considered the potential environmental effects of each of the four categories of access management: boundary management, access control management, road management, and trail management. The Corps determined the only environmental effect of boundary management would be a negligible effect on vegetation from minor pruning, therefore this section does not address this category further. The Corps also determined the administrative actions in the access control management category have no environmental effects, except negligible effects associated with installation of signs, therefore this section addresses the effects of only the structural methods of access control management.

3.2 Geology and Soils

3.2.1 Affected Environment

Dworshak is located within the Clearwater River watershed and is a sub-basin of the lower Snake River watershed. There are two major tributaries to the reservoir: Elk Creek and Little North Fork. Dworshak is formed in the steep-sided North Fork and Little North Fork Valleys. Rising abruptly from the reservoir's full pool elevation of 1,600 feet, the neighboring mountains and ridges reach elevations of over 5,000 feet. Steep slopes dominate the shoreline and Corps lands. Relatively few flat or low-slope areas exist.

The geology for the majority (over 60%) of the basin is a contact zone of schist and gneiss, which is located in the central, north, and northwestern parts of the basin. This contact zone is susceptible to erosion processes resulting in a relatively high occurrence of mass failures. The basin is on the northern edge of the Idaho Batholith as granitic formations are located along the southeastern portion of the basin. Along the north and northeast edge of the basin are meta-sedimentary rocks of the Belt Series. To the west and southwest of the basin are Columbia River basalt flows.

The soils derived from meta-sedimentary rocks generally weather to finer textured soils with varying amounts of course fragments. Granitics weather rapidly to grus, which are sandy and excessively well drained in composition. Basalt rock has a tendency to

weather into large cobble size material. In most of the basin the soils include a layer of ash from the explosion of Mount Mazama that can be up to 20 inches thick. This layer of volcanic ash contributes substantially to the water and nutrient holding capacity of the soils and is the significant reason for the high productivity of the soils in the basin. This ash has been eroded primary on south to west facing slopes and in areas denuded by fire.

Windblown loess and volcanic ash from Cascade Mountain volcanoes create a fine textured surface soil layer across much of the area. In other areas, particularly steep south and west aspects, the surface soil layer is thin and underlain by impervious parent rock that contributes to the basin's high runoff characteristics (Corps 1996a). The most common surface soil textures are: silt loams, loams, and sandy loams with some clay accumulation with depth. Because of the natural forest conditions predominating, organic materials have accumulated on the soil surface. Soils are generally acidic due to the forest vegetation present. Soil below the surface is low in organic matter but does support moderate to heavy stands of coniferous timber and understory vegetation on Corps lands.

3.2.2 Environmental Effects

3.2.2.1 Alternative 1 - No Action

Structural methods for access control management associated with the No Action alternative would have minimal direct effects on geology and soil resources due to the localized nature of these activities. Limited amounts of ground disturbance would occur, and detrimental effects, including soil displacement and compaction, would be confined to the immediate area and be minor in scope.

Road/trail maintenance, road closure, road recommissioning, and new road/trail construction activities associated with the No Action alternative would have the potential to affect the soil productivity through displacement, compaction, and erosion, but the effects would be limited to the road/trail footprint, and with the implementation of conservation efforts the soil/geology negative effects would be minimal. Maintenance actions that restore or improve drainage conditions would reduce the potential for soil erosion and runoff, maintaining soil productivity and structure.

3.2.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Implementation of structural methods of access control management activities under the Balanced Access Management alternative would have the same types of minor effects on soil/geology as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road/trail maintenance activities, road recommissioning, and road/trail reconstruction associated with this alternative would have the same types of effects on soils/geology as the No Action alternative, but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain. However, by

implementing the minimization/avoidance measures and Best Management Practices (BMP's) listed in Attachment A of the AMP (Appendix A), these effects would be minimal and soil productivity would be maintained.

Road closures under the Balanced Access Management alternative would have similar effects on geology/soils as the No Action alternative. However, soil recovery may occur on closed roads depending on whether the closed roads are made available to motorized and non-motorized trail use by the public afterwards. With proper trail maintenance soil effects would be kept to a minimum.

Road and trail construction activities under this alternative would also have the potential to cause short term erosion, resulting in a possible loss of site productivity. As with road and trail maintenance, the Corps would minimize these effects by implementing the minimization/avoidance measures and BMPs listed in Attachment A of the AMP.

3.3 Hydrology/Water Quality

3.3.1 Affected Environment

Dworshak Reservoir is on the North Fork Clearwater River (NFCR). Elk Creek and the Little North Fork are the two major tributaries that drain into the reservoir. The majority of annual runoff for the NFCR is derived from a combination of winter rains and spring snowmelt. The streamflow pattern in the NFCR is characterized by low flows from late July through February, increasing flows during March, high flows from April through May or June, and receding flows in late June and July. The magnitude of flows generated by spring runoffs vary with the amount of snow accumulated, temperatures, and the amount of rainfall received in the area.

Dworshak reservoir is a deep, cold-water water body characterized by low watershed nutrient contributions and a lack of point sources that lead to oligotrophic (low nutrients and productivity) conditions along the thalweg and mesotrophic (medium concentrations of nutrients and productivity) states in some of the inlet areas.

The thermal characteristics of the 53-mile reservoir can be divided into two reaches. The deeper, lower 20 miles are monomictic (mixing occurs once a year), and the middle and upper reaches are dimictic (mixing occurs twice a year). Thermal stratification, or temperature layering, of the reservoir generally begins in late April, and by mid-May a distinct thermocline has developed and remains into November. Depth to the thermocline increases as the summer progresses from about 15 feet in May to July, about 20 to 25 feet in August, and about 25 to 30 feet in September. During July and August, the average temperature of the epilimnion (surface layer of water) typically ranges from 70ºF to 75ºF. Waters deeper than 100 feet generally remain below 45ºF the year around.

Water depth, distance upstream, biological activity, and season of the year are variables affecting dissolved oxygen levels in the reservoir. Dissolved oxygen concentrations are generally high year round in the epilimnion (percent saturation typically

ranges from slightly less than 100% to 120%) and are lowest in the hypolimnion during the summer and fall. Concentrations of less than 5 mg/L have been documented in the lower depths of the water column at sample stations above RM 19 as well as in the Elk Creek arm. The water column in the forebay is well oxygenated while values less than 2 mg/L have been measured near the sediment-water interface above RM 41 due to organic matter input.

Light attenuation in the reservoir is governed by suspended particles such as silts, clays, mica, algae, zooplankton, and detritus in the water column. Wave action and slumping of exposed shoreline material is a continuing source of turbidity in the reservoir, especially in the near-shore zone. The trend through Dworshak Reservoir is for generally high turbidity with minimum Secchi disc readings[3] occurring in the summer-fall period. Annual Secchi disc averages typically range from 3 to 5 m, and seasonally low values are usually recorded in inlet areas, such Elk Creek.

Conductivity is a measure of the amount of ions in solution. Average reservoir values are relatively low, ranging from about 25 to 35 µS/cm and confirm the nutrient-poor status of the reservoir.

3.3.2 Environmental Effects

3.3.2.1 Alternative 1 - No Action

Structural methods for access control management associated with the No Action alternative would have minimal direct effects on hydrology and water quality due to the localized nature of these activities. Limited amounts of ground disturbance would occur, and detrimental effects, including possible soil displacement and subsequent erosion, would be confined to the immediate area and would result in insignificant hydrology impacts to the stream or the reservoir.

Road/trail maintenance, road recommissioning, and new road/trail construction activities associated with the No Action alternative would have the potential to affect water quality through sedimentation to streams and/or the reservoir, but the effects would be limited to the road/trail footprint. Sedimentation effects to the hydrology would be kept to a minimum with the implementation of conservation efforts. Maintenance actions that restore or improve drainage conditions would reduce the potential for sedimentation and the effects to water quality would be minimal or positive. Road closures would have no adverse effect on water quality and may result in improved stream conditions due to reduced sedimentation from road prisms.

3.3.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Implementation of structural methods of access control management activities associated with the Balanced Access Management alternative would have the same types

[3] Measurement of water transparency performed by lowering a black and white disk into water and recording the depth at which the disk is no longer visible.

of minor effects on water quality as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road/trail maintenance activities, road recommissioning, and road/trail reconstruction associated with this alternative would have the same types of effects on hydrology as the No Action alternative but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain. However, by implementing the minimization/avoidance measures and BMPs listed in Attachment A of the AMP, these effects would be minimal and water quality would not be reduced.

Road closures under the Balanced Access Management alternative would have similar effects on hydrology as the No Action alternative. However, hydrologic conditions may improve in areas adjacent to closed roads depending on whether the closed roads are made available to motorized and non-motorized trail use by the public afterwards. With proper trail maintenance negative effects to water quality would be kept to a minimum or conditions may improve.

Road and trail construction activities under this alternative would also have the potential to cause short term erosion, resulting in possible sedimentation to streams or the reservoir. As with road and trail maintenance, the Corps would minimize these effects by implementing the minimization/avoidance measures and BMPs listed in Attachment A of the AMP.

3.4 Vegetation

3.4.1 Affected Environment

The Project vegetation includes a mix of cover types influenced by soil types, topography, climate, past management practices, and ecosystem processes. Fourteen major cover types are found on the lands that surround the reservoir. Drier forest types are found in the downstream end of the pool (near the dam), while mesic and wetter forest types are increasingly encountered farther up the pool.

Vegetation on Project lands is dominated by coniferous forests, which is typical of steep lands in north central Idaho. Grand fir (*Abies grandis*), Douglas fir (*Pseudotsuga menziesii*), and western redcedar (*Thuja plicata*) are the most common tree species. Less common species include: ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentales*), western white pine (*Pinus monticola*), and western hemlock (*Tsuga heterophylla*). Alder (*Alnu*s spp.), birch (*Betula* spp.), and cottonwoods (*Populus* spp.), and mixed forbs and shrubs have vegetated some areas subjected to severe forest fires. Bunchgrass steppe vegetation extends into the lower reaches of the canyon on warm aspects, and elements of Palouse prairie flora, including several regional endemic species, merge with those of moist, western redcedar forests of the Clearwater Mountains.

Project vegetation has been significantly altered since 1900. Logging, road building, disease, insect infestation, and fire suppression activities have changed the forest composition to more late-seral, wetter forest types, primarily grand fir and western red cedar. White pine blister rust and logging activities largely eliminated western white pine stands while fires have also affected the distribution and types of vegetation.

Wildfire was historically the most dramatic ecological process to shape northern Idaho forests. The effects of fire on an ecosystem are dependent on the localized fire regime. The exclusion of fire from fire-adapted ecosystems can alter forest composition, form and structure, nutrient cycling, soil properties, erosion potential, and fish and wildlife habitat. There has been a significant reduction in the frequency of low-severity fire regimes (ground fires) in the drier forest types, resulting in altered composition, form, and structure of these forests.

Dworshak Reservoir Project lands include a diversity of forest habitats, and contain several rare plant species and unique plant communities. The unusual flora of the area is due, in part, to its location in a core area of inland-maritime climate. Biodiversity of the area is further enhanced by its location between two ecoregions: the Bitterroot Mountains Section of the Northern Rocky Mountains Province and the Palouse Prairie Section of the Columbia Plateau Province (McNab and Avers, 1994).

Several priority habitat types have been identified on Project managed lands. These include: Ponderosa Pine Ecosystems, Old Growth Forest Communities, Western White Pine Communities, and Wetland Communities:

- **Ponderosa Pine Ecosystems:** Threatened throughout Idaho and provide habitat for numerous wildlife species. Restoring these ecosystems provides wildlife habitat benefit and is the primary focus of the Project vegetation management plan.
- **Old Growth Forest Communities:** House species associated which mature and old-growth forests. Management strategies are to protect and conserve these forest communities.
- **Western White Pine Communities:** Historically, western white pine was a prominent component of western forests, including the Project lands. White pine blister rust has eliminated over 90% of the western white pines from the landscape. Management strategies include identifying areas that formerly supported western white pine and work to re-introduce rust-resistant strains of western white pine.
- **Wetland Communities:** With the creation of the reservoir and subsequent water level fluctuations, many wetland habitats were eliminated or no longer support wetland species. Many native wildlife species are dependent on wetland communities. Strategies for wetland priority habitat include location, classification and mapping of existing wetlands, inventorying and documenting species use of wetlands, and the protection and/or enhancement of known wetlands.

3.4.2 Environmental Effects

3.4.2.1 Alternative 1 - No Action

Structural methods for access control management associated with the No Action alternative would have minimal direct effects on vegetation due to the localized nature of these activities. Limited amounts of ground disturbance and vegetation removal would occur, and detrimental effects would be confined to the immediate area and would result in insignificant vegetation effects.

Road/trail maintenance, road recommissioning, and new road/trail construction activities associated with the No Action alternative would have the potential to affect vegetation within and adjacent to the roads/trails, but the effects would be limited to the road/trail prism and adjacent cleared areas. By implementing appropriate conservation measures, vegetation effects would be minimal. Weed introduction would be possible during these activities, but should be minimal due to implementation of actions currently required through the Corps Walla Walla District Integrated Pest Management Plan.

Maintenance actions that restore or improve drainage conditions would have minimal vegetation effects. Road closures would have no negative effects on vegetation and may result in improved vegetative conditions as long-term effects would be reduced. The use of BMP's would reduce effects to less than significant.

3.4.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Implementation of structural methods of access control management activities associated with the Balanced Access Management alternative would have the same types of minor effects on vegetation as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road/trail maintenance activities, road recommissioning, and road/trail reconstruction associated with this alternative would have the same types of effects on vegetation as the No Action alternative but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain. However, by implementing the minimization/avoidance measures and BMPs listed in Attachment A of the AMP, these effects would be minimal and vegetation effects would be limited.

Road closures under the Balanced Access Management alternative would have similar effects on vegetation as the No Action alternative. However, vegetation conditions may improve in areas adjacent to closed roads depending on whether the closed roads are made available to motorized and non-motorized trail use by the public afterwards. With proper trail maintenance vegetation effects would be kept to a minimum or conditions may improve.

Road and trail construction activities under this alternative would also have the potential to cause short term erosion, resulting in possible weed introduction on these sites. Weed effects should be minimized through implementation actions required in the Corps Pest Management Plan. As with road and trail maintenance, the Corps would minimize these effects by implementing the minimization/avoidance measures and BMPs listed in Attachment A of the AMP.

3.5 Wildlife

3.5.1 Affected Environment

Mammals

Thirty-nine species of mammals, excluding domestic species, were documented during Idaho Department of Fish and Game (IDFG) surveys at Dworshak (Bowers and Nadeau 2002). Those include small mammals (14), bats (7), mid-sized mammals (3), furbearers and carnivores (11), cervids (deer family) (4), and domestic species. Of the 39 mammal species detected, only two are on Idaho's "Species of Greatest Conservation Need" list: Townsend's big-eared bat (*Corynorhinus townsendii*) and gray wolf (*Canis lupus*). Undocumented sightings of fisher (*Martes pennanti*) and wolverine (*Gulo gulo*) have also been reported to Dworshak staff. Common species include moose (*Alces alces*), mule and white-tailed deer (*Odocoilius virginianus*), Rocky Mountian elk (*Cervus elaphus*), and American black bear (*Ursus americanus*). The reservoir, when originally filled to its maximum elevation (1,600 feet msl), flooded an estimated 19,090 acres of big game winter range. Efforts to mitigate for the lost habitat have primarily focused on the replacement of elk winter range. While wildfires on Corps lands are suppressed, harvest and prescribed burning have been used in the past for developing high quality browse. Even though most past management efforts have concentrated on the needs of wintering elk, the lands around Dworshak are also important for a variety of mammals.

Aquatic furbearers on Dworshak lands include beaver (*Castor canadensis*), American mink (*Mustela vison*), and river otter (*Lutra canadensis*). Terrestrial furbearers include coyote (*Canis latrans*), bobcat (*Felis rufus*), badger (*Meles meles*), raccoon (*Procyon lotor*), gray wolf (*Canis lupus*), red fox (*Vulpes vulpes),* black bear (*Ursus americanus*), pine marten (*Mustela americana*), short-tailed weasel (*Mustela erminea*), striped skunk (*Mephitis mephitis*), mountain lion (*Felis concolor*), and bobcat (*Felis rufus*) (Asherin and Orme 1978, Bowers and Nadeau 2002).

Asherin and Orme (1978) trapped 20 species of small mammals, representing eight families along Dworshak Reservoir. The deer mouse (*Peromyscus maniculatus*) was the most common small mammal encountered. They also reported six species of bats along the reservoir, with the little brown bat (*Myotis lucifugus*) occurring most abundantly. Within the Dworshak boundary, big brown bat, little brown bat, Townsend's big-eared bat, California myotis, yellowpine chipmunk and yellow-belied marmot were documented by IDFG.

Birds

A total of 42 waterfowl and shorebird species were observed on Dworshak Reservoir during terrestrial resource surveys conducted by IDFG (Bowers and Nadeau, 2002). Six of these species are known to nest along the reservoir. These include Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), green-winged teal (*Anas crecca*), common merganser (*Mergus merganser*), and spotted sandpiper (*Actitus macularia*). However, Dworshak Reservoir is primarily used by waterfowl and shorebirds as a loafing area during the spring and fall migratory periods, with peak waterfowl usage occurring during late fall, winter, and spring. Some feeding by geese and puddle ducks occurs along the exposed shoreline during the winter drawdown. The extreme fluctuations in pool level limit the growth of aquatic vegetation, reducing the amount of food available for waterfowl.

Sixteen raptors species were documented at the Project by IDFG (Bowers and Nadeau, 2002). Among these are eagles, hawks, ospreys, falcons, and owls. A large population of bald eagles winter on the reservoir, but only five nests have been documented. Over 150 osprey nests have been documented at the Project.

Upland game bird species at the Project include mourning dove (*Zenaida macroura*), California quail (*Callipepla californica*), ruffed grouse (*Bonasa umbellus*), blue grouse (*Dendragapus obscurus*), spruce grouse (*Dendragapus canadensis*), and wild turkey (*Meleagris gallopavo*). Asherim and Orme (1978) observed one male mountain quail at Magnus Bay in September 1977. Mountain quail were also reported near Reeds Creek in 1990 and 1993. Of these species, only the mountain quail is classified as a special status species in Idaho. Wild turkey are not native to the Dworshak Project. In 1985, however, 16 wild turkeys were released by IDFG in the Canyon Creek drainage. In 1993, additional releases of wild turkeys were made near Orofino Creek (26 birds) and Whiskey Creek (22 birds) to supplement the population. Wild turkey populations are now thriving.

Numerous land birds use Dworshak Project lands for breeding, foraging, and/or over-wintering habitat. Most land birds are protected under the Migratory Bird Treaty Act (1918), and all except the American crow (*Corvus brachyrhynchos*) are considered protected non-game species in Idaho. Eighty-seven land bird species, including seven woodpeckers, were detected during IDFG surveys.

Amphibians and Reptiles

Eight amphibian species were detected in IDFG surveys. Three of these species have special status in Idaho: the Idaho giant salamander (*Dicamptodon aterrimus*), the Coeur d'Alene salamander (*Plethodon idahoensis*), and the Columbia spotted frog (*Rana luteiventris*). According to the Idaho Conservation Data Center, Columbia Spotted frog populations are only of concern south of the Snake River. All amphibians documented in and around Dworshak require moist sites for reproduction and development of their young. Idaho salamander adults are terrestrial. They seek cover under logs, bark, rocks, and

other surface debris, most often in the riparian zones of streams and lakeshores, but in other moist upland environments as well. The Coeur d'Alene salamander is associated with flowing water of seeps, streams, and creeks. Columbia spotted frogs are highly aquatic, and seldom found far from water. Several amphibian species, including the Columbia spotted frogs, utilize standing water, ranging from ephemeral pools to permanent wetlands and shallow margins of the reservoir. Isolated wetlands located throughout Project lands provide valuable habitats for amphibian reproduction.

Six species of reptiles were documented at Dworshak in IDFG surveys. These include the rubber boa (*Charina bottae*), gopher snake (*Pituophis melanole*), western terrestrial garter snake (*Thamnophis elegans*), common garter snake (*T. sirtalis*), western skink (*Eumeces skiltonians*), and northern alligator lizard. The western yellow-bellied racer (*Coluber constrictor mormon*) is likely to occur in the open forests and meadows below Dent Bridge, but has not been documented recently. The northern alligator lizard is the only reptile listed by the state. Dworshak is located at the very southern extent of the northern alligator lizard's range in Idaho (Groves et al., 1977). Northern alligator lizards inhabit cool, moist forests near riparian areas, forest clearings, or forest edges, which they utilize for foraging and basking, and they hibernate in logs and rock crevices (Brown et al., 1995).

3.5.2 Environmental Effects

3.5.2.1 Alternative 1 - No Action

Having access controls that reduce public access, including gates, fences, signs, etc. would benefit most wildlife species by reducing human disturbance and protecting sensitive wildlife habitat. Under the No Action alternative, installation and repair of fences, gates, and barricades could disturb wildlife, but the disturbance would be for a short time period and wildlife would return to the area once the action was completed. Small amounts of vegetation could be removed or trimmed as part of structure installation or repair, but this would have an insignificant effect on wildlife habitat. The structures themselves would have little effect on wildlife resources as the structures would be designed to restrict or regulate human use and not wildlife. New fencing and repaired fencing would use fence designs that reduce the risk of entanglement and travel impediments for deer and elk.

Road and trail maintenance and road reconstruction activities associated with the No Action alternative would also have minimal effects on wildlife resources. Wildlife effects from trail and road maintenance and road reconstruction activities would be limited to the immediate localized area where these small scale actions would occur. These effects could include disturbance and loss of small areas of shrub and tree habitat. These effects would be localized and short term. Displaced wildlife would likely return after maintenance activities are completed.

Road closure actions would have a short term adverse effects to some wildlife species from the presence of workers and use of motorized equipment, but generally long

term, indirect benefits to the same species would occur, as these actions would restore natural habitat conditions and reduce the potential for unauthorized public access and the associated effects of wildlife disturbance and possible habitat degradation.

New road construction would have more of an effect on wildlife than maintenance or reconstruction. Wildlife habitat would be lost because of the removal of trees, shrubs, and ground cover, but this loss would be kept to a minimum and is not expected to have a significant effect because of the small scale of the disturbed area. Roads would be designed to avoid sensitive wildlife areas and known cultural resource sites. Construction activities would disturb wildlife and likely cause them to leave the area until construction was completed. New roads would be for official use only for natural resource management and would not experience heavy use, therefore limiting disturbance to wildlife from vehicle traffic.

3.5.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Implementation of structural methods of access control management activities associated with the Balanced Access Management alternative would have the same types of minor effects on wildlife as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road and trail maintenance activities associated with this alternative would have the same types of effects on wildlife as the No Action alternative, but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain. However, by implementing the minimization measures and BMP's listed in Attachment A of the AMP, the Corps would keep these effects to an insignificant level.

Road closures under the Balanced Access Management alternative could result in slightly more disturbance to wildlife than the No Action alternative as roads that are closed could be considered for motorized and non-motorized trail use. This may result in animals moving from some areas during the times of use by the public. Access restrictions, as needed, and regulations would reduce these adverse effects. The road obliteration and demolition actions themselves would have the same effect on wildlife under the Balanced Access Management alternative as the No Action alternative

New road and trail construction activities under this alternative would have the same effect on wildlife as new road and trail construction under the No Action alternative, but there would be a greater potential for these effects as more miles of roads and trails could be constructed. By using the public road/trail density calculations described in Section 2.2.3, the Corps would minimize adverse effects on wildlife by keeping the road/trail density within the ICEBMP guidelines. As with road and trail maintenance, the Corps would keep these effects to an insignificant level by implementing the minimization measures and BMPs listed in Attachment A of the AMP when determining the location and configuration of the new roads and trails. Because new roads under this alternative could also be used for public access, there would be a greater overall effect on wildlife than for

the No Action alternative. Access restrictions, if needed, and regulations would reduce these adverse effects.

3.6 Fisheries

3.6.1 Affected Environment

Thirteen fish species were documented as occurring in Dworshak Reservoir in 2013 (Hand 2013) (Table 3-1). Although no recent fisheries investigation has documented species presence in Dworshak, most of these species are expected to still occur in the reservoir. Primary sport species include kokanee, rainbow trout, smallmouth bass and cutthroat trout. Smallmouth bass reproduce in the reservoir, but the steep shorelines and extreme fluctuations in pool level can adversely affect their reproductive success. Cutthroat and rainbow trout spawn in the tributaries in the spring. Bull trout and kokanee spawn in the fall primarily in the tributaries to the reservoir (Maiolie, 1988).

Table 3-1 Fish species found at Dworshak Project

Common Name	**Scientific Name**
Bridgelip sucker	*Catostomus columbianus*
Largescale sucker	*Catostomus macrocheilus*
Sculpin	*Cottus* spp.
Smallmouth bass	*Micropterus dolomieu*
Kokanee	*Oncorhynchus nerka*
Black crappie	*Pomoxis nigromaculatus*
Northern pike minnow	*Ptychocheilus oregonensis*
Longnose dace	*Rhinichthys cataractae*
Speckled dace	*Rhinichthys osculus*
Redside shiner	*Richardsonius balteatus*
Cutthroat trout	*Onocorhynchus clarki*
Rainbow trout	*Onocorhynchus mykiss*
Bull trout	*Salvelinus confluentus*
Source: Per. Comm. Hand, Robert, 2013.	

The westslope cutthroat trout (*O. clarkii henshawi*) is listed as a sensitive species in Idaho. Since the late 1800s, distribution and abundance of westslope cutthroat trout has declined throughout its former range (Liknes and Graham, 1988). The decline of cutthroat trout has been attributed to overfishing, genetic introgression, competition with nonnative species (especially stocked rainbow trout), and habitat destruction. Westslope cutthroat occur in the reservoir and spawn in most tributaries (StreamNet, 2014). Bull trout are found in the highest elevation tributaries of the Lower North Fork Assessment Unit and throughout Dworshak Reservoir.

3.6.2 Environmental Effects

3.6.2.1 Alternative 1 - No Action

Structural methods for access control management associated with the No Action alternative would have minimal direct effects on fisheries resources due to the localized nature of these activities. Limited amounts of ground disturbance would occur, and detrimental effects, including turbidity and sedimentation, would be confined to the immediate area and be of short duration.

Road closure activities under the No Action alternative would reduce the potential for soil erosion by stabilizing the road beds with vegetation and prohibiting use of the road for public trail use. This would reduce possible sedimentation in the reservoir and streams.

Road and trail maintenance, road recommissioning, and new road construction activities associated with the No Action alternative would have the potential to indirectly impact the reservoir and streams through possible sedimentation and thereby affect fish, but the effects would be minimal and of short duration. These activities have the potential to cause short term erosion, resulting in possible sedimentation in the reservoir and streams, but with the implementation of BMP's to reduce the potential for soil erosion and storm water runoff into surface water, the fisheries effects would be minimal. Maintenance actions that restore or improve drainage conditions would also reduce the potential for soil erosion and storm water runoff. Constructing bridges over streams would eliminate direct water contact by trail users crossing the streams. Any blasting would be done in upland locations and should not affect fisheries.

3.6.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Implementation of structural methods of access control management activities associated with the Balanced Access Management alternative would have the same types of minor effects on fisheries as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road and trail maintenance activities, road recommissioning, and road reconstruction associated with this alternative would have the same types of effects on fisheries as the No Action alternative but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain. However, by implementing the minimization measures and BMPs listed in Attachment A of the AMP, the Corps would keep these effects to an insignificant level.

Road closures under the Balanced Access Management alternative would have similar effects on fisheries as the No Action alternative. However, there could be a greater potential for erosion and runoff if the closed roads are made available to motorized and

non-motorized trail use by the public. With proper trail maintenance, this erosion would be kept to a minimum.

Road and trail construction activities under this alternative would also have the potential to cause short term erosion, resulting in possible sedimentation to the reservoir and streams. As with road and trail maintenance, the Corps would keep these effects to an insignificant level by implementing the minimization measures and BMPs listed in Attachment A of the AMP. By following the road density guidelines from ICEBMP and applying them to the EHU's when considering proposed additional public roads and trails, the Corps would minimize effects on fisheries by minimizing sediment erosion and runoff from new roads and trails.

3.7 Threatened and Endangered Species

3.7.1 Affected Environment

Five species listed under the Endangered Species Act (ESA) may occur in the Project area. These include Canada lynx (*Lynx canadensis*), bull trout, fall Chinook salmon (*Oncorhynchus tshawytscha*), Snake River Basin steelhead (*O. mykiss*), and whitebark pine (*Pinus albicaulis*). Gray wolf was formerly listed under the endangered species act as an experimental nonessential population in north central Idaho, but this status was removed May 5, 2011. Detailed information regarding the potential effects to all of these species, except whitebark pine, and the measures to protect their habitat are presented in the 2011 Biological Assessment (BA) for Dworshak Natural Resources Land Management Activities (Appendix B) and the 2013 BA Amendment (Appendix C) that addressed effects of trail management. Whitebark pine was listed as a candidate species on July 18, 2011 at approximately the same time the Biological Assessment in Appendix B was completed.

Canada Lynx: Canada lynx are listed as Threatened under the ESA. In the United States, lynx inhabit conifer and conifer-hardwood habitats that support their primary prey, snowshoe hares. Historically, these cats ranged from Alaska across Canada and into many of the northern U.S. states. Today, they are found only in Maine, Montana, Washington, and Colorado. The IDFG, using 12 remote camera stations and live traps, conducted surveys for furbearers and carnivores throughout Dworshak in 2000 and 2001. No lynx were observed within the study area. However, lynx have been documented in 2 locations north of Breakfast Creek, one on the Floodwood Road in 1997 and once at Stocking Meadows Ridge in 1998 (Corps, 2006). Lynx are typically found in above 3,750 feet in elevation. The highest elevation within the Dworshak boundary is 3,520 feet. Therefore, no lynx or lynx habitat are expected within the Project boundary.

Bull Trout: Bull trout are listed as Threatened under the ESA. Dworshak Reservoir has an isolated subpopulation of migratory bull trout. This subpopulation spends most of the winter, spring, and early summer months in the reservoir. Adults may leave the reservoir as early as May to spawn in larger tributaries of the reservoir and remain in the tributaries for extended periods of time after spawning or migrate to the reservoir immediately

depending on the abundance of prey in the specific tributary. Bull trout generally spend the entire winter in the reservoir before they again begin their upstream migration. The highest concentrations of wintering bull trout have been documented between Cranberry Creek and Elkberry Creek. Dworshak Reservoir and several tributaries have recently been designated as critical habitat for bull trout.

Fall Chinook Salmon: Fall Chinook salmon are listed as Threatened under the ESA. Dworshak Dam was built on the North Fork of the Clearwater River in 1972. The dam permanently prevented upstream fish passage of all anadromous species, including Fall Chinook salmon. Consequently, these fish do not currently occur in Dworshak Reservoir, or within any of its tributaries. Fall Chinook salmon do occur in the main stem of the Clearwater River and in the North Fork Clearwater River below Dworshak Dam. Both of these reaches are designated as critical habitat for fall Chinook.

Snake River Basin Steelhead: Snake River Basin Steelhead are listed as Threatened under the ESA. Steelhead are anadromous and since the completion of Dworshak dam in 1972 have been blocked from accessing Dworshak Reservoir. As a result, these fish do not occur in Dworshak Reservoir or any of its tributaries. Snake River Basin Steelhead do occur in the main stem of the Clearwater River and in the North Fork Clearwater River below Dworshak Dam. The Clearwater River and the North Fork of the Clearwater River are also designated as critical habitat for Snake River Basin steelhead.

Whitebark Pine: Whitebark pine was identified on July 18, 2011 as a Candidate species for ESA listing. Whitebark pine is a tree species, found in subalpine environments, that has been eliminated from much of its range by mountain pine beetle and white pine blister rust. In north Idaho it is a component of subalpine fir communities and dominates the highest peaks and ridges over 6,000 feet. The highest elevation within the Dworshak boundary is 3,520 feet. Therefore, whitebark pine is not anticipated to be present within the Project area.

3.7.2 Environmental Effects

3.7.2.1 Alternative 1 - No Action

Structural access control management activities associated with the No Action alternative would have minimal direct effects on ESA listed species due to the localized nature of these activities. There would be no effect on Snake River fall Chinook, Snake River basin steelhead, Canada lynx, or whitebark pine as they are not likely to occur in the Dworshak Project area. Only bull trout are likely to occur in the Project area. Because the structural methods are all upland and would have only minor soil disturbance, they would not affect bull trout.

Road and trail maintenance, road closure, road recommissioning, and new road construction activities associated with the No Action alternative would have the potential to indirectly impact Dworshak Reservoir and tributary streams through possible sedimentation from short term erosion, but the effects would be minimal and of short

duration if minimization measures and BMP's are fully implemented. The Corps has determined these activities would have no effect on any of the species other than bull trout. The Corps has determined these activities may affect, but are not likely to adversely affect bull trout as there would be only minor, indirect effects from erosion and sedimentation.

3.7.2.2 Alternative 3 - Balanced Access Management (Preferred Alternative)

Implementation of structural methods of access control management activities associated with the Balanced Access Management alternative would have the same types of minor effects on threatened and endangered species as those under the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

The BA determined there would be no significant effects from the proposed road and trail maintenance, road closure, road recommissioning, or new road and trail construction actions. Further detail is presented in the BA and the BA Amendment, which are in Appendices B and C, respectively. Table 3-2 summarizes the effects determination in Appendices B and C for listed species. Letters from USFWS in Appendix B and C concur with the Corps determination of no significant effects from the proposed actions.

Table 3-2 Alternative 3 Effects on ESA-Listed Species

Species	Species Determination	Critical Habitat Determination
NMFS		
SR Fall	No Effect	No Effect
SRB	No Effect	No Effect
USFWS		
Bull trout	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect
Canada lynx	No Effect	No Effect

As provided for in the 2011 BA, the Corps would perform Project tracking by sending the USFWS a spreadsheet annually in conjunction with any monitoring reports. This spreadsheet will list the natural resource management projects, including access management projects, that were implemented that year and the location of each.

3.8 Cultural Resources

3.8.1 Affected Environment

The NFCR has been continuously occupied for thousands of years by the Nez Perce Tribe (NPT) or Nimiipu. They lived throughout the area that is now encompassed by Dworshak Project, and their land base extended beyond northern Idaho into surrounding states. Archaeological evidence that is found today at Dworshak comprises the remnants of camps, villages, and ceremonial sites, as well as where resources were procured and processed (such as fish, game, roots, and toolstone). In the nineteenth and twentieth

centuries, the Nez Perce continued to live on and utilize the North Fork Clearwater area, and today the southern portion of the Project, including Dworshak Dam, is within the Nez Perce Tribe Indian Reservation boundaries. In the late-1800s, Euro-American homesteads were established within the Project area. Historical development is evidenced by the remnants of a few small towns, as well as remnants of transportation and logging activities.

Several types of cultural resources have been documented on Project lands, including archaeological sites, Traditional Cultural Properties (TCPs), and isolated finds. A recent query of the Corps' geospatial database indicates there are 359 recorded archaeological sites on Project lands. A majority of these sites are related to prehistoric occupation of the area, with a smaller number dating to the historic period. Only 40 of these sites have been formally evaluated for National Register of Historic Place (NRHP) eligibility, with five found eligible, and 35 found not eligible. While recommendations have been provided for eligibility determinations for other sites in various reports, they have not been formally evaluated. Until they are formally evaluated, they are considered potentially eligible for listing on the NRHP.

TCPs are areas tied to beliefs, customs, and practices of a living community. They may coincide with the boundaries of archaeological sites, or be comprised of a number of landscape features. Identification and evaluation of TCPs on Dworshak managed lands is ongoing.

A number of isolated finds are documented at the Project. Isolated finds often contain isolated artifacts or features that on their own are not considered archaeological sites, but when taken together provide information on the prehistoric or historic use of the landscape.

Most of the archaeological sites recorded at the Project are comprised of lithic scatters ranging from several flaked pieces of stone to thousands of flakes and formed tools. Peeled trees (old trees where the tree bark and inner cambium was removed and used as a starvation food source by the Nez Perce during the precontact and ethnographic period) have not yet been documented at Dworshak but are likely present, possibly in the far northern extent of the Project where trees greater than 100 years of age may still be present. Other resources present include remnants of historic camps, often times with associated structures such as trash scatters, fences, and structure remnants, as well as linear features like roads, trails, and utility lines.

A Cultural Resources Management Plan (Cannell et al. 2001) was prepared for the Project in 2001. Section 106 of the National Historic Preservation Act (36 CFR 800) (NHPA) requires a review to be conducted for Federal undertakings that have the potential to impact cultural resources. A majority of the lands located in the drawdown zone were surveyed by archaeologists from the University of Idaho and the NPT in 1976, 1988-1989, and 1995-1996. A plan for surveying the remainder of Project lands was completed in 2011 (Norman and Glindeman 2011), and surveys are ongoing. In addition to those large inventory surveys, a variety of smaller surveys have taken place at Dworshak over the

years as part of planning for individual undertakings, mainly activities like road and trail maintenance, fire and vegetation management, and development or improvements to recreation sites, State Parks, the Dam, and Dworshak National Fish Hatchery. To date, some 5,926 acres of Dworshak Project land have been surveyed, and the Corps classifies another 2,399 unsurveyed acres as having a high priority for future survey. There are likely numerous unrecorded archaeological sites present in those unsurveyed areas.

The Corps archaeologists evaluate individual actions as they are proposed, in accordance with Section 106 of the NHPA. This is necessary to identify if areas have been surveyed, whether historic/cultural properties are present, and if there are potential adverse effects to such properties. For actions occurring on Corps managed lands within the boundaries of the NPT Indian Reservation, the Corps consults only with the NPT Tribal Historic Preservation Office (THPO). For actions occurring on Dworshak managed lands outside of the reservation, the Corps consults with both the Idaho SHPO and the NPT THPO.

The Corps regularly uses the Federal Columbia River Power System (FCRPS) Programmatic Agreement (PA) (BPA et al. 2009:51-54) at Dworshak for individually reviewed access undertakings. The PA allows for streamlined review of routine activities that have little or no potential to cause effects. The routine activities usually include work in areas where there is no potential to affect historic/cultural properties (e.g. areas that are already disturbed, and/or where no known properties are present). There are 20 categories of such activities in the PA, and the categories that appear to have the most utility for access related actions include:

> 6. Adding rock fill or gravel to roads where no new ground disturbance will occur and no recorded properties are within the road bed.
>
> 8. Encroachment thinning using hand methods to lop branches and cut small trees and brush, where material is dropped in place, stumps are left in place, and no chemical treatments are used. This would not include areas with culturally modified trees.
>
> 10. Maintenance or repair of fence lines that are less than 50 years old, where no ground disturbance occurs, or the fence line is on fill, there will be no movement, removal, or alteration of rock, and where the fence is not located within the boundaries of an historic property, or where the property has been determined "not eligible" for the National Register in consultation with the SHPO/THPO.
>
> 13. Installation, repair, or replacement of signs and markers where no ground disturbance will occur, or where installation is confined to disturbed areas or fill, and without movement, removal, or alteration of rock.
>
> 15. Excavations for maintaining, removing, or replacing tile, ditches, fire lines, dikes, levees, pipes, pipelines, cables, telephone lines, fiber optic lines,

signs, gates, or cattle guards, when the property or items are less than 50 years in age or have been determined "not eligible" in consultation with the SHPO/THPO, where they are not within or part of an historic property, and where excavations, including heavy equipment operation, occur within the demonstrated vertical and horizontal limits of previous construction and within previously surveyed areas.

16. Small bore (less than 6 inch diameter) drilling within areas previously surveyed and outside of known property areas.

19. Maintenance of existing trails, walks, paths, sidewalks, and associated signage and work is conducted within the demonstrated vertical and horizontal limits of previous construction or disturbance, and no known properties are within the work area.

20. Maintenance within existing road or parking lot profiles, such as repaving, grading, cleaning inboard ditches, repairing, brushing, signing and sign maintenance or replacing guards and gates within the demonstrated vertical and horizontal limits of previous construction or disturbance.

The PA also allows for some leeway for 106 reviewers to determine if an undertaking has "…little or no potential to cause effects on historic properties." For instance, the monumentation of Corps boundaries, with hand installation of aluminum posts and hand trimming of vegetation to establish line-of sight visibility, is not generally considered an activity that requires Section 106 review due to the negligible impact.

3.8.2 Environmental Effects

3.8.2.1 Alternative 1 - No Action

Access management activities associated with the No Action alternative would have minimal direct effects on cultural resources. Marking the Corps boundary may have a positive effect on cultural resources by limiting potential for encroachments that could cause surface and/or subsurface effects to cultural resources. The Corps Cultural Resources Section would continue to review actions as they are proposed on an annual basis.

Road/trail maintenance activities associated with the No Action alternative would have the potential to effect cultural resources. Existing roads, often related to old homesteads or Natural Resource Management Actions, often cross through historic or precontact archaeological sites. Many maintenance activities that involve surface or ground disturbance, including leveling, widening, and maintaining culverts, can cause impacts to archaeological sites. However, by reviewing proposed undertakings, and conducting additional survey as needed to determine if resources are present, can lessen those impacts.

Construction of new roads would be limited to those needed for natural resource management actions related to vegetation or wildlife management areas. No new trails or motorized trails would be constructed under the No Action alternative. Limiting road construction to those just associated with Natural Resource Management actions, and no new trail construction, would limit public access. As many archaeological site impacts are caused by road construction, erosion, and public use, limiting the number of roads available may cause fewer effects to cultural resources. Additionally, by limiting roads to those needed for Natural Resource Management, roads would largely be constructed to access timber and wildlife mitigation areas, quite often located on wooded slopes, and without high potential for archaeological resources. Often time roads constructed for public use lead to areas that have high potential for archaeological resources. As a result, the No Action alternative may lead to greater construction of fences and gates to block access to unauthorized visitor constructed trails and motorized trails.

Efforts would be made to avoid impacts to cultural resources as specific road and trail activities maintenance activities are proposed, prior to implementation. All proposed activities would be reviewed by Corps Archaeologists under the FCRPS PA, and if needed, additional surveys would be conducted. If the activity is not exempt from consultation under the PA or if archaeological sites or other cultural resources are identified, then the Corps would conduct standard Section 106 consultation with the Nez Perce Tribe and the Idaho SHPO. If significant effects are identified, supplemental/tiered NEPA analysis would be required, or projects would be modified.

3.8.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

The effects of structural methods of access control management activities associated with the Balanced Access Management alternative would be similar to the No Action alternative.

Access management activities associated with the Balanced Access Management Alternative would have minimal direct effects on cultural resources. Marking the Corps boundary may have a positive effect on cultural resources by limiting potential for encroachments that could cause surface and/or subsurface effects to cultural resources. The Corps would allow boundary survey and monumentation to occur without additional review, as it is an activity with little to no potential to cause effects.

Road and trail maintenance activities associated with this alternative would have the same types of effects on cultural resources as the No Action alternative but there would be a greater potential for these effects as there would be more miles of roads and trails to maintain.

Road and trail construction activities under this alternative have the potential to cause damage to archaeological sites, and could result in adverse effects to cultural resources. However, all proposed road and trail construction proposals would be reviewed by Corps Archaeologists under the FCRPS PA, and if needed, additional survey would be conducted. If the activity is not exempt from consultation under the PA or if archaeological

sites or other cultural resources are identified, then the Corps would conduct standard Section 106 consultation with the Nez Perce Tribe and the Idaho SHPO. If significant effects are identified, supplemental/tiered NEPA analysis would be required, or projects would be modified.

3.9 Recreation

3.9.1 Affected Environment

Dworshak is the only large reservoir with a forested shoreline found within a 100-mile radius of Orofino, Idaho. It is an important regional recreation resource for eastern Washington and north central Idaho. Because of the remote nature of the NFCR, there is limited road access and development has been minimal. The most popular activities include boat-in camping, boating, water-skiing, fishing, hunting, and hiking. Facilities include seven boat launch sites, two developed Class "A" full service campgrounds, two primitive campgrounds, a marina, and over 80 boat-accessible mini-camps. Annual visitation to the reservoir is approximately 150,000.

The recreation facilities at Dworshak Project provide for a wide range of recreational pursuits. With the exception of Dworshak State Park (Freeman Creek and Three Meadows) and Big Eddy Marina, which are leased to the State of Idaho, all of the recreation sites are operated and maintained by the Corps. The majority of recreation activities occur at the lower end of the reservoir, from Dworshak Dam to Dent Acres Bridge, with major recreation developments located at Big Eddy, Dworshak State Park, and Dent Acres. These recreation sites were built with Project construction money when the dam was built.

Dworshak is important to the communities of Orofino and Lewiston, because it provides a large percentage of the region's water-based recreational opportunities. The Project also contains, in many cases, the only access to the upper reaches of the NFCR and many of its tributaries and perennial streams. Although about 150,000 people visit Dworshak each year, the Project has never come close to reaching its estimated potential in terms of recreational development and visitor use.

The Corps-managed recreation facilities at Dworshak Reservoir vary from well-developed campgrounds to primitive areas with few facilities. Because of topography, road access, and location relative to population centers, most development of intensive-use recreation facilities have been concentrated on the lower third of the reservoir. Drawdown of the reservoir during the summer recreation season began in 1992 and has modified recreational use at the Project as most of the recreation sites outside of the campgrounds were designed for boat access only. Currently, full pool usually lasts for only a few weeks around the Fourth of July. This change of operations has limited access to recreational areas on the reservoir, necessitating alternative resource planning considerations. Changes in desired activities and visitor use have also promoted changes in facilities and resource maintenance. During preparation of the Master Plan, the Corps identified an increased public demand for motorized trails to access the mini camps and

the shoreline. The Corps also identified a demand for non-motorized trail opportunities for mountain biking, horseback riding, and extended backpacking trips. In some instances, there are conflicting recreational uses of the lands around the reservoir.

Presently, the Corps maintains about 24 miles of designated non-motorized trails and about 6 ½ miles of motorized recreational trail at the Project. There are six systems of non-motorized trails that provide opportunities primarily for day hiking, but are also open to mountain biking and horseback riding (see Figure 2-1 in Section 2.2.1.4 and Table 2-3 in Section 2.2.2.4). There are also three systems of motorized trails, Elk Creek Meadows OHV Trail System, Little Meadow OHV Trail, and L6.0 Primitive Camp FSV Access Trail see (Figure 3 in Section 2.2.1.4). There are also a number of user-defined trails around the reservoir, some of which follow old logging or homestead roads. The Corps has been inventorying these unauthorized trails and using access controls to limit their use.

3.9.2 Environmental Effects

3.9.2.1 Alternative 1 - No Action

Structural methods for access control management associated with the No Action alternative would continue to be used to promote appropriate recreational use of roads and trails while limiting or discouraging unauthorized use. Gates and other physical barriers would block access whenever appropriate to meet other management needs such as during seasonal closures to protect wildlife or when trail conditions are hazardous for safe use. Physical barriers could also be used to block user-defined trails.

Road and trail maintenance activities associated with the No Action alternative would continue to provide access for safe recreational use at the same level as present. This would not meet the demand for additional motorized access, but would maintain the existing three trail systems. It would also not meet the demand for non-motorized trail management that supports uses other than day hiking.

Road closures would continue to be used when a particular road is not needed. The Corps would consider recreational use when evaluating a road for closure.

New road construction would have no effect on recreation as under this alternative the Corps would continue to develop new roads for natural resource management actions only.

3.9.2.2 Alternative 3 - Balanced Access Management (Proposed Alternative)

Structural methods for access control management under the Balanced Access Management alterative would have the same types of minor effects on recreation as the No Action alternative. However, there would likely be more instances of management control activities such sign or gate installation as more of these activities may be needed to control the greater amount of access.

Road and trail maintenance under the Balanced Access Management alternative would have the same effect as the No Action alternative as it would provide safe recreational use of trails and of roads where recreational use is allowed. Because this alternative could allow additional motorized and non-motorized trail development, subject to density limits, this alternative could result in an increased overall amount of maintenance. There would be a change in maintenance of non-motorized trails to support more multiple use instead of only day hiking.

Road closure under this alternative could provide additional trail opportunities if the Corps determines inactive or closed roads are suitable for interim or permanent trail use.

Trail management under this alternative could provide additional recreational trail opportunities for both motorized and non-motorized users. The Corps would consider developing additional trails to meet public demand if feasible, subject to complying with the minimization measures and BMP's in the AMP, and to finding a sponsor or availability of Corps project funds. The Corps would also change non-motorized trail management to multiple use to address the demand for uses other than day hiking.

3.10 Cumulative Effects

Cumulative effects are defined as "the impact on the environment which results from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." Analysis of cumulative effects focuses on issues that are relevant to the decision to be made and are "truly meaningful" (CEQ 1997), (i.e., important issues of national, regional, or local significance). The Corps reviewed comments received on the Dworshak Master Plan, other related environmental compliance efforts, and input from technical staff to determine which resources should be included in this analysis. The Corps considered potential cumulative effects for the affected environment, but identified only one resource in the region, recreation, as being relevant to the decision and truly meaningful.

The Corps identified both a temporal and a geographic scope for this cumulative effects analysis. The Corps identified the period of 1970 through 2025 as the temporal scope. This time period encompasses the changes in recreational use of Dworshak Project from its construction to about 10 years into the future. The Corps used a geographic scope of about 50-100 miles from Dworshak as that represents a reasonable distance for both motorized and non-motorized recreational use.

Past Recreational Use

Recreational use in the vicinity of Dworshak Project has been affected by public land use decisions, private land management, changes in motorized recreational vehicles, and changes in non-motorized use demand. When the Dworshak Project was completed in the early 1970's, there was not as great a demand for motorized recreational trails. Trail use focused on non-motorized use such as hiking and horseback riding. Mountain bikes

also did not exist. Early recreational development plans addressed motorized access as a way to access large developed campgrounds and focused on highway vehicles (e.g. passenger cars). OHV's and all-terrain vehicles (ATV's) were not popular or did not exist. The only "off-highway vehicles" at that time were four-wheel drive jeeps. The first ATV was introduced in 1970, but they were not widely used until the early 1990's.

In 1993, there were an estimated 2.9 million ATVs in the United States. By 2003, there were over 8 million ATVs. Since 2003, sales of ATVs have fluctuated some, but have typically been over 1 million new ATVs per year. The number of ATV operators has increased 32 percent, from 27.3 million in 2000 to 37.6 million in 2007. In 2007, the total number of users grew to over 40 million. The average user spends from 2 to 3 days each month using an ATV (Corps, 2015a). Because the popularity of ATV-based recreation is relatively recent and is still increasing, the full range of short- and long-term impacts has yet to be fully realized or understood. Overall, it is clear that ATV use on public lands is, and will continue to be, an important management issue.

Over the past 20 years, OHV's have become more affordable and popular and the opportunities to use them have expanded. Four-wheel drive vehicles have also become more popular, as have mountain bikes.

Current Recreational Use

Recreation trails are emerging as an important outdoor activity for motorized uses such as OHV's and four-wheel drive vehicles, and non-motorized uses such as walking, jogging, and bicycling. Current land management practices of adjacent land owning agencies and other regional agencies have significant impacts on the demand for trails on Dworshak land. The following paragraphs describe recreational opportunities on lands surrounding Dworshak Project lands.

Idaho Department of Lands. This agency manages land granted to the state of Idaho by the federal government when Idaho became a state. These lands were granted on the condition they produce maximum long-term financial returns for public schools and other beneficiaries. Idaho Department of Lands (IDL) does not manage for public access or recreation. However, they do not restrict public access, nor do they encourage it or maintain trails or other public amenities. The state acknowledges OHV use occurs on IDL-managed lands and a portion of every OHV registration payment in Idaho is given to IDL to provide OHV opportunities and to compensate for the effects of OHV use on the IDL infrastructure.

Potlatch Corporation. Potlatch Corporation owns a significant amount of land surrounding Dworshak Reservoir. Potlatch is a Real Estate Investment Trust marketing forest products to local lumber and paper manufacturers. They recently sold some land around the reservoir for development of private home sites. Sales for residential development could have a positive effect on Corps land, including increased visitation. But, additional demand for public access points, additional recreational amenities, and increased stresses

on natural resources could produce an opposite negative impact. Residential development may also increase demands for access easements and location of utilities.

Public access on Potlatch land for recreation is allowed year-round, although this privilege may be restricted or closed at various times and places. There is no guarantee that Potlatch will continue to allow access and they may also sell more land. Recreation depends on how users respect their natural resources and Potlatch regulations. A fee permit is required for visitors wanting to recreate. Use of all private Potlatch roads to access Corps land requires a permit. A permit fee for using Potlatch land has been in place since April 2007, and has added additional pressure on Dworshak land for ATV use and dispersed vehicle camping by users not wanting to pay the permit fee.

U.S. Forest Service. The Forest Service is the primary forest management agency for the United States. Nearly two-thirds of the land in the Dworshak region is owned by the Federal government. Of that number, 97 percent is owned and managed by the Forest Service.

The Nez Perce-Clearwater National Forest provides many opportunities for recreation. Forest Service policy has been updated on motorized access to address environmental concerns as well as user demand. The Clearwater Travel Management Plan Final Environmental Impact Statement and Record of Decision were signed in January 2012. The Forest Service has completed the Clearwater National Forest Motor Vehicle Use Maps showing the roads, trails, and areas designated for motorized use. Historically, Forest Service policy allowed cross-country travel by motorized vehicles in all areas unless posted as closed. New policy restricts motorized access to designated trails only. All areas are closed to motorized traffic unless posted as open. Public interest in the motorized recreation policies on Forest Service land is high with respect to the impacts of uncontrolled motorized access on natural resources. Their new policy has specifically impacted this region of Idaho by limiting areas open to motorized recreation, and has caused users to look elsewhere for open areas. ATV user groups have expressed their desire to recreate on Dworshak land at public meetings, in working groups, and in letters to the Idaho congressional delegation.

The Corps' policy of restricting motorized access to designated trails is consistent with the new Forest Service policy. Staff at Dworshak has identified areas of unauthorized motorized use. The Corps would continue to coordinate with the Forest Service and other land management agencies in the area to determine the best way to manage motorized access.

Private Landowners. During the past decade an increased amount of land around Dworshak Reservoir, previously owned and managed for large-scale timber or natural resources, has been sold to individuals for the development of private homes. This has resulted in an increase of both intentional and inadvertent encroachment onto federal property. Many home owners want immediate access to the water, including trails, boat launches, and docks. Unauthorized trails are considered an encroachment or trespass and will be closed until such time as the trail may be evaluated for its potential to become a

designated trail. Designated trails on Dworshak land are not reserved for exclusive use and must remain open to the public

In the United States, the state of Idaho is second only to Wyoming in the percentage of total population using ATVs. There are also few public trails on the lands surrounding the Dworshak Project lands. The growing demand in Idaho to use public lands for ATV use has put an increased demand on the natural resources of the region. Many agencies have allowed ATV use to occur without managing or monitoring its effects on resources. A growing understanding of the effects ATVs have on the environment is leading most agencies to make current guidelines and regulations more restrictive.

Future Recreational Use

Recreation projections should always be viewed cautiously. The preferred recreational activities and technologies of today may become obsolete or fall out of favor over time. Recreational habits are influenced by weather, income, population growth, availability and other factors. However, it is useful to see what the projections are based on current trends and patterns. Tables 3-3 and 3-4 depict recreation trends from the National Survey on Recreation and the Environment (1999) for the Rocky Mountain Region. These tables show a project upward trend in recreational activity.

Table 3-3 Projections of participation in activities on developed land

Activity	**2010**	**2020**
Biking	17%	26%
Developed Camping	16%	17%
Family Gathering	19%	29%
Picnicking	18%	29%
Sightseeing	21%	32%
Visiting Historic Sites	23%	34%

Table 3-4 Projection of participation in activities on dispersed land

Activity	**2010**	**2020**
Backpacking	11%	18%
Hiking	15%	24%
Horseback Riding	13%	23%
Off-Road Driving	9%	17%
Primitive Camping	12%	20%
Rock Climbing	6%	20%

Regarding reasonably foreseeable future actions, the Corps is aware of two future actions/projects that may affect trail development in the immediate vicinity of Dworshak Project. One of these is a long distance trail, the GEM trail, being planned from Wallace, Idaho to McCall, Idaho. This trail may cross Dworshak reservoir at Grandad Bridge. The other planning effort is the Nez Perce National Forest Motor Vehicle Use Map. This map would designate all roads and trails available for public motorized travel on the Forest.

The potential incremental effects to recreation resulting from the proposed action, when added to other past, present, and reasonably foreseeable future actions, is not expected to be significant. By allowing development of additional OHV/ATV trails and non-motorized trails, the Corps would be providing additional recreational opportunities to help meet the demand for trails in the region.

SECTION 4. COMPLIANCE WITH APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

4.1 Treaties and Native American Tribes

Treaties between the United States and regional mid-Columbia/lower Snake River tribes document agreements reached between the federal government and the tribes. In exchange for Native American tribes ceding much of their ancestral land, the government established reservation lands and guaranteed that it would respect the treaty rights, including fishing and hunting rights. These treaties, as well as statutes, regulations, and national policy statements originating from the executive branch of the federal government provide direction to federal agencies on how to formulate relations with Native American tribes and people.

Treaties with the Nez Perce Tribe (e.g., Treaty with the Nez Percés of June 11, 1855, 12 Stat. 957 (1859); Treaty with the Nez Percés of June 9, 1863, 14 Stats., 647 (1867); Treaty with the Nez Percés of August 13, 1868, 15 Stats. 693 (1869)) explicitly reserved unto the Nez Perce certain rights, including the exclusive right to take fish in streams running through or bordering reservations, the right to take fish at all usual and accustomed places in common with citizens of the territory, the right of erecting temporary buildings for curing, together with the privilege of hunting, gathering roots and berries, pasturing their horses and cattle upon open and unclaimed lands, use of watering places, and the protection of timber.

Under the Dawes Act of 1887 (PL 49-119) and the subsequent allotment Agreement with the Nez Perce Indians in Idaho (May 1, 1893, 28 Stats., 327-331)), certain reservation lands were allotted to individual tribal members and the Tribe as a whole, and the remainder of the reservation land was conveyed to the United States. Dworshak Project is comprised of federal land managed by the U.S. Army Corps of Engineers, approximately 6,000 acres of which are located within the boundaries of the Nez Perce Tribe Indian Reservation. Nez Perce tribal members retain treaty rights on all Corps managed land at Dworshak Project, unless necessarily restricted by operational/safety considerations.

Adoption of the proposed AMP is not expected to have any significant effect on important treaty rights/resources.

4.2 Federal Laws

4.2.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires Federal agencies to use a systematic interdisciplinary approach to evaluate the environmental effects of a proposed Federal action prior to implementing that action. This is usually accomplished through preparation of a statement, either an Environmental Impact Statement (EIS) if the action is a major federal action significantly affecting the human environment, or an Environmental Assessment (EA) if the Federal agency has not yet determined the significance of the effects.

This EA considers the environmental effects of implementing a programmatic AMP. The AMP is intended to serve as a decision-making guide for taking access management actions in response to triggers. The AMP is not site-specific, rather is establishes a process for making decisions and taking actions. It also specifies minimization measures and BMP's to be incorporated into any action the Corps takes. By adhering to these "sideboards", the Corps greatly reduces or eliminates the need for additional environmental compliance for site-specific management actions taken under the AMP. However, some actions such as construction of new trail segments or construction near surface water, may require additional review under other environmental laws such as the National Historic Preservation Act or the Clean Water Act. If the Corps proposes site-specific management actions that have not been adequately addressed in this EA, the Corps would prepare a supplemental EA solely for those site-specific actions.

This EA has been prepared and is being circulated to agencies and the public for review and comment pursuant to requirements of NEPA. No effects significantly affecting the quality of the human environment have been identified at this time for adopting and implementing an AMP. If no such effects are identified during the public review process, compliance with NEPA would be achieved upon the signing of a Finding of No Significant Impact (FONSI). However, if such effects are identified during the public review, an EIS would be required. Compliance with NEPA would then be achieved upon completion of an EIS and the signing of a Record of Decision.

4.2.2 Endangered Species Act

The Corps prepared a biological assessment in 2011 and an amendment in 2013 (focused on trail management) in accordance with section 7(a)(2) of the ESA, which analyzed potential effects of management actions (including vegetation and access management) on listed species and designated critical habitat, and consulted with the USFWS. The USFWS concurred with the Corps' determination that the project "may affect, but is not likely to adversely affect" bull trout and designated bull trout habitat, and that it would not affect Canada lynx. The 2011 BA, 2013 Amendment and USFWS concurrence letters are attached to this EA as Appendices B and C.

A candidate species, whitebark pine, was not assessed in the 2011 biological assessment because it had only been identified as a candidate species for ESA listing a short time prior to the publication of that document. However, the occurrence of whitebark pine is not expected in the Dworshak project area due to whitebark pine high elevation habitat requirements, above elevations present within the Project.

As stated in the 2011 BA, the Corps will perform Project tracking by sending the USFWS a spreadsheet annually in conjunction with any monitoring reports. This spreadsheet will list the natural resource management projects, including access management projects, that were implemented that year and the location of each.

4.2.3 Bald and Golden Eagle Protection Act of 1940

Bald eagle nests have a no-disturbance zone based on recommendations from the USFWS. This area is defined as 660 feet if the activity is within nest line of sight or 330 feet it the activity is obscured from view. Regardless of line of sight, noise disturbance from machinery must be addressed when working within or near the no-disturbance zones, if the noise negatively impacts eagles. If road/trail maintenance or construction is desired within this no disturbance zone, the maintenance or construction actions would be conducted after the chicks have fledged and left the area or between August 16 and February 28. In addition, no trees within 330 feet of a nest tree would be removed any time of the year unless they present a hazard to visitors. A Corps wildlife biologist would survey the road or trail area prior to maintenance or construction activity to locate any active eagle nests within the work area. By implementing the recommendations from the USFWS, disturbance of nesting bald eagles is unlikely to occur. No take of either bald or golden eagles is expected to occur due to the proposed projects.

4.2.4 Fish and Wildlife Coordination Act of 1958

The proposed action addresses operation and maintenance of an existing water resources development project. The elk mitigation area was established and is maintained as an ongoing obligation to mitigate for the loss of Rocky Mountain elk winter range caused by the creation of Dworshak reservoir. The proposed action would not alter or modify stream-flow or a body of water and would not involve activities subject to this Act.

4.2.5 Magnuson-Stevens Fishery Conservation and Management Act of 1976

The proposed action is not expected to adversely affect Essential Fish Habitat.

4.2.6 Migratory Bird Treaty Act of 1918 (MBTA) As Amended

Some of the actions associated with road and trail development and maintenance have the potential to affect bird species protected by the MBTA. To comply with the Act, the Corps intends to follow the procedures and conservation measures described in the July 2006 *Memorandum of Understanding (MOU) between the U.S. Department of Defense and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory*

Birds, the conservation and impact avoidance and minimization measures (BMP's) and procedures described in the Corps' May 2015 *Dworshak Project Vegetation Management Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Impact Avoidance and Minimization Plan*, the USFWS National Bald Eagle Management Guidelines, and any subsequent updates or amendments to these documents when taking actions to manage access at Dworshak Project.

Ground-based road and trail maintenance activities would have little or no effect on birds protected under the Act. Any disturbance of migratory birds would be incidental and short-lived and would be in compliance with the Act. Most of the vegetation to be removed would be too small to support bird nesting. Should an individual tree pose a safety hazard for road or trail users and need to be removed, the Corps would attempt to remove the tree before nesting season. Current USFWS Guidelines call for avoiding effects during the nesting timeframe of 1 April – 15 August. If tree removal needs to be performed within that timeframe, a biologist (or a person with equivalent ornithological experience acceptable to the Corps) would determine if the tree supports active bird nests. If there is an active nest, the tree would be removed after the birds have fledged, if possible. However, if the tree poses an immediate safety hazard, the Corps would notify the USFWS and remove the tree.

Construction of new roads or trails has the potential to result in a take of birds protected under this Act. Prior to construction of road or trails, a biologist or person with equivalent ornithological experience would assess the construction area for potential use by nesting birds using historic and current data and field surveys during the known nesting period. If the biologist identifies active nest sites, those sites would be flagged and an appropriate buffer zone established around each site. No construction activities would take place within the buffer zone until the birds have fledged. If additional nests are identified by work crews, the biologist would be notified to inspect the site and establish a buffer zone if the nest is active.

Buffer zone distances would follow the general guidance of 50 feet for specific areas where non-raptor birds are believed to be nesting but the exact nest site is not determined, and 15 feet from known nest sites. The buffer zone distance for raptors nests would be 150 feet. Eagle buffer zone distances would be in compliance with the recommendations found in the USFWS National Bald Eagle Management Guidelines or 660 feet for disturbances that are in line of sight, and 330 feet for non-line of sight, unless (after consulting with the USFWS) it is determined that less of a buffer is appropriate -- e.g., when eagles have become accustomed to human activity. If work cannot be avoided within the buffer zone from an active nest, and the work may result in the take of migratory birds, the Corps would obtain a take permit from USFWS.

4.2.7 Clean Air Act of 1970, As Amended

Activities performed under an AMP would have a de minimus effect on air quality. The proposed actions would be in compliance with the Clean Air Act. Pursuant to Section

176(C) and 309 of the Act, this environmental assessment would be provided to the Environmental Protection Agency.

4.2.8 Clean Water Act

The proposed action is not expected to involve the discharge of dredged or fill material, below the ordinary high water mark, into waters of the United States, and would therefore be in compliance with Sections 404 and 401 of the Clean Water Act. The proposed action is also not expected to result in the discharge of pollutants and would therefore be in compliance with Sections 402 and 401 of the Clean Water Act. Should a site-specific action implemented under an AMP involve the discharge of dredged or fill material or the discharge of pollutants, the Corps would comply with Sections 404, 402, and 401 of the Act, as required.

4.2.9 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966, as amended, directs federal agencies to consider potential affects from this federal undertaking on cultural properties under their jurisdiction. Implementing regulations, 36 Code of Federal Regulations (CFR) Part 800, require an agency to consult with the State Historic Preservation Officer (SHPO), Tribes and interested parties to ensure historic properties are adequately identified, evaluated and considered in planning for proposed undertakings.

The Corps of Engineers has determined that the proposed AMP and actions taken thereunder are undertakings, as described in Section 106 of the NHPA and its implementing regulations, Title 36, Code of Federal Regulations, Part 800. Boundary management activities, including land survey/marking of unsurveyed portions of the Project boundary (through setting of aluminum markers), and repairing damaged survey monumentation is not expected to have the potential to affect historic/cultural properties. Additionally, other activities under the AMP are also expected to have no potential effect on historic/cultural properties, including:

- Replacing existing signs with no ground disturbance;
- Maintaining or repairing fence lines, with no new ground disturbance, that are less than 50 years old;
- Adding rock fill or gravel to existing, maintained road beds, and clearing existing inboard ditches, with no ground disturbance beyond the original ditch profile; and
- Encroachment thinning with no ground disturbance near roads and trails.

On October 30, 2013, the Corps initiated consultation on proposed trail management actions at Dworshak. The Nez Perce Tribe and Idaho SHPO provided written and verbal comments in November 2013, regarding the proximity of roads and trails to documented archaeological sites, and concern over allowing vehicles to drive in the drawdown zone. The Corps responded to both the Nez Perce Tribe and Idaho SHPO on February 13, 2014 that the Corps would combine the Trails Management Plan into a Vegetation and Access Management Plan. In 2015, the Corps consulted on a Five Year

Vegetation Management Plan, and is now consulting on a separate Programmatic Access Management Plan.

All undertakings proposed under an AMP, other than boundary survey and monumentation, would undergo separate Section 106 reviews prior to project implementation. The undertakings would be reviewed under the FCRPS PA to determine if they are routine activities that do not require further consultation. If they are not considered routine activities, then the Corps would engage in site-specific Section 106 evaluation and, if necessary, consult with the Nez Perce Tribe and Idaho SHPO. The Corps would first attempt to modify any project potentially affecting historic/cultural properties to avoid or minimize any potential impacts. If adverse effects are identified the Corps would identify appropriate mitigation and (if appropriate) determine if supplemental/tiered NEPA analysis would be required.

4.2.10 Comprehensive Environmental Response, Compensation and Liability Act of 1980 and 2006

The proposed action is not known to involve lands contaminated with hazardous substances. Environmental compliance would be performed, if necessary, to determine liability and remediation.

4.2.11 Emergency Planning and Community Right-To-Know Act of 1986

If activities undertaken as part of the proposed action involve hazardous substances in quantities listed in 40 CFR 355, the Corps would perform any necessary notification of state and local agencies and comply with all reporting requirements in accordance with this Act.

4.2.12 Energy Independence and Security Act of 2007

The proposed action would not convert more than 5,000 square feet to impermeable surfaces and would not be subject to the Act.

4.2.13 Farmland Protection Policy Act of 1984

The proposed federal action would not convert farmland to non-agricultural uses.

4.2.14 Federal Water Project Recreation Act of 1965

Wildlife enhancement actions would be a part of the federal action in that access control would be used to protect important habitat.

4.2.15 Federal Insecticide, Fungicide, and Rodenticide Act of 1947

The proposed action may utilize pesticides. All guidelines identified in the Act would be followed (proper storage, disposal, training, and pesticides registration; certified

applicator, record keeping, and other rules listed in FIFRA). Additionally, any pest management activates would be conducted in accordance with the District's Integrated Pest Management Plan.

4.2.16 Flood Control Act of 1944

The federal action would not permit or encourage the use of recreation areas in a manner that is inconsistent with state laws for the protection of fish and game.

4.2.17 Hazardous Materials Transportation Act of 1975

The proposed action is not expected to involve the transportation of hazardous materials under this Act, but actions under the AMP would if necessary, conform to all applicable transportation standards.

4.2.18 National Trail Systems Act of 1968

The federal action would not affect any trails of the National Trails System.

4.2.19 Noise Control Act of 1972

The federal action would not result in noise emissions greater than the applicable legal limits. The required certified low-noise-emission products would be utilized if needed.

4.2.20 Northwest Electric Power Planning and Conservation Act of 1980 (Northwest Power Act)

The proposed action would not conflict with the requirements of the Act or the Columbia Basin Fish and Wildlife Program.

4.2.21 Oil Pollution Act Of 1990

The proposed action would not involve actions or quantities of oil subject to the Act.

4.2.22 Plant Protection Act of 2000

The proposed action would not result in the movement or commerce of any plant pest or noxious weed.

4.2.23 Pollution Prevention Act Of 1990

The proposed action would involve substances that are potential pollutants and actions would be taken to recycle, treat, or dispose of substances in an environmentally safe and friendly manner.

4.2.24 Resource Conservation and Recovery Act of 1976

The proposed action may involve hazardous wastes, used oil, or underground storage tanks regulated by this Act and any required environmental compliance would be performed to properly dispose of all hazardous waste.

4.2.25 Rivers and Harbors Act of 1899

The action would not involve the construction of any structure in or over any navigable water, or work affecting the course, location, condition, or physical capacity of such waters.

4.2.26 Safe Drinking Water Act of 1974

The proposed action would not involve public drinking water systems and is not subject to this Act.

4.2.27 Toxic Substances Control Act of 1976

The proposed action would not involve production, importation, use, and disposal of polychlorinated biphenyls (PCBs), asbestos, radon, or lead-based paint.

4.2.28 Wild and Scenic Rivers Act of 1968

No rivers designated as “wild and scenic” occur within or near the proposed project area.

4.3 Executive Orders

4.3.1 Executive Order 11988, Flood Plain Management, May 24, 1977

The proposed project would not affect floodplain resources.

4.3.2 Executive Order 11990, Protection of Wetlands, May 24, 1977

Wetlands would be protected through proposed access control measures and would be avoided during construction of new roads and trails.

4.3.3 Executive Order 12898, Environmental Justice, February 11, 1994

The proposed federal action would not adversely or disproportionately affect minority or low income populations.

4.3.4 Executive Order 13112, Invasive Species, February 3, 1999

The proposed action would involve lands with invasive species populations. In accordance with the Order, the agency would take appropriate actions to prevent the spread of invasive species, and provide for the restoration of native species.

4.3.5 Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000

The Corps originally initiated consultation with the Nez Perce Tribe on a combined Dworshak Programmatic Vegetation Management and Access Management Environmental Assessment by letter on February 13, 2014. In 2015 the Corps decided to address vegetation management and access management as two separate actions. The Corps invited Government to Government consultation with the Nez Perce Tribe on just the access management in a letter dated May 17, 2016, but has not received a request to consult to date.

4.3.6 Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001

The proposed action would impact migratory bird species or their habitat subject to this EO and the MOU with the USFWS. The USFWS and other applicable agencies have been consulted and compliance measures addressed in the environmental stipulations/commitments.

4.3.7 Executive Order 13195, Trails for America in the 21st Century, January 18, 2001

The proposed federal action would not involve activities that would impact scenic, historic, recreation, Millennium or other trails subject to this EO. The proposed action may increase the number of trails available for public use.

4.3.8 Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, October 5, 2009

The proposed federal action would not involve activities that would be impacted by this EO.

Section 5. COORDINATION, CONSULTATION, AND PUBLIC INVOLVEMENT

This EA is being distributed for agency review and comment and is also available through the Walla Walla District Corps of Engineers website at www.nww.usace.army.mil/Missions/EnvironmentalCompliance.aspx. The distribution list includes the following:

Federal Agencies
Environmental Protection Agency
National Marine Fisheries Service
U.S. Fish and Wildlife Service
U.S. Forest Service

Idaho State Agencies
Idaho Department of Environmental Quality
Idaho Department of Fish and Game
Idaho Department of Lands
Idaho Department of Labor
Idaho Department of Water Resources
Idaho State Historic Preservation Office

Local Governments
City of Orofino
Clearwater County

Tribes
Nez Perce Tribe

Local Groups
Clearwater Community Complex
Dworshak Reservoir Association
Lewis and Clark ATV Club
Pierce Weippe ATV Trailriders
PLAY (Public Land Access Year-round)
Two Rivers Back Country Horsemen

Other
Dworshak State Park
Orofino Chamber of Commerce
Potlatch Corporation

This EA is being made available to the public and local, state, and federal agencies for a 30-day review and comment period.

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APPENDIX A

PROGRAMMATIC LAND-BASED ACCESS MANAGEMENT PLAN

US Army Corps of Engineers ®
Walla Walla District
BUILDING STRONG®

Dworshak Project
Land-based Access Management Program

Programmatic Land-based Access Management Plan

Dworshak Dam and Reservoir
Ahsahka, Idaho

June 2016

Project Number PM-EC-2013-0092

CONTENTS

1. INTRODUCTION. 1
1.1 Purpose of the Programmatic Land-based Access Management Plan 1
1.2 Authorities, Directives, and Obligations 1
1.3 Relationship to the Environmental Assessment 6

2. LAND-BASED ACCESS MANAGEMENT 6
2.1 Addressing Access Management Needs 6
2.2 Access Management Categories 9
2.2.1 Boundary Management 9
2.2.2 Access Control Management 9
2.2.3 Road Management 9
2.2.4 Trail Management 11

3. PLAN IMPLEMENTATION 11
3.1 Introduction 11
3.2 Monitoring 12
3.2.1 Roads Inventory 12
3.2.2 Annual Trails Review 12
3.2.3 Five-year Inventory for the OMP 12
3.2.4 Reports from Corps Personnel 13
3.2.5 Reports from Agencies or Public 13
3.2.6 Use of Monitoring Reports 13
3.3 Conditions that Warrant Action 13
3.3.1 Boundary Management 13
3.3.2 Access Control 14
3.3.3 Road Management 14
3.3.4 Trail Management 14
3.4 Actions in Response to Conditions that Warrant Action 15
3.4.1 Boundary Management 15
3.4.2 Access Control 18
3.4.3 Road Management 20
3.4.4 Trail Management 26

4. PLAN UPDATES 37

5. REFERENCES 37

TABLES
Table 2-1. Outgranted roads at Dworshak 11
Table 3-2.Trail specifications for ATV's 29
Table 3-3 Trail specifications for motorized vehicles greater than 50 inches 30

FIGURES

Figure 1-1 Dworshak land use allocations 4
Figure 3-1 Boundary survey decision process 16
Figure 3-2 Survey monumentation repair decision process 18
Figure 3-3 Road maintenance action decision process 21
Figure 3-4 Road access closure decision process 23
Figure 3-5 New road construction decision process 25
Figure 3-6 New trail development decision process 27
Figure 3-7 Trail maintenance decision process 33
Figure 3-8 Unauthorized trail evaluation decision process 36

ATTACHMENTS

A – Minimization/Avoidance Measures and Best Management Practices

INTRODUCTION

1.1 Purpose of the Programmatic Land-based Access Management Plan

The Programmatic Land-based Access Management Plan (AMP) provides a framework for the Walla Walla District Corps of Engineers (Corps) management of land-based access on Corps-managed lands at Dworshak Dam and Reservoir project on the North Fork of the Clearwater River. The purpose of the AMP is to effectively manage land-based access at Dworshak Project to respond to changing public recreational use demand and minimize unauthorized use of Corps-managed project lands, while continuing to facilitate multiple resource management and conservation of the natural and cultural resources entrusted to Corps stewardship.

The AMP is a long-term plan that describes the process the Corps intends to follow when making decisions on land-based access management. It addresses four categories of access-related issues: boundary management, access control management, road management, and trail management. Road management addresses managing or maintaining existing secondary and primitive roads and limited new road development, while trail management addresses developing and maintaining both motorized and non-motorized trails. It does not address boat access management or paved road maintenance.

The AMP does not prescribe site-specific development or actions. Rather, it identifies the conditions that would warrant management action and the actions the Corps would take in response to those conditions. It also identified impact minimization measures and Best Management Practices (BMP's) the Corps would incorporate into any action it takes when managing access. The AMP guides only those actions taken by the Corps within the Dworshak project boundary and within the Corps' authority. The AMP will be periodically reviewed by the Corps and modified if changes become necessary to better address land-based access management.

1.2 Authorities, Directives, and Obligations

Dworshak Project is a multi-purpose water resource project with five congressionally authorized purposes: Navigation, Flood Control, Hydropower, Fish and Wildlife, and Recreation. Construction of the project was authorized by Section 201 of the 1962 Flood Control Act (P.L. 87-874). Various Federal laws and regulations guide the management of natural resources on Corps Projects. The Federal Water Project Recreation Act of 1965 (P.L. 89-72) established recreation as a full project purpose.

The Corps has an ongoing obligation under the Fish and Wildlife Coordination Act (PL 85-624) to mitigate for loss of Rocky Mountain elk winter range caused by the creation of Dworshak Reservoir. The Corps, U.S. Fish and Wildlife Service (USFWS), and Idaho Department of Fish and Game (IDFG) agreed upon an approach to mitigate this habitat loss and in 1977 the Corps prepared a proposed mitigation plan, "Design

Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat* (DM-15) (USACE 1977). The primary purpose of DM-15 was to present a plan for the development and maintenance of winter range for the elk. DM-15 presented a plan for the development of elk habitat on project lands along the upper reservoir. After failing to acquire the 50,800-acre Heezen Block of land the agencies had recommended for elk management, the Corps acquired a total of 5,110 acres at the junction of the Little North Fork and the North Fork of the Clearwater River for elk habitat mitigation (Figure 1-1) as well as 3,217 acres of project lands in the vicinity of the mitigation lands to be committed to wildlife use. In the 1970's and 1980's, the Corps clear-cut and burned several thousand acres of the mitigation lands to increase winter forage production for the elk.

DM-15 discusses human disturbance, livestock grazing, and elk number as part of a management scheme for elk on Dworshak project lands. The implications of human disturbance is the only issue having a potential to affect access on Dworshak project lands. The DM states: "Consideration will be given to development activities which will minimize the harassment of elk occurring on lands surrounding Dworshak Reservoir. Means to accomplish this may include." The DM then listed four precautions that should be taken to minimize the harassment of elk on lands surrounding Dworshak Reservoir:

1. All trails and secondary roads above Grandad Creek Bridge will be closed to off-road vehicles, including snowmobiles.
2. Future recreation development beyond Grandad Creek Bridge will be primitive in nature and constructed in a manner compatible with the natural environment.
3. No road will be constructed to provide access to the mini-camps surround Dworshak Reservoir.
4. Only visitor travel by foot and horseback will be permitted on project and mitigation lands identified for elk management.

The Corps can allow project activities in conflict with these four precautions from DM-15, after consensus with IDFG and USFWS. The consensus/coordination process will be described in a future Memorandum of Understanding (MOU) with IDFG and USFWS.

The Corps continues to enforce the restriction on motorized access on mitigation lands. However, because of the change in reservoir pool operation and the change in recreational needs for access, the Corps is seeking flexibility from IDFG and USFWS on the above four precautions. The AMP includes a provision to consider the effect any access management action might have on elk and make adjustments to minimize potential conflicts. The Corps and IDFG will also collaborate and work cooperatively on land management issues to assess potential effects on the natural resources (wildlife, forest, habitat, etc.) surrounding Dworshak Reservoir when considering access. The Corps, IDFG, and USFWS may develop a MOU and/or Memorandum of Agreement

(MOA) when authorities allow by both agencies to establish this collaboration and partnership.

To the extent the AMP differs from DM-15, pertaining to the four precautions listed above, the AMP is intended to modify DM-15 to allow consideration of allowing potential access that is in conflict with the four precautions through consensus with IDFG and USFWS. The consensus/coordination process is to be described and defined in the MOU with IDFG and USFWS.

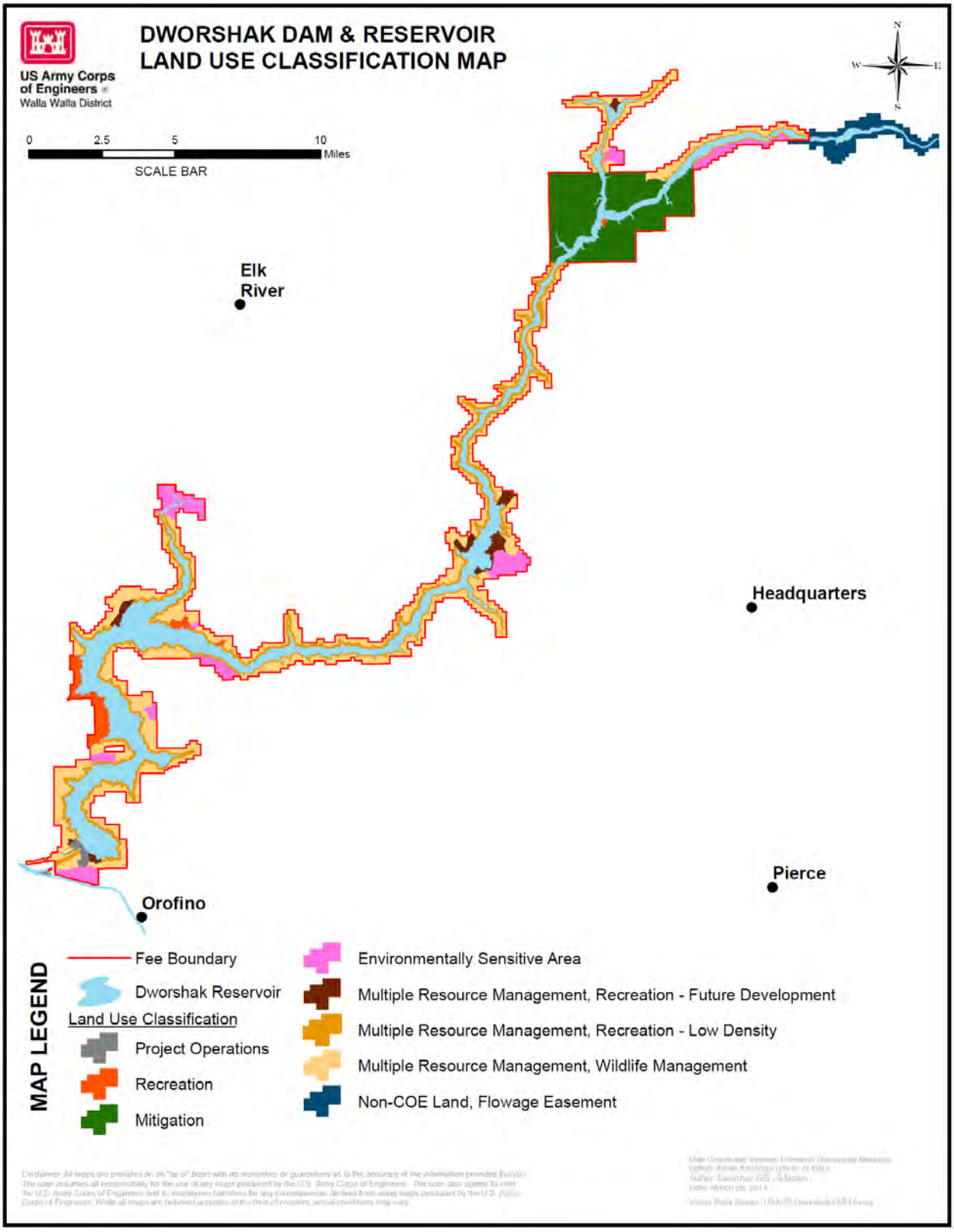

Figure 1-1. Dworshak land use allocations

Engineering Regulation 1130-2-540, dated 15 Nov 1996, Environmental Stewardship Operations and Maintenance Policies, contains guidance for forest and woodland management, fish and wildlife management, and wetlands management.

Engineering Regulation 1130-2-550 dated 15 November 1996, Recreation Operations and Maintenance Polices, established the policy for the management of recreation programs and activities, and for the operation and maintenance of Corps recreation facilities and related structures at civil works water resource projects.

Engineering Pamphlet 1130-2-540, dated 15 Nov 1996, Environmental Stewardship and Maintenance Guidance and Procedures, establishes guidance for the management of environmental stewardship related operations and maintenance activities at USACE civil works water resource projects.

Engineering Pamphlet 1130-2-550 dated 15 November 1996, Recreation Operations and Maintenance Guidance and Procedures, establishes guidance for development of Master Plans and Operational Management Plans for civil works water resource projects.

The Corps completed the Dworshak Reservoir Master Plan (Corps 2015) in June 2015. The Master Plan is a strategic land use document that guides the comprehensive management, development, and use for recreation, natural resources, and cultural resources throughout the life of the Dworshak Project. The Master Plan focuses on goals and objectives, but not details of design, management, or implementation. The AMP addresses and must be consistent with the access-related Resource Use Objectives identified in the Master Plan:

- Prevent timber and livestock trespass and other unauthorized use of government property.
- Actively address unauthorized motorized access to reduce impacts to fish and wildlife habitat and conflicts with non-motorized recreation users.
- Manage the road system within the operating project boundaries to meet transportation needs and to prevent resource damage.
- Provide safe and accessible recreation opportunities for all visitors.

The Corps prepared the *Dworshak Reservoir Public Use Plan for the Development and Management of Public Access at Dworshak Reservoir, Supplement to Design Memorandum 10* (PUP) (Corps 2011) in February of 2011. The PUP defined management strategies for acceptable public use and access for lands and waters of Dworshak Reservoir and serves as a guide for development and management of water and associated lands. The PUP was incorporated into the June 2015 Master Plan and been superseded by the Master Plan.

Corps policy is for each operating water resource project to have an Operational Management Plan (OMP). The OMP implements the resource objectives and development needs identified in the Master Plan. Project personnel develop and

implement the project OMP in accordance with the Master Plan. The OMP is updated annually to develop future years work plans. The AMP would be referenced during these updates and planned work would comply with the AMP.

The Corps prepared a Biological Assessment in 2011 that addressed the effects of Dworshak natural resources land management program activities. As provided for in the 2011 BA, the Corps will perform project tracking by sending the USFWS a spreadsheet annually in conjunction with any monitoring reports. This spreadsheet will list the natural resource management projects, including access management projects, that were implemented that year and the location of each.

1.3 Relationship to the Environmental Assessment

All Federal agencies are required to consider potential effects to the environment from an agency action, including developing and implementing land use management plans. The Corps prepared a programmatic Environmental Assessment (EA) for this AMP to comply with the National Environmental Policy Act (NEPA). This AMP is based on the preferred alternative identified in the EA, Alternative 3 Balanced Management. The Corps did not identify any significant effects to the environment from adopting and implementing the AMP.

The AMP is intended to serve as a decision-making guide for implementing access management actions when conditions warrant action. The AMP is not site-specific, rather it establishes a process for making decisions and taking actions. It also specifies minimization measures and Best Management Practices (BMP's) to be incorporated into any action the Corps takes. By adhering to these "sideboards", the Corps greatly reduces or eliminates the need for additional environmental compliance documentation for site-specific management actions taken under the AMP. However, some actions such as construction of new trail segments or construction near surface water, may require additional review under other environmental laws such as the Clean Water Act or the National Historic Preservation Act. If the Corps proposes site-specific management actions that have not been adequately addressed in the EA, the Corps would prepare a supplemental EA solely for those site-specific actions.

2. LAND-BASED ACCESS MANAGEMENT

2.1 Addressing Access Management Needs

The AMP is designed to accommodate changes in public use at the Project and to fulfill the intent of the Master Plan and the Corps' obligation for environmental stewardship and property accountability. Through implementation of the AMP the Corps seeks to reduce the amount of unauthorized Off-Highway Vehicles (OHVs[1]),

[1] OHV: The class of vehicles specifically designed for use off developed roads; these include motorized dirt bikes, All Terrain Vehicles (ATV) and other high clearance vehicles designed for off road use.

trespass incursions on Corps lands, reduce negative effects to fish and wildlife habitat, and provide opportunities for the development, management, and maintenance of motorized and non-motorized trails by the Corps or in partnership with external entities.

The Corps identified the following goals for access management:

1. Provide the framework for comprehensive trail planning for all types of recreational users. The subsequent trail network would provide a myriad of opportunities for differing types of roaming recreational activities.
2. Reduce negative effects to fish and wildlife habitat and cultural resources from access development and both authorized and unauthorized access.
3. Seek new opportunities for alternative access and recreational trail activities including but not limited to motorized, equestrian, and mountain biking opportunities where natural resource ecology, cultural resources, and the public are not in conflict.
4. Prevent unintentional trespass and negative effects associated with timber trespass, livestock trespass, and other unauthorized use of government property.
5. Continue efforts to monument project boundary and cooperate with adjacent landowners to create opportunities for the sharing of data and costs for common boundary surveys.
6. Continue to inventory, assess and geo-locate all known roads within Corps managed lands and spatially define those roads using GIS.
7. Establish and implement a road system and maintenance schedule that meets project transportation needs and prevents natural resource damage.

The AMP addresses several needs. One of these is the lack of a defined project boundary, which defines the limits of the Corps management responsibilities. Most of the property adjacent to Dworshak project lands is owned by the state of Idaho, private landowners, or other federal agencies, each of which have different opportunities for and restrictions to land-based public access. These access requirements are not always compatible with those of Dworshak Project. About 32 miles of the exterior project boundary have been fenced and unauthorized OHV intrusions have been responsible for some of the damage to segments of this fencing. As of the date of this AMP, about 166 miles of the 184 miles of Dworshak boundary have been surveyed, marked, and posted. About 18 miles have not been surveyed or monumented, which contributes to unintentional trespass and negative effects associated with timber and livestock trespass and other unauthorized use of project land.

Unauthorized access has the potential to damage project resources including soils, vegetation, wildlife and wildlife habitat, cultural resources, water quality, and aesthetics. Poorly sited or constructed trails can contribute to soil erosion and create turbidity in streams. They can also disturb wildlife or alter wildlife habitat. A plan to limit or control public access could reduce this potential for adverse effects and allow the Corps to meet its stewardship responsibility for these resources.

The Corps has an obligation to manage for elk winter range on the Project's elk mitigation lands. The Corps needs the ability to access these lands for management purposes while preventing unauthorized public access. Unauthorized public access can physically damage the lands and human presence can disturb the elk, potentially causing stress to the animals and possible causing them to leave the area.

Motorized recreation has changed since construction of Dworshak was completed, resulting in a change in the types of vehicles used and greater demand by the public for access on Project lands. Early development plans addresses motorized access as a way to access large developed campgrounds and focused on highway vehicles (e.g. passenger cars). Other forms of motorized recreation, such as the use of OHV's and all-terrain vehicles (ATV's) were not popular or did not exist. With the increase in ownership and use of these vehicles, the public has been creating their own trails (user-defined trails) on Project lands. These user-defined trails are not designed or sited to minimize soil erosion, avoid sensitive natural or cultural resource areas, comply with wildlife management objectives, or avoid conflict with other road or trail users. Access control structures have been designed to prevent full size vehicles from entering non-motorized areas and OHV's/ATV's can often pass around the structures. These factors have contributed to the need for changes in the treatment of motorized access at Dworshak.

The ability to access some of the recreational sites at the Project has also changed. For the first 20 years of reservoir operation, the Corps normally kept the reservoir level at or near the full pool elevation from July through September to provide for summer recreation. The Corps developed recreation facilities along the shoreline, many of which were designed to be operational at full pool and accessible only by boat. However, starting in 1992, the Corps has been required to release cold water from Dworshak reservoir in the summer to improve salmon migration conditions in the lower Snake River. The Corps typically starts drawing down the reservoir after July 4 each year, lowering the water level by about 80 feet. This annual drawdown adversely affects access to many of the shoreline recreation sites as boaters must climb a steep, muddy slope to reach the sites. Development and maintenance of overland access routes would improve the ability of the public to use the project for recreation. This would be consistent with national objectives and regional goals.

An access plan would also address road and trail development and maintenance. The project currently has about 126 miles of roads, about 24 miles of non-motorized trails, and about 6 ½ miles of motorized trail within its boundaries. These roads and trails require different levels of maintenance depending on the type of use. Some roads may no longer be needed and could be restored to native habitat or possibly developed as trails to meet demand for both motorized and non-motorized trails. Some of the roads are also needed to access vegetation management sites and wildlife management areas (such as the elk mitigation area shown on Figure 1-1) for monitoring and maintenance.

Public demand for non-motorized trails has changed. Most of the existing non-motorized trails on the project were designed for day hikes or short duration backpacking trips. These trails do not meet the needs of other non-motorized user groups, specifically equestrian and mountain biking groups. They also do not provide the opportunity for extended trips.

2.2 Access Management Categories

Land-based access management at Dworshak Project can be separated into four interrelated categories:

1. boundary management
2. access control management
3. road management
4. trail management (motorized and non-motorized).

These categories cross and relate to the various land classifications discussed in the 2015 Master Plan. All of these categories are addressed in this AMP. Each of these management categories is described below.

2.2.1 Boundary Management

Boundary management is administrative in nature and is used to ensure the integrity of federal lands and resources. The Corps uses surveying, marking, and posting the Project boundary to visually identify Corps property ownership and minimize or prevent unintentional trespass and other unauthorized uses of government property. Establishing identified markings help facilitate land management and trespass/encroachment enforcement. Boundary information in the form of GIS data is also shared with other land managers. Boundary management also includes repairing damaged survey monumentation.

2.2.2 Access Control Management

Access control is used to manage motorized public access on Corps managed lands. Control methods used by the Corps include physical structures such as gates, barricades, fences, other physical barriers; and administrative actions such as posting signs and notices, education, and Title 36 enforcement (36 CFR 327, Rules and Regulations Governing Public Use of Water Resource Development Projects Administered by the Chief of Engineers). Access control is important for protecting soils, vegetation, wildlife, wildlife habitat, cultural resources, water quality, and air quality and for minimizing conflicting use of roads and trails.

2.2.3 Road Management

Road management is used to meet current and future transportation needs and prevent resource damage from the roads themselves and the access they provide. The

Project currently has about 16 miles of paved roads, 27 miles of gravel roads, and 95 miles of dirt roads. Some roads are designed primarily to provide public access to recreation sites while others are for official use (administrative use) only such as providing access to vegetation management areas. The Corps manages and maintains most of the roads, but some are outgranted and maintenance is the responsibility of the grantee (see Table 2-1). Road management provides safe movement of vehicles while protecting resources including soils, water quality, and fish and wildlife habitat. Road management is used to schedule maintenance for existing roads; determine when existing roads need to be decommissioned (closed), obliterated, or converted into trails; and determine when and where new or reconstructed roads may be needed and what design criteria should be used for the roads. The road management program focuses primarily on the maintenance of existing roads and associated drainage structures. However, it also addresses construction of new roads when needed to access areas that have no current or historic roads.

Table 2-1. Outgranted Roads at Dworshak

Road	Grantee	Easement Number	Notes
Grandad (Musselman) Road and Breakfast Creek Road	State of Idaho	DACW68-2-80-32	Perpetual
Smith Ridge Road	Idaho Department of Lands	DACW68-2-92-20	Expires August 2017
Breakfast Creek Road	Potlatch Corporation	DACW68-2-77-13	Perpetual
Silver Creek Road	Potlatch Corporation	DACW68-2-77-12	Perpetual
Dworshak State Park	Idaho Department of Parks and Recreation (IDPR)	DACW68-1-96-18	IDPR responsible for all regular maintenance. For Three Meadows Group Camp, IDPR responsible for first $5,000 of any major road repair. Corps responsible for all additional repair costs.

2.2.4 Trail Management

Trail management is similar to road management and is used to meet current and future public demand for both motorized and non-motorized recreation. Management actions include maintaining existing trails; constructing new trails; closing or re-routing existing trails; and changing the use or design of existing trails to meet changing public demand and minimize user conflicts. Trail management provides recreational opportunities for a variety of users while protecting resources including soils, water quality, fish and wildlife habitat, and cultural resources.

3. PLAN IMPLEMENTATION

3.1 Introduction

This section presents the process for monitoring, identifying, and planning actions to address land-based access needs. The Corps would use information from the monitoring efforts to identify conditions on Dworshak project lands that may warrant access management action, subject to availability of funds and other management priorities. The conditions that warrant action for each of the access management categories are described in Section 3.3. The actions the Corps would take in response to plan an action are discussed in Section 3.4.

3.2 Monitoring

The overall purpose of monitoring is to provide a framework to ensure Dworshak land-based access needs are being met; comply with applicable obligations and agreements; comply with applicable environmental laws and regulations; and to provide feedback to the Corps for planning and improving long-term access management. Monitoring would assist the Corps in determining if access should be removed because it is no longer needed, restricted, or increased. The following sections describe monitoring that will be performed as part of the AMP.

3.2.1 Roads Inventory

The Corps has been inventorying all Dworshak Project roads and assessing them for purpose, condition, future needs, and the expected level of maintenance. Data layers with road features and associated attributes have been created and stored in the Project GIS system. All primary roads have been inventoried, but there are still many old logging and homestead roads that have not been identified. The Corps would continue to inventory these roads and add the road profiles to the GIS system. This information would then be used to identify future use and maintenance of the roads, or restoration to native habitat.

3.2.2 Annual Trails Review

The Corps performs a review of Dworshak trails each year to assess the trails for issues requiring immediate attention within the following recreation season. The annual reviews are performed prior to Memorial Day weekend each year. Usually these reviews are performed at the same time as annual maintenance activities. The reviewer documents any maintenance issue or unique feature by taking photos and preparing a written description of the location, the work to be performed, and any safety issues posing a risk to Project personnel or trail users. The review would also be used to document unauthorized access or damage to natural resources from unauthorized access.

Groups or agencies that partner with the Corps for development and maintenance of trails also perform an annual review of their respective trail segments and address any problems within the scope of their capabilities. If any issue is encountered that is beyond the capability of the group or is beyond the scope of the EA and hence triggers additional review, the issue is then brought to the attention of the Corps.

3.2.3 Five Year Inventory for the OMP

The Corps conducts an inventory of operation and maintenance needs and proposed actions every five years to create a 5-year work plan for the OMP. Access management actions are included in this inventory. This inventory is performed to assess conditions and determine priorities for any maintenance work needed during the

next five-year increment. The Corps reviews the OMP every year, then uses that inventory to develop the annual plan for operational and maintenance actions to implement. The reviewing team collects GPS data to document the spatial location of features that need attention and prepares a detailed log of specific actions to be performed that includes descriptive information such as the site location, type of action, equipment needed, and photo documentation.

3.2.4 Reports from Corps Personnel

Corps personnel at Dworshak report access-related issues and needs identified when performing their normal activities on the project. These issues include maintenance needs and discovery of unauthorized access. These reports are maintained by the Dworshak Natural Resources Office.

3.2.5 Reports from Agencies or Public

The Corps occasionally receives reports of needed maintenance or access control actions, potential trail development opportunities, requests for changes in trail use, or reports of other access-related needs or concerns from other agencies and the public. These reports are maintained by the Dworshak Natural Resources Office.

3.2.6 Use of Monitoring Reports

The goal of the AMP is to be proactive as well as reactive. The Corps wants to plan and implement actions that reduce access-related needs before they become a problem and that minimize adverse effects to natural resources. Monitoring reports would be used to determine when a trigger has been reached, prompting the Corps to take an action to address an access-related need. The Corps would review monitoring reports on an annual basis as part of the OMP process to determine where and when action is needed.

3.3 Conditions that Warrant Action

The following sections describe the conditions for each of the access management categories indicating an action may be warranted. Section 3.4 describes the actions that may be implemented in response to the identification of these conditions.

3.3.1 Boundary Management

Situations indicating the need to take action for boundary management include:

- The Corps has an upcoming project in an area that may not have been surveyed.
- Adjacent landowners are implementing an action in an area where the Dworshak project boundary may not have been surveyed.

- A trespass action has occurred on Dworshak project lands.
- The Corps has the opportunity to survey and/or identify additional segments of the project boundary.
- Existing survey monumentation has been damaged.

3.3.2 Access Control

Situations indicating the need to take action for access control include:

- Unauthorized motorized or non-motorized vehicle use could occur or is occurring at one or more locations on Dworshak project lands.
- Fish and wildlife habitat is being negatively affected by authorized or unauthorized access.
- Sensitive natural or cultural resources could be or are being threatened by motorized or non-motorized users.
- Conflict is occurring or could occur at one or more locations between motorized and non-motorized users.

3.3.3 Road Management

Situations indicating the need to take action for road management include:

- Road conditions are not meeting target maintenance levels.
- Road use justifies changing target maintenance level.
- A road is no longer needed for its original intent.
- A new wildlife, vegetation, or other management project requires road access.
- Fish and wildlife habitat is being negatively affected by authorized or unauthorized access.

3.3.4 Trail Management

Situations indicating the need to take action for trail management include:

- Demand by trail user communities is not being met by the existing trail system.
- The public has created a new trail (user-defined trail), either motorized or non-motorized.
- The Corps has identified a potential opportunity for new trail development that would enhance recreational use of Dworshak project.
- The Corps plans to close a road that could be considered for use as a trail.
- Trail conditions are not meeting target maintenance levels.
- Fish and wildlife habitat is being negatively affected by authorized or unauthorized access.

3.4 Actions in Response to Conditions that Warrant Action

The way in which the Corps responds to conditions that warrant action would differ based on the category of access management. Each category can have different elements, each with their own process. The process and description of actions that may be taken for each of the access management categories are described below.

3.4.1 Boundary Management

Actions taken under boundary management are broken into two elements, boundary surveys and damaged survey monumentation repair. The Corps would determine which element is applicable and may take the following actions in the order listed for each element. Figures 3-1 and 3-2 provide flow charts for making boundary management decisions.

- **Boundary Surveys**

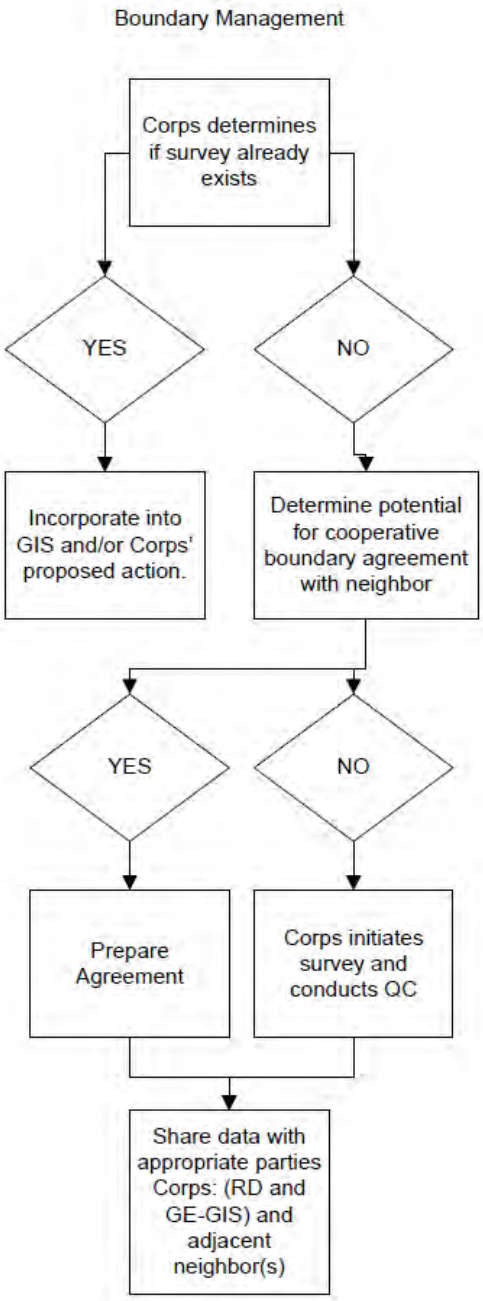

Figure 3-1 - Boundary surveys decision process

1. Identify segments of Corps boundary in question.
   - o Evaluate the quality and availability of GIS data layers for monuments and boundary status.
   - o Contact adjacent landowners to determine the current status of common property boundary.

- Research county courthouse records to determine if a portion of the boundary line has been surveyed and has not been updated in Corps records.
- Verify the status of the boundary line through field visits.

2. Determine potential for cooperative boundary agreement.
   - Once a segment of un-surveyed boundary has been identified, determine if the opportunity exists for cooperative boundary survey with the adjacent land owner.
   - If the opportunity exists, work with the Office of Counsel to draft an agreement for signature between the Corps and the adjacent land owner.
   - If there is not an opportunity for a cooperative boundary agreement, mark and post the boundary line using Corps resources as available.

3. Initiate boundary survey.
   - Coordinate budget requirements with the, Natural Resources Manager, Operations Project Manager, Administrative Officer, Budget Analyst, and the Walla Walla District General Engineering Section.
   - Send maps of the planned survey area to General Engineering, Survey Department in the District Office.
   - Follow-up with Surveying Department to ensure the contract has been awarded.
   - Provide boundary posts, decals, and bearing tree tags to contractor.
   - Contractor installs boundary monuments.

4. Review boundary survey.
   - Perform ground review of surveyed area; ensuring contractor has fulfilled the contract obligations.
   - Receive deliverables including the Record of Survey, Corner Perpetuation Filings, and coordinates of all monumentation surveyed or referenced.

5. Share data with appropriate parties.
   - Provide deliverables to the GIS information Manager for updating GIS data.
   - File documentation as appropriate.
   - Provide copies of deliverables to cooperating parties.

- **Damaged Survey Monumentation Repair**

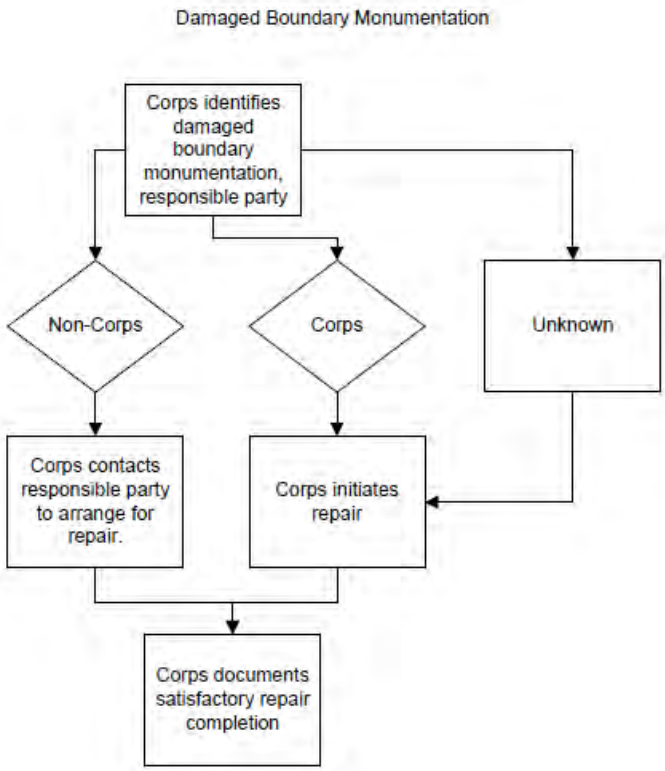

Figure 3-2 – Survey monumentation repair decision process

1. Photograph the extent of damage to the monuments and markers to assist in identifying the responsible party.
2. Contact the responsible party and/or adjacent land owner to arrange for repair and resetting of the monument.
   a. If the responsible party is not identified, the Boundary Management Program Manager would initiate repair in coordination with the Walla Walla District General Engineering Section, subject to availability of funding.
   b. If the monument has not been replaced and the original monument has been recovered, it should be reset.
3. Conduct a site inspection after the monument has been reset and follow up with any responsible parties.

3.4.2 Access Control

Actions taken under access control are broken into two elements: administrative actions and structural methods. The Corps would determine which element is applicable and may take the following actions.

- **Administrative actions**

There are two administrative actions the Corps may use to control access: education and enforcement. The Corps may use education to reduce or prevent unauthorized access and enforcement to address unauthorized access that has already occurred.

Education

- Educate and inform the recreating public through personal contacts, maps, and brochures.
- Through incidental contacts, verbally educate the public about current OHV guidelines and explain the rationale, plans, and policy behind a specific OHV management action.
- Create and post maps at entrance kiosks to the Elk Mitigation Area, recreation trailheads, and any other applicable location communicating Corps policy and rationale behind the policy.
- Post, sign, and patrol known areas of unauthorized OHV use.

Enforcement

- Inventory, assess, and map all known unauthorized OHV trails.
- Inform unauthorized OHV users of the rationale behind restrictions.
- Employ the use of Title 36 to gain compliance from unauthorized OHV users.

Upon discovery of an unauthorized OHV trail, the Corps may take the following actions:

- Map the trail either through the use of GPS or draw on a map.
- Note the type of OHV tracks, brushing, and other items of interest.
- Note the type of correction action needed to eliminate the unauthorized access.
- Notify the Access Management program manager.
- Take pictures and document

- **Structural Methods**

The Corps may use structural methods to control access when administrative actions have not been effective or are not likely to be effective.

- Inventory, assess, and map all access control structures.
- Inspect all access control structures annually or semi-annually to assess condition and determine necessary repairs.
- Inspect outside the established schedule, those access control structures having a recent history of vandalism and unauthorized OHV access.

- Maintain access control structures to fulfill each structure's intended purpose and to positively reflect on the Corps of Engineers' image, (well maintained, functional signs, fresh paint).
- Install access control structures (gates, barricades, fencing, and road demolition) where education has failed to reduce unauthorized OHV use.
- Utilize natural materials to restrict motorized access if it is impractical to install an access control structure or the unauthorized use appears to be an isolated incident.

3.4.3 Road Management

Actions taken under road management are broken into three elements: road maintenance, road access closure, road access development. The Corps would determine which element is applicable and may take the following actions in the order listed for each element. Figures 3-3, 3-4 and 3-5 provide flow charts for making road management decisions other than maintenance.

- **Road Maintenance**

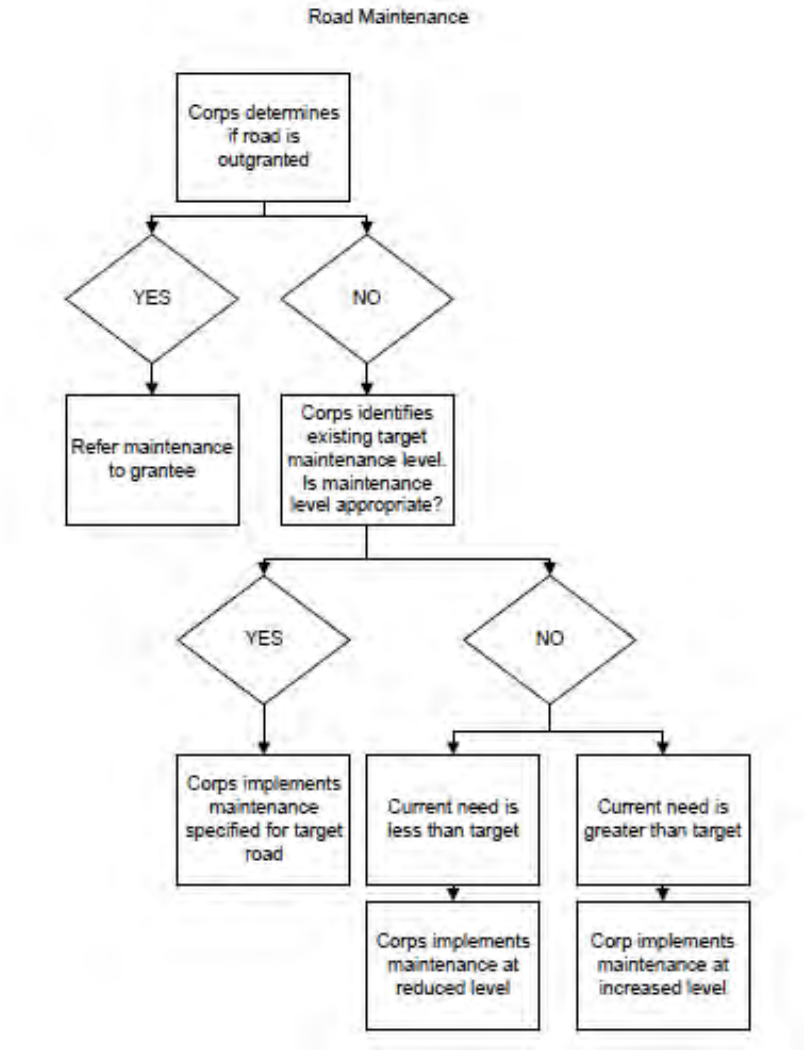

Figure 3-3 Road maintenance action decision process

1. Determine if the road needing maintenance is outgranted, then refer the maintenance need to the grantee if applicable.
2. Check the GIS road inventory to determine the target maintenance level for the road.
3. Raise or lower the target maintenance level if the type and amount of usage justifies the change.
4. Implement the needed maintenance actions for the identified maintenance level while incorporating the Impact Minimization Measures and BMP's in Attachment A.

Road maintenance actions include:
- grading or blading gravel or dirt roads
- placing additional gravel on the road surface
- filling potholes
- repairing seeps, slumps, and washouts

- clearing vegetation from shoulders and ditches
- cleaning out ditches and culverts
- repairing water control features such as rolling dips, and water bars
- repairing, replacing, or installing new culverts
- removing large obstacles such as rock, logs, and landslides

The level of road maintenance depends on the expected type of vehicle traveling on the road. Vehicles using project roads include passenger cars with low clearance, and trucks and 4-wheel drive vehicles with high clearance. Roads do not need to provide access to all types of vehicles. The target maintenance levels are:

Low Clearance Vehicles: These roads would be maintained to provide for travel by any vehicle legal for highway travel. Roads in this category typically have a surface comprised of crushed gravel or better. Some roads within this category may be closed for public motorized use via regulations (i.e. not designated for public use). Natural or manmade physical barriers may be in place to minimize unauthorized public use while allowing access for allowable uses. Roads within this category would have a minimum target road surface width of 14 feet. However, the road surface width may currently be much wider than 14 feet and thus the target would include maintaining the entire road surface.

High Clearance Vehicles: These roads would be maintained to provide for full sized high clearance (typically four-wheel drive) vehicles. They may have obstacles and/or potholes that require vehicles with higher ground clearance or may have loose or unstable material requiring four-wheel drive to safely and efficiently traverse. These roads are not recommended for vehicles that are not equipped to safely operate in such conditions. Natural or manmade physical barriers may be in place to minimize unauthorized public use while allowing access for allowable and/or official uses. The target maintenance level is to maintain a 14 foot wide road surface at a minimum.

- **Road Access Closure**

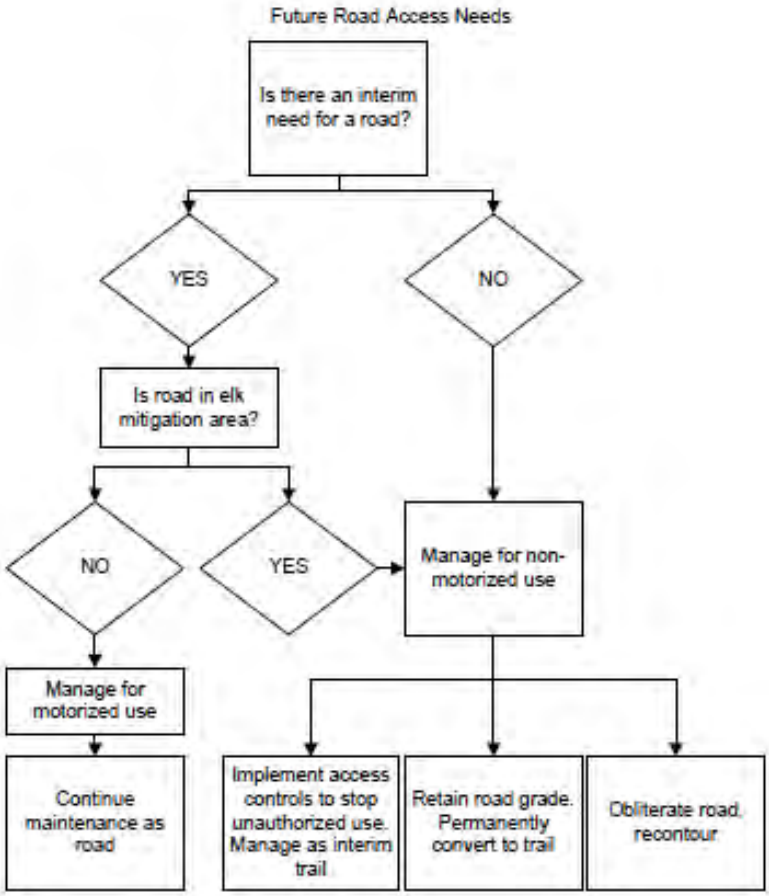

Figure 3-4 Road access closure decision process.

1. Assess the potential need for road access at that location in the future.
2. If road access may be needed again, use access controls to block unauthorized access, implement actions as needed to stabilize the soil, and consider interim use as a trail.
3. If road access is not needed for the foreseeable future, obliterate the road or consider converting it to permanent trail use.

Road access closure actions include:

- installing access controls such as gates or barricades to block unauthorized access
- stabilizing road surfaces through vegetation planting such as grass seeding or tree and shrub planting, or allowing revegetation to occur naturally
- removing culverts or other drainage structures
- installing water control features to minimize erosion
- removing fill
- re-establishing original slope contours

- removing sections of road by using heavy equipment or explosives

If the Corps determines a particular road is not currently needed, but would likely be needed in the future, the Corps may temporarily close the road by changing the road status to inactive, taking actions such as grass seeding or culvert removal to stabilize the soil and reduce erosion, and implementing appropriate access controls to minimize unauthorized access. If the Corps determined there is a need for either motorized or non-motorized trail use in the area, the Corps may consider allowing interim use of the road as a trail. Roads in the elk mitigation area could be considered only for non-motorized public trails or Government administrative use while roads outside of the mitigation area could be considered for either motorized or non-motorized trails.

If the Corps determines a road would not be needed again, the Corps may close the road by obliterating it or permanently converting it to trail or Government administrative use. Road obliteration may include removing culverts, constructing drainage dips, seeding all disturbed and exposed soil with a native grass seed mix, placing woody material (brush, slash, logs) on the finished surface to reduce erosion, removing fill, and re-contouring the road surface to match the contour of the adjacent slopes. Heavy equipment or explosives could be used to remove specific road sections to prevent vehicle passage. If the Corps determined there is a need for either motorized or non-motorized trail use in the area, the Corps may consider permanently converting the road to a trail. Roads in the elk mitigation area could be considered only for public non-motorized trails while roads outside of the mitigation area could be considered for either motorized or non-motorized trails.

- **Road Access Development**

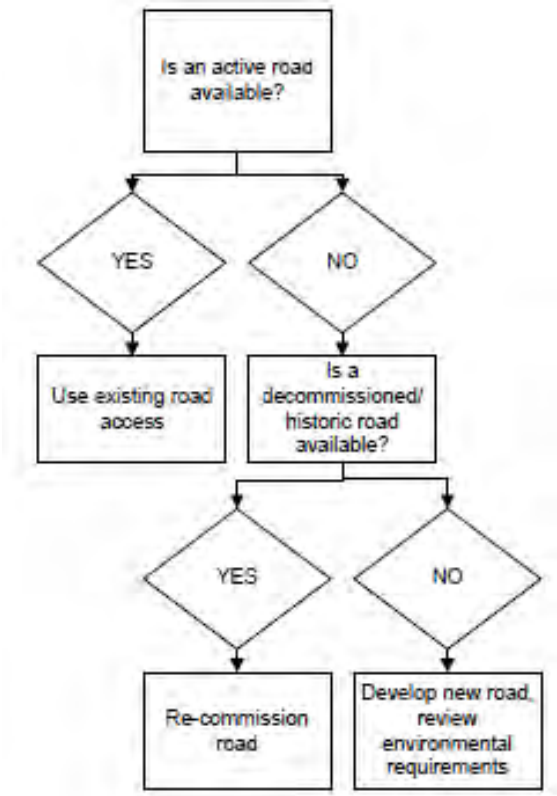

Figure 3-5. New road construction decision process

1. Determine if an existing road, either active, closed, or historic, is available.
2. Recommission (open) road, if necessary.
3. Develop a new road if no existing road is available.

When the Corps identifies a need for road access, it would determine if any existing roads are available and use them to the maximum extent possible. This includes active roads, closed roads, and historic road beds. Closed or historic road beds would likely need to be recommissioned (opened)/reconstructed. Road reconstruction consists of reconditioning and preparing the roadbed and shoulders, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning, repairing, and upgrading the drainage structures of existing roads. It also includes work for associated ditches, other surface drainage, and culvert installation. Roadbed surfaces in Riparian Habitat Conservation Areas (RHCA's) would be graveled to limit suspended sediment. Sediment capture devices would be installed between work areas and streams to prevent escapement of sediment into the streams.

The Corps would consider constructing a new road if an existing road is not available. The construction of new roads may require the felling of timber up to about

20 feet on either side of the road centerline, if needed. Clearing and grubbing would remove all trees, logs, brush, stumps, roots, slash, and other woody debris and materials embedded in the ground. The road width for new roads would be no greater than 14 feet. The cut slope would be cut down and leveled out to form the subgrade width with a proper fill slope ratio (approximately 1.5:1). All native and gravel surfaced timber treatment area roads would be one lane with pullouts appropriately sized for log trucks. Pit run rock would be applied to the native surface in areas that are steep or poorly drained and at all live water crossings. New construction would include work associated with ditches, other surface drainage structures and culvert installation for the proper functionality of the roads.

3.4.4 Trail Management

Trail management is similar to road management and is used to schedule maintenance for existing trails; determine when and where new trails are needed and what design criteria should be used; determine if certain trails should be closed or re-routed; and determine when to change use or design of existing trails. The Project's trail network would provide opportunities for differing types of roaming recreational activities by OHVs, recreational 4-wheel drive vehicles hikers, mountain bike riders, and horseback riders. Snowmobile use is allowed on all open motorized trails, but the AMP does not include provisions for snowmobile trail development and management. Snowshoeing and skiing are allowed on all open non-motorized trails, but the AMP does not include provisions for developing and managing trails for this use. Using the design principles and criteria from EM 1110-1-400, Recreation Planning and Design Criteria, Project trails would be designed and managed in a manner such that visual and human-cultural values associated with the project would be protected, preserved, or maintained to the maximum extent possible. Specific ecological considerations would include actions to preserve critical habitats of fish and wildlife; prevent or control sedimentation and erosion; maintain water quality; regulate stream flow, runoff, and groundwater supplies; and avoid or mitigate actions that would reduce scarce biota, ecosystems, or basic resources. When developing individual project features, the Corps would consider the needs for architectural design, land treatment, or other resource conservation measures.

Actions taken under trail management are broken into three elements: new trail development, trail maintenance, and unauthorized trail evaluation. The Corps would determine which element is applicable and may take the following actions in the order listed for each element. Figures 3-6 and 3-7 provide a flow charts for making trail development decisions.

- **New Trail Development**

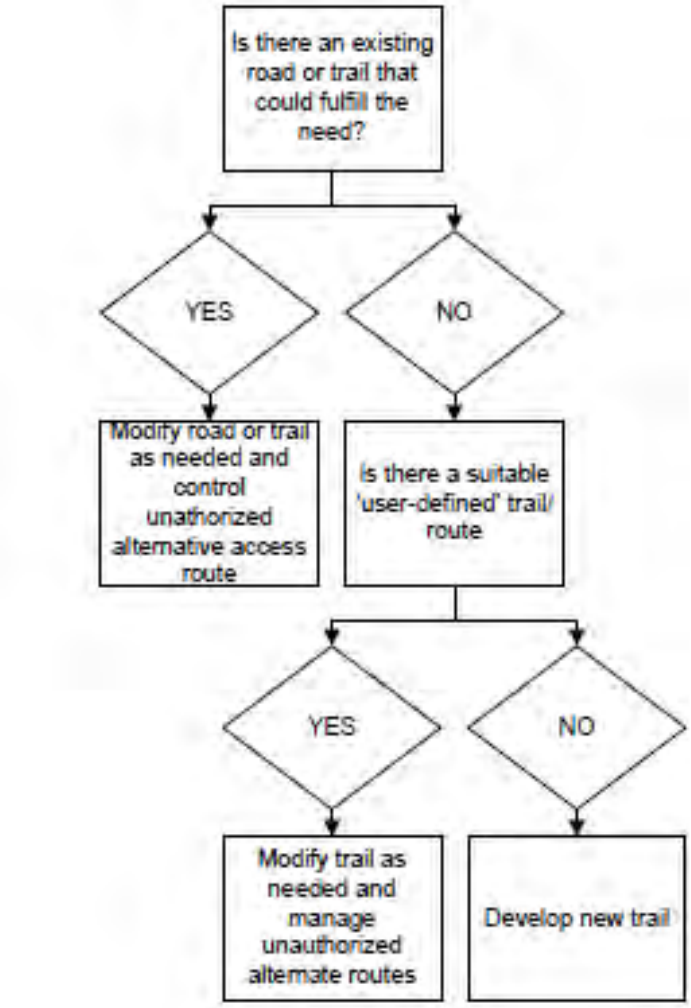

Figure 3-6 New trail development decision process

1. Determine if an existing road (active, inactive, closed, or historic) or trail is available and suitable for the proposed use.
2. If an existing road or trail is not available, determine if a user-defined trail is available and suitable for use.
3. Modify the existing road, trail, or user-defined trail as needed to design and siting requirements, impact minimization measures, and BMP's, and use access controls to manage any unauthorized alternate routes.
4. If no existing roads, trails, or user-defined trails are available, develop a new trail to applicable specifications while incorporating design and siting requirements, impact minimization measures, and BMP's.

Motorized Trail Development

Motorized access on approved trails would be allowed in, and restricted to, designated areas deemed appropriate and necessary by the Corps. All motorized access is subject to seasonal or permanent closure based on road conditions, the presence of important wildlife species that would be adversely affected by the presence of motorized vehicles, or other reasons deemed appropriate by the Corps.

Proposed motorized trails would be evaluated for environmental acceptability, site-specific environmental compliance needs, implementation feasibility, availability of funding for construction and maintenance, and public acceptability prior to approval and construction. If deemed feasible and acceptable, trails would be built to the characteristics of Class 3 and Class 4 motorized trails as summarized below and in tables 3-2 and 3-3:

- Class 3 Motorized Trail
  - Trail wide and suitable for one lane and occasional two-lane passage for managed use types.
  - Occasional moderate tread protrusions and short awkward sections, which require speed and maneuvering adjustments.
  - Tread infrequently graded. Obstacles cleared if they substantially hinder the managed use and difficulty level.
  - Tread surface generally native materials, with occasional on-site fill or imported materials, if more stable surface is desired.
  - Crossings may be wet fords; likely with hardening and armoring or simple bridges for resource protection and to ensure appropriate access.
  - Trails have frequent markers and are readily followed.
  - Signing size and type appropriate for managed speeds and potential nighttime use (signs likely reflectorized).

- Class 4 Motorized Trails
  - Trail wide and suitable for the managed use type, and may consistently accommodate two-way passage.
  - Tread surface generally smooth with only small protrusions, which moderately affect speed and ease of travel.
  - Tread graded as needed.
  - Tread surface may include imported aggregate or intermittent paved sections if more stable surface is desired.
  - Crossings are typically either hardened or armored or a substantial bridge.
  - Recommended speeds or speed limits may be posted.
  - Trails have frequent markers and are easily followed.
  - Signing size and type appropriate for managed speeds and potential nighttime use (signs reflectorized).

Table 3-2 Trail specifications for ATV's

Table 6-4. Trail Specifications for ATVs

Designed Use ALL-TERRAIN VEHICLE		Trail Class 3	Trail Class 4
Design Tread Width	Single Lane	60"	60" – 72"
	Double Lane	96" – 108"	96" – 120"
	Structures (Minimum Width)	60"	60"
Design Surface	Type	• Native with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 3" May be common, not continuous	≤ 3" Uncommon, not continuous
	Obstacles (Maximum Height)	6" May be common, left for increased challenge	3" Uncommon
Design Grade	Target Grade	5% – 15%	3% – 10%
	Short Pitch Maximum	25%	15%
	Maximum Pitch Density	15% – 30% of trail	10% – 20% of trail
Design Cross Slope	Target Cross Slope	3% – 8%	3% – 5%
	Maximum Cross Slope	10%	8%
Design Clearing	Height	8' – 8'	8' – 10'
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")	60" – 72"	72" - 96"
	Shoulder Clearance	6" – 12"	12" – 18"
Design Turn	Radius	8' – 10'	8' – 12'

Table 3-3 Trail Specifications for Motorized Vehicles Greater than 50 Inches

Table 6-5. Trail Specifications for Motorized Vehicles Greater than 50 Inches

Designed Use FOUR-WHEEL DRIVE VEHICLE > 50"		Trail Class 3	Trail Class 4
Design Tread Width	Single Lane	72" – 96"	96" – 120"
	Double Lane	16'	16'
	Structures (Minimum Width)	96"	96"
Design Surface	Type	• Native, with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native, with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 8" May be common and continuous	≤ 4" May be common and continuous
	Obstacles (Maximum Height)	24" Common, left for increased challenge	12" Uncommon
Design Grade	Target Grade	5% – 18%	5% – 12%
	Short Pitch Maximum	20%	15%
	Maximum Pitch Density	10% – 20% of trail	5% – 10% of trail
Design Cross Slope	Target Cross Slope	5% – 12%	5% – 8%
	Maximum Cross Slope	12%	8%
Design Clearing	Height	6' – 8'	8' – 10'
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")	72" – 96"	96" - 144"
	Shoulder Clearance	6" – 12"	12" – 18"
Design Turn	Radius	15' – 20'	20' – 30'

Trails would be considered in locations where land use classifications permit, and they would provide safe access to mini-camps or other recreation features around the reservoir. In addition, some desired trails may be part of a larger regional trail system. The designated trails would primarily follow old logging or homestead roads, although some shared roads may be considered. Potential OHV trails would only be permitted in areas classified as Recreation, Multiple Resource Management, Low Density Recreation; Multiple Resource Management, Wildlife Management; and Multiple Resource Management, Vegetation Management as per the Dworshak Master Plan. Trails would not be allowed in areas classified as Environmentally Sensitive or Mitigation, unless on main public access roads already in use in those areas. Future OHV trails must not have significant impacts to other known sensitive habitat areas or

other areas of significant ecological importance. Future trail planning efforts and any necessary site-specific environmental compliance procedures would evaluate the effects of each proposed OHV trail. General trail construction guidelines are included in the following paragraphs. Specific trail criteria may be prescribed by the Corps for each trail, depending on location.

The purpose of OHV trails would be primarily to access mini-camp locations or other recreation features. No large loop trails are currently envisioned on Corps property due to topography constraints, noise, and impacts to wildlife and environmentally sensitive areas. Recreational OHV use would only be allowed on designated trails, and no cross-country travel would be permitted. No OHV use would be permitted on exposed banks below the full-pool water mark, although some areas may be considered for designation as an area acceptable for OHV transport from boat to shore at all water levels. Not all mini-camps would be accessible by trail, even when topography and environmental factors allow. In some locations, mini-camps would be preserved for boat access only, or as possible equestrian or walk-in mini-camps.

OHV trails may be opened on a seasonal basis, as determined by Corps staff. The trails would be monitored and evaluated annually, and may be closed at any time based on factors including trail conditions, environmental degradation, adverse effects on wildlife, adverse effects to non-motorized hunters, presence of threatened or endangered species, adverse effects to cultural resources, failure of a user group to properly maintain trails, and/or abuse of the OHV trail and areas adjacent to the trail by the OHV community.

Non-Motorized Trail Development

Non-motorized trails may be developed for multiple use to include day hiking, backpacking, mountain bike riding, and horseback riding. Proposed non- motorized trails would be evaluated for environmental acceptability, site-specific environmental compliance needs, implementation feasibility, availability of funding for construction and maintenance, and public acceptability prior to approval and construction. If deemed feasible, trails would be built and maintained to the characteristics of Class 2 and Class 3 non-motorized trails as summarized below:

Class 2 Non-Motorized Trails
-Trail discernible, continuous, and rough with few or no allowances for passing.
-Tread is constructed from native materials.
-Vegetation may encroach into trail corridor.
-Blockages cleared to define route and protect resources.
-Drainage functional.
-Primitive foot crossings and fords.
-Few destination signs present.
-Minimum number of signs required for basic direction.

Class 3 Non-Motorized Trails
-Tread obvious and continuous with occasional allowances for passing.
-Tread is generally constructed from native materials, but may have segments containing aggregate.
-Tread surface is generally smooth with only small protrusions.
-Vegetation is fully cleared within the trail corridor.
-Trail structures may be common and substantial, such as:
- Bridges
- Retaining walls
- Steps
- Causeways

-Crossings are typically either hardened or armored or a substantial bridge.
-Trails have frequent markers and are easily followed.
-Directional signs are typically present.
-Informational and interpretive signs may be present.

Presently, all trails are open yearlong to any non-motorized activity and this use is not expected to change unless resource damage occurs or un-resolvable user conflicts develop.

- **Trail Maintenance**

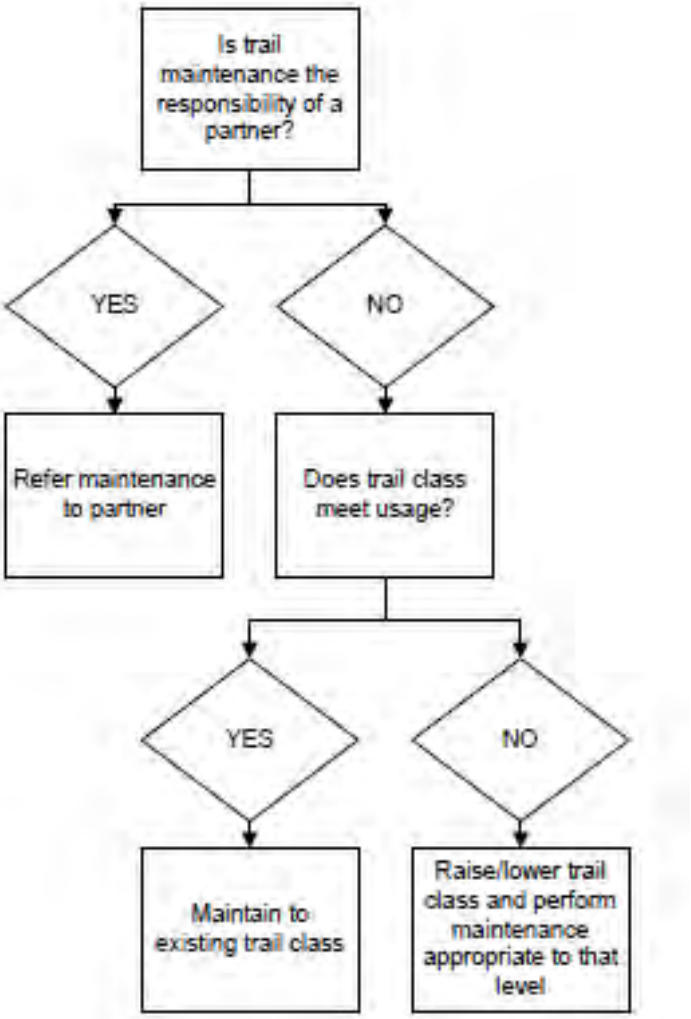

Figure 3-7 Trail maintenance decision process.

1. Determine if the trail needing maintenance is the responsibility of a partner and refer the maintenance need to the applicable partner.
2. Determine the class of the trail (both motorized and non-motorized) and the trail condition standards for that class.
3. Raise or lower the class of the trail if the type and amount of usage justifies the change.
4. Implement the needed maintenance actions for the identified trail class while incorporating the Impact Minimization Measures and BMP's in Attachment A.

All trails would be maintained on an annual basis or bi-annual schedule, subject to availability of funding and other priority actions. Maintenance would most likely be performed in the spring and in the early fall, and for any weather event such as high winds that could cause extreme amounts of downfall on any given trail system.

The level of trail maintenance depends on the trail class and expected type of usage. Each trail does not need to provide access to all types of OHV's or non-motorized users.

Motorized Trail Maintenance

Typical maintenance activities for Dworshak motorized trails consist of:

- Clearing of vegetation within the trail corridor using chainsaws and hand tools. The width of the corridor depends upon the managed use of the trail. In general, the width of the corridor would range between three feet to four feet of the trail center line and the height of the corridor would range between 8 to 10 feet tall; these dimensions are dependent upon the terrain.

- Grooming of the tread surface using equipment and hand tools. Typical equipment used for tread maintenance typically includes the use of a trail dozer and backhoe.

- Construction and replacement of water bars. Water bars are typically constructed from on-site materials, usually small diameter trees, and placed at a 30 to 45 degree angle. Lengths of water bars would vary based upon topography and tread width.

- Construction and replacement of retaining walls. Retaining walls used in trail applications at Dworshak are typically constructed of dimensional lumber or stone materials and range in size from 1 foot high x 1 foot long to 3 feet high x 50 feet long.

- Construction and maintenance of bridges. Bridges are to be constructed based upon the managed use of a trail with consideration given to the terrain and vegetation of the site. As each bridge site is a unique structure, it is impractical to try to capture the variety of designs, load bearing characteristics, and aesthetic values associated with each. In general, all bridges would likely be constructed of wood materials and set upon a rock or cement structure base. Bridges would be of a type and style to support OHV use.

Non-motorized Trail Maintenance

Typical maintenance activities for Dworshak non-motorized trails consist of:

- Clearing of vegetation within the trail corridor using chainsaws and hand tools. The width of the corridor depends upon the managed use of the trail. In general, the width of the corridor would range between two feet to six feet of the trail center line and the height of the corridor would range between 8 to 10 feet tall; these dimensions are dependent upon the terrain and managed use of the trail. Typically,

the following dimensions of vegetation clearance are associated with the following managed uses:
  - Day Hiking / Backpacking: 4 feet wide by 8 feet tall
  - Horseback Riding: 6 feet wide by 10 feet tall
  - Mountain Biking: 4 feet wide by 8 feet tall.

- Grooming of the tread surface using hand tools. The width of the trail tread is also dependent upon the managed use of the trail:
  - Day Hiking / Backpacking: 12 – 24 inches
  - Horseback Riding: 18 – 36 inches
  - Mountain Biking: 12 – 24 inches

- Construction and replacement of water bars. Water bars are typically constructed from on-site materials, usually small diameter trees, and placed at a 30 to 45 degree angle. Lengths of water bars would vary based upon topography, tread width, and availability of materials.

- Construction and replacement of retaining walls. Retaining walls used in trail applications at Dworshak are typically constructed of dimensional lumber or stone materials and range in size from 1 foot high x 1 foot long to 3 feet high x 50 feet long.

- Construction and maintenance of bridges. Bridges would be constructed based upon the managed use of a trail with consideration given to the terrain and vegetation of the site. As each bridge site is a unique structure, it is impractical to try to capture the variety of designs, load bearing characteristics, and aesthetic values associated with each. In general, all bridges would likely be constructed of wood materials and set upon a rock or cement structure base. Bridges would be designed to support equestrian use. Handrails would be installed on all bridges having a deck height of greater than 24 inches from the bottom of the bridge decking to the lowest vertical point below the bridge.

- **Unauthorized Trails Evaluation**

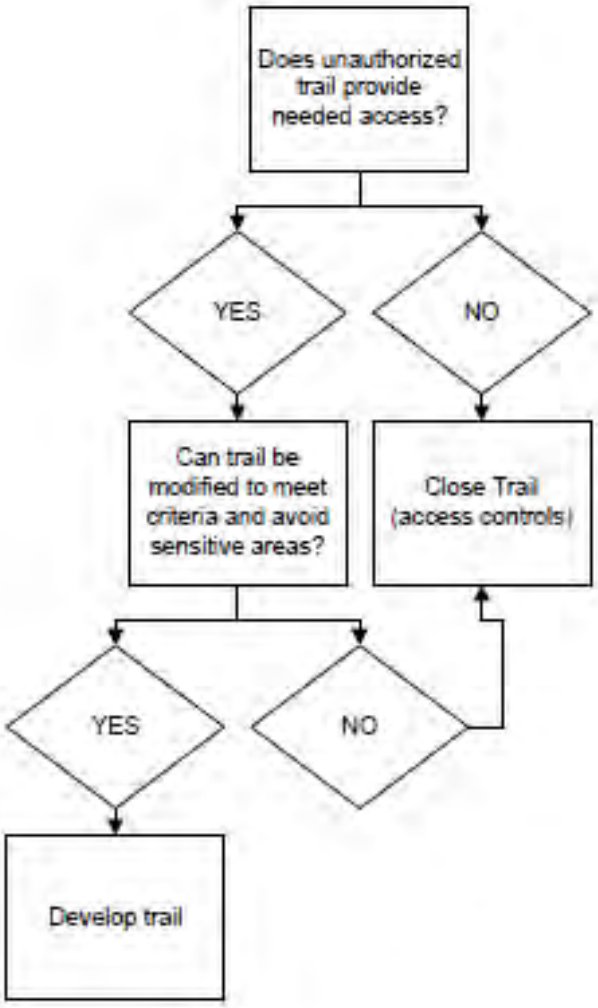

Figure 3-8 Unauthorized trail evaluation process

1. Determine if the unauthorized trail provides needed access.
2. Determine if the unauthorized trail can be modified to meet design criteria, including re-routing sections if needed to avoid safety hazards or sensitive resource areas.
3. Develop the trail if it meets the above conditions.
4. Close the trail if it does not meet the above conditions.
5. Take enforcement actions described in Section 3.4.2.

Any unauthorized trails would be considered an encroachment or trespass, and may be closed until such time as the trail may be evaluated for its potential to become a designated trail.

4. PLAN UPDATES

The AMP will be periodically reviewed by the Corps and modified if necessary to better address land-based access management at Dworshak project. The AMP may also be updated whenever the Corps determines conditions have changed enough to warrant an update or when monitoring identifies needed changes. Modification could include adding or removing impact minimization measures or changing a decision process.

The Corps will initiate and facilitate the reviews and oversee any plan updates. Plan updates may require additional environmental compliance.

5. REFERENCES

U.S. Army Corps of Engineers. 1977. Design Memorandum No. 15, Plan for Development of Rocky Mountain Elk Habitat (DM-15). U.S. Army Corps of Engineers, Walla Walla District.

U.S. Army Corps of Engineers. 2011. Dworshak Reservoir Public Use Plan: Ahsahka, Idaho. Supplement to Design Memorandum No. 10. Public Use Plan for the development and management of public access at Dworshak Reservoir. . U.S. Army Corps of Engineers, Walla Walla District.

U.S. Army Corps of Engineers. 2015. Dworshak Reservoir Master Plan. U.S. Army Corps of Engineers, Walla Walla District.

U.S. Forest Service. 1996. Integrated Scientific Assessment for Ecosystem Management in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Gen Tech Rep PNW-GTR-382. Washington, D.C.: United States Department of Agriculture.

Attachment A

Minimization or Avoidance Measures and Best Management Practices for Dworshak Access Management Actions

The Corps will include the following minimization/avoidance measures as part of any applicable land-based access management action implemented at Dworshak project under the access management plan.

A. Impact Minimization Measures

The following impact minimization measures will be implemented by the Corps:

1. The Pacific Anadromous Fish Strategy/Inland Fish Strategy (PACFISH/INFISH) would be used as a guide in creating and maintaining riparian habitat conservation area (RHCA) buffers around all water sources. All tributaries to the reservoir are intermittent streams, with the exception of those portions of the Little North Fork Clearwater River (containing bull trout), Breakfast Creek, Reeds Creek, and Silver Creek. All of the intermittent streams in the proposed projects are not Endangered Species Act (ESA)-listed fish bearing streams. PACFISH/INFISH guidelines suggest a RHCA encompassing 50 feet either side of these intermittent streams.

The Corps would meet the PACFISH/INFISH guideline as a minimum on all intermittent streams unless the topography is such that inside of 50 feet the slope breaks and surface water would no longer drain into the stream in question. The land type within the project boundary is classified as "breaklands" by the US Forest Service. Due to the type of landscape associated with breaklands, there are frequent changes in relief among these drainages creating narrow drainages less than 100 feet in width. For example, if a given stream drainage is only 40 feet wide (20 feet either side) protecting vegetation (prohibiting harvest) for 50 feet either side of the stream does nothing but limit the opportunity for wildlife habitat or ecological restoration work. Using the same understanding, the Corps would likely protect well over 50 feet if the slope breaks over 50 feet (e.g. 75 feet). In terms of the conditions within the RHCAs described by INFISH the Corps would adhere to all once the RHCAs are established.

2. Fuel and lubricants would be stored outside RHCAs in project staging areas.

3. Refueling within RHCAs would be avoided.

4. Equipment would be staged outside RHCAs when not in use.

5. Equipment would be inspected for leaks and cleaned in project staging areas prior to RHCA entry. Any detected leaks would be repaired before the vehicle enters an RHCA.

6. A spill prevention and control plan would be developed and discussed to equipment operating personnel prior to instream work.

7. Ephemeral stream channels would not be used as road locations. Equipment would cross ephemeral channels at designated crossings to minimize soil disturbance. Vegetative debris would be placed in the designated crossings to reduce soil displacement and compaction.

8. Development of new roads within proposed work projects would be minimized.

9. Best management practices would be used to control erosion damage, particularly on roads.

10. All roads would have erosion bars installed where needed upon project completion.

11. Re-vegetation of road surfaces with a native grass seed mix would be conducted upon project completion if the road is no longer needed.

12. Project specific erosion and sediment control measures would be implemented including:

a. Minimizing tree removal within RHCAs.

b. Having measures in place to monitor for and reduce the potential for the establishment of invasive plants in disturbed and requiring contractors or road/trail managing partners to ensure that their equipment is clean and weed-free.

c. Seeding all roads when no longer needed.

d. Using berms, water bars, cross-draining, diversions, sediment traps, out sloping, and/or silt fences.

e. Scattering slash material.

f. Closing work sites during heavy rains and snowfall.

13. Access restriction barriers would be installed to prevent unauthorized motorized access.

14. Any redds (fish nests) observed in the work area would be avoided and not disturbed.

15. Migratory Bird Avoidance

a. The Corps would follow the procedures and conservation measures described in the July 2006 *Memorandum of Understanding (MOU) between the U.S. Department of Defense and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds*, the conservation and impact avoidance and minimization measures (BMP's) and procedures described in the Corps' May 2015 *Dworshak Project Vegetation Management Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Impact Avoidance and Minimization Plan*, the USFWS National Bald Eagle Management Guidelines, and any subsequent updates or amendments to these documents when taking actions to manage access at Dworshak project.

b. Road and trail maintenance activities would be performed before or after the nesting season, when and where practical. Current USFWS Guidelines call for avoiding effects during the nesting timeframe of 1 April – 15 August. Given nesting timeframe variations a biologist may use existing surveys to determine a site specific timeframe for bird species in the area and their most probable nesting timeframe. Management activities would use this data to determine avoidance timeframes. In the absence of survey data, management actions would use the national timeline and avoid activities from 1 April – 15 August.

c. When performing road and trail maintenance activities during the nesting season, active bird nests would not be destroyed. Individual trees or shrubs with active nests would not be pruned or removed until the birds have fledged. Should an individual tree pose a safety hazard for road or trail users and need to be removed, the Corps would attempt to remove the tree before nesting season. If the tree needs to be removed within the nesting timeframe, a biologist would determine if the tree supports an active bird nest. When possible, trees with active nests would be removed after the birds have fledged. However, trees that pose an immediate safety hazard, would be removed and the USFWS notified.

d. Prior to road or trail construction, a biologist would assess the construction area for potential use by nesting birds using historic and current data and surveys. If the biologist identifies active nest sites, those sites would be flagged and an appropriate buffer zone established around each site. No construction activities would take place within the buffer zone until the birds have fledged. If additional nests are identified by work crews, a biologist would be notified to inspect the site and establish a buffer zone if the nest is active.

e. Buffer zone distances would follow the general guidance of 50 feet for specific areas where birds are believed to be nesting but the exact nest site is not determined, and 15 feet from known nest sites. The buffer zone distance for raptors nests would be 150 feet. Eagle buffer zone distances would be in compliance with the recommendations found in the USFWS National Bald Eagle Management Guidelines or 660 feet for disturbances that are in line of sight, and 330 feet for non-line of sight.

f. If necessary or appropriate, bird surveys may be performed by a person with equivalent ornithological experience acceptable to the Corps' Dworshak Natural Resource Manager rather than a Corps biologist. The Natural Resource Manager will coordinate with the Environmental Compliance Section in the Walla Walla District office prior to allowing a non-Corps biologist to perform the surveys.

16. The following additional restrictions would be observed to protect bald eagles:

a. Avoid removal of overstory trees within 330 feet (100 meters) of both active and alternate nests at any time.

b. Avoid performing access management actions during the nesting season within 660 feet (200 meters) of the nest if the work is visible to the nest (line of sight) or within 330 feet (100 meters) if not within line of sight of the nest. Standoff distances to alternate tended sites would be 330 feet until eggs at the primary site have hatched..

c. To avoid disturbing nesting bald eagles and their young, do not fly aircraft within 1000 feet (305 meters) of the nest, except where eagles have demonstrated tolerance for such activity

17. No public motorized access would be allowed within the elk mitigation lands.

18. Close OHV trails to public use during elk calving season and the winter, if needed and in agreement with Idaho Department of Fish and Game, to reduce disturbance to elk.

19. All new roads and trails would be sited to avoid sensitive wildlife areas or cultural resource sites.

20. Before undertaking an access management action, consider the effects the action may have on elk and make modifications to the action to minimize potential conflicts.

21. The density of existing and proposed roads and trails would be evaluated based on the Interior Columbia Basin Ecosystem Management Project (ICBEMP) (U.S. Forest Service, 1996) density classes to ensure adequate protection of natural/cultural resources.

a. The combined density of roads and trails available for public use would be evaluated by Elk Habitat Unit (EHU) and would be calculated only for the portion of the EHU within the Dworshak Project boundary. The existing roads and trails within the portion of an EHU within the Dworshak project boundary, when combined with roads and trails proposed within that EHU portion, should generally not exceed the density limits listed in the table below. The Corps would also take into consideration site specific conditions and existing or planned road/trail densities on adjacent ownerships as well as the density limits on Corps land when determining if a new road or trail would be appropriate on Corps land.

Road Density Class Acceptability Limits by Project Slope/Aspect Categories

Road Density Class (miles/mile^2)	Slopes < 10% All Aspects	Slopes 10-30% South Aspects	Slopes 10-30% North Aspects	Slopes 30-60% All Aspects	Slopes > 60% All Aspects
Very Low (0.02-0.1)	Yes	Yes	Yes	Yes	Yes
Low (0.1-0.7)	Yes	Yes	Yes	Yes	Yes
Moderate (0.7-1.7)	Yes	Yes	Yes	Yes	No

High (1.7-4.7)	Yes	No	Yes	No	No
Extremely High (>4.7)	No	No	No	No	No

Yes = acceptable, No = not acceptable

b. The only area in which new roads would not be considered would be the elk mitigation area.

22. Seasonal and/or temporary restrictions may be placed on any road or trail for the following variety of reasons.

- To reduce damage to wildlife habitat and/or reduce disturbance to wildlife during nesting or rearing season.
- To reduce excessive road damage during periods of inclement weather. Often fall and spring rains and runoff leaves road surfaces too wet and soft for vehicle travel.
- Snow depth and conditions in the winter months render the road impassible.
- A particular environmental event renders the road impassible for its intended use. In this case the road may be closed indefinitely until either repairs can be executed or the road is reassessed with a lower target maintenance level.
- To execute planned roadwork.
- To conduct natural resource work in the area and to protect the public from the hazardous work conditions.

23. If blasting is needed for road/trail maintenance or development, the following conditions would be followed:

- Exact locations of each hole would be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.
- Holes would be dug into the soil using either a rock bar or a post-hole digger.
- Explosives would be placed in the holes; charges may be tied together, and set off.
- Explosives would be discharged in such a manner as to adhere to the best management practices mentioned below for fish protection.
- Guards and warning signs would be posted during the entire blasting procedure.

B. Best Management Practices

Typical types of best management practices will depend on site-specific conditions, but would generally include the following.

1. Retain all trees within 50 feet on each side of draws showing scoured flow channel or having flowing water.

2. Retain all trees within 50 feet of seeps, springs, and bogs.

3. Retain all trees within 50 feet of raptor nests with the additional requirements for bald eagles of 330 feet.

4. Retain all trees within 100 feet of the ordinary high water mark of the reservoir.

5. Retain all trees within 100 feet of each minicamp.

6. Retain all snags and culls (unless they present a safety hazard).

7. Ensure diversion of surface runoff around road or trail maintenance and construction.

8. Place berms to prevent runoff to local creeks around road or trail maintenance and construction.

9. Use erosion bars and sediment traps for road construction.

10. Minimize the visual intrusiveness of the action on the reservoir user.

11. Road obliteration work would be conducted during dry conditions when the potential for erosion is minimal.

12. All disturbed surfaced roads and trails shall be grass seeded with native grass species upon completion.

13. Ensure diversion of surface runoff around road obliteration work.

14. Place sediment traps and/or silt fences to prevent runoff to local creeks around road obliteration work.

15. Any instream work would be performed under dry conditions either through dewatering or done when intermittent streams are dry.

APPENDIX B

DWORSHAK NATURAL RESOURCES LAND MANAGEMENT PROGRAM ACTIVITIES 2011 BIOLOGICAL ASSESSMENT

United States Department of the Interior
Fish and Wildlife Service
Idaho Fish And Wildlife Office
1387 S. Vinnell Way, Room 368
Boise, Idaho 83709
Telephone (208) 378-5243
http://www.fws.gov/idaho

DEC 07 2011

Michael S. Francis
Chief, Environmental Compliance Section
Department of the Army
Corps of Engineers
Walla Walla District
201 North Third Avenue
Walla Walla, Washington 99362-1876

Subject: Dworshak Natural Resources Land Management Program—Clearwater County, Idaho—Concurrence
In Reply Refer To: 01EIFW00-2012-I-0039 Internal Use: CONS-100a

Dear Mr. Francis:

This letter transmits the Fish and Wildlife Service's (Service) concurrence on the effects to species listed under the Endangered Species Act (Act) of 1973, as amended, from the Dworshak Natural Resources Land Management Program (Program). In a letter dated November 15, 2011, and received by the Service on November 17, the Army Corps of Engineers (Corps) requested concurrence with the determination, as documented in your Biological Assessment (Assessment), that the Program is not likely to adversely affect the bull trout (*Salvelinus confluentus*) and its critical habitat. You also determined that the Program will have no effect on the threatened Canada lynx (*Lynx canadensis*) and the North American wolverine (*Gulo gulo luscus*), a candidate species. We acknowledge these no effect determinations.

The Corps proposes to implement the Program to enhance ecosystem integrity, forest health, wildlife habitat, and recreational opportunities on Corps administered lands surrounding 29,318 acre Dworshak Reservoir. Safety and aesthetics are the primary focus for treatments within recreation areas, including high density recreation areas and primitive campsites (i.e., mini camps). In order to meet these goals, the Program has been divided into the following management categories, or activities:

- Access and Trails Management
- Boundary Management
- Fire Management
- Forest Management
- Road Management
- Wildlife Habitat Management
- Recreation

More details on these activities are found in the Table below.

Table 1. Program management Activities, Elements, and maximum number of Activity Elements implemented per year between 2012 and 2022 (adapted from Table 2 of the Assessment).

Dworshak Programmatic Activity Elements	Maximum Quantity per Year
Access and Trails Management	
Gate and/or Barricade Installations	5 per year
Gate and/or Barricade Modifications	5 per year
Gate and/or Barricade Refurbishing	10 per year
Sign Installation/Maintenance	20 per year
Fence Repair and Maintenance	5 miles per year
Fence Removal	5 miles per year
Trail Corridor Brushing and Tread Maintenance	50 miles per year
Bridge Installation/Maintenance	5 per year (non-fish bearing)
Surface Water Control Structure Installation/Maintenance	50 per year
Boundary Management	
Boundary Monument Installation	5 miles per year
Fire Management	
Broadcast Burning	1,000 acres a year
Pile Burning	100 piles per year
Slashing and/or Pruning	200 acres per year
Fire Lines	25 recreational mini camps (approx. 1.25 mi), designated burn units
Forest Management	
Selective Harvest	750 acres a year
Road Management	
New Construction	5 miles per year
Road Reconstruction	15 miles per year
Road Maintenance	50 miles per year
Road Obliteration	2 miles per year
Road Demolition	1/4 mile per year
Culverts	50 per year (on intermittent streams, no bull trout streams involved)
Wildlife Habitat Management	
Wetland Enhancement	2 per year
Planting	1,500 plants per year
Recreation Management	
Recreation Foot Trails	10 miles per year

The Program contains Impact Minimization Measures (IMMs) and Best Management Practices (BMPs) to reduce resource impacts. These measures include the following:

- Buffering streams using PACFISH/INFISH guidelines for establishing riparian habitat conservation areas (RHCAs)
- Storing fuel and lubricants outside of RHCAs
- Inspecting equipment for leaks (and repairing leaks) before entry into RHCAs
- Igniting prescribed fires outside of RHCAs (but fire will be allowed to burn into RHCAs)

- Prohibiting timber harvest in RHCAs
- Minimizing development of new roads
- Waterbarring firelines
- Using handlines on overly steep slopes
- Revegetating road surfaces with native grasses upon project completion
- Using management guidelines for the protection of bald eagles
- Using accepted standards during any blasting activities for protecting fish and migratory birds
- Conducting road obliteration and instream work under dry conditions (with few exceptions all streams in the action area are ephemeral).

The Corps will conduct implementation and effectiveness monitoring and track projects completed under the Program. The monitoring and tracking reports will be provided to the Service.

The Corps will implement the Program between 2012 and 2022. Refer to the Assessment for a complete description of the Program including all IMMs and BMPs.

Of the activities shown in Table 1 above, the Corps has identified Fire, Forest, Road, and Recreation management as the most likely to affect bull trout and its critical habitat. The stressors potentially produced from these management activities include suspended sediment and turbidity, petro-chemical toxins, and shock waves associated with blasting. Our concurrence that the Program is not likely to adversely affect the bull trout and its critical habitat is based on the following rationales:

- The risk of any direct effects to spawning bull trout resulting from Program implementation is discountable because no bull trout spawning has been documented in the action area.

- In the action area, adult bull trout overwinter and subadults reside year-round in Dworshak Reservoir. The action area also includes free flowing sections of the Little North Fork Clearwater River (2,200 feet) and Breakfast Creek (1,500 feet) which bull trout use for feeding, migrating, and overwintering (FMO) habitat. Effects to bull trout in Dworshak Reservoir, the Little North Fork Clearwater River and Breakfast Creek from Program implementation are expected to be insignificant due to the implementation of project IMMs and BMPs.

  Specifically, sediment inputs into the Reservoir and affected streams will be minimized through limiting harvest treatments and burn prescriptions to areas outside of RHCAs; reseeding roads and landings after project completion; using helicopter logging on slopes greater than 40 percent; using erosion control measures such as silt fences and sediment traps; and closing work sites during periods of heavy rain or snowfall. Any sediment effects to bull trout habitat in Dworshak Reservoir from the project will be insignificant in comparison to baseline conditions associated with reservoir drawdowns for flow augmentation. By using selective harvest and by not allowing any harvest in RHCAs, effects to water temperature and large woody debris recruitment in the action area will be minimized.

Equipment staging and fuel storage will occur outside of RHCAs. Equipment will be cleaned and inspected for leaks (and any leaks repaired) prior to entry into RHCAs.

For minimizing the potential effects of blasting on bull trout, the Corps will only conduct blasting in areas that are near occupied bull trout habitat (including the Reservoir, the Little North Fork Clearwater River, and Breakfast Creek) during that period when the majority of adult bull trout are migrating out of the Reservoir or are in upstream spawning reaches (i.e., mid-June through mid-October). In addition, the Corps will strictly adhere to standards developed by the state of Alaska for protecting fish during blasting (Alaska Department of Fish and Game 1991, available at: http://www.adfg.alaska.gov/static/license/uselicense/pdfs/adfg_blasting_standards.pdf (last accessed December 6, 2011).

- Dworshak Reservoir and those portions of the Little North Clearwater River and Breakfast Creek within the action area are designated as bull trout critical habitat and provide FMO habitat. Program implementation will result in insignificant or no effects to the Primary Constituent Elements (PCEs) of critical habitat because of the IMMs and BMPs incorporated into the Program. The functionality of the critical habitat in providing FMO habitat for bull trout will be maintained.

This concludes informal consultation on the proposed action under section 7 of the Act. If the proposal addressed in this letter is modified, environmental conditions change, or additional information becomes available regarding potential effects on listed species, you should verify that your conclusions are still valid.

Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Clay Fletcher at (208) 378-5256 if you have questions concerning this letter.

Sincerely,

Russell K. Holder

– for –

Brian T. Kelly
State Supervisor

cc: NMFS, Grangeville (Brege)
IDFG, Region II, Lewiston (Hennekey)

DWORSHAK NATURAL RESOURCES LAND MANAGEMENT PROGRAM ACTIVITIES

DWORSHAK RESERVOIR

PM-EC-2010-0065

Biological Assessment

for

Threatened and Endangered Species,
Critical Habitat, and Essential Fish Habitat

Under the Jurisdiction of:

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

U.S. Army Corps of Engineers
Walla Walla District
Environmental Compliance Section

Date
15 November 2011

If additional information regarding this document is required, please contact Jason Achziger, Fishery Biologist in the Environmental Compliance Section of the U.S. Army Corps of Engineers, Walla Walla District, at (509) 527-7262, or by email at jason.k.achziger@usace.army.mil. Other correspondence can be mailed to:

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TABLE OF CONTENTS

LIST OF FIGURES ..... **V**

LIST OF TABLES ..... **V**

GLOSSARY ..... **VI**

1. INTRODUCTION ..... **- 1 -**

2. BACKGROUND / HISTORY ..... **- 1 -**

2.1. BACKGROUND ..... - 2 -
2.1.1. Ecosystem Integrity ..... *- 2 -*
2.1.2. Forest Health ..... *- 3 -*
2.1.3. Wildlife Habitat ..... *- 4 -*
2.1.4. Recreational Opportunities ..... *- 6 -*
2.2. PROJECT HISTORY ..... - 6 -
2.3. DOCUMENTATION OF RELEVANT CORRESPONDENCE ..... - 7 -
2.4. SUPPLEMENTAL INFORMATION ..... - 7 -
2.5. FEDERAL ACTION HISTORY ..... - 7 -

3. PROJECT DESCRIPTION ..... **- 8 -**

3.1. AUTHORITY ..... - 8 -
3.2. PROJECT AREA AND ACTION AREA ..... - 10 -
3.2.1. Footprint ..... *- 10 -*
3.2.2. HUC, Township, Range, Section ..... *- 11 -*
3.2.3. Quantification of Area Potentially Affected ..... *- 13 -*
3.2.4. Action Area ..... *- 13 -*
3.3. PROJECT PURPOSE AND OBJECTIVES ..... - 13 -
3.3.1. Access and Trails Management ..... *- 14 -*
3.3.2. Boundary Management ..... *- 14 -*
3.3.3. Fire Management ..... *- 15 -*
3.3.4. Forest Management ..... *- 15 -*
3.3.5. Road Management ..... *- 16 -*
3.3.6. Wildlife Habitat Management ..... *- 17 -*
3.3.7. Recreation Management ..... *- 17 -*
3.4. PROJECT ACTIVITIES ..... - 18 -
3.4.1. Access Management ..... *- 19 -*
3.4.2. Boundary Management ..... *- 31 -*
3.4.3. Fire Management ..... *- 34 -*
3.4.4. Forest Management ..... *- 38 -*
3.4.5. Road Management ..... *- 39 -*
3.4.6. Wildlife Habitat Management ..... *- 44 -*
3.4.7. Recreation Management ..... *- 45 -*
3.5. PROJECT TIMELINE ..... - 46 -
3.6. PROPOSED CONSERVATION MEASURES ..... - 46 -
3.6.1. Impact Minimization Measures ..... *- 46 -*
3.6.2. Best Management Practices ..... *- 48 -*
3.7. MITIGATION ..... - 49 -
3.8. INTERDEPENDENT AND INTERRELATED ACTIONS ..... - 49 -
3.9. ONGOING AND PREVIOUS PROJECTS IN THE ACTION AREA ..... - 50 -
3.10. MONITORING ..... - 50 -
3.11. PROJECT TRACKING ..... - 51 -

4. STATUS OF SPECIES AND CRITICAL HABITAT ..... **- 51 -**

4.1. Species Lists from NMFS and USFWS ..... - 51 -
4.2. Identification of Listed Species and Critical Habitat ..... - 51 -
4.3. Identification of Designated Critical Habitat ..... - 52 -
4.4. Status of Species ..... - 52 -
4.4.1. Bull Trout ..... - 52 -
4.4.2. Canada Lynx ..... - 57 -
4.4.3. North American Wolverine (Candidate) ..... - 59 -
4.5. Status of Critical Habitat ..... - 61 -
4.5.1. Bull Trout ..... - 61 -
4.5.2. Canada lynx ..... - 64 -

5. ENVIRONMENTAL BASELINE ..... - 65 -

5.1. Matrix of Pathways and Indicators (MPI) ..... - 71 -
5.2. Baseline Conditions Justification ..... - 72 -

6. EFFECTS OF THE ACTION ..... - 73 -

6.1. Project Effects ..... - 73 -
6.1.1. Access Management ..... - 73 -
6.1.2. Boundary Management ..... - 74 -
6.1.3. Fire Management ..... - 74 -
6.1.4. Forest Management ..... - 75 -
6.1.5. Road Management ..... - 76 -
6.1.6. Wildlife Habitat Management ..... - 78 -
6.2. Effects on Listed Species ..... - 78 -
6.2.1. Elevated Suspended Sediment and Turbidity ..... - 78 -
6.2.2. Chemical Contamination ..... - 79 -
6.2.3. Blasting ..... - 80 -
6.2.4. Riparian Vegetation Reduction ..... - 80 -
6.3. Effects on Critical Habitat ..... - 80 -
6.3.1. Bull Trout ..... - 80 -
6.3.2. Canada Lynx ..... - 81 -
6.3.3. Gray Wolf ..... - 81 -
6.4. Cumulative Effects ..... - 81 -
6.5. Effects Determination ..... - 82 -
6.5.1. Listed Species ..... - 85 -
6.5.2. Critical Habitat ..... - 85 -
6.5.3. Summary. ..... - 85 -

7. CONCLUSIONS ..... - 86 -

8. ESSENTIAL FISH HABITAT ..... - 86 -

8.1. Description of the Proposed Action ..... - 86 -
8.2. Effects of the Proposed Action ..... - 86 -
8.3. Proposed Conservation Measures ..... - 87 -
8.4. Conclusions by EFH ..... - 87 -

9. REFERENCES ..... - 88 -

10. APPENDIX A: ROAD MANAGEMENT MAPS ..... - 94 -

11. APPENDIX B: DWORSHAK BLASTING ACTIVITIES ..... - 106 -

11.1. Purpose and Need ..... - 106 -
11.1.1. Wetland Enhancement ..... - 106 -
11.1.2. Road Obliteration ..... - 106 -

11.1.3. Trail Construction / Maintenance ..... *- 106 -*
11.1.4. Road Construction/Maintenance ..... *- 106 -*
11.2. PROPOSED ACTION ..... - 107 -
11.3. BEST MANAGEMENT PRACTICES ..... - 107 -
11.3.1. Protection of Fish ..... *- 107 -*
11.3.2. Protection of Migratory Birds ..... *- 110 -*
11.4. REFERENCES ..... - 110 -

BACKGROUND ..... - 111 -

IMPLEMENTATION ..... - 112 -

List of Figures

FIGURE 1 DWORSHAK ELK MITIGATION AREA. ..... - 6 -
FIGURE 2 HUC 17060308 AND DWORSHAK PROJECT LANDS. ..... - 12 -
FIGURE 3 ACCESS STRUCTURES. ..... - 20 -
FIGURE 4 UNAUTHORIZED MOTORIZED TRAILS AT DWORSHAK. ..... - 23 -
FIGURE 5 TYPICAL BRIDGE ON RECREATION TRAILS AT DWORSHAK. ..... - 31 -
FIGURE 6 BOUNDARY STATUS. ..... - 33 -
FIGURE 7 LOCATION OF CRRU (USFWS 2002) ..... - 53 -
FIGURE 8 NFCR CORE AREA CLEARWATER RECOVERY UNIT (USFWS 2002). ..... - 54 -
FIGURE 9 BULL TROUT DISTRIBUTION IN LOWER NORTH FORK CLEARWATER (HUC 17060308) (STREAMNET 2010) ..... - 55 -
FIGURE 10 DESIGNATED CRITICAL HABITAT FOR BULL TROUT IN UNIT 21- NORTH FORK SUBUNIT (USFWS 2010D). THE MAP INCLUDES ALL OF THE CORPS LANDS AT DWORSHAK. ..... - 62 -
FIGURE 11 FINAL BULL TROUT CRITICAL HABITAT (BLUE) IN RELATION TO CORPS LANDS AT DWORSHAK (GREEN BORDERED IN RED). ..... - 63 -
FIGURE 12 EXAMPLE OF EXPOSED BANKS IN DWORSHAK (IN ELK CREEK MEADOWS AREA). ..... - 70 -
FIGURE 13 EXAMPLE OF EXPOSED BANKS IN DWORSHAK (IN ELK CREEK MEADOWS AREA). ..... - 70 -
FIGURE 14 TOPOGRAPHIC CASES CONSIDERED IN ADFG'S PROPOSED BLASTING STANDARDS. ..... - 108 -
FIGURE 15 TABLE 3 FROM ADFG'S PROPOSED BLASTING STANDARDS. ..... - 109 -
FIGURE 16 TABLE 5E FROM ADFG'S PROPOSED BLASTING STANDARDS. ..... - 110 -

LIST OF TABLES

TABLE 1 HISTORIC FIRE CHARACTERISTICS OF DWORSHAK HABITAT TYPES ..... - 3 -
TABLE 2 DWORSHAK PROGRAMMATIC ACTIVITY ELEMENTS. ..... - 18 -
TABLE 3 LAND MANAGEMENT ACTIVITIES VERSUS ACTIVITY ELEMENTS. ..... - 19 -
TABLE 4 FEDERAL REGISTER NOTICES FOR FINAL RULES THAT LIST THREATENED AND ENDANGERED SPECIES, DESIGNATE CRITICAL HABITATS, OR APPLY PROTECTIVE REGULATIONS TO LISTED SPECIES CONSIDERED IN THIS CONSULTATION. LISTING STATUS: 'T' MEANS LISTED AS THREATENED UNDER THE ESA; 'E' MEANS LISTED AS ENDANGERED; "P" MEANS PROPOSED FOR LISTING OR DESIGNATION. ..... - 51 -
TABLE 5 LOWER NORTH FORK SUBBASIN BULL TROUT LIFE HISTORY USAGE (STREAMNET 2010). ..... - 56 -
TABLE 6 PRIMARY CONSTITUENT ELEMENTS (PCES) OF CRITICAL HABITATS DESIGNATED FOR BULL TROUT. ..... - 64 -
TABLE 7 CHECKLIST FOR DOCUMENTING ENVIRONMENTAL BASELINE AND EFFECTS OF PROPOSED ACTION ON RELEVANT ANADROMOUS SALMONID HABITAT INDICATORS ..... - 72 -
TABLE 8 DWORSHAK MANAGEMENT ACTIVITIES. ..... - 73 -
TABLE 9 TRACKING TABLE FOR SPECIES EFFECTS. ..... - 83 -
TABLE 10 TRACKING TABLE FOR CRITICAL HABITAT. ..... - 84 -
TABLE 11 EFFECTS DETERMINATION SUMMARY. ..... - 85 -

Glossary

ac/yr	Acres per Year
Activity	Land Management Activity (Access, Boundary, Fire, Forest, Road, Wildlife Habitat, and Recreation Management)
af	Acre-feet
AU	Assessment Unit
BMP	Best Management Practice
BO	Biological Opinion
CBTPA	Clearwater-Potlatch Timber Protection Association
CFR	Code of Federal Regulations
CHU	Critical Habitat Unit
CHSU	Critical Habitat Subunit
Corps	U.S. Army Corps of Engineers
CR	Clearwater River
CRB	Clearwater River Basin
DBH	Diameter at Breast Height
DM-15	Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat*
DPS	Distinct Population Segment
Dworshak	Corps-managed Lands at Dworshak Dam and Reservoir
EFH	Essential Fish Habitat
ESA	Endangered Species Act of 1973, as amended
ER	Engineering Regulation
ESU	Evolutionarily Significant Unit
FCA	Forest Cover Act of
ft	Feet
HUC	Hydrologic Unit Code
IDFG	Idaho Department of Fish and Game
IMM	Impact Minimization Measure
in	Inch(es)
IPIF	Idaho Partners in Flight
LC	Lower Clearwater
LNF	Lower North Fork
MPG	Major Population Group
mi	Miles
mi^2	Square Miles
MMBF	Million Board Feet of Timber
MSA	Magnuson-Stevens Fishery Conservation and Management Act
msl	Mean Sea Level
NFCR	North Fork Clearwater River
NMFS	National Marine Fishery Service
NRM	Natural Resource Management
OHWM	Ordinary High Water Mark
PCE	Primary Constituent Element
PFMC	Pacific Fishery Management Council

Program	Dworshak Natural Resources Land Management Program
PROU	Provisional Resource Use Objective
RFPA	Reciprocal Fire Protection Agreement
RHCA	Riparian Habitat Conservation Area
RM	River Mile
SR	Snake River
SRB	Snake River Basin
UCR	Upper Columbia River
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

1. Introduction

The U.S. Army Corps of Engineers (Corps) proposes to programmatically manage forest and wildlife resources within Corps-managed lands at Dworshak Dam and Reservoir (Dworshak), Clearwater County, Idaho, as part of the Dworshak Natural Resources Land Management Program (Program). The treatments will include a variety of activities that will occur on an annual basis between 2011 and 2021. Program management activities will be limited in quantity (e.g. miles, acres, etc.) each year to minimize potential adverse effects.

The proposed action is proposed as programmatic management because it is distinguished by well-defined activity types with potential adverse effects that are minor, repetitive, and predictable. Individual consultation of these actions at the project scale would produce the same overall result and not provide any additional conservation benefit.

2. Background / History

Dworshak was authorized in 1962. The 717 feet (ft) tall Dworshak Dam is a hydroelectric, concrete gravity dam in Clearwater County, Idaho, United States at river mile (RM) 1.9 on the North Fork Clearwater River (NFCR). The dam is located 4 miles (6 km) northwest of the city of Orofino, and 47 miles (76 km) east of Lewiston. Construction began in June 1966; the main structure was completed in 1972, with the generators coming online in 1973. The drainage area is 2,440 square miles (mi^2), and the maximum operating pool is at 1,600 feet mean sea level (msl). The National Marine Fisheries Service (NMFS) biological opinion (BO) for operation and maintenance of the Federal Columbia River Power Supply System (FCRPS) (NMFS 2008) requires the summer drawdown of Dworshak's reservoir to cool water in the Snake River for anadromous fish, which results in fluctuations in pool elevation. These fluctuations leave 80 to 155 ft of exposed banks in the reservoir below the ordinary high water mark (OHWM) (1,600 msl).

The gross storage capacity for the reservoir is 3,468,000 acre-feet (af), and the reservoir length (at 1, 600 msl) is 53.6 miles (mi). Dworshak has 175 mi of shoreline, and 17,090 surface acres at 1,600 msl (9,050 at 1,445 msl).

The sums of Corps lands that are part of the Dworshak operating project include approximately 46,000 acres. This includes flow easements in the Clearwater National Forest of approximately 2,150 acres, approximately 21 acres at the Dworshak Fish Hatchery in Ahsahka, and lands inundated by the reservoir. Dworshak Reservoir is surrounded by 29,318 acres of land that the Corps owns and manages, and most of which are the subject of this consultation.

Today Dworshak has five congressionally authorized purposes; Navigation, Flood Control, Hydropower, Fish and Wildlife and Recreation. Further, various laws and regulations guide how natural resources are to be managed on Corps Projects.

In the Forest Cover Act (FCA), Congress declares that lands owned in fee title by the Chief of Engineers are to be managed in such a way as to promote future resources of readily available timber. Sustained yield programs and accepted conservation practices are mentioned in the FCA

as a ways to meet this declaration. In response to the FCA, Engineering Regulation (ER) 1130-2-540 Chapter 2 states "Forest and woodland management will be applied to develop, maintain, protect and/or improve vegetation conditions for timber, fish, wildlife, soils, recreation, water quality and other beneficial uses.

Further, the new Public Use Plan for Dworshak includes Forest Management as one of several resource use objectives. It states,

> "Manage forestland along Dworshak Reservoir to meet various resource objectives, including ecosystem integrity, forest health, wildlife habitat, and recreational opportunities. Forest management actions include, but are not limited to, the following: use of large and small-scale timber sales, pre-commercial thinning, brush slashing, prescribed burning, road construction, re-construction, and demolition, planting of native plant species where necessary to meet specific management objectives."

It is the intent of the Corps to utilize the management activities listed above to meet objectives in the Dworshak Public Use Plan (USACE 2011). The forest management activities will involve what have been considered in the past large and small scale timber sales at Dworshak. These will include sales of several acres to several hundred acres of selectively-harvested timber.

2.1. Background

2.1.1. Ecosystem Integrity

In conjunction with biologists from the U. S. Forest Service (USFS) Clearwater National Forest and in concert with the Interior Columbia Basin Ecosystem Management Project (ICBEMP) recommendations (ICBEMP 1997), the Corps has concluded that current stand conditions for most stands are unnatural, unhealthy, and occurring as a result of fire suppression. The Corps has contracted with Clearwater-Potlatch Timber Protection Association (CPTPA) to suppress fires on Corps administered lands at Dworshak since 1965. Prior to 1965, CPTPA actively suppressed fires on this landscape starting in about 1905 as part of their protection area.

The ecosystem processes that historically shaped the vegetative composition, form, and structure of the regional flora consisted of deposition of ash, glaciations, flooding, landslides, wind events, and wildfire. Of these, only the effects of landslides, wind events, and wildfire have been measurably altered by human activity. Landslides have increased on forested land due primarily to road construction. The effects of wind events have also increase due to logging's affect on natural windbreaks. The effects of these processes on the vegetative composition, form, and structure of the forest stands surrounding Dworshak are considered negligible in comparison to the effects from fire suppression. Within Dworshak and the surrounding area, wildfire and its effects have been suppressed for over 100 years. Most habitat types occurring on Dworshak were historically affected by wildfire (Table 1). The past and present management action of fire suppression has drastically altered the vegetative composition, form and structure of most forest stands surrounding Dworshak and presumably all stands within the stewardship project. This is plausible based on historic fire regimes and further evidenced by the current forest conditions.

Table 1 Historic Fire Characteristics of Dworshak Habitat Types

HABITAT TYPES	ACRES	FIRE GROUP[1]	Biophysical Setting	AVERAGE FIRE INTERVAL [2]			
				All Fires	Surface	Mixed	Replacement
Ponderosa Pine/Idaho Fescue	1462	1	80531	6	8	35	125
Ponderosa Pine/Snowberry	208	1	80531				
Douglas Fir/Snowberry	13	1	1010451	21	35	60	300
Douglas Fir/Mallow Ninebark	3245	2	1010451				
Grand Fir/Mallow Ninebark	6296	2	1010451				
Grand Fir/Twinflower	81	7	1010451				
Grand Fir/Bride's Bonnett	590	7	1010453	69		100	220
Grand Fir/Wild Ginger	604	7	1010453				
Western Redcedar/Bride's Bonnett	10384	8	1010471	80		133	200
Western Redcedar/Wild Ginger	2374	8	1010471				
Western Redcedar/Oak Fern	49	8	1010471				
Western Hemlock/Bride's Bonnett	1009	8	1010471				
Western Hemlock/Wild Ginger	62	8	1010471				
Western Redcedar/Maidenhair Fern	935	9	1010471				

[1] Derived from Smith and Fischer 1997.

[2] Derived from LANDFIRE: Vegetation Dynamic Models. http://www.landfire.gov/national_veg_models_op1.php (8/12/2010)

The potential for altered vegetative characteristics as a result of fire suppression increases inversely with the average fire interval. Thus the more frequent the historic fire interval the more potential variation from natural vegetative conditions from active fire suppression. .

Many stands (Fire Groups 1 & 2) are estimated to have missed 5 – 15 fire cycles over the past 100 years. The expected measurable effects from fire suppression include; increased fuel loads, an increase in tree density and canopy closure, a shift from early to late seral tree species and an increase in the height of understory species. Most of these effects have been documented within Fire Group 1 & 2 stands. Examples of past projects designed to meet the ecosystem integrity objective include the Elk Creek Meadows Project (1219 acres) and the Little Bay Project (1288 acres selectively harvested over a 3 year period).

The Dworshak property is surrounded mostly by privately owned land. There are numerous small private landowners; however, of these, the largest landowner is Potlatch Corporation. Potlatch is a large, privately owned timber company whose primarily land management activity is commercial timber production. Dworshak also shares a common property boundary with public land managed by the State of Idaho and other federal agencies. In relation to our adjacent landowners, Corps managed land sits lower in elevation (down slope); this creates a higher potential for wildfires originating on Corps land for spread onto adjacent ownerships since fire tends to burn up slope. Thus due to the juxtaposition of the Corps lands and the missions of adjacent landowners, we do not have the option for wildland fire use as a management tool.

Based on the above discussions the Corps plans to continue to manage forest stands for ecosystem integrity which can include large or small scale timber sales, road construction and/or reconstruction, gate and barricade installation and maintenance, sign installation, prescribed fire both broadcast and pile burning, and vegetation slashing.

2.1.2. Forest Health

Forest trees compete for limited water, sunlight, and nutrients. As stands mature (succession) without disturbance they become overstocked resulting in increased competition for a limited

amount of resources. As this occurs trees become stressed and are more susceptible to disease and insect infestation. Currently many forest stands surrounding Dworshak are overstocked and are exhibiting an elevated amount of dead and dying trees resulting from disease (root rot, heart rot and other pathogens have all been observed onsite) and beetle infestation. These conditions are the cause of the safety and aesthetic concerns within recreation areas and tree health and fire danger within the multiple resource management areas.

Forest health issues are generally addressed by thinning forest stands to reduce competition for limited resources. This increases the vigor and health of individual trees and reduces their susceptibility to insect and disease outbreaks. One such project was conducted on Corps managed land surrounding Dworshak Reservoir, The Bishop-Chutes Timber Sale. The NRM Team at Dworshak plans to continue to utilize forest thinning to address forest health issues. This could include employing the following natural resource management actions; large or small scale timber sales, road construction and/or reconstruction, gate and barricade installation and maintenance, sign installation, prescribed fire both broadcast and pile burning, and vegetation slashing.

2.1.3. Wildlife Habitat

A host of native wildlife species occur on Corps managed lands surrounding Dworshak Reservoir. Conserving, protecting, and enhancing habitat for native species is a primary goal for forest management. Habitat for Rocky Mountain Elk, a regional focal species, was identified as critical for the North Fork Basin, and the loss of habitat through the creation of Dworshak Reservoir was mitigated by the Corps, Idaho Department of Fish and Game and the US Fish and Wildlife Service in the late seventies. The resulting mitigation document "Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat* (DM-15) (USACE 1977) set the direction for future elk habitat measures on Dworshak Reservoir.

The primary purpose of DM-15 was to present a plan for the development and maintenance of winter range for Rocky Mountain Elk at Dworshak Dam and Reservoir. This report established the legal mitigation lands and requirements on Dworshak Reservoir. DM-15 addressed the development of elk habitat on project lands along the upper reservoir (above Grandad Bridge). A total of 5,119 acres at the junction of the Little North Fork and North Fork of the Clearwater River were acquired for elk habitat mitigation. An additional 4,680 acres on Smith Ridge were also intended for inclusion in the Dworshak Elk Habitat Development Program, but the Corps was unable to acquire the Smith Ridge lands from the State of Idaho. The actual mitigation lands acreage comes out to approximately 6,900 acres.

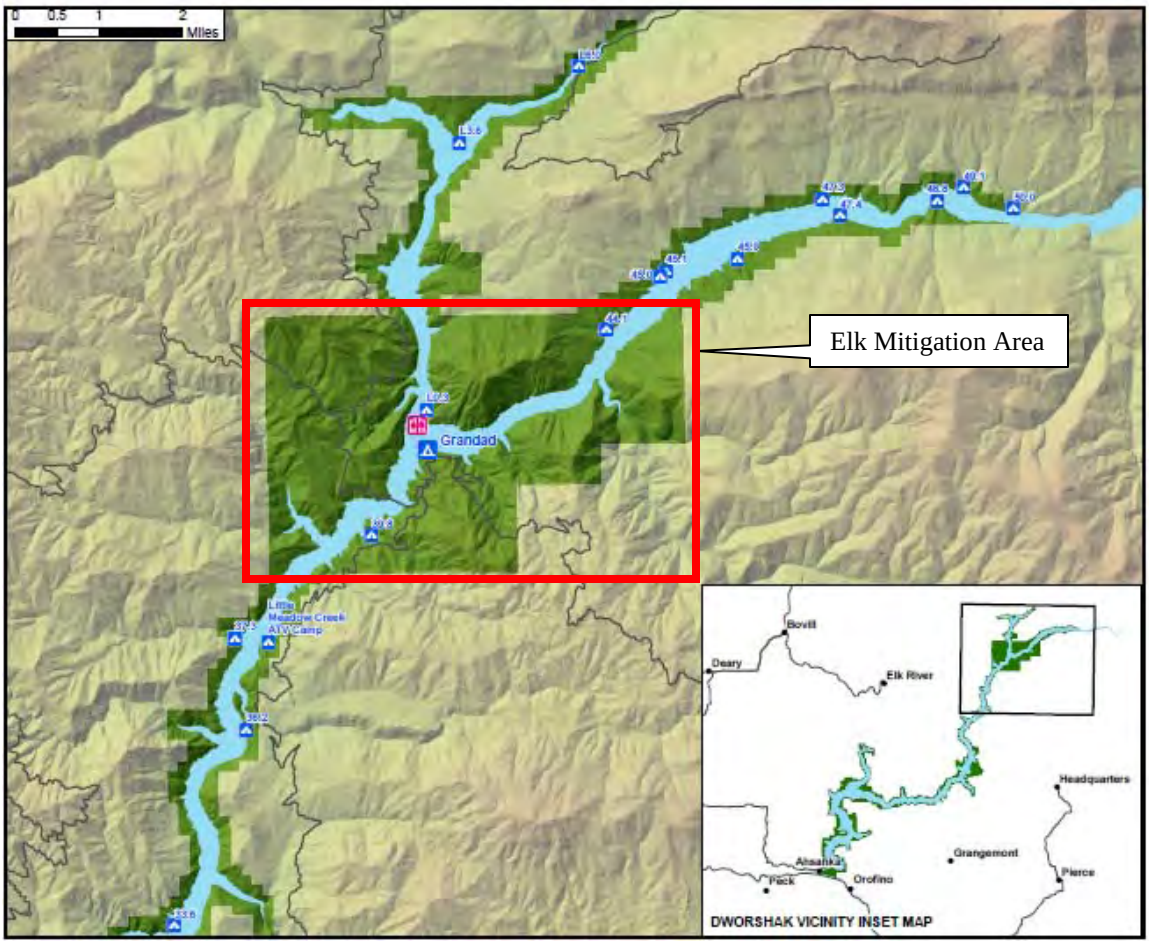
In the 1970s and 1980s, the Corps conducted extensive treatments to enhance elk habitat within the previously defined elk mitigation area (Figure 1). Thousands of acres were clear-cut and burned to optimize elk habitat and increase winter forage production. Although the treatments were highly successful, they were not enough to meet the objective of producing 915,000 pounds of browse annually. As a result, Bonneville Power Administration (BPA) acquired 60,000 acres on Craig Mountain (near Lewiston, Idaho, now Craig Mountain Wildlife Management Area) as mitigation for Dworshak Reservoir. These lands were deeded to the State of Idaho to be managed in perpetuity by the Idaho Department of Fish and Game (IDFG). In addition, millions

of dollars in trust funds were given to IDFG and the Nez Perce Indian Tribe for mitigation. A letter from the Director of IDFG in 1992 documented IDFG's consensus that 100% of the Corps' mitigation obligations were met through the purchase of these lands and the establishment of the trust funds.

Dworshak Project has harvested approximately 100MMBF over the past 30 years. The majority of the harvesting has taken place in the Grandad Elk Mitigation Area in the late 1970's through the 1980's and was accomplished in order to increase forage for wintering elk. The Natural Resource Management (NRM) Team at Dworshak continues to manage the mitigation area primarily for elk habitat.

Along with timber management, other activities have been implemented to meet objectives in DM-15. Planting and protecting redstem ceanothus (*Ceanothus sanguineus*) and other forage plants, minimizing unauthorized motor vehicle access, vegetation slashing and prescribed burning are other examples of management actions designed to meet objectives presented in DM-15. The Corps is still obligated to annually maintain the "hard core" Wildlife Mitigation Area for its designated purposes. The work of improving elk habitat within the mitigation area and throughout the reservoir continues today. Both IDFG and the Corps are committed to maintaining the mitigation area for the purposes for which it was purchased and managed. Future management actions to improve habitat for elk and other species include large or small scale timber sales, road construction and/or reconstruction, gate and barricade installation and maintenance, sign installation, prescribed fire both broadcast and pile burning, and vegetation slashing.

Figure 1 Dworshak elk mitigation area.



2.1.4. Recreational Opportunities

Forest management actions are often required to facilitate the construction and maintenance of recreational facilities. Timber sales were a significant portion of the original establishment of all recreational facilities constructed originally. Few new facilities have been construction since the original development. In the recent past forest management actions for recreation has focused on maintenance for safety and aesthetics. In 2005 the Viewpoint Timber Sale was executed to enhance recreational facilities at the Viewpoint and more projects are being planned (e.g. Canyon Creek Timber Sale). The maintenance of existing recreational facilities will continue and could include small scale timber sales, road construction and/or reconstruction, gate and barricade installation and maintenance, sign installation, prescribed fire both broadcast and pile burning, and vegetation slashing. ESA consultation for new recreation facilities will be addressed in subsequent documents.

2.2. Project History

In the past, Dworshak's Program has been conducted under individual plans, and has been managed, in general, at the project scale. This approach has resulted in several consultations that have involved similar activities, with similar effects, and added workload, both to the Services

and the Corps. The Corps intends to minimize consultation-related workload for the Corps and the Services, while producing the same overall result through a programmatic approach to management, and programmatic consultation.

2.3. Documentation of Relevant Correspondence

The design of this Program has been accomplished through great effort and coordination between the Dworshak Natural Resource Team, and the Corps' Environmental Compliance Section. Numerous emails, telephone calls, and exchange of information have facilitated the development of this Program.

2.4. Supplemental Information

Supplemental information may be found in the Dworshak Reservoir Public Use Plan, available at: http://www.nww.usace.army.mil/planning/er/dworshak/pub-use-plan.pdf

2.5. Federal Action History

The construction of Dworshak Dam and Reservoir was authorized for flood control and other purposes under Section 201 of the Flood Control Act of 1962, Public Law (PL) 87-874, approved 23 October 1962. The Federal Water Project Recreation Act of 1965 (PL 89-72, 89th Congress, 1st Session, dated 9 July 1965), as amended, established recreation potential at Dworshak Dam and Reservoir as a full project purpose.

- Endangered Species Act Section 7(a) (2) Consultation Biological Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on Remand for Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10(a) (I) (A) Permit for Juvenile Fish Transportation Program (Revised and reissued pursuant to court order, *NWF v. NMFS*, Civ. No. CV 01-640-RE. (D. Oregon)) May 5, 2008. The FCRPS BO requires the Corps to draw down the reservoir level in early July each year to facilitate fish outmigration. This policy has been in place, and has continued each year since 1992, with only minor adjustments in timing.

The Corps has conducted projects similar to the proposed action around Dworshak on Corps owned, and some adjacent property. These projects are:

- Grandad Boat Ramp Extension Project, Clearwater County, Idaho-Biological Assessment USFWS File #352.3215.02 1-4-02-1-722 HUC #17060308 is complete.

- Little Bay Stewardship Project (Little Bay Stewardship Project adjacent to Dworshak, Orofino, Clearwater County, Idaho, Biological Assessment USFWS File # 351.3040 0ALS #1-4-01-1-787 and File # 351.3040 OALS #1-4-02-1-415) is complete.

- Elk Creek Stewardship Project (Elk Creek Meadows Stewardship Project, Clearwater County, Idaho – Concurrence, USFWS File #351.3040 OALS #1-4-05-1-754, dated 2

September 2005) has not yet been fully implemented. Vegetation has been cut and timber thinning has occurred on the Elk Creek project selected units. Burning has not taken place to date on selected burn units due to constraints involved with burning and the narrow burn window within each burn season.

- Ahsahka Stewardship Project (Ahsahka Stewardship Project-Clearwater County, Idaho-Concurrence USFWS File #352.0000 14420-2011-1-0019 dated 16 November 2010)(Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Ahsahka Stewardship Project, Clearwater River, Clearwater County, Idaho, HUCs 1706030601, 1706030606, and 1706030612 (one project), dated 16 December 2010, NMFS No. 2010/05314) has had section 7 consultation completed, and is awaiting implementation.

- Canyon Creek Recreational Facilities Enhancement Project –Clearwater County, Idaho-Concurrence USFWS File #352.0000 14420-2011-I-0039 received 10 January 2011. This project has not yet been implemented.

3. Project Description

3.1. Authority

Many of the activities subject to this consultation are authorized by the February 2011 Dworshak Reservoir Public Use Plan (USACE 2011).

Authority to manage Dworshak natural resources and to conduct timber harvest in support of a variety of project purposes is supported by the Dworshak Final Environmental Impact Statement (USACE 1975a);

> "In general, a well-managed forest is healthy and disease resistant. In order to maintain thrift in a forest, stand density must be controlled by thinning in younger stands. This will accomplish three objectives; release for thrifty growth; provide ground cover with forage value for wildlife; open the stand for visual and walking pleasure for the recreationist."
>
> "The North Fork Clearwater supports a considerable number of big game animals. The ability of the reservoir shorelands to support these animals during the winter months can be improved by manipulating the forest and brush canopy."
>
> "In order to develop the boat-in recreation sites, the road access recreation sites classed as future development, remote minicamp sites, foot access trails, and allow for disease control, wildlife habitat, and removal of unsafe trees, an estimated 7,000,000 board feet of saw logs annually will be produced in excess of requirements for reservoir operations."

Authority also comes from the Forest Cover Act (P.L.86-717).

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is hereby declared to be the policy of the United States to provide that reservoir areas of projects for flood control, navigation, hydroelectric power development, and other related purposes owned in fee and under the jurisdiction of the Secretary of the Army and Chief of Engineers shall be developed and maintained so as to encourage, promote, and assure fully adequate and dependable future resources of readily available timber, through sustained yield programs, reforestation and accepted conservation practices, and to increase the value of such areas for conservation, recreation, and other beneficial uses: Provided, That such development and management shall be accomplished to the extent practicable and compatible with other uses of the project.'

Agency guidance for implementing land management activities on the project includes Engineering Regulation 1130-2-540, dated 15 Nov 1996, *Management of Natural Resources and Outdoor Recreation at Civil Works Water Resource Projects.*

"- Forest and Woodland Management. The Forest Cover Act provides a statutory mandate for multiple use forest management, or other vegetative cover management, on project lands and waters. Forest and woodland management will be applied to develop, maintain, protect, and/or improve vegetation conditions for timber, fish, wildlife, soils, recreation, water quality, and other beneficial uses."

"- Fish and Wildlife Management. Section 2 of the Forest Cover Act provides authority for the Corps to manage project lands and waters for any or all conservation purposes, including fish and wildlife conservation. The Corps will conduct fish and wildlife management activities which seek to maintain populations of targeted wildlife species through the manipulation and management of habitat. The Corps will coordinate and conduct its program in conjunction with other Federal, state, and local agencies having fish and wildlife management responsibilities using a variety of techniques including the placement of artificial structures and other practices."

"Wetlands Management. The Forest Cover Act provides for the development of other vegetative cover, such as wetlands, so as to yield maximum benefit and otherwise improve such areas". "Existing wetlands will be protected, conserved, and maintained. The development and maintenance of wetlands should integrate the needs of fish and wildlife and support national programs and efforts associated with the Endangered Species Act."

"Enhancement. PL 89-72 provides for the consideration of fish and wildlife enhancement opportunities at Corps water resources development projects. Enhancement measures/activities are those measures/activities taken above a stewardship level (i.e. level required to sustain fish and wildlife resources for the life of the project), and those measures/activities which produce an increase or concentration of animal numbers for the purpose of recreational benefits."

There are 18 provisional resource use objectives established for Dworshak (USACE 1996a). Several of the objectives focus on the forest resources of Dworshak. Objective number 11 explicitly states the need to "maintain a healthy forest ecosystem." The rationale to support this objective comes from the Forest Cover Act (Public Law 86-717) that provides for the protection of forest cover for reservoir areas that fall under the jurisdiction of the Chief of Engineers. It states that reservoir areas will be developed and maintained to assure future resources of available timber and to increase the value of such areas for conservation, recreation, wildlife, and other beneficial uses. To the extent practicable, such development and management would be accomplished in a manner compatible with other project uses. In order to carry out this national policy, the Corps will provide for the sustainable development of forest resources, as well as the establishment and maintenance of other conservation measures on reservoir areas so as to yield the maximum benefit and otherwise improve such areas.

The Corps has the authority to plan and execute fire pre-suppression and suppression activities based on Provisional Resource Use Objective (PRUO) 12 established by the CORPS and approved by the Chief of Operations.

Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat* (DM-15) (USACE 1977) presented a plan for the development and maintenance of winter range for Rocky Mountain Elk at Dworshak Dam and Reservoir. This report established the legal mitigation lands and requirements on Dworshak Reservoir. The Corps is still obligated to annually maintain the “hard core” Wildlife Mitigation Area for its designated purposes.

Recreation is one of five congressionally authorized purposes for Dworshak. The Federal Water Project Recreation Act of 1965 (PL 89-72, 89th Congress, 1st Session, dated 9 July 1965), as amended, established recreation potential at Dworshak Dam and Reservoir as a full project purpose. This purpose is primarily to enhance and/or maintain recreation amenities. Further, there are 18 provisional resource use objectives established for Dworshak (USACE 1996a). Several of the objectives focus on the recreational facilities and opportunities. Others discuss forest resources and aesthetics. Objective number 2 explicitly states the need to "provide and enhance camping and day use opportunities and facilities."

3.2. Project Area and Action Area

3.2.1. Footprint

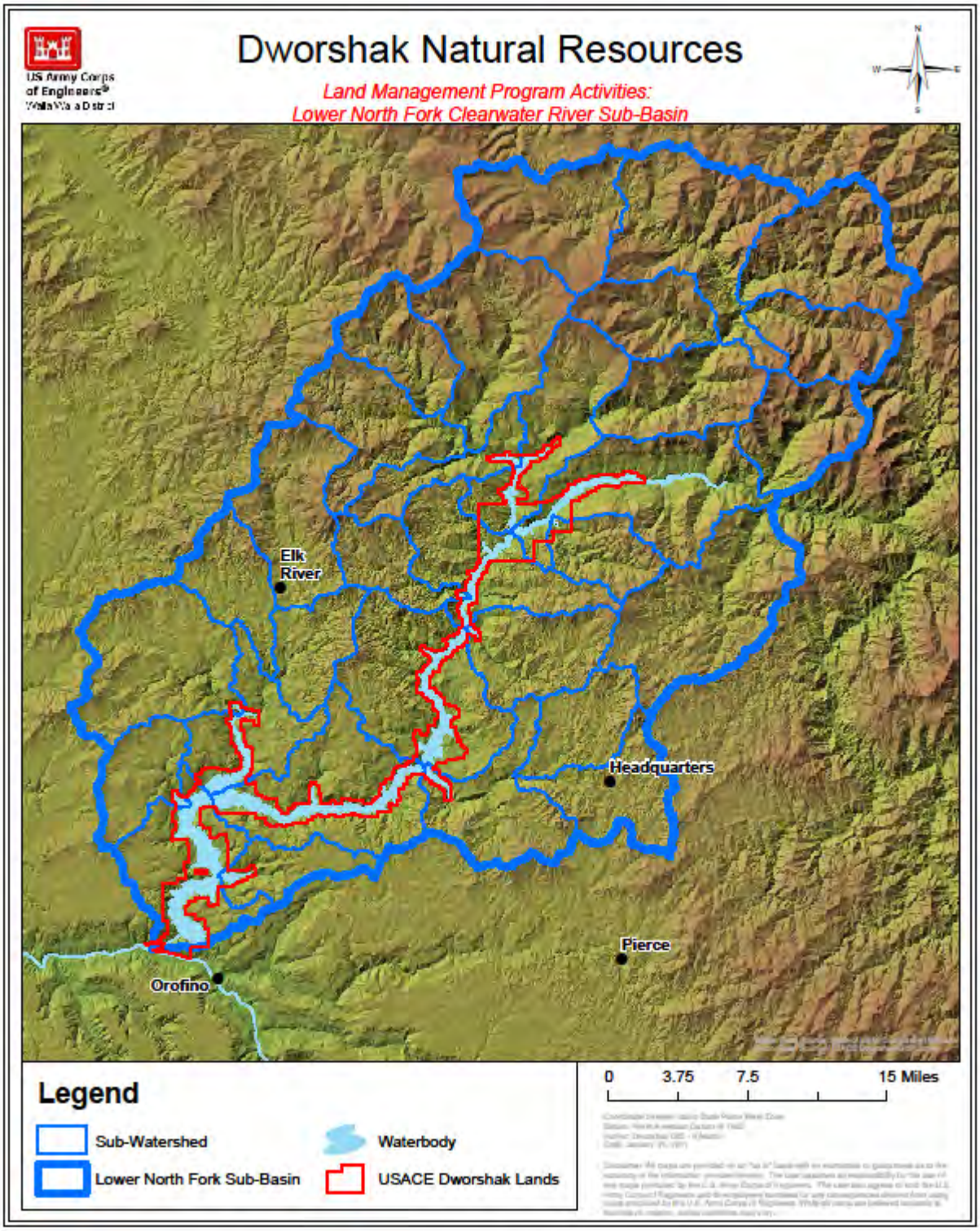
The footprint for the proposed action includes all Corps managed lands in the vicinity of Dworshak Dam and Reservoir in Clearwater County Idaho, except for those lands that drain directly into the North Fork Clearwater and Clearwater rivers downstream of Dworshak Dam. The footprint is, therefore, confined to the areas that drain directly into Dworshak Reservoir.

Those lands that drain directly into the North Fork Clearwater and Clearwater rivers were consulted on for the Ahsahka Stewardship Project. Beyond that consultation, the Corps does not envision any of the proposed work in this document being conducted in that area in the foreseeable future.

3.2.2. HUC, Township, Range, Section

The proposed action is in the Lower North Fork Clearwater subbasin (HUC 17060308) (Figure 2). The proposed project is located along the NFCR, in and around Dworshak upstream of Dworshak Dam.

Figure 2 HUC 17060308 and Dworshak project lands.



3.2.3. Quantification of Area Potentially Affected

The maximum area potentially affected on an annual basis is limited by quantities proposed, but may occur in any location in the 29,318 acres of land of Dworshak managed by the Natural Resource Team that drains into the reservoir.

Areas in and around Dworshak that drain into the North Fork Clearwater or Clearwater rivers, and not into the reservoir, are not included as part of the proposed action. Areas that were consulted on in the Ahsahka Stewardship Project are also not included at this time.

3.2.4. Action Area

The action area includes all Corps managed lands at Dworshak that drain directly into Dworshak Reservoir. The action area specific to bull trout is confined to Dworshak Reservoir (defined by 1,600 msl), and some free-flowing areas of reservoir tributaries above 1,600 msl, which includes: approximately 2,200 ft of free-flow Little NF Clearwater River (containing bull trout), a 1,500 ft section of free-flowing portion of Breakfast Creek, 600 ft of Reeds Creek, and 800 ft of Silver Creek. There is no free flowing portion of the NF Clearwater River on Corps lands. All free flowing portions are outside the action area. Floodwood Creek (containing bull trout) is outside of (and approximately 2/3 mi. upstream of) the Corps boundaries, and is outside of the action area (S. Martin, personal communication, November 4, 2011).

3.3. Project Purpose and Objectives

The primary purposes for this action are to enhance ecosystem integrity, forest health, wildlife habitat, and recreational opportunities. Safety and aesthetics are the primary focus for treatments within recreation areas, including high density recreation areas and primitive campsites (i.e. minicamps). In order to meet the purposes of the Dworshak Natural Resources Land Management Program (Program), the Program has been divided into the following management categories, or "activities."

- Access and Trails Management
- Boundary Management
- Fire Management
- Forest Management
- Road Management
- Wildlife habitat management
- Recreation

Each activity has specific goals and objectives that are designed to meet the purposes of the Program. The goals and objectives are outlined in the following.

3.3.1. Access and Trails Management

Goals:

- To reduce negative impacts to fish and wildlife habitat and non-motorized recreational users from unauthorized motorized access by actively managing access on Project lands. This active management will include public education, Title 36 enforcement and constructing, installing and maintaining access control structures designed to reduce and/or eliminate unauthorized access.
- To maintain and improve the existing trail system for non-motorized recreational trail users.
- To seek new opportunities for alternative access and recreational trail activities including but not limited to motorized, equestrian, and biking opportunities where the resource ecology and the public support.

Objectives:

- Actively manage access along the project boundaries to reduce negative impacts to fish and wildlife habitat and non-motorized recreational users from unauthorized motorized access.
- Public education and enforcement through the use of Title 36, Code of Federal Regulations, Part 327.
- To enhance user safety and recreational experience, perform maintenance activities including but not limited to clearing and brushing of the trail corridor, maintenance of the tread surface, installation and maintenance of bridge structures, surface water control structures, retaining structures, switchbacks and signage.
- Construct, install, and maintain access control structures to prevent unauthorized motorized access.
- Seek new opportunities for improved access for approved alternative methods, (motorized, horse, hike, bike, etc), where the resource and the public support.
- Work to improve existing access and prevent degradation of the resource.
- Respond to customer demands with analysis of access requests.

3.3.2. Boundary Management

Goals:

- To prevent unintentional trespass and negative impacts associated with timber trespass and other unauthorized use of government property by visually identifying property ownership through the surveying, marking and posting of the project boundary, sharing data with adjacent land owners, public education, and enforcement.
- Continue efforts to monument project boundary and cooperate with adjacent landowners to create opportunities for the sharing of data and costs for common boundary surveys.

Objectives:

- Prevent unintentional trespass and negative impacts associated with timber trespass and other unauthorized use of government property by visually identifying property ownership.

- Continue efforts to monument the Project boundary and cooperate with adjacent landowners.
    - Develop cooperative boundary plans with landowners adjacent to Corps land.
    - Share survey data, where applicable.

3.3.3. Fire Management

Goals:

- To maintain a fire protection system for lands managed by the Corps at Dworshak.
- To provide wildland fire prevention, detection, pre-suppression, and suppression capability resulting in no closures of the public access to Dworshak Reservoir.
- To limit all wildland fires to no more than two (2) acres in size in NFDRS fuel model "C"[1] and no more than one (1) acre in size in NFDRS fuel model "G"[2] (USFS 1999).
- To maintain trained fire suppression personnel in an available and ready status.
- To maintain fire suppression equipment to initiate first attack capability as well as provide limited extended attack capability.
- To maintain accurate continuous fire weather data. And to prevent all wildfires initiating on Corps property from crossing onto adjacent properties.
- To safely use a controlled fire to emulate the effects of a natural wildfire within a given habitat type in order to accomplish a set of desired outcomes as prescribed for the benefit of wildlife, forest health, fire fuels reduction and/or ecosystem integrity.

Objectives:

- Minimize the negative effects of wildfires, including impacts to the recreating public and to federal property, by maintaining a fire protection system capable of providing wildland fire prevention, detection, pre-suppression, and suppression.
- Use prescribed burning as a tool to help meet the ecological, wildlife, and forest health objectives of the project.
- Maintain several trained fire suppression personnel in an available and ready status.

3.3.4. Forest Management

Goals:

- Manage forestland along Dworshak Reservoir to meet various resource objectives including ecosystem integrity, forest health, wildlife habitat, and recreational opportunities. All forest management actions shall be designed such that ecosystem

[1] Open pine stands typify Model C fuels. Perennial grasses and forbs are the primary ground fuel but there is enough needle litter and branchwood present to contribute significantly to the fuel loading. Some brush and shrubs may be present but they are of little consequence. Situations covered by Fuel Model C are open, longleaf, slash, ponderosa, Jeffrey, and sugar pine stands. Some pinyon-juniper stands may qualify.

[2] Fuel Model G is used for dense conifer stands where there is a heavy accumulation of litter and downed woody material. Such stands are typically overmature and may also be suffering insect, disease, wind, or ice damage -- natural events that create a very heavy buildup of dead material on the forest floor. The duff and litter are deep and much of the woody material is more than 3 inches in diameter. The undergrowth is variable, but shrubs are usually restricted to openings. Types meant to be represented by Fuel Model G are hemlock-Sitka spruce, Coast Douglas-fir, and windthrown or bug-killed stands of lodgepole pine and spruce.

management principles are applied, aesthetics are preserved, and environmental degradation is minimized.

Objectives:
Provisional Resource Use Objectives (PRUO's) for Dworshak reservoir were established in 1990 to provide interim direction for the management of natural resources prior to the update of the Project Master Plan. The following PRUO's directly relate to forest management and were used as guidance during the development of this plan, particularly the goals and objectives.

- PRUO 1-Preserve the integrity, stability, and aesthetic beauty of the ecological community through comprehensive management, responsible care of public lands, waters, and resources, and (full and equal consideration of all alternatives and members of the community)
- PRUO 3-Provide an aesthetic, safe boating environment and enhance boating activities on the lake
- PRUO 4-Optimize fishing and hunting opportunities on project lands and waters
- PRUO 7 -Provide mitigation for fish and wildlife habitat losses caused by construction of the project
- PRUO 11-Manage project forest resources on a sustained development basis in light of other RUOs
- PRUO 12-Provide well planned and executed fire prevention, pre-suppression, and suppression programs

- Manage forestland along Dworshak Reservoir to meet various resource objectives, including ecosystem integrity, forest health, wildlife habitat and recreational opportunities. Forest management actions will include, but are not limited to, the following:
    - Use of large and small-scale timber sales
    - Pre-commercial thinning
    - Brush slashing
    - Prescribed burning
    - Road construction and re-construction
    - Planting of native plant species where it is necessary to meet specific management objectives

3.3.5. Road Management

Goals:
- Establish and execute a road system and maintenance schedule that that meets project transportation needs and prevents resource damage.

Objectives:
- Manage the road system within Project boundaries to meet transportation needs and prevent resource damage through inventory, assessment, construction, and maintenance of all roads.

- Classify all existing roads based on existing and desired future use, and maintain accordingly.
- Review property boundaries and potential points of new access, and post property ownership and/or rules accordingly. Numerous old logging and homestead roads exist throughout the Project. Many of these old roads are essentially closed, and not authorized for motorized use. Some old roads are discovered and used by the public when timber harvest activities occur near the Project.
- Consider and evaluate opportunities for future use and development.

3.3.6. Wildlife Habitat Management

Goals:

- Maintain the elk mitigation area for its intended purposes in DM 15.
- Conserve, protect, and/or enhance habitat for Rocky Mountain elk throughout Corps managed land surrounding Dworshak Reservoir at a watershed scale.
- Conduct forest management in such a way as to preserve, protect and/or enhance habitats for native wildlife species.

Objectives:

- Conserve, protect, restore, and/or enhance habitat and habitat components important to the survival and proliferation of threatened, endangered, special status, and other regionally important species on Project lands.
- Continually assess Dworshak's "Priority Habitats" based on the habitat needs of these and other native species present at Dworshak (ponderosa pine ecosystems; old growth forest communities; western white pine communities; isolated palustrine wetlands; and critical elk habitat).
- Combine information from the assessment of priority habitats with management objectives to initiate suitable forest management actions.
- Use objectives as guidelines when forest management actions are planned for other purposes.

3.3.7. Recreation Management

Goals:

- Manage forests with lands designated as recreation to enhance aesthetic value and reduce safety hazards.

Objectives:

- Remove trees within designated recreation areas that pose a notable threat to the recreation public.
- Conduct timber harvest and vegetation slashing to improve current and future conditions for public safety and aethetics.

3.4. Project Activities

Program management activities can be further broken down into Program management activity "elements." Program activities and their associated activity elements are listed in Table 2, along with maximum annual quantities (e.g. miles, acres, etc.) for each activity element.

Table 2 Dworshak programmatic activity elements.

Dworshak Programmatic Activity Elements	Maximum Quantity per Year
Access and Trails Management	
Gate and/or Barricade Installations	5 per year
Gate and/or Barricade Modifications	5 per year
Gate and/or Barricade Refurbishing	10 per year
Sign Installation/Maintenance	20 per year
Fence Repair and Maintenance	5 miles per year
Fence Removal	5 miles per year
Trail Corridor Brushing and Tread Maintenance	50 miles per year
Bridge Installation/Maintenance	5 per year
Surface Water Control Structure Installation/Maintenance	50 per year
Boundary Management	
Boundary Monument Installation	5 miles per year
Fire Management	
Broadcast Burning	1,000 acres a year
Pile Burning	100 piles per year
Slashing and/or Pruning	200 acres per year
Fire Lines	25 mini camps (approx. 1.25 mi), designated burn units
Forest Management	
Selective Harvest	750 acres a year
Road Management	
New Construction	5 miles per year
Road Reconstruction	15 miles per year
Road Maintenance	50 miles per year
Road Obliteration	2 miles per year
Road Demolition	1/4 mile per year
Culverts	50 per year
Wildlife Habitat Management	
Wetland Enhancement	2 per year
Planting	1,500 plants per year
Recreation Management	
Recreation Foot Trails	10 miles per year

Management activities at Dworshak are very interrelated. Activity elements have been identified for each management activity based on what activity an element falls into the majority of the time. However, any of the activity elements may occur as part of other management activities from time to time. For example, road management activities will occur as part of routine road management, but will also occur as part of fire management, forest management, and may even occur as part of recreation.

For illustration purposes, and to help demonstrate the interrelated nature of activity elements, an "X" has been placed in a box in Table 3 for each activity element (shown in the left column) that

may occur as part of a given management activity (Access, Boundary, Fire, Forest, Road, Wildlife Habitat, Recreation Management).

Table 3 Land management activities versus activity elements.

Management Activity							
Activity Element	**Access**	**Boundary**	**Fire**	**Forest**	**Road**	**Wildlife**	**Recreation**
Gates	X			X		X	X
Signs	X			X		X	X
Fences	X						
Trails	X						X
Monumentation		X					
Broadcast Burning			X	X		X	X
Pile Burning			X	X		X	X
Slashing and/or Pruning			X	X		X	X
Fire Lines			X	X		X	X
Selective Harvest			X	X		X	X
Snag Removal			X	X	X		X
Road Construction			X	X	X	X	X
Road Reconstruction			X	X	X	X	X
Road Maintenance	X	X	X	X	X	X	X
Road Obliteration	X		X	X	X	X	
Road Demolition	X		X	X	X	X	X
Culverts			X	X	X	X	X
Planting			X	X	X	X	X
Wetland Enhancement						X	

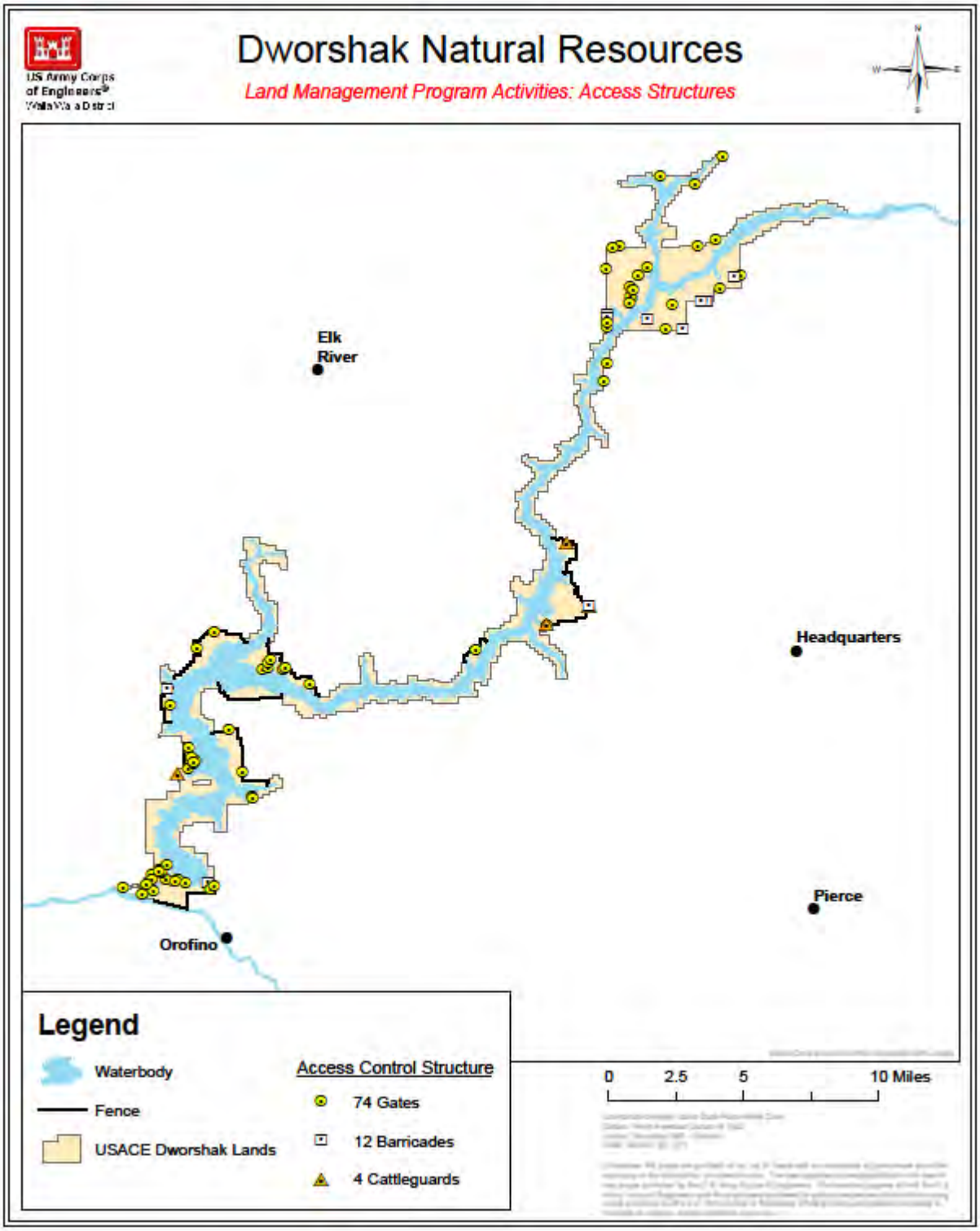
The following is a description of each project activity, and its associated element(s).

3.4.1. Access Management

Access to Dworshak managed lands is controlled by signage, gates, barricades, other physical barriers, fences, and boundary management (Figure 3). Access Management activities may occur throughout Corps-managed lands at Dworshak.

Access management is also important for ensuring access for fire management. This would include building and installing access control structures (gates and barricades) as well as posting the area fire danger ratings and the associated restrictions.

Figure 3 Access structures.



3.4.1.1. Gates

Gates are located at various locations on the boundary of the Corps' property, as well as within project lands. The primary purpose of the gates is to keep vehicles out of lands not open to vehicle use, but they also provide security in places.

3.4.1.1.1. Gate/Barricade Installation

The Corps proposes to install up to 5 gates per year. This will occur in previously disturbed areas using either equipment or hand tools. Gates will be placed into a hole dug with hand tools or machinery. Dirt will be tamped in place around the gate, and the hole will likely be filled with concrete to set the gate in position.

3.4.1.1.2. Gate/Barricade Modification

The Corps proposes to modify 5 gates per year. This will include routine repairs that would not warrant replacing the entire gate (i.e. welding on a wing).

3.4.1.1.3. Gate/Barricade Refurbishing

The Corps proposes to refurbish up to 10 gates or barricades per year. This will include routine activities that do not include modifying or replacing the gate (e.g. sanding, painting, and hanging signs).

3.4.1.2. Sign Installation/Maintenance

The Corps proposes to install or maintain up to 20 signs per year. This includes digging a post hole with hand tools up to 42 inches (in) deep, and placing the post. Post placement will be accomplished through tamping dirt, and may include filling the hole with concrete to prevent the post from falling, or being removed.

3.4.1.3. Fences

Dworshak contains approximately 34.4 miles of fencing. The project boundary incorporates 30.9 miles of this fencing, while the other 3.6 miles of fencing are located inside the project to provide security, guidance, and barriers. Due to the rough terrain, fencing the entire project would not be cost effective.

Inventory of existing and abandoned fences is ongoing, and numbers and locations of existing fences, both in use, and abandoned, will be updated as the inventory progresses.

3.4.1.3.1. Fence Repair/Maintenance

The Corps proposes to repair or maintain up to 5 miles of fence per year. This will include replacing metal t-posts or wooden posts. Because of the types of fencing used at Dworshak, and the type of terrain, fencing is installed primarily with hand tools.

3.4.1.3.2. Fence Removal

The Corps proposes to remove up to 5 miles of old fence per year. This will be done in steep terrain with hand tools, and is incidental to normal fence repair/maintenance.

3.4.1.4. Trails

Access to Dworshak Reservoir includes a complex system of roads and trails that serve both project operations and the public. There are also hiking trails in different areas around the lake where the topography allows. Most hiking trails provide access to the reservoir; however, drawdowns create exposed banks that are difficult to negotiate in most areas. There are networks of old logging and homestead roads throughout the reservoir lands, most originating beyond Dworshak boundaries and overgrown with vegetation. Some may be of value for future transportation routes or trails. As such, in 2005, the Corps evaluated the possibility of introducing ATV trails on Dworshak lands, and included the development of the development of motorized trails in the Public Use Plan for Dworshak (USACE 2011).

Fishing and hunting take place year round at Dworshak. Any vehicle capable of travel over snow is allowed on designated trails as they cross through Dworshak project boundaries. Currently there are no Corps designated snowmobile trails within project boundaries other than those that are a part of designated trail systems that cross project lands. Snowshoeing and cross country skiing are permitted on all Dworshak lands.

The tables in the following discussions are taken directly from the Public Use Plan (USACE 2011), and their numbering does not coincide with the rest of this document.

Recreation trails are emerging as important outdoor recreation facilities at Dworshak Reservoir (Table 2-11 from the Public Use Plan). Walking, jogging, and bicycling are all popular activities along the reservoir. Prior to the development of the Public Use Plan (USACE 2011), the trails on the project were only authorized for nonmotorized use.

Table 2-11. Dworshak Trail Inventory

Trail Type	Length	Difficulty
Hiking		
Merry's Bay Trail	1.5 miles one way	easy to moderate
Big Eddy Trail	10 miles one way	easy to moderate
Canyon Creek Trail	1.5 miles one way	easy to moderate
Cold Springs Trail	5.5 miles one way	easy to moderate
Dent Trail	1.8 miles one way	easy to moderate
Placid View Trail*	.5 miles loop	easy
Ocean Spray Trail*	2 miles loop	easy to moderate
*Part of Dworshak State Park outgranted to the Idaho Parks and Recreation.		
Horse -None designated, but currently allowed on all hiking trails		
Bike -None designated, but currently allowed on all hiking trails		
OHV -None designated --Little Meadow Creek ATV trail is a current pilot project that is being used to test impacts of ATV on the environment.		

At Dworshak, there has been a demand to use old logging road and trails for ATV use. In many places, ATV users have used these roads and created unauthorized trails (Figure 4). These trails now show signs of erosion, and there are other negative effects on the natural resources of the area (Photos 4). Although gates have been installed and trails closed, ATV users can easily find other routes to access the trails they have been using.

Figure 4 Unauthorized motorized trails at Dworshak.

The new Public Use Plan (USACE 2011) will restrict motorized access to designated trails, and all areas will be considered closed to motorized traffic unless posted as open.

Motorized access on approved trails will be allowed in, and restricted to, designated areas deemed appropriate and necessary by the Corps. All motorized access is subject to seasonal or

permanent closure based on road conditions, the presence of important species that would be impacted by the presence of motorized vehicles, or other reasons deemed appropriate by the Corps.

Any unauthorized trails will be considered an encroachment or trespass, and will be closed until such time as the trail may be evaluated for its potential to become a designated trail. Any trail designated on Dworshak lands will not be reserved for exclusive use, and must be open to general public access.

Proposed motorized trails will be evaluated for environmental compliance, implementation feasibility, and public acceptability prior to approval and construction. If deemed feasible trails will then be constructed to be a class 3 or 4 type trail as classified by the United States Forest Service. The following tables give guidance for general trail construction and motorized trail construction. For more detailed information on the US Forest Service trail planning, construction, and maintenance guidelines see FSH 2309.18

Table 6-2. General Trail Guidance

Trail Attributes	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail
General Criteria **Physical Characteristics to be Applied to All National Forest System Trails**		
Tread & Traffic Flow	• Tread obvious and continuous • Width accommodates unhindered one-lane travel (occasional allowances constructed for passing) • Typically native materials	• Tread wide and reltively smooth with few irregularities • Width may consistently accommodate two-lane travel • Native or imported materials • May be hardened
Obstacles	• Obstacles infrequent • Vegetation cleared outside of trailway	• Few or no obstacles exist • Grades typically <12% • Vegetation cleared outside of trailway
Constructed Features & Trail Elements	• Trail structures (walls, steps, drainage, raised trail) may be common and substantial • Trail bridges as needed for resource protection and appropriate access • Generally native materials used in Wilderness	• Structures frequent and substantial • Substantial trail bridges are appropriate at water crossings • Trailside amenities may be present
Signs	• Regulation, resource protection, user reassurance • Directional signs at junctions, or when confusion is likely • Destination signs typically present • Informational and interpretive signs may be present outside of Wilderness	• Wide variety of signs likely present • Informational signs likely (outside of Wilderness) • Interpretive signs possible (outside of Wilderness) • Trail Universal Access information likely displayed at trailhead

Table 6-3. General Motorized Trail Guidance

Trail Attributes	Trail Class 3 Developed/Improved Trail	Trail Class 4 Highly Developed Trail
	Additional Criteria for Motorized Trails **Apply in addition to Trail Class General Criteria**	
Motorized Trails **Motorcycle/ ATV** **(etc.)**	• Trail wide and suitable for one lane and occasional two-lane passage for managed use types. • Occasional moderate tread protrusions and short awkward sections, which require speed and maneuvering adjustments. • Tread infrequently graded. Obstacles cleared if they substantially hinder the managed use and difficulty level. • Tread surface generally native materials, with occasional on-site fill or imported materials, if more stable surface is desired. • Crossings may be wet fords; likely with hardening and armoring or simple bridges for resource protection and to ensure appropriate access. • Trails have frequent markers and are readily followed. • Signing size and type appropriate for managed speeds and potential nighttime use (signs likely reflectorized).	• Trail wide and suitable for the managed use type, and may consistently accommodate two-way passage. • Tread surface generally smooth with only small protrusions, which moderately affect speed and ease of travel. (Some roughness may be desired and incorporated to control/limit speed.) • Tread graded as needed. • Tread surface may include imported aggregate or intermittent paved sections if more stable surface is desired. • Crossings are typically either hardened or armored or a substantial bridge. • Recommended speeds or speed limits may be posted. • Trails have frequent markers and are easily followed. • Signing size and type appropriate for managed speeds and potential nighttime use (signs reflectorized).

Trails will be considered in locations where land use classifications permit, and they provide safe access to mini-camps or other recreation features around the reservoir. In addition, some desired trails may be part of a larger regional trail system. The designated trails will primarily follow old logging or homestead roads, although some shared roads may be considered. Potential ATV trails will only be permitted in areas classified as Recreation, Multiple Resource Management, Low Density Recreation; Multiple Resource Management, Wildlife Management; and Multiple Resource Management, Vegetation Management as updated in the land classifications presented in Section 5 of this report. Trails will not be allowed in areas classified as Environmentally Sensitive or Mitigation, unless on main public access roads already in use in those areas. Future ATV trails must not have significant impacts to other known sensitive habitat areas or other areas of significant ecological importance. Future trail planning efforts and accompanying Corps environmental compliance procedures will evaluate the effects of each proposed ATV trail. General trail construction guidelines are included in the following paragraphs. Specific trail criteria may be prescribed by the Corps for each trail, depending on location.

The purpose of ATV trails will be primarily to access mini-camp locations or other recreation features. No large loop trails are envisioned on Corps property due to topography constraints,

noise, and impacts to wildlife and environmentally sensitive areas. Recreational ATV use will only be allowed on designated trails, and no cross-country travel will be permitted. No ATV use will be permitted on exposed banks below the full-pool water mark, although some areas may be considered for designation as an area acceptable for ATV transport from boat to shore at all water levels. Not all mini-camps will be accessible by trail, even when topography and environmental factors allow. In some locations, mini-camps will be preserved for boat access only, or as possible equestrian or walk-in mini-camps.

All ATV trails will be opened on a seasonal basis, as determined by Corps staff. The trails will be monitored and evaluated annually, and may be closed at any time based on trail conditions, use, or other environmental requirements.

Areas that have been identified by Corps staff and the public as appropriate for designated ATV access include Elk Creek Meadows, Little Bay, Swamp Creek, Mini- Camp 26.0 (near Magnus Bay), Evans Creek, and Boehls Fire Camp. These areas were determined to be appropriate locations; however, additional study will be necessary before any of these areas may become a designated ATV route. Other areas may also be appropriate for designation, but are not identified at this time. Section 1.8.1 contains a description of the evaluation process for potential sites prior to development and designation.

Table 6-4. Trail Specifications for ATVs

Designed Use ALL-TERRAIN VEHICLE		Trail Class 3	Trail Class 4
Design Tread Width	Single Lane	60"	60" – 72"
	Double Lane	96" – 108"	96" – 120"
	Structures (Minimum Width)	60"	60"
Design Surface	Type	• Native with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 3" May be common, not continuous	≤ 3" Uncommon, not continuous
	Obstacles (Maximum Height)	6" May be common, left for increased challenge	3" Uncommon
Design Grade	Target Grade	5% – 15%	3% – 10%
	Short Pitch Maximum	25%	15%
	Maximum Pitch Density	15% – 30% of trail	10% – 20% of trail
Design Cross Slope	Target Cross Slope	3% – 8%	3% – 5%
	Maximum Cross Slope	10%	8%
Design Clearing	Height	8' – 8'	8' – 10'
	Width (On steep side hills, increase clearing on uphil side by 6" – 12")	60" – 72"	72" - 96"
	Shoulder Clearance	6" – 12"	12" – 18"
Design Turn	Radius	8' – 10'	8' – 12'

Dirt bikes will be allowed on all designated ATV trails. A dirt bike is defined as a two-wheel, single-rider motorcycle. Dirt bikes must remain on the trail and no cross-country travel will be permitted. Specific trails for dirt bikes only will be evaluated under similar requirements as ATV trails, when public input and desire warrants such studies.

Full-size vehicles are currently permitted only on designated roads within Corps project boundaries. Future access points for full-size vehicles will be evaluated on a case by case basis.

The design guidelines and environmental conditions will be evaluated in a similar manner to that of an ATV trail (Table 6-4), with the understanding that impacts from a full-size vehicle will be more significant than an ATV due to size and weight.

Areas identified by Corps staff and the public to be appropriate areas for full-size vehicle access include Little Meadow Creek ATV Camp, Camp 26.0 at Magnus Bay, Evans Creek, Elkberry Creek, and Boehls Fire Camp. Additional study will be necessary before any of these areas could become a designated route for full-size vehicles. Other areas may also be appropriate for designation, but have not been identified at this time.

Table 6-5. Trail Specifications for Motorized Vehicles Greater than 50 Inches

Designed Use FOUR-WHEEL DRIVE VEHICLE > 50"		Trail Class 3	Trail Class 4
Design Tread Width	Single Lane	72" – 96"	96" – 120"
	Double Lane	16'	16'
	Structures (Minimum Width)	96"	96"
Design Surface	Type	• Native, with some onsite borrow or imported material where needed for stabilization, occasional grading • Intermittently rough • Sections of soft or unstable tread on grades < 5% may be present	• Native, with imported materials for tread stabilization common, routine grading • Minor roughness • Sections of soft tread not common
	Protrusions	≤ 8" May be common and continuous	≤ 4" May be common and continuous
	Obstacles (Maximum Height)	24" Common, left for increased challenge	12" Uncommon
Design Grade	Target Grade	5% – 18%	5% – 12%
	Short Pitch Maximum	20%	15%
	Maximum Pitch Density	10% – 20% of trail	5% – 10% of trail
Design Cross Slope	Target Cross Slope	5% – 12%	5% – 8%
	Maximum Cross Slope	12%	8%
Design Clearing	Height	8' – 8'	8' – 10'
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")	72" – 96"	96" - 144"
	Shoulder Clearance	6" – 12"	12" – 18"
Design Turn	Radius	15' – 20'	20' – 30'

Given the nature of the terrain around Dworshak, and the myriad of trail types on Dworshak, the necessity may arise to use explosives to remove rocks and other hard surfaces that cannot be altered by conventional methods.

Once a trail is identified for blasting the work would include the following:

- Exact locations of each hole will be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.
- Holes will be dug into the soil using either a rock bar or a post-hole digger.
- Explosives will be placed in the holes; charges may be tied together, and set off.
- Explosives will be discharged in such a manner as to adhere to the best management practices mentioned below for fish protection.
- Guards and warning signs will be posted during the entire blasting procedure.

See Appendix B for BMPs.

All trails will be maintained on at least an annual basis and probably on a bi-annual schedule with maintenance performed in the spring and in the early fall and for any weather event such as high winds that could cause extreme amounts of downfall on any given trail system.

The Corps proposes to create/maintain up to 25 miles of recreation trails per year

3.4.1.5. Bridge Installation/Maintenance

Bridges, for the purposes of the Dworshak Natural Resource Activities, are recreation trail bridges. These bridges are typically found on foot trails around the reservoir and are generally made of logs, or wood materials, and span intermittent (seasonal) streams that are non-fish bearing. An example of the types of bridges found on recreation trails at Dworshak can be seen in Figure 5. Pre-treated wood (i.e. pressure treated) will be used in bridge construction. However, only those woods treated in the BMP manner will be used for construction. Also, to minimize impacts to aquatic environments, installations will occur during work windows of low to no-flow stream periods to minimize the potential for leaching into streams.

Figure 5 Typical bridge on recreation trails at Dworshak.

Most of the work done on these bridges in with hand tools, as the terrain precludes the use of machinery. Materials may be dropped in by helicopter or carried in.

The Corps proposes to install/maintain up to 5 bridges per year.

3.4.1.6. Surface Water Control Structure Installation/Maintenance

These structures are for the purposes of reducing wash-outs and erosion of trails. They may include the installation of culverts similar to those used for roads, but smaller, and on intermittent stream crossings along recreation trails.

The Corps proposes to install/maintain up to 50 water control structures per year.

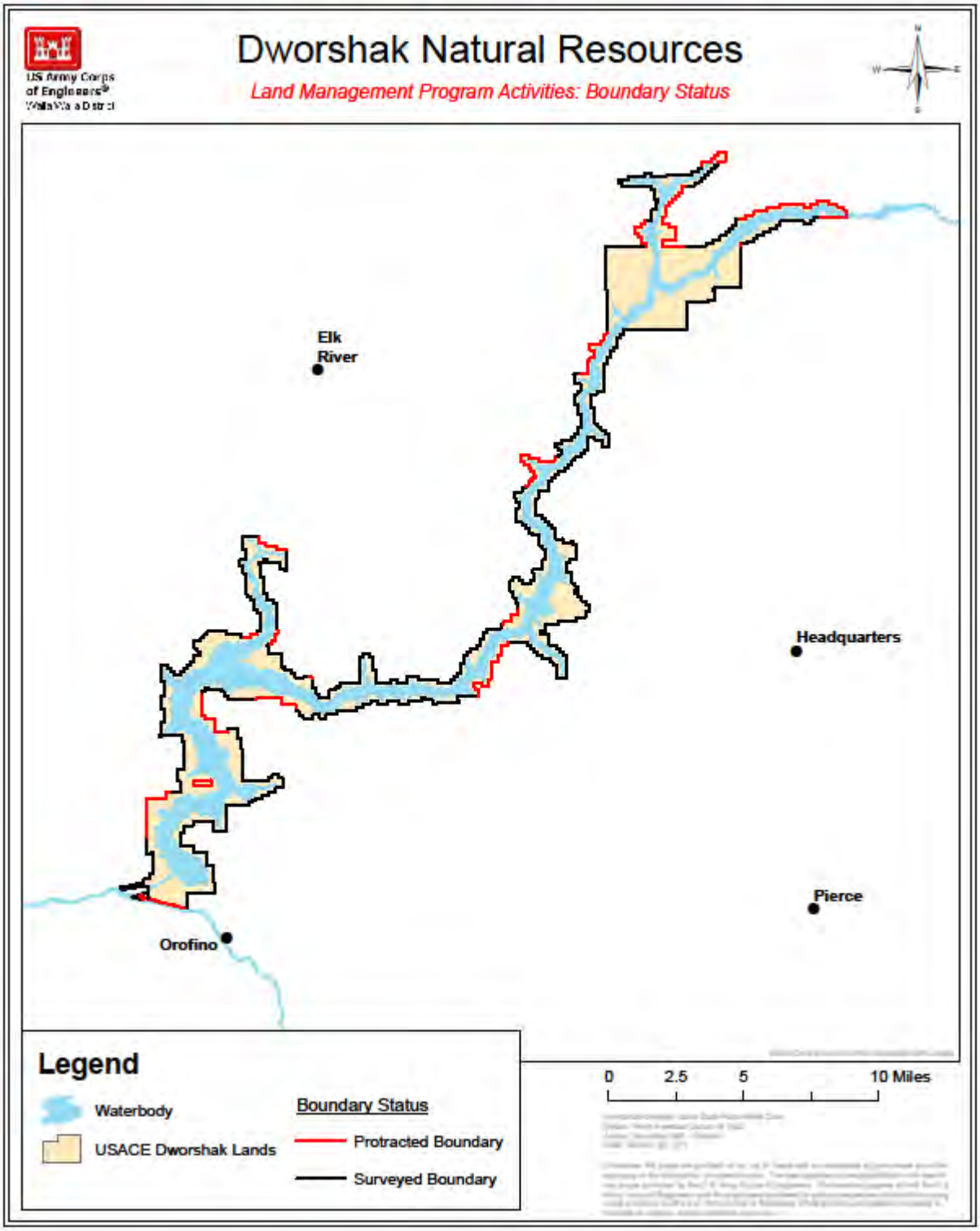
3.4.2. Boundary Management

The monumentation on the Dworshak boundary serves both the project and the public by identifying Dworshak lands. Approximately 74 percent of project lands are monumented (Figure 6). However, despite the monumentation, encroachment problems exist, primarily due to livestock and timber trespass. In addition, the frequency of encroachment issues is on the rise, due to an increase in private ownership of lands adjacent to the reservoir. Timber has been cut in

order to create views of the lake; and ATV riders from adjacent lands cut fences, break and/or cut gate locks, and create trails on Corps lands.

Inventorying of existing boundary monumentation is ongoing, and numbers and locations of existing monuments will be updated as the inventory progresses.

Figure 6 Boundary status.



3.4.2.1. Boundary Monumentation

The purpose for surveying, marking, and posting the Corps boundary is to prevent unintentional trespass and other unauthorized uses of government property by visually identifying property ownership. Lack of identified markings allows the public to go onto cut trees, and until there is a legally recognized boundary in adherence with federal and state cadastral laws and regulations, the Corps will have a hard time defending any enforcement actions.

Dworshak has 184 miles of boundary. Of that, approximately 140 miles has been surveyed, marked, and posted. That leaves 44 miles of boundary. On average, approximately 1 to 2 miles of that boundary is surveyed per year, with a maximum of 4 miles per year surveyed.

The following paragraph describes the common activities associated when a boundary survey occurs:

> Utilizing GPS, the land surveyor establishes control points to establish a known location. When the locations of the control points have been determined to a suitable level of accuracy, the surveyor then executes a traverse. Usually, this is accomplished by using the path of least resistance between two points. For example, the surveyor will use existing roads that parallel the boundary setting up a tripod with a total station to measure the distance between set-ups. The surveyor then continues to measure these distances until reaching the other control point. The surveyor gets from point A to B by foot and sometimes, if they're lucky, by using ATV's on established roads and trails. No ground disturbance would occur from this activity. It is possible that a line would be brushed out between set-ups. After calculating the position of the true boundary line, the surveyor then brushes out the true line, sets the monumentation in accordance with the BLM's Manual of Surveying Instructions, and then drives aluminum posts in the ground within a visible interval or at a maximum of 200 feet between boundary posts. All work is accomplished with the use of hand tools. No motorized equipment is used in this process. The monumentation is usually set in a hole approximately two feet deep by eight inches in diameter. These holes are dug with the use of hand tools such as shovels, bars, and clamshell shovels.

The Corps proposes to monument up to 5 miles of the Dworshak boundary per year.

3.4.3. Fire Management

The Corps can be held financially responsible for fires that escape project lands and burn onto an adjacent landowner's property. For this reason, in 1986, the Corps entered into a Reciprocal Fire Protection Agreement (RFPA) with the State of Idaho, Department of Lands to provide wildland fire protection and suppression for project lands. Recently this agreement has been replaced with a contract. The State meets all requirements of the RFPA through the use of the Clearwater-Potlatch Timber Protection Association (CPTPA).

Snags will be protected as wildlife habitat to the greatest extent practicable, unless a snag presents a safety hazard to operation personnel, in which case it will be removed.

There will be up to several years of planning associated with any given prescribed burn, but the potential exists for any area of Dworshak lands to be within a burn unit.

3.4.3.1. Prescribed Burning

Prescribed burning is an efficient and effective way to enhance ungulate forage, to reduce fuel loads and to create seedbeds for the natural regeneration of conifers or planting. It's been used very successfully around the reservoir to meet each of the above objectives for wildlife habitat improvements and to meet ecological restoration objectives. Wildfire is a natural ecological process and prescribed burning, if executed appropriately, can effectively emulate that process.

The Corps plans to continue using prescribed fire to meet a variety of forest management objectives. Our prescribed burning program currently utilizes the knowledge and expertise of CPTPA to accomplish our large prescribed burns. Small burns may be conducted by Dworshak staff. This will continue to be our direction unless the situation warrants a change. .

Today the Corps has the responsibility to continue to manage the elk mitigation area for its intended purposes. This requires periodic treatments to ensure that suitable winter forage is available. One such treatment necessary for the development of suitable winter range is prescribed fire. Many of the preferred browse species, especially redstem ceanothus, require heat scarification of the seed coats to bring about germination. The Corps must use prescribed fire in order to adequately meet its mitigation requirements.

Prescribed fire will also be used in ecological restoration projects. Burns will be implemented where appropriate to reach a desired future condition through emulating the natural effects of wildfire. In order to meet ecological objectives in dry forest types, prescribed fire will typically follow logging. Timber sale units or portions of units, which contain habitat types that historically received frequent under-burns and have the appropriate conditions, will be proposed for prescribed burning. Post harvest conditions such as the juxtaposition and amount of ground fuel will determine the potential to conduct an effectual prescribed burn (Kilgore and Curtis, 1987).

Although it is more expensive, trees will be topped and limbed in place to allow for more fuels on the ground to bring about an effective prescribed burn. Prior to human fire control methods, historic fires in the area likely took place in the heat of August. Prescribed burning in August to emulate natural fires would be dangerous, as temperatures and relative humidity would make controlling the burn extremely difficult. Therefore, by leaving more ground fuels a safe and effective the burn can occur in the fall. This way the fire behavior will be similar to natural fire conditions, but will be easier to control due to lower ambient temperatures, higher relative humidity, and higher fuel moistures.

Prescribed burning will occur after vegetation has been thinned and selected trees harvested. Selected units will be lit by drip torch and, in some cases, by helicopter. Burns will likely occur no earlier than September and no later than November 15. If conditions do not warrant a safe burn (e.g., conditions are not within temperature, fuel moisture, and relative humidity levels that

allow for a safe and controllable burn), the burning will be delayed until the burn season of the following year. A unique approved burn plan will be created for each prescribed burn. They will be created cooperatively by the Corps and/or the CPTPA.

Burning will most likely occur between September 1 and November 15, but specific environmental conditions in which a safe and effective prescribed burn can occur may vary based on fuels, slope, weather, aspect and other factors, which may push the burn dates outside of the identified dates one way or another.

Prescribed burning includes controlled broadcast burning and pile burning.

3.4.3.1.1. Broadcast Burning

Broadcast burning is the act of applying fire in a prescriptive manner over a broad area, typically over several acres. Broadcast burning at Dworshak is, at no time, uncontrolled. Broadcast burning, as part of prescribed treatments, is used at Dworshak for a variety of reasons including; reduce fuel loading, improve wildlife habitat and to restore ecological forest condition. The Corps generally conducts broadcast burning in the fall, but occasionally executes these burns in the spring. It involves ignition, control, and patrol. Ignition can be accomplished with a variety of tools (i.e. drip torch, propane torch, helitorch). Control really involves keeping the fire within prescription regarding intensity and location. However, in the unlikely event that a fire burns out of prescription, it is considered a wildfire, and is treated as such. Thus the best way to describe control is readiness. It includes having people and equipment available, some examples are; firefighting crews with hand tools (e.g. pulaski, shovels, McLeod), dozers, water truck, fire engines, and hose-lays with pumps. The fire is then monitored or "patrolled" for up to several days following the burn to ensure that it does not spread outside of the designated burn area.

Assessment of the environmental conditions (fuel moisture, relative humidity, ambient air temp, wind speed, and direction) of the site will be conducted prior to each burn. This is typically done multiple times prior to ignition, usually every week or so as conditions start looking favorable. The conditions will then be assess 24 hours before ignition and again right before ignition.

The Corps proposes to broadcast burn up to 1,000 acres per year in designated burn units.

3.4.3.1.2. Slashing and/or Pruning

Additional optional work includes brush slashing and pile burning. All brush slashing will be done by hand.

Slash resulting from the harvest operation will be lopped and scattered to facilitate use of prescribed fire. Maximum average slash depth after lopping and scattering is not expected to exceed 18 inches. Scattering of slash will be done to create a uniform fuel bed to successfully carry the fire and to reduce potential for crown fires. Native seral conifer species require mineral soil scarification to germinate (Steele and Geier-Hayes 1995, Schubert 1974). In some areas, where excessive fuels are generated by the lop and scatter prescription or in units where the historic fire regime did not consist of frequent under-burns, slash may be dozer-piled and burned

to reduce fuel loads. Scarification produced by dozer piling should prepare a seed bed for future browse regeneration and native seral conifers. Upon completion of the timber sale, all debris and slash at the landings will be machine piled and burned. The landing site will then be seeded with a native grass seed mix and fertilized.

The Corps proposes to perform slashing and/or pruning of up to 200 acres per year.

3.4.3.2. Pile Burning

In many places, slash will be gathered into piles, where it will be burned. Slash piling will typically be accomplished by heavy machinery, but may, at times, be done by hand, depending on the topography.

Pile burning includes the ignition, control and patrol of burning piled woody debris. Piles of woody debris are most often created to consume/remove logging slash (tree tops and limbs). They are always ignited in the late fall or winter when wildfire risk is very low. Ignition is typically accomplished with either drip torches or propane torches.

Like broadcast burning, pile burning reduces fuel loading in a more controlled fashion, but doesn't promote as much forage seed germination as the burn covers less area. Piles will be ignited during cool moist weather, late fall and winter, to reduce the potential for fire to spread.

The Corps proposes to burn up to 100 slash piles per year.

3.4.3.3. Fire Lines

The Corps proposes to annually restore a total combined length of approximately 1.25 miles of fire lines (firebreaks) around up to 25 designated camp sites (minicamps).

Fire lines will also be created around designated burn units to the minimum extent necessary as needed for burning. Fire lines will be cleaned out around designated camp sites in order to prevent the unintentional spread of camp fires outside of designated camp sites in the event that a fire gets out of control of campers.

Additional fire prevention work around mini camps involves: cleaning and removing organic materials from around fire grills, tent pads, and picnic tables.

This will include "brushing out" the fire lines around a maximum of 25 mini camps as designated by the Corps each year. This will include cutting down all over hanging brush and trees less than 6 inches DBH for a horizontal distance of five (5) feet on both sides of the center of the fire line and to a vertical distance of ten (10) feet above the ground level. Trees greater than 8 inches DBH within the "Brush out" zone shall be pruned to a height of eight (8) feet the entire circumference of the tree. Slash that is created shall be scattered to a safe distance outside the fire lines. Slash will not be scattered over or on any access trail leading to or from the camp site. Locations of the camps to receive fire line brushing will be designated by the NRM Team prior to the commencement of the general mini-camp maintenance work each year.

Fire lines around designated burn units will be constructed using bull dozers and hand tools to prevent the spread of fire to outlying areas. These breaks will be re-seeded to native grasses following management activities.

The fire lines around designated burn units will be created prior to burning the unit as part of the burning process, and to prevent the unintentional spreading of fire outside of the designated burn unit. Once fire management activities cease in a given burn unit, the fire lines will be reseeded with native seed. Fire line Rehabilitation work around designated burn units may be done by CPTPA as well. This work may include pulling fire line materials back into the area it was cleared from for line construction, grass seeding the area within the fire perimeter, construction of erosion control measures, etc.

3.4.4. Forest Management

The Corps utilizes timber harvests and other active forest management tools to meet resource use objectives. Timber harvesting for ecological restoration and forest health will primarily involve thinning overstocked forest stands, and is not for the purposes of clearing, nor will it clear the landscape of trees. However, small clear-cuts (less than 5 acres) may be used in areas of extensive insect or disease infestations to promote forest health. Selected harvesting will be used to allow for promotion of a healthier and more natural ecosystem that should eventually reflect historic conditions around the reservoir. Trees selected for removal will be primarily smaller trees, allowing for better health and continued growth of well established individual trees. Attention will be given to the optimal distance between trees, allowing for better root expansion and development, as well as moisture uptake ability by the root systems.

The objective within select recreational areas will be to remove all trees posing a risk to recreationalists (hazard trees) and thin the smaller diameter trees to improve aesthetics and reduce fuel loading. For select multiple resource management areas, the overstory will be thinned selecting for the removal of trees showing evidence of disease and/or beetle damage and are less resistant to wildfire. Trees posing a safety risk to loggers will also be selected for removal. Following harvest, the slash may be piled and burned, broadcast burned, or not treated.

Areas for treatment will be selected by the project Forester in consultation with the Dworshak Wildlife Biologist. A new GIS vegetation layer for Dworshak is currently in production. Under a Memorandum of Understanding, the Bureau of Land Management completed a comprehensive forest inventory of Dworshak. They completed their inventory (777 plots) and submitted a final report in 2009. The data will now be used as ground truth data for a remote sensing based classification using the latest satellite imagery to create a detailed forest inventory. With the GIS forest vegetation layer, Dworshak staff will be able to more easily identify areas with overstocked forest stands exhibiting elevated amounts of disease and insect infestations. Prior to the development of the final GIS layer, the current data will be used to the same end, but will be more time consuming.

Areas selected for treatment will undergo a more detailed forest inventory (timber cruise) to evaluate the potential for a small or large scale timber sale. It is anticipated that most areas

selected for treatment will include the selective harvest of timber and a timber sale. Timber harvest without a timber sale, such as pre-commercial tinning, may be used as an option. Timber harvests may include several harvest and yarding methods including "in-woods" processing, tractor yarding, cable yarding, and/or helicopter yarding. Treating slash may include hand or machine piling or scattering and pile or broadcast burning.

Forest stands throughout Dworshak in need of ecological restoration, forest health treatment and/or recreation facilities maintenance or enhancement will be identified by the project Wildlife Biologist and Forester in consultation with the Dworshak recreation staff if appropriate.

Snags will be protected as wildlife habitat to the greatest extent practicable, unless a snag presents a safety hazard to operation personnel, in which case it will be removed.

3.4.4.1. Selective Harvest

Trees for retention within harvest units will be identified through marking and all other merchantable trees within the harvest units will be available for harvest using a tractor, line skidder or, in some cases, a helicopter. Helicopter logging will be used only when necessary due to the added production expense. Harvest on steep slopes exceeding 40 percent will use helicopters and line skidding machines to yard logs to landings where they will be prepared for truck transport to mills. Helicopter yarding greatly reduces ground disturbance on steep slopes and reduces the need for roads and log landings in the immediate area.

The Corps proposes to selectively harvest up to 750 acres per year (ac/yr), which includes pre-commercial thinning. Pre-commercial thinning is basically forest thinning, cutting down trees, without taking the logs to market. Pre-commercial thinning is typically conducted on young overstocks stands in which cutting down the smaller subordinate trees will improve the forest health and particularly increased the vigor of the remaining larger trees. The Corps may put out a timber sale contract for over 1,500 acres at one time, but the harvest will occur over several years.

3.4.5. Road Management

The road management program primarily focuses on the maintenance of existing roads and associated drainage structures. However, road management activities will also be implemented as part of Access, Boundary, Fire, Forest, Wildlife Habitat, and Recreation Management. Work associated with the Program will require the use of existing primitive, gravel, and paved surface roads. Existing roads and historic road beds will be utilized during the proposed projects to the maximum extent possible. However, there will likely be the need for some additional access in areas that have no current or historic roads.

All projects will seek to provide access and haul roads first using any existing maintained roads, second maintaining and/or reconstructing existing roads and lastly constructing new roads. Nearly all roads either reconstructed or newly constructed will be temporary. Most will be grass seeded and have erosion bard installed once temporary use has seized. Others will be obliterated or decommissioned.

To accommodate timber harvests, roads will generally be used to gain access, to transport logs to the mill, and for landing areas. For selected treatment areas all existing roads will be evaluated and mapped using GPS. Where slopes exceed 40percent helicopter yarding will be used to transport logs to selected landings.

Roadwork will require the use of heavy equipment (e.g. dozers, tractors, excavators, and road graders).

Dworshak has approximately 16.2 miles of paved roads, 27.3 miles of gravel roads, and 95.7 miles of dirt roads. These figures are for all the Dworshak roads and includes roads in out-grants and roads not maintained by the NRM Team. Inventorying of existing roads is ongoing, and numbers and locations of existing roads, both in use, and abandoned, will be updated as the inventory progresses. Road Management maps are located in Appendix A.

3.4.5.1. New Construction

The construction of new roads will require the felling of timber at least 20 feet on either side of the road centerline. Clearing and grubbing will remove all trees, logs, brush, stumps, roots, slash, and other woody debris and materials embedded in the ground. The road width (running surface) for both new and reconstructed roads will be 14 feet. The cut slope is cut down and leveled out to form the subgrade width with a proper fill slope ration (common is 1 ½:1). All native and gravel surfaced sale area roads will be one lane with pullouts appropriately sized for log trucks. Pit run rock will be applied to the native surface in areas that are steep or poorly drained and at all live water crossings.

New construction includes work associated with associated ditches, other surface drainage and culvert installation for the proper functionality of the roads.

Roads to be constructed or maintained for natural resource management activities, such as harvest operations, may require blasting of rocks and other hard surfaces that cannot be altered by conventional methods. The potential for this work is extremely low as generally rocky outcroppings and the like are nearly always avoided during road layout. However, the possibility that a particular rocky outcropping cannot be avoided and must be blasted exists, but is remote.

Once a road is identified for blasting the work would include the following:

- Exact locations of each hole will be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.
- Holes will be dug into the soil using either a rock bar or a post-hole digger.
- Explosives will be placed in the holes; charges may be tied together, and set off.
- Explosives will be discharged in such a manner as to adhere to the best management practices mentioned in Appendix B for fish protection.
- Guards and warning signs will be posted during the entire blasting procedure.

See Appendix B for BMPs.

The Corps proposes up to 5 miles of new road construction per year. Annual averages may be as little as 1 mile, but may be as much as 5 miles in a year associated with a timber sale.

3.4.5.2. Road Reconstruction

Road reconstruction will consist of reconditioning and preparing the roadbed and shoulders, cleaning and shaping drainage ditches, trimming vegetation from cut and embankment slopes, and cleaning, repairing, and upgrading the drainage structures of existing roads. It also includes work for associated ditches, other surface drainage, and culvert installation. Subsequent to project completion, all roads and skid trails will be barred and grass seeded to reduce the potential for erosion. Roadbed surfaces in RHCAs will be graveled to limit suspended sediment. Sediment capture devices will be installed between work areas and streams to prevent escapement of sediment into the streams.

The Corps proposes up to 15 miles of road reconstruction per year.

3.4.5.3. Road Maintenance

Road maintenance work includes adding gravel, blading, brushing, and ditch and culvert clean-out. It also includes maintenance of the road's associated ditches and other surface drainage, and may include placing new layer of crushed gravel.

The Corps proposes to maintain up to 50 miles of roads per year.

3.4.5.4. Road Obliteration

Road obliteration is the process of re-contouring a road surface to match the surrounding landscape thus rendering the road inconspicuous for the purpose of removing any and all existing culverts, constructing drainage dips (water bars) into the road surface, and seeding all disturbed and exposed soil with a native grass seed mix once completed. The roadbed will then be allowed to re-vegetate naturally over time. The fill material will then be dug up and placed back onto the road surface along with any additional material needed to restore the natural contour of the adjacent slope. This may also include placing brush, slash, and logs on the finished surface to reduce future erosion. All disturbed and exposed soil will then be seeded with a native grass seed mix once completed. The resulting area will then be allowed to re-vegetate naturally over time. This work is generally done with heavy equipment such as; a rubber tired backhoe, an excavator, dozer, etc."Roads and or trails or portions of each to be obliterated will be evaluated and selected by the Natural Resource Specialist charged with access management in consultation with Dworshak's Wildlife Biologist.

Roads will be obliterated typically for one of two purposes. The first and probably most often reason is to return the road surface back to a natural state for a host of reasons (provide natural habitat, prevent future maintenance needs, minimize risk of erosion etc.). The second is to prevent unauthorized motor vehicle access. The biggest reason is to get it off of the Corps' inventory if it's not planned for use, so that the road does not need to be maintained.

Roads will be obliterated using a variety of sources including; Corps NRM staff, a contractor, or the construction division. It could be any road, but would typically be roads that that were recently created and aren't planned for use again for a long time, or may be very old roads that haven't been used for a long time.

Road obliteration will likely involve the use of heavy machinery (typically an excavator) and/or explosives. Explosives would largely only be used on the demolition (described below) of small sections of road to prevent unauthorized motor vehicle access and where vehicle access is limited.

It also includes removal of all drainage structures, (surface and culverts), recontouring slope, possible planting of trees and brush species, and reseeding of the disturbed area with native seed.

Once a road is identified for blasting the work would include the following:

- Exact locations of each hole will be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.
- Holes will be dug into the soil using either a rock bar or a post-hole digger.
- Explosives will be placed in the holes; charges may be tied together, and set off.
- Explosives will be discharged in such a manner as to adhere to the best management practices mentioned in Appendix B for fish protection.
- Guards and warning signs will be posted during the entire blasting procedure.

See Appendix B for BMPs.

The Corps proposes up to 2 miles of road obliteration per year

3.4.5.5. Road Demolition

Road demolition is the act of using heavy equipment or explosives to place a large hole in the road surface or to completely destroy a small section of the road to prevent vehicle passage. Road demolition will include the use of explosives for the purposes of removal of all drainage structures, (surface and culverts), re-contouring slope, and possible planting of trees and brush species. This will prevent unauthorized motor vehicle access and where vehicle access is prohibited. Demolition has also been defined as "decommissioning" of roads in previous plans and specifications at Dworshak. "Decommission" is the process of returning to an old existing road only for the purpose of removing any and all existing culverts, constructing drainage dips (water bars) into the road surface, and seeding all disturbed and exposed soil with a native grass seed mix once completed. The roadbed will then be allowed to re-vegetate naturally over time. The idea is that the individual road is either not anticipated to be used in the foreseeable future, or is deemed to be unserviceable due to failures that may have occurred in the past. The road may be reclassified as a trial at this point. This work is generally done with heavy equipment such as; a rubber tired backhoe, an excavator, etc.

There is a large volume of unauthorized motor vehicle use on Corps land surrounding Dworshak Reservoir resulting in negative impacts to soils, vegetation, wildlife, water quality and aesthetics as well as having the potential to affect resident fish and aquatic ecology, recreation, cultural resources and ESA-listed species. The Dworshak access management program utilizes one or a combination of education, signage, and physical barriers (when necessary) to prevent unauthorized access. Many of these are gates and barricades, which require annual inspection and maintenance. Obliterating all or portions of roads and trails could be used to prevent unauthorized access at a lower maintenance cost. Road obliteration may be the only physical barrier option in areas where access is limited. In these cases explosives will be used to obliterate a portion of these roads.

The Corps proposes up to 1/4 mile of road demolition per year

3.4.5.6. Culverts

Any culverts that may be installed in the vicinity of Dworshak Reservoir will be above the OHWM of the reservoir, typically in ephemeral streams. No ESA-listed fish bearing streams will have culverts installed in them. Dworshak's Wildlife Biologist reviewed the tributaries identified in StreamNet (2010), and they are all much bigger streams than would be crossed for access. .

Culvert work will include repair of existing culverts, replacement of existing culverts, or installation of new culverts.

There are currently approximately 500 culverts on Corps-managed lands at Dworshak. Inventorying of the culverts is ongoing, and numbers and locations of existing culverts, both in use, and abandoned, will be updated as the inventory progresses.

Pipe culverts and pipe-arch culverts will be bedded on a selected granular or fine readily compactable soil material having a depth of not less that 10 % of the diameter or height of the drainage structure concerned. The types and sizes of culvert will be site specific and will be wide enough to accommodate a 100-year flood. Culverts will be laid in the stream bed and clean fill will be placed over them. Fill width will be limited to the minimum necessary to complete the crossing, and the fill will not reduce existing stream widths. Manipulation of the stream banks will be limited to the culvert sites. Materials needed for construction will be obtained from and stored outside of the riparian habitat conservation areas (RHCAs).

Culvert work includes cleaning inlets, outlets, and rebuilding catch basins as needed.

The Corps proposes installation of up to 50 culverts per year

3.4.6. Wildlife Habitat Management

3.4.6.1. Wetland Enhancement

The primary purpose for wetland enhancement is to improve Dworshak wetlands for breeding amphibians, resulting in increased reproductive success. Idaho Partners in Flight (IPIF) has designated non-riverine wetlands as a high priority habitat, and established an objective of obtaining a net increase in the number of wetland acres in Idaho (IPIF 2000). Dworshak has a large number of small isolated wetlands that warrant protection and/or enhancement.

Currently, many existing wetlands around Dworshak are silting in and provide minimum adequate reproductive habitat for the species present; Pacific Chorus Frog (*Pseudacris regilla*s) and Columbia Spotted Frog (*Rana luteiventris*). The objective is to preserve the existing shallow water habitat present at the site while converting a portion of the silted in area to a combination of deep and shallow water habitat. Creating some deeper water habitat would allow the wetland to hold standing water longer into the spring and summer and greatly improve the conditions for amphibian reproduction.

Additionally, a new and more deadly strain of a fungus known as the Chytrid fungus is currently causing massive die-offs of amphibians throughout the world. If the fungus enters a wetland many times all amphibians parish. Scientists are encouraging all land managers to conserve, protect and enhance any isolated wetlands as they have less probability of encountering the virus and could act as a source population if declines continue. Currently many wetlands on Corps land are silting-in and provide minimum adequate reproductive habitat for the species present; pacific chorus frog (*Pseudacris regillas*), Columbia spotted frog (*Rana luteiventris*) and western toad (*Bufo borealis*). Further, researchers indicate that the length of the hydro-period is directly correlated with amphibian reproductive success. The longer surface water remains within any given wetland the greater the reproductive success and the species richness ad abundance. Ideal wetland habitats for amphibian reproduction include topographic relief from extremely shallow areas with minor ridges (micro-topography) to deeper wetland habitats that include some upland characteristics (macro-topography). The objective is to preserve the existing shallow water habitat present at these sites if present while converting a portion of the silted-in area to a combination of deep and shallow water habitat.

Wetlands will be evaluated and selected for enhancement by the Project Wildlife Biologist. The depth and extent of excavation will vary with existing size and condition of the wetlands and the surrounding landscape. A combination micro-topography (60% shallow water habitat) and macro-topography (40 percent deep water habitat) will be targeted for each wetland. A target depth of 3 ft will be the objective for deep water habitat and 6 to 12 inches for shallow water habitat.

Wetland enhancement work will includes deepening existing small isolated wetlands with heavy machinery or explosives. The majority of wetlands will be treated using machinery (i.e. backhoe) and hand tools. Access to some of the sites is limited to foot travel, which precludes the use of machinery to accomplish the objectives. Therefore, in these areas, the use of explosives is planned for the enhancement effort. Roads could be built to facilitate the use of

machinery, but the environmental impacts from the road building and machinery use would be substantially greater than the impacts from the use of explosives.

Once a wetland is identified for blasting the work would include the following:

- Exact locations of each hole will be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.
- Holes will be dug into the soil using either a rock bar or a post-hole digger.
- Explosives will be placed in the holes; charges may be tied together, and set off.
- Explosives will be discharged in such a manner as to adhere to the best management practices mentioned below for fish protection.
- Guards and warning signs will be posted during the entire blasting procedure.

See Appendix B for BMPs.

The Corps proposes to deepen up to 2 wetlands per year.

3.4.6.2. Planting

Planting of redstem ceanothus (*Ceanothus sanguineus*) and other forage plants within Dworshak Dam and Reservoir's elk mitigation area is proposed to meet the elk habitat maintenance requirements of Design Memorandum No. 15. Specific forage species, specific areas to be planted within the mitigation area, and exact timing of plantings will be specified by the Dworshak Wildlife Biologist. Other areas with the potential for planting may occur outside of the mitigation area, and will also be identified by the Dworshak Wildlife Biologist, if any are proposed in the future.

Planting a will involve digging a hole will by hand for each plant, approximately one foot deep and one foot in diameter. A Bobcat with an auger is available for use if site-specific conditions permit their use.

Planting may occur anywhere on Corps-managed lands at Dworshak, but the bulk will be the Grandad Mitigation Area.

The Corps proposes to plant up to 1,500 plants per year.

3.4.7. Recreation Management

Recreation Management activities associated with the Dworshak Natural Resources Land Management Program are typically captured in Access, Forest, Road, Wildlife Management. However, there are also recreation trails around Dworshak Reservoir that are the responsibility of the Natural Resource Team, and are part of the Program. These trails fall solely within Recreation Management.

3.5. Project Timeline

The proposed action will occur annually between 2011 and 2021, with quantities of each activity limited to those described above for a given year.

3.6. Proposed Conservation Measures

The Corps proposes the following conservation measures as part of the proposed action.

3.6.1. Impact Minimization Measures

The following impact minimization measures will be implemented by the Corps:

1) PACFISH/INFISH will be used as a guide in creating and maintaining RHCA buffers around all water sources. All tributaries to the reservoir within the project boundary are intermittent streams, with the exception of those portions of the Little NF Clearwater River (containing bull trout), Breakfast Creek, Reeds Creek, and Silver Creek that are within the action area. All of the intermittent streams in the action area are not ESA-listed fish bearing streams. PACFISH/INFISH guidelines suggest a RHCA encompassing 50 ft either side of these streams. The Corps' plan is to meet the PACFISH/INFISH guideline as a minimum on all intermittent streams unless the topography is such that inside of 50 ft the slope breaks and surface water would no longer drain into the stream in question. The land type within the project boundary is classified as "breaklands" by the USFS. Due to the type of landscape associated with breaklands, there are frequent changes in relief among these drainages creating narrow drainages less than 100 ft in width. For example, if a given stream drainage is only 40 ft wide (20 ft either side) protecting vegetation (prohibiting harvest) for 50 ft either side of the stream does nothing but limit our opportunity for wildlife habitat or ecological restoration work. Using the same understanding, the Corps will likely protect well over 50 ft if the slope breaks over 50 ft (e.g. 75 ft). In terms of the conditions within the RHCAs described by INFISH we plan to adhere to all once the RHCAs are established.
2) Fuel and lubricants will be stored outside RHCAs in the staging area.
3) Refueling within RHCAs will be avoided.
4) Equipment will be staged outside RHCAs when not in use.
5) Equipment will be inspected for leaks and cleaned in the staging area prior to RHCA entry. Any detected leaks will be repaired before the vehicle enters an RHCA.
6) A spill prevention and control plan will be developed and discussed to equipment operating personnel prior to instream work.
7) A hazardous materials spill kit will be required on site during work on any blasting project.
8) Ephemeral stream channels will not be used as forwarder/skid trails, landing sites, or road locations. Equipment will cross ephemeral channels at designated crossings to minimize soil disturbance. Vegetative debris will be placed in the designated crossings to reduce soil displacement and compaction.

9) Contamination of waterbodies by drip torch fuel will be avoided. Refueling and storage of drip torch fuel will occur outside of RHCAs. Crossing any waterbody with a drip torch containing fuel will be prohibited.
10) All burning will be executed in accordance with developed burn plans[3].
11) Fires will not be ignited within RHCAs.
12) Fires will only be allowed to back-down within RHCAs. The Corps will also require:
    a. Handlines on overly steep slopes and select when possible ridge tops for dozer lines,
    b. that firelines do not run along streams in RHCAs, but may, at times, have to run into RHCA's,
    c. waterbars on all firelines (firelines will need to tie into wet draws to prevent escaped fire).
13) Once initial prescribed burns are executed and fuel loads are reduced, the stewardship project area will be monitored to evaluate the need for subsequent prescribed burns.
14) All snags will be left unless they present a hazard to logging activities. Leaving the dominant and codominant trees will also provide for snag replacement trees.
15) Minimizing development of new roads.
16) Using best management practices to control erosion damage, particularly on roads.
17) All roads will have erosion bars installed where needed upon project completion.
18) Re-vegetation of road surfaces with native grass seed mix upon project completion where needed.
19) Erosion and sediment control measures include:
    a. Prohibiting harvest from RHCAs.
    b. Measures in place to monitor for and reduce the potential for the establishment of invasive plants in disturbed areas associated with broadcast and pile burning include the Corps requires contractors to ensure that their equipment is clean. The Corps also conducts annual inventories of noxious weeds and target recently burned areas as priority for inventories. Currently the Corps treats all known noxious weeds populations.
    c. Seeding all roads and landings.
    d. Using berms, water bars, cross-draining, diversions, sediment traps, out sloping, and/or silt fences.
    e. Scattering slash material.
    f. Closing work sites during heavy rains and snowfall.
20) Access restriction barriers will be installed to prevent unauthorized motorized access.
21) In the unlikely event that a redd is observed, it will be avoided. However, there is no spawning in the action area in the reservoir. .
22) A no disturbance zone, with a radius of 150 feet, will be maintained around all known and active raptor nests from March 1 through August 31. If tree removal is needed

[3] The only suppression activities that the Corps would execute would be initial attack which would involve smothering a spot fire with flappers or dirt (shoveling), creating a small handline or applying water via a bladder bag or an ATV mounted spray rig. Extended attack would be accomplished by the Clearwater/Potlatch Timber Protection Association (CPTPA)(http://www.cptpa.com/). They have jurisdiction to fight fires on any land within their fire district and depending on the fire they could use any variety of fire suppression methods. If CPTPA is required to execute substantial fire suppression activities as a result of an "out of control" prescribed burn they will take any measure necessary to suppress the fire.

within this no disturbance zone, the removal will be conducted between October 1 and November 1. In addition neither the nest tree(s), nor any other trees within 50 feet of the nest tree, may be removed. A Corps wildlife biologist will survey the sale area prior to harvest activity to determine if there are active raptor nests within the units.

23) Eagles:
    a. Avoid clear-cutting or removal of overstory trees within 330 feet (100 meters) of both active and alternate nests at any time.
    b. Avoid timber harvesting operations, including road construction and chain saw and yarding operations, during the nesting season within 660 feet (200 meters) of the nest. The distance may be decreased to 330 feet around alternate nests within a particular territory, including nests that were attended during the current nesting season but not used to raise young, after eggs laid in another nest within the territory have hatched.
    c. Selective thinning and other silviculture management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the nesting season.
    d. If burning during the nesting season is necessary, do the following:
        i. Conduct burns only when adult eagles and young are absent from the nest tree (i.e., at the beginning of, or end of, the nesting season, either before the particular nest is active or after the young have fledged from that nest).
        ii. Take precautions such as raking leaves and woody debris from around the nest tree to prevent crown fire or fire climbing the nest tree.
        iii. Avoid construction of log transfer facilities and in-water log storage areas within 330 feet (100 meters) of active and alternate nests nest
    e. To avoid disturbing nesting bald eagles and their young, do not fly aircraft within 1000 feet (305 meters) of the nest, except where eagles have demonstrated tolerance for such activity
24) Activity will be limited within 1 mile of any identified active gray wolf dens from April 1-June 15.
25) Blasting: see Appendix B for:
    a. Protection of fish
    b. Protection of migratory birds.

3.6.2. Best Management Practices

Typical types of best management practices would depend on site-specific conditions, but would generally include the following.

1) Preferred order of retention species will be based on existing stand composition.
2) Retain all trees within 50 feet on each side of draws showing scoured flow channel or having flowing water.
3) Retain all trees within 50 feet of seeps, springs, and bogs.
4) Retain all trees within 50 feet of raptor nests.
5) Retain all trees within 100 feet of the ordinary high water mark of the reservoir.
6) Retain all trees within 100 feet of each minicamp.

7) Retain all snags and culls (unless they present a safety hazard).
8) Select and remove trees with faded needles to enhance forest health.
9) Select and remove trees to improve forest health if evidence of insect or disease attacks is observed in centralized locations affecting numerous trees. This should further provide a more natural mosaic.
10) In helicopter-yarded stands, generally the minimum diameter at breast height (DBH) tree marked will be 9 inches. Top diameter specifications will be 6 inches.
11) Do not retain any trees with an 80 % or greater crown ratio; mainly grand fir, Douglas fir, or open ground ponderosa pine in planed burn units. These trees will likely burn if left in place.
12) Ensure diversion of surface runoff around road construction.
13) Place berms to prevent runoff to local creeks around road construction.
14) Use erosion bars and sediment traps for road construction.
15) Care will be taken to minimize the visual intrusiveness of the operation on the reservoir user.
16) Road obliteration work will be conducted during dry conditions when the potential for erosion is minimal.
17) All disturbed surfaced roads and trails shall be grass seeded with native grass species upon completion.
18) Ensure diversion of surface runoff around road obliteration work.
19) Place sediment traps and/or silt fences to prevent runoff to local creeks around road obliteration work.
20) Any instream work will be done under dry conditions either through dewatering or done when intermittent streams are dry.
21) Blasting: see Appendix B for:
    a. Protection of fish
    b. Protection of migratory birds.

3.7. Mitigation

Mitigation should not be required under the Clean Water Act, as there will be no in-water work, or fill in the waters of the United States. 1

Mitigation for the proposed action related to issuance of permits under the Clean Water Act may be required as part of the permitting process.

3.8. Interdependent and Interrelated Actions

Recreation is an interrelated and interdependent action. Recreation may increase in treated areas. The increase in recreation is not expected to cause any measurable increase in environmental impacts over current recreation use of Dworshak.

3.9. Ongoing and Previous Projects in the Action Area

There are several similar fire, forest, and road management projects that have, and are occurring in the project area, as previously discussed. The following list also includes several recreation-related projects, the nature of which would be covered under a Recreation Program:

- 2011-Canyon Creek Recreation Enhancement
- 2011-Ahsahka Stewardship
- 2009-Three Meadows Campground Clearwater Power Easement
- 2009-Freeman Creek Campground Dock Replacement
- 2009-Freeman Creek Boat Dock Replacement
- 2008-Freeman Creek Swing Set Installation
- 2008-Freeman Creek Standpipes
- 2008-Freeman Creek Campground CXT Restroom
- 2008-Dworshak Large Boat Mooring Buoys
- 2007-Three Meadows Access Road Repair
- 2007-Freeman Creek Playground Equipment
- 2007-Canyon Creek Road Easement Extension
- 2007-Big Eddy Marina Anchor repair
- 2006-Dworshak Nutrient Supplementation
- 2005-Install Large-Vessel (Houseboat) Mooring Buoys, Bruce's Eddy
- 2003-Hudson and Robinson Creek Prescribed Burns
- 2002-Granddad Boat Ramp Extension
- 1998-Bishop-Chute Creeks Timber Salvage Sale
- 1995-Freeman Creek Boat Ramp Extension
- 1994-Weitas Creek Timber Sale
- 1994-Indian Creek Timber Sale
- 1994-Dent Acres Campground Boat Ramp Extension

3.10. Monitoring

Implementation and effectiveness monitoring would be implemented on a schedule determined by the Wildlife Biologist at Dworshak. Implementation monitoring would occur during each project by personnel conducting the activity and by Dworshak's Wildlife Biologist. Adjustments to IMMs would occur as required based on the professional judgment of Dworshak's Wildlife Biologist.

Not all activities that are part of the proposed action would require effectiveness monitoring. For example, monitoring the effectiveness of gate and/or barricade refurbishing would not be valuable. However, monitoring the effectiveness of a prescribed burn to determine if the burn objectives were met would be extremely valuable. Those activities that would have effectiveness monitoring activities associated with them would include:

- Fire Management
- Wildlife Habitat Management

Monitoring will also provide valuable information on how effective the IMMs are in reducing impacts to species and habitats. Monitoring would indicate whether or not adjustments in IMMs would be needed to provide effective impact minimization. For example, buffer zones around raptor nests could easily be evaluated during the avian surveys routinely conducted by Dworshak's Wildlife Biologist.

An example of the Corps monitoring plans can be found in Appendix C.

3.11. Project Tracking

Project tracking in the form of a spreadsheet, sent to USFWS annually in conjunction with any monitoring reports, would allow for tracking of which projects are implemented each year and the location of those projects.

4. Status of Species and Critical Habitat

4.1. Species Lists from NMFS and USFWS

On 13 June 2011, the Corps reviewed the current list of threatened, endangered, and candidate species that pertain to the area affected by this action under jurisdiction of the National Marine Fisheries Service (NMFS) (http://www.nwr.noaa.gov/ESA-Salmon-Listings/upload/snapshot-7-09.pdf), as well as the list for species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) for Clearwater County, Idaho (http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf).

4.2. Identification of Listed Species and Critical Habitat

Table 4 Federal Register notices for final rules that list threatened and endangered species, designate critical habitats, or apply protective regulations to listed species considered in this consultation. Listing status: 'T' means listed as threatened under the ESA; 'E' means listed as endangered; "P" means proposed for listing or designation.

Species	Listing Status	Critical Habitat	Protective Regulations
Chinook salmon (*Oncorhynchus tshawytscha*)			
Snake River fall-run	T 6/28/05; 70 FR 37160	12/28/93; 58 FR 68543	6/28/05; 70 FR 37160
steelhead (*O. mykiss*)			
Snake River Basin	T 1/05/06; 71 FR 834	9/02/05; 70 FR 52630	6/28/05; 70 FR 37160
bull trout (*Salvelinus confluentus*)			
Columbia River DPS	T 6/10/98; 63 FR 31647 31674	9/02/05; 70 FR 56211 56311: 10/18/10; 75 FR 63898	
Canada lynx (*Lynx canadensis*)			
Contiguous U.S. DPS	T 3/24/00; 63 FR 16051 16086	2/25/09; 74 FR 8615 8702	
North American Wolverine (*Gulo gulo luscus*)			
Candidate	C 12/14/2010: 75 FR 78030 78061		

SR fall Chinook salmon and SRB steelhead do not occur upstream of Dworshak Dam. Anadromous fish have not been able to pass Dworshak dam since its completion in 1972. No species under the jurisdiction of NMFS occur upstream of Dworshak Dam, within the action area, or within Dworshak Reservoir. There will be no effect on species or designated critical habitat under the jurisdiction of NMFS.

4.3. Identification of Designated Critical Habitat

Critical habitat has been designated for bull trout in the reservoir. There is no designated critical habitat for SR fall Chinook salmon or SRB steelhead within the reservoir, or the action area.

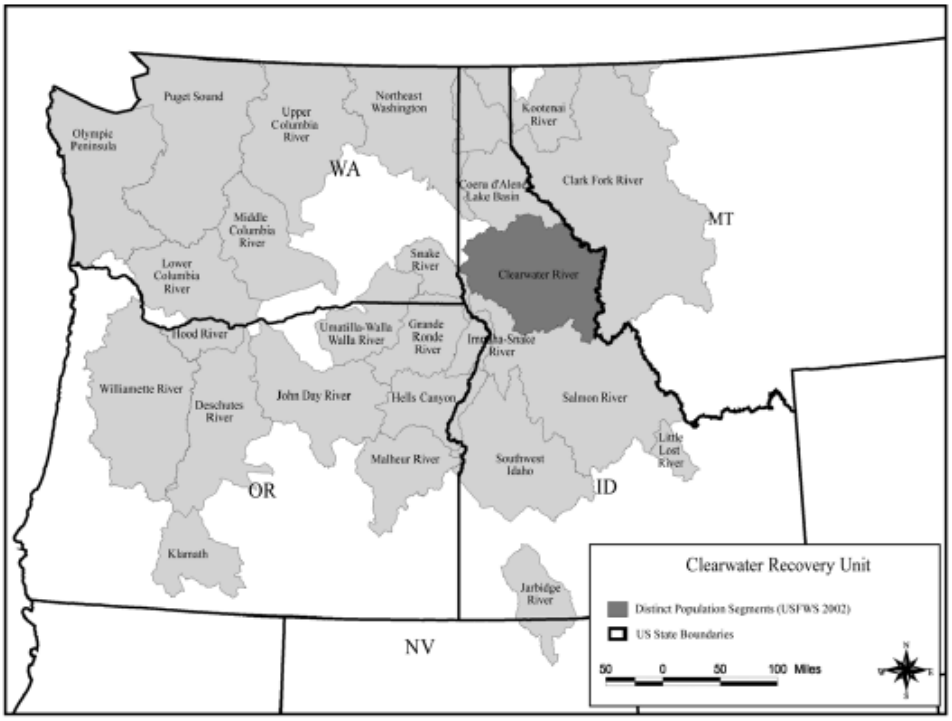
4.4. Status of Species

4.4.1. Bull Trout

4.4.1.1. Listing History

The USFWS issued a final rule listing the Columbia River population of bull trout as a threatened species on June 10, 1998 (63 FR 31647). Bull trout are currently listed throughout their range in the coterminous United States as a threatened species. Bull trout critical habitat was designated in 2005, and a new proposed final rule was issued in early 2010 for critical habitat throughout Idaho. In the Columbia River Basin, bull trout historically were found in about 60 % of the basin. They now occur in less than half of their historic range. Populations remain in portions of Oregon, Washington, Idaho, Montana, and Nevada. In the Klamath River Basin, bull trout occur in 21 % of their historic range. The Clearwater River Recovery Unit (CRRU) 21 (Figure 7) forms part of the range of the Columbia River Distinct Population Segment. The CRRU includes the entire CRB upstream from the confluence with the SR. Bull trout are distributed throughout most of the large rivers and associated tributary systems within the CRRU, and they exhibit adfluvial, fluvial and resident life history patterns (CSS 2001). The CRRU consists of 7 core areas, with a total of 45 local populations and 27 potential local populations distributed among the core areas (USFWS 2002).

Figure 7 Location of CRRU (USFWS 2002).



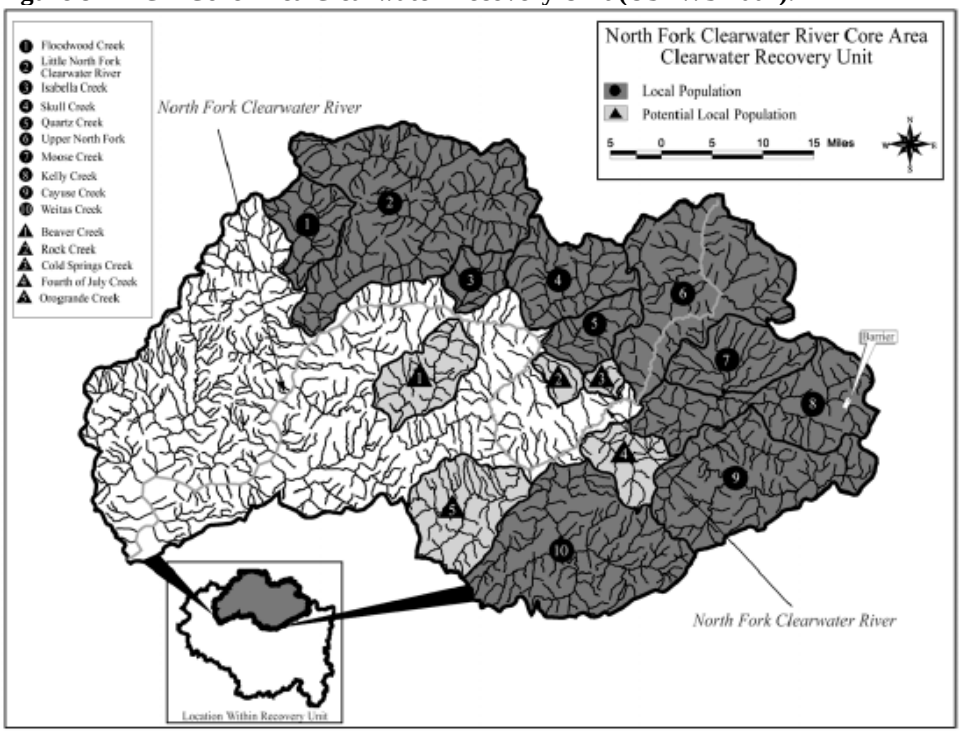
The CRRU is one of 22 recovery units designated for bull trout in the Columbia River basin (Figure 7). The CRRU includes the entire CRB upstream from the confluence with the SR. Except for some high elevation lakes and streams with natural barriers, bull trout were historically likely able to move among most areas within the recovery unit. However, Dworshak Dam now isolates bull trout in the NFCR from fish in the remainder of the basin. The CRB is included in a single recovery unit because it likely functioned as a unit historically (USFWS 2002).

The CRRU has been divided into seven core areas for purposes of recovery planning. These core areas include the NFCR, Fish Lake (an isolated basin in the NFCR watershed), Lochsa River, Fish Lake (an isolated basin in the Lochsa River watershed), Selway River, South Fork CR, and the Lower and Middle Fork CR (USFWS 2002).

The NFCR core area (Figure 8) is located in Clearwater, Idaho, and Shoshone Counties. It includes the NFCR River and all its tributaries upstream of Dworshak Dam. The core area is approximately 632,360 hectares (1,562,561 acres). Elevations range from 441 meters (1,445 feet) near the reservoir to 2,440 meters (8,000 feet) at the headwaters. Major tributaries within the core area include; Elk Creek, Little NFCR, Beaver Creek, Quartz Creek, Skull Creek, Orogrande Creek, Weitas Creek, and Kelly Creek (USFWS 2002).

The NFCR flows 46 kilometers (29 miles) from its headwaters to Dworshak with an average annual discharge of 100 cubic meters per second (3,520 cubic feet per second) from Dworshak Dam. Long-term discharge and temperature data have been recorded by the U.S. Geological Survey at Canyon Creek, just upstream of Dworshak.

Figure 8 NFCR Core Area Clearwater Recovery Unit (USFWS 2002).



The NFCR has been identified by the State of Idaho as a Special Resource Water. This State designation recognizes the NFCR as having at least one, if not all, of the following characteristics: (1) the water is of outstanding high quality, exceeding cold water biota standards; (2) the water is of unique ecological significance; (3) the water possesses outstanding recreational or aesthetic qualities; and (4) intensive protection of the quality of the water is in the paramount interest of the people of Idaho (USFWS 2002).

4.4.1.2. Life History/Biological Requirements

Individual bull trout may exhibit resident or migratory life history strategies. Resident bull trout carry out their entire life cycle in the stream in which they spawn and rear. Migratory bull trout spawn in tributary streams, but eventually travel to larger streams (or lakes) where they mature. Habitat components that appear to influence bull trout distribution and abundance include water temperature, cover, channel form and stability, valley form, spawning and rearing substrates and migratory corridors (with resting habitat). All life history stages of bull trout are associated with complex forms of cover, including large woody debris, undercut banks, boulders, and deep pools.

Bull trout normally reach maturity in four to seven years and may live as long as twelve years. They generally spawn from August to November during periods of decreasing water temperatures. Migratory bull trout may travel over one hundred miles to their spawning grounds. Egg incubation is normally 100 to 145 days and fry remain in the substrate for several months.

Bull trout are opportunistic feeders. Their diet requirements vary depending on their size and life history strategy. Resident and juvenile bull trout prey on insects, zooplankton, and small fish. Adult migratory bull trout mainly eat other fish.

4.4.1.3. Distribution

Bull trout are distributed throughout most of the large rivers and associated tributary systems within the CRRU. Bull trout exhibit adfluvial, fluvial, and resident life history patterns within the CRRU. Fluvial and resident bull trout populations have been commonly documented throughout the current range of bull trout in the CRRU. There are two naturally adfluvial bull trout populations within the CRRU; one is associated with Fish Lake in the upper NFCR drainage, and the other is associated with Fish Lake in the Lochsa River drainage (USFWS 2002).

Wydoski and Whitney (2003) indicate that all four life history types of bull trout (anadromous, adfluvial, fluvial, and resident) require water temperatures below 15°C (59° F). In Idaho, bull trout were found at elevations from 2000 to 3800 feet in elevation with gradients ranging from 1.9 to 8.3 % (Wydoski and Whitney 2003).

StreamNet (2010) shows the distribution of bull trout throughout the Lower North Fork subbasin (Figure 9). The information indicated that bull trout use 27% (242.0 miles) of the total stream miles (901.76 miles) in the HUC (Table 5). Distribution in the reservoir appears to be limited to streams higher in the reservoir above the action area (StreamNet 2010). Bull trout are known to use the reservoir for overwintering at times that correspond with the drawdown season, which results in lower water levels throughout the reservoir.

Figure 9 Bull Trout Distribution in Lower North Fork Clearwater (HUC 17060308) (StreamNet 2010)

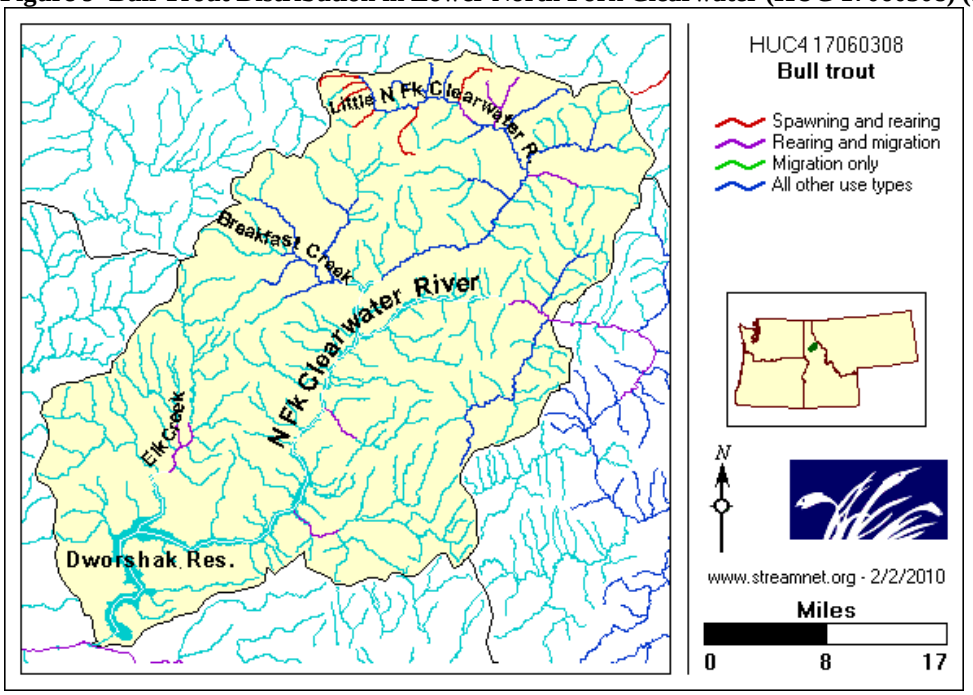


Table 5 Lower North Fork Subbasin Bull Trout Life History Usage (StreamNet 2010).

Species	Run	Use Type	Miles of Stream Used (mi)	% of Stream Miles Used
Bull trout	N/A	Spawning and rearing	20.35	2%
		Rearing and migration	34.22	4%
		Year-round use	113.04	13%
		Nodal (adult residence)	65.21	7%
		Unknown	9.22	1%
Total: Total Stream Miles in the defined area: 901.76			242.0	27%

4.4.1.4. Factors for Decline

4.4.1.4.1. Historical Pressures on the Species

Bull trout are estimated to have occupied about 60 percent of the Columbia Basin and presently occur in only about 45 percent of their historic range. The decline of bull trout is primarily due to habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, past fisheries management practices and the introduction of non-native species. Declining salmon and steelhead populations could also negatively impact bull trout populations by reducing the number of juvenile salmon and steelhead that bull trout might prey on.

4.4.1.4.2. Current Pressures on the Species

Bull trout habitat is sensitive to stream channel changes. Altered flow regimes, sedimentation rates, bank erosion, and reduced channel complexity all reduce the quality of bull trout habitat.

4.4.1.4.3. Limiting Factors for Recovery

Barriers between isolated populations are a limiting factor for most of the bull trout subpopulations in the Columbia Basin.

4.4.1.5. Local Empirical Information

Dworshak Dam is a barrier to upstream fish passage. The reservoir has an isolated sub-population of migratory bull trout. Migratory bull trout formerly linked resident bull trout to the overall gene pool for this species. Migration barriers have isolated these populations, potentially causing a loss of genetic diversity. In some cases, reservoirs such as Libby, Hungry Horse, and Dworshak provide habitat that is used by adfluvial populations of bull trout (USFWS 2000).

Available historical data does not suggest bull trout spawning/early rearing habitat was inundated when Dworshak or the Lower SR dams were completed; all evidence suggests that the impounded areas were historically used as adult/subadult foraging and over-wintering areas. This use continues today for these age groups (USFWS 1998).

4.4.1.5.1. Current Local Population Information

Spatial and temporal distribution, migration patterns, spawning sites, and basic life history information of bull trout in Dworshak are currently being investigated by IDFG. IDFG's investigation began in the spring of 2000 and, as of 2002, 163 adult bull trout had been captured, radio-tagged, and monitored. Preliminary findings indicated extensive use of the reservoir by bull trout for over-wintering. Bull trout enter the reservoir after spawning in the larger tributaries. They may remain in the tributaries for extended periods of time after spawning or migrate to the reservoir immediately depending on the abundance of prey in the specific tributary. For example, bull trout spawning in the Little NFCR have been documented to begin their downstream migration immediately following spawning and reach the reservoir in early September. Whereas spawning adults in the mainstem reach the reservoir in late October presumably due to a large spawning population of kokanee in the mainstem. Bull trout will spend the entire winter in the reservoir and begin their upstream migration in late May to early June. The highest concentrations of wintering bull trout have been documented as occurring between Cranberry Creek and Elkberry Creek (D. Schiff, personal communication, 2003).

4.4.1.5.2. Ongoing Monitoring

The Idaho Department of Fish and Game (IDFG) continues to monitor bull trout in Dworshak.

4.4.2. Canada Lynx

4.4.2.1. Listing History

The Canada lynx was listed as a threatened species in 2000. In 2003, in response to a court-order to reconsider the listing, USFWS clarified their final listing decision. Recent observations of lynx are primarily from the Cascade Range and the Blue Mountains. Canada lynx likely have never been as abundant in the lower 48 States as they were in northern Canada and Alaska because there is less lynx and snowshoe hare habitat at the southern part of the range.

4.4.2.2. Life History/Biological Requirements

Canada lynx are medium-sized cats, generally measuring 75-90 centimeters long (30-35 inches) and weighing 8-10.5 kilograms (18-23 pounds). Canada lynx are smaller than the European lynx with a shorter tail and longer hind legs. They have large feet adapted to walking on snow, long legs, tufts on the ears, and black-tipped tails. They are highly adapted for hunting snowshoe hare, the primary prey, in the snows of the boreal forest.

Lynx in the contiguous United States are at the southern margins of a widely-distributed range across Canada and Alaska. The center of the North American range is in north-central Canada. Lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare (Ruggiero et al. 2000). These forests are generally described as boreal forests. In North America, the distribution of lynx is nearly coincident with that of snowshoe hares. Lynx survivorship, productivity, and population dynamics are closely related to snowshoe hare density in all parts of its range. A minimum density of snowshoe hares (greater than 0.5 hare per hectare

(1.2 hares per acre)) distributed across a large landscape is necessary to support survival of lynx kittens and recruitment into and maintenance of a lynx population.

In the United States, lynx inhabit conifer and conifer-hardwood habitats that support their primary prey, snowshoe hares. Both timber harvest and natural disturbance processes, including fire, insect infestations, catastrophic wind events, and disease outbreaks, can provide foraging habitat for lynx when resulting understory stem densities and structure provide the forage and cover needs of snowshoe hare). These characteristics include a dense, multi-layered understory that maximizes cover and browse at both ground level and at varying snow depths throughout the winter (crown cover within the lower 4.5 meters (15 feet) in order to provide cover and food for snowshoe hares to 2 meters (6 feet) high at maximum snow depths). Despite the variety of habitats and settings, good snowshoe hare habitat has a common denominator – dense, horizontal vegetative cover 1-3 meters (3-10 feet) above the ground or snow level.

The southernmost extent of the boreal forest that supports lynx occurs in the contiguous United States in the Northeast, western Great Lakes, northern and southern Rockies, and northern Cascades. Here the boreal forest transitions into other vegetation communities and becomes more patchily distributed. As a result, the southern boreal forests generally support lower snowshoe hare densities, hare populations do not appear to be as highly cyclic as snowshoe hares further north, and lynx densities are lower compared to the northern boreal forest.

Individual lynx maintain large home ranges (reported as generally ranging from 31 to 216 kilometers^2 (km^2), or 12-83 mi^2. Thus, a lynx population can only persist in a large boreal forested landscape that contains appropriate forest types, snow depths, and high snowshoe hare densities. In the Northeast, lynx were most likely to occur in areas that support deep snow (greater than 268 centimeters [106 inches] annual snowfall) associated with regenerating boreal forests in landscapes 100 km^2 (40 mi^2) or greater in area. The Corps assumes areas with smaller patches of boreal forest are unlikely to provide a sufficient amount of habitat suitable to support a lynx population.

Lynx are highly mobile and have a propensity to disperse long distances, particularly when prey becomes scarce. Lynx also make long distance exploratory movements outside their home ranges. Areas or habitats used by lynx during dispersal or exploratory movements are poorly understood at this time. Dispersing lynx may colonize suitable but unoccupied habitats, augment existing resident populations, or disperse to unsuitable or marginal habitats where they cannot survive. Numerous lynx mortality records exist from anomalous habitats or habitats where no records support evidence (either current or historical) of a reproducing population. Many of these records correspond to post-population peaks in Canada, with some lag time for immigration. The Corps finds no evidence of lynx populations becoming established in such areas.

4.4.2.3. Distribution

The Canada lynx occurs throughout Canada and Alaska, in the extreme northeastern and north-central U.S., and in the northern and central Rocky Mountains (ICDC 2010). In western states, most lynx occurrences (83%) were associated with Rocky Mountain Conifer Forest, and most

(77%) were within the 1,500-2,000 m (4,920-6,560 ft) elevation zone (McKelvey et al. 2000*b*). Primary vegetation that contributes to lynx habitat is lodgepole pine, subalpine fir, and Engelmann spruce (Aubry et al. 2000). Within Idaho populations occur north of the Salmon River in the west and north of the Caribou Range in the east (McKelvey et al. 2000). The total population size in Idaho is unknown, but it is thought to be less than 100 individuals (ICDC 2010). In extreme northern Idaho, northeastern Washington, and northwestern Montana, cedar-hemlock habitat types may also be considered primary vegetation. In central Idaho, Douglas-fir on moist sites at higher elevations may also be considered primary vegetation. Secondary vegetation that, when interspersed within subalpine forests, may also contribute to lynx habitat, includes cool, moist Douglas-fir, grand fir, western larch, and aspen forests. Dry forest types (e.g., ponderosa pine, climax lodgepole pine) do not provide lynx habitat (USACE 2006).

4.4.2.4. Local Empirical Information

The IDFG, using 12 remote camera stations and live traps, conducted surveys for furbearers and carnivores throughout Dworshak in 2000 and 2001. Eleven species of furbearers and carnivores were documented. No lynx were observed within the study area. However, lynx have been documented in 2 locations north of Breakfast Creek, one on the Floodwood Road in 1997 and once at Stocking Meadows Ridge in 1998 (USACE 2006). The exact location of the Floodwood sighting is unknown. The Floodwood road begins at Clarkia, Idaho and ends on the top of Smith Ridge by the Clearwater National Forest boundary and varies greatly in elevation, diving into canyons and climbing to the tops of ridges. With respect to Stocking Meadows, it is about 3 miles from the nearest edge of a Corps boundary and lies 1,600 feet higher than the nearest segment of Corps boundary (2,200 feet Corps versus 3,800+ feet Stocking Meadows).

4.4.2.4.1. Current Local Population Information

There are no known local populations of Canada lynx in the action area.

4.4.2.4.2. Ongoing Monitoring

There are no known ongoing monitoring efforts for Canada lynx at Dworshak.

4.4.3. North American Wolverine (Candidate)

4.4.3.1. Listing History

The North American wolverine is currently a candidate species, and was petitioned for listing as threatened or endangered by the USFWS on December 14, 2010.

4.4.3.2. Life History/Biological Requirements

Wolverines are opportunistic feeders, consuming a variety of foods depending on availability. They primarily scavenge carrion, but also prey on small animals and birds and eat fruits, berries, and insects. Wolverines have an excellent sense of smell, enabling them to find food beneath deep snow. Breeding generally occurs from late spring to early fall. Females undergo delayed

implantation until the following winter to spring, when active gestation lasts from 30 to 40 days. Litters are born between February and April, containing one to five kits, with two to three kits being the most common number. Wolverines have large spatial requirements; the availability and distribution of food is likely the primary factor in determining wolverine movements and home range). Wolverines can travel long distances over rough terrain and deep snow, with adult males generally covering greater distances than females. Home ranges of wolverines are generally extremely large, but vary greatly depending on availability of food, gender, age, and differences in habitat (USFWS 2011).

Wolverine habitat consists entirely of alpine, arctic, and sub-arctic regions. Snow cover during the spring is essential for females who use deep snow banks for denning throughout the pregnancy and weaning periods. Habitat areas for wolverines are usually isolated and described as "patchy," often separated by large areas of unsuitable habitat. Almost all wolverine habitat in the contiguous U.S. is federally owned and managed. Suitable wolverine habitat in Oregon is considered to be the high-elevation forests of the Cascade Range, and of the Blue Mountains, Wallowa Mountains, and Ochoco Mountains. There is potential for wolverines from the Rocky Mountain population to enter Oregon from Idaho, Wyoming, or Montana.

4.4.3.3. Distribution

Reproductive dens in Idaho were located in snow-covered boulder talus in subalpine cirque basins (Copeland 1996; Magoun and Copeland 1998). Home ranges of adult wolverines range from less than 100 square kilometers (km2) to over 900 km2 (38.5 square miles (mi2) to 348 mi2) (Banci 1994). Copeland (1996) found that annual home ranges of resident adult females in central Idaho averaged 384 km^2 (148 mi^2), while the annual home ranges of resident adult males averaged 1,522 km^2 (588 mi^2) (USFWS 2011).

4.4.3.4. Local Empirical Information

Wolverines have not been documented at Dworshak and are not on species lists maintained by the Dworshak Wildlife Biologist. Although it is possible, it is likely that wolverines may not occur at elevations consistent with Dworshak Reservoir, as the upper most elevations in the timber forest at Dworshak are at the lower end of the recorded inhabited elevation of wolverines. Combined with the amount of anthropogenic influence at the reservoir, and the solitary nature of wolverines, it seems highly unlikely that wolverines would occur near the reservoir (R. Davis, personal communication, May 17, 2011).

4.4.3.5. Current Local Population Information

There are no known local populations of wolverine in the action area.

4.4.3.6. Ongoing Monitoring

There are no known ongoing monitoring efforts for wolverine at Dworshak.

4.5. Status of Critical Habitat

In 1993, NMFS determined that the critical habitat designations for SR fall-run Chinook salmon would focus on the physical and biological features of the habitat that are essential to the conservation of the species. In 2005, in designating critical habitat for SRB steelhead NMFS focused on certain habitat features called "primary constituent elements" (PCEs) that are essential to support one or more of the life stages of salmon and steelhead. The 2005 designations also analyzed areas that will provide the greatest biological benefits for listed salmon and balance the economic and other costs for areas considered for designation.

There is no designated or proposed critical habitat in Dworshak for SR fall Chinook salmon or SRB steelhead.

4.5.1. Bull Trout

4.5.1.1. Geographical Extent of Designated Critical Habitat

Bull trout critical habitat was designated in 2005.The USFWS revised the designation in 2010. A final rule was published on October 18, 2010.

Unit 21: Clearwater River Unit. The CR Critical Habitat Unit (CHU) is located east of Lewiston, Idaho, and extends from the SR confluence at Lewiston on the west to headwaters in the Bitterroot Mountains along the Idaho–Montana border on the east in Nez Perce, Latah, Lewis, Clearwater, Idaho, and Shoshone Counties. This unit includes five Critical Habitat subunits (CHSUs): Lower/ Middle Fork CR; NFCR (and Fish Lake); South Fork CR; Lochsa River (and Fish Lake); and the Selway River. In the CR CHU, 2,702.1 km (1,679.0 mi) of streams and 6,721.9 ha (16,610.2 ac) of lake and reservoir surface area are designated as critical habitat. Figure 10 shows bull trout critical habitat in relation to Corps lands at Dworshak.

Bull trout critical habitat in the action area is limited to Dworshak Reservoir (defined by 1,600 msl), and some free-flowing areas of reservoir tributaries above 1,600 msl, which includes: approximately 2,200 ft of free-flow Little NF Clearwater River (containing bull trout), a 1,500 ft section of free-flowing portion of Breakfast Creek, 600 ft of Reeds Creek, and 800 ft of Silver Creek. There is no free flowing portion of the NF Clearwater River on Corps lands (Figure 11). All free flowing portions are outside the action area (S. Martin, personal communication, November 4, 2011).

Bull trout may occur throughout the reservoir, and are generally dispersed through the reservoir. However, most bull trout leave the reservoir by April and return to the reservoir in September (S. Wilson, personal communication, November 8, 2011). The highest concentrations of wintering bull trout have been documented as occurring between Cranberry Creek and Elkberry Creek (D. Schiff, personal communication, 2003). Bull trout may also occur in the portions of the Little NF Clearwater River,

Figure 10 Designated Critical Habitat for Bull Trout in Unit 21- North Fork Subunit (USFWS 2010d). The map includes all of the Corps lands at Dworshak.

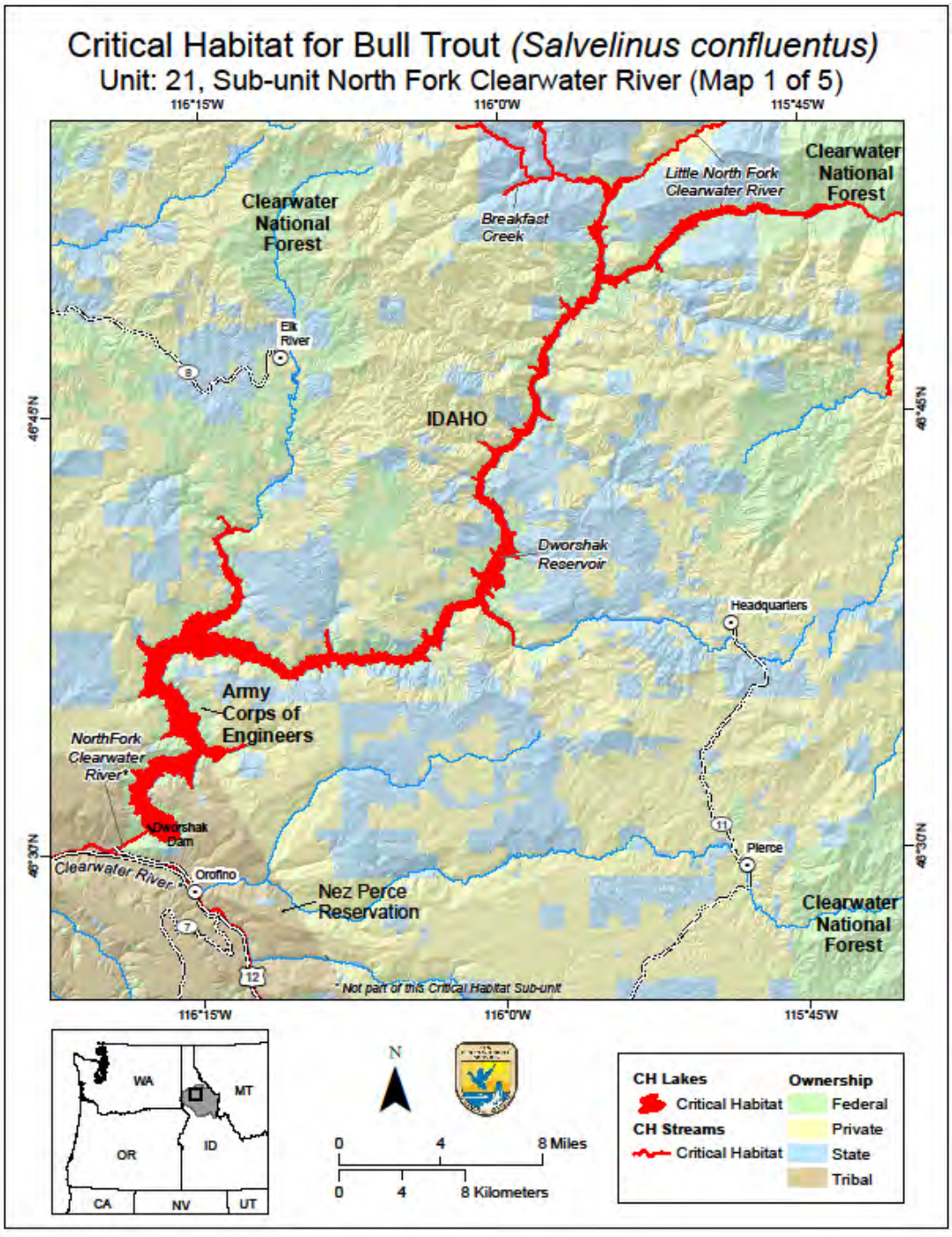
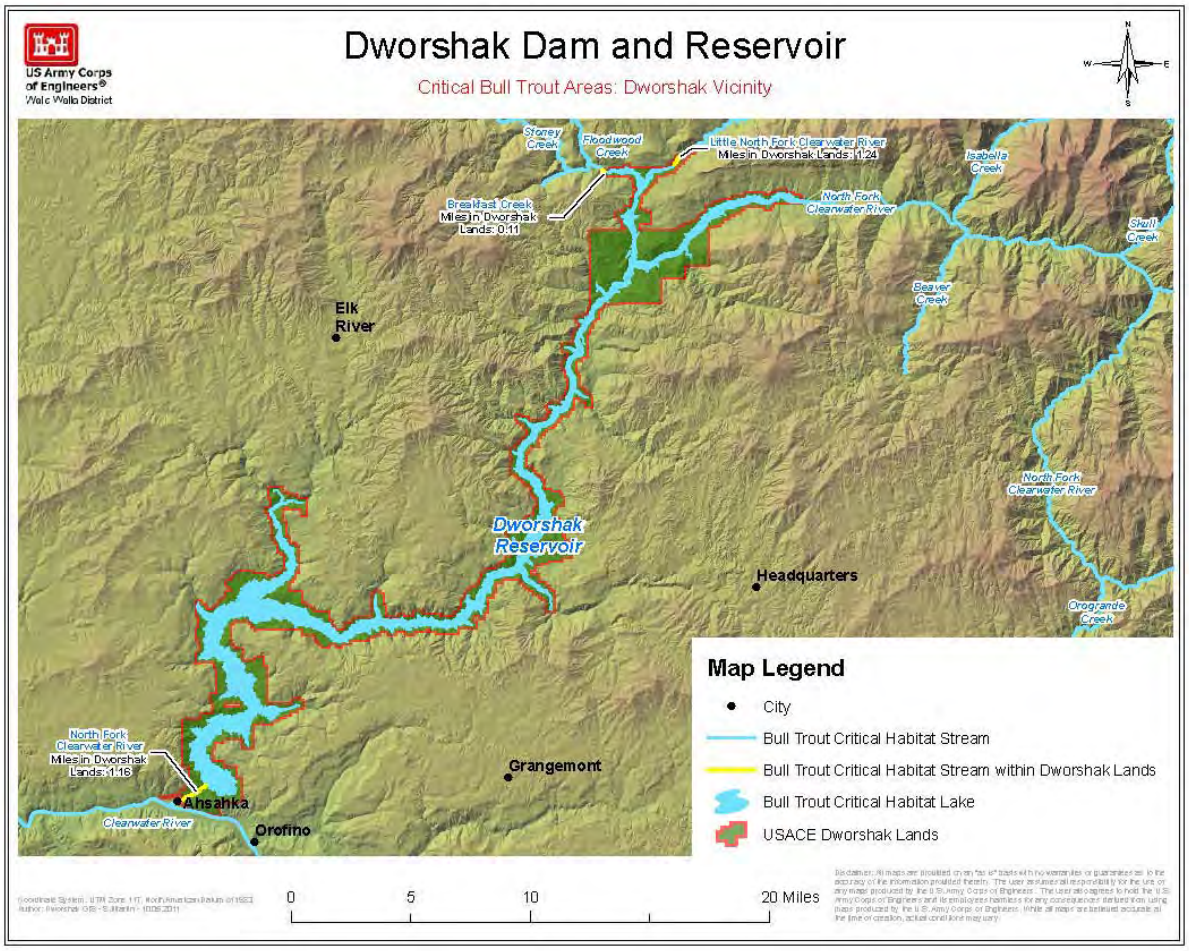


Figure 11 Final bull trout critical habitat (blue) in relation to Corps lands at Dworshak (green bordered in red).



4.5.1.2. Essential Elements of Designated Critical Habitat

Primary Constituent Elements for Bull trout based on the needs identified in 50 CFR 17 (75 FR 63898) and the current knowledge of the life-history, biology, and ecology of the species and the characteristics of the habitat necessary to sustain the essential life history functions of the species, the USFWS has identified the following PCEs for bull trout critical habitat (Table 6).

Table 6 Primary constituent elements (PCEs) of critical habitats designated for bull trout.

PCEs		
1	Water Quality	Springs, seeps, groundwater sources, and subsurface water connectivity (hyporheic flows) to contribute to water quality and quantity and provide thermal refugia.
2	Migration Habitat	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	Food Availability	An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.
4	Instream Habitat	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 Temperature	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	Substrate Characteristics	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	Stream Flow	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	Water Quantity	Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.
9	Nonnative Species	Sufficiently low levels of occurrence of nonnnative 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.

4.5.2. Canada lynx

4.5.2.1. Geographical Extent of Designated Critical Habitat

No critical habitat for Canada lynx has been designated within the proposed action area.

4.5.2.2. Essential Elements of Designated Critical Habitat

No critical habitat for Canada lynx has been designated within the proposed action area.

5. Environmental Baseline

The geographical area for which the environmental baseline is being established is discussed in the Action Area section of this document, and includes both Timber Management and Recreation and Reservoir Operation activities.

NMFS describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support all life stages of each listed species within the action area. This holds true for bull trout as well, however, the biological requirements for bull trout differ slightly. For the action area, the biological requirements for fish species are the habitat characteristics that support successful completion of spawning, rearing, and freshwater migration.

The climate of the Clearwater Basin is characterized by mild summers and long, cold winters. Mean annual temperatures in the basin range from less than 32°F (0°C) at the highest elevations to over 50°F (10°C) at the lowest elevations. Seasonal temperatures have a fairly uniform pattern. Subfreezing weather is common during the months of October to May, when temperatures reach well below 0°F (-17.8°C), while mild temperatures prevail during the summer months. The average daytime summer temperature is around 88°F (31°C), while the winter nighttime average is approximately 28°F (2.2°C).

Precipitation, which averages 51 inches annually for the overall basin, ranges from 24 inches near the dam to nearly 80 inches near the summit of the Bitterroot Mountain Range. Precipitation has a seasonal pattern, with about 40 percent occurring during the months of November through January. During high snow years, more water storage is needed, and the reservoir is drawn down in anticipation of snowmelt to prevent flooding. In low snow years, the reservoir is allowed to fill early, often increasing access to the shoreline recreational facilities.

Dworshak Reservoir lies within the Clearwater River Basin in north-central Idaho. Elevations in this basin range from 738 feet mean sea level (msl) at the mouth of the Clearwater in Lewiston, Idaho, to over 8,000 feet msl in the peaks of the Bitterroot Mountain Range. The portion of the Clearwater Basin that lies west of Dworshak is characterized by barren hills and plateaus intersected by cultivated valleys.

The 53.6-mile-long reservoir is formed in the North Fork and Little North Fork valleys. Steep slopes dominate the shoreline and project lands, although a few flat or low-slope areas can also be seen (Plates 2A and 2B). These low areas are the primary location of the majority of existing developed recreation sites.

The North Fork Clearwater River originates in a mountainous area underlain by metamorphic and igneous granite rocks. In the lower portion of the reservoir, the valley floor is mantled by stream-deposited material. The lower valley walls are covered by a thin residual soil, with soil depth increasing at higher elevations. Rock outcroppings occur frequently along the canyon walls in the lower reservoir, but seldom appear on the upper two-thirds of the reservoir.

Soils vary from desertic soils to the forest soils more typical of the area. At Dworshak, many unstable soils have developed on parent rock that was, at one time, subjected to tremendous heat and pressure. These soils are generally thin and underlain by an impervious parent rock. This rock contributes to the basin's high runoff characteristics. Many of the soils at Dworshak are highly susceptible to erosion, which precludes their use for further development.

The higher slopes along the reservoir are covered in many places with residual soils that are the product of weathering metamorphic rocks. Because of the instability associated with these soils and the weaker rock masses, particularly in the steeper areas, construction activity is difficult. In some locations along the reservoir, a fairly flat bench occurs between the steeper mountainous terrain and the maximum pool elevation. These flat areas are generally associated with the clays and poorly indurated shales mentioned above. The clay-deposited areas have the hummocky topography, seep areas, and ponded water typical of slide areas.

The most common types of surface soil are sandy loam, loam, and silt loam, with some clay content indicated in each. Because of the natural forest conditions, layers of organic material have accumulated on the surface soil. Soils and slopes are a significant influencing factor at Dworshak. The National Resources Conservation Service (NRCS) Soil Capability Class Classification System describes the soils at Dworshak for the purposes of this report.

There are two major types of soils in this area: Bandmill-Riswold Complex 5 to 20 percent slopes (93%) and Elkridge-Riswold Complex 40 to 70 percent slopes (7%). The Bandmill-Riswold Complex of these soil types are well drained with low to moderate erodibility (Kw = .24-.37).

Capability class is the broadest category in the land capability classification system. Class codes 1 through 8 are used to represent both irrigated and non-irrigated land capability classes. Capability subclass is the second category in the land capability classification system. Class codes e, w, s, and c are used for land capability subclasses.

The subclass represents the dominant limitation that determines the capability class. Within a capability class, where the kinds of limitations are essentially equal, the subclasses have the following priority: e, w, s, and c. Subclasses are not assigned to soils or miscellaneous areas in capability classes 1 and 8.

All of the soils at Dworshak have erosion potential. However, for the purpose of forest and wildlife management, this is not a major concern. The erosion potential of the soil is a significant factor in determining locations for recreational features, including campgrounds, trails, roads, and other amenities. Locations of recreational amenities should avoid areas that have visible signs of existing erosion and excessive slopes. Construction methods and design criteria must also address the limitations imposed by the soils at Dworshak Reservoir.

Dworshak Reservoir and environs encompass a diversity of forest habitats, and contain several rare plant species and unique plant communities. The unusual flora of the area is due, in part, to its location in a core area of inland-maritime climate. Biodiversity of the area is further enhanced by its location between two ecoregions: the Bitterroot Mountains Section of the

Northern Rocky Mountains Province and the Palouse Prairie Section of the Columbia Plateau Province (McNab and Avers, 1994).

Bunchgrass steppe vegetation extends into the lower reaches of the canyon on warm aspects, and elements of Palouse prairie flora, including several regional endemic species, merge with those of moist, western red cedar (*Thuja plicata*) forests of the Clearwater Mountains. Major forest cover types of the area are ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), and western red cedar.

Soil data for the Clearwater Basin indicates that fourteen forest habitat types, as described by Cooper et al. (1991), occur on Corps-managed land surrounding Dworshak Reservoir. Based on regional geology, topography, soils, and climate; disturbance has played a significant role in shaping the composition, form, and structure of these forests.

Historic ecosystem processes included the deposition of ash through volcanic activity, glaciation, flooding, landslides, wind events, and wildfire. Several of these processes have occurred with high enough frequency and severity to be considered when managing natural resources. Although these types of events are natural occurrences, modern man has had substantial effect on their frequency and magnitude, either directly or indirectly. Resource managers should take care in planning new road construction to minimize the potential for landslides. Similarly, forest management practices can affect the impact of wind events as well. By overharvesting, remaining trees are left with little protection to withstand even moderate wind events. However, of these natural ecological processes, none have been more altered by man then wildfire.

Wildfire was historically the most dramatic process to shape North Idaho forests. The impacts of fire to an ecosystem are dependent on the localized fire regime. The exclusion of fire from fire-dependent ecosystems can alter forest composition, form and structure, nutrient cycling, soil properties, erosion potential, and fish and wildlife habitat.

Active efforts to suppress fires from Pacific Northwest ecosystems, including lands surrounding Dworshak Reservoir, began in the early 1900s. Years of fire suppression in the basin have resulted in dramatically altered fire regimes. There has been a significant reduction in the frequency of low-severity fire regimes (ground fires). The reduction in low severity fire frequency has drastically altered the composition, form, and structure of many drier forest types throughout the basin. Unnatural forest change occurs when fire-intolerant tree species (e.g., grand fir) are allowed to mature in the absence of fire, and take over areas historically dominated by fire tolerant species (e.g. ponderosa pine). In contrast, wetter forest types, where frequent low-severity burns were not part of their historic fire regime, are not altered as drastically with the absence of fire. Reduced fire frequencies result in increased forest fuel loads as well, and more severe fires would be expected under more natural conditions.

Most hiking trails provide access to the reservoir; however, drawdowns create exposed banks that are difficult to negotiate in most areas. Bank erosion at high pool has also created ledges that cause difficulty accessing the reservoir in some locations.

Historically, the reservoir remained at full pool from Memorial Day to Labor Day. This allowed for the majority of the recreation areas to be used during the peak summer recreation season. The 1995 FCRPS BO has changed operational procedures, so that reservoir drawdowns begin much earlier to help reduce water temperatures and restore a more natural flow in the Clearwater and Snake Rivers. Currently, full pool lasts for only a few weeks around the Fourth of July. This change of operations has limited access to recreational areas on the reservoir, and necessitates an analysis of alternative resource planning considerations.

The lower North Fork AU is home to numerous terrestrial vertebrates and has been inhabited by the North American wolverine (*Gulo gulo*), fisher (*Martes pennanti*), Townsend's big-eared bat (*Corynorhinus townsendii*), western toad (*Bufo boreas*), and Coeur d'Alene salamander (*Plethodon idahoensis*). Inundation of habitat following the construction of Dworshak Dam has reduced the occurrence of many terrestrial focal species in this area. Migratory corridors used by the wide-ranging North American wolverine have likely been compromised by the creation of Dworshak, as have structurally complex riparian areas used by the fisher. Both Townsend's big-eared bat and the western toad are rare and are threatened by loss or fragmentation of habitat. The Coeur d'Alene salamander has been documented throughout several portions of the AU. Based on surveys conducted in the 1980s, the NFCR drainage represented the core distribution area for Coeur d'Alene salamanders in the Clearwater sub-basin. Recent surveys, however, have been unable to confirm the occurrence of the Coeur d'Alene salamander in many of the previously occupied locations, suggesting the possibility of localized population extirpation.

With the exception of the lower 1.9 miles of the mainstem NFCR, passage of anadromous species into the Lower North Fork Assessment Unit (AU) is completely blocked by Dworshak Dam. Dworshak is located entirely within the Lower North Fork AU and provides a substantial fishery for kokanee (*Oncorhynchus nerka*), smallmouth bass (*Micropterus dolomieu*), rainbow trout (*O. mykiss*), and other native salmonids. Limitations to the Dworshak fishery are primarily related to dam operations resulting in highly variable flows and fluctuating water levels.

Bull trout distribution is restricted to the highest elevation tributaries of the Lower North Fork AU, and to Dworshak. Although westslope cutthroat trout (*O. clarkii henshawi*) are known to be widely distributed throughout most of the AU, limited information is available on the status of populations. Strong populations of both bull trout and westslope cutthroat trout exist in the Little NFCR drainage. Resident salmonids throughout the AU tributary systems are impacted by sediment and temperature issues associated with land use activities, as well as by introductions of exotic species. Brook trout are widely distributed throughout the AU, however little is known about their population status in most areas (Ecovista 2003).

The NFCR feeds Dworshak from the mountains of Idaho. The dam begins at RM 1.9 on the NFCR, just upstream from the confluence with the CR in the town of Ahsahka, Idaho. The drainage area associated with the reservoir is 2440 square miles. There are 175 miles of shoreline in the reservoir, and the gross storage capacity is 3,468,000 acre-feet. The maximum structural height of the dam is 717 feet (ft). The maximum operating pool is 1600 feet mean sea level (msl) with a normal operating range from 1600 msl down to 1445 msl.

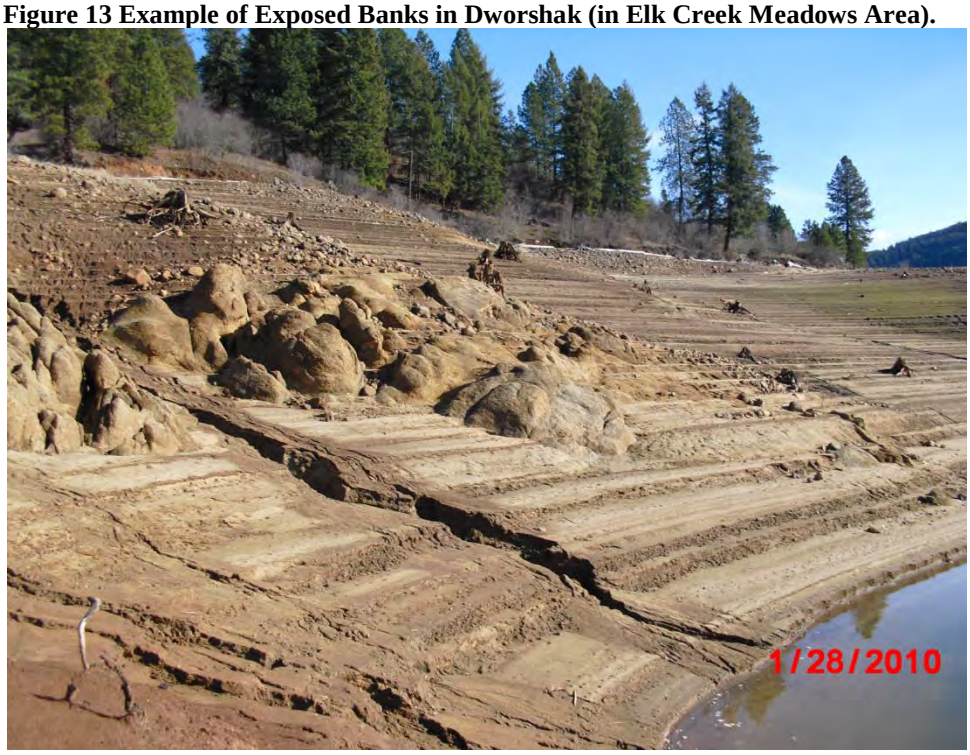
Dworshak Dam and a large part of the reservoir are located within the boundaries of the Nez Perce Reservation. Each summer, from July through September, Dworshak is drafted 80 feet from full pool (1600 msl) to provide 1.2 million acre-feet of flow augmentation to benefit juvenile fall Chinook emigrating through lower Snake Reservoirs. As part of the Nez Perce Water Rights Agreement, the Nez Perce Tribe has the permanent right to use 200,000 acre-feet (of the 1.2 million acre-feet) for flow augmentation and temperature control in August and/or September (Haller).

Cold water releases from Dworshak benefits juvenile fall Chinook as well as returning adult fall Chinook and steelhead. Excessive cold water releases in early July can retard the growth of Clearwater fall Chinook so salmon managers attempt to balance the needs of the Clearwater fish, which tend to over-winter in lower Snake, and the SR fish, which out-migrate primarily in June and July. Operational decisions are made on a weekly basis during the summer with the TMT (except for the Tribe's 200kaf, the operation of which is developed by the Dworshak Board, consisting of the Nez Perce Tribe as Chair, the Corps, NMFS, Idaho Department of Water Resources and Bonneville Power Administration) and are guided by temperature modeling by the Environmental Protection Agency (EPA) and the Corp of Engineers. The goal is to not exceed the State of Washington temperature standard of 68 degrees as measured in the tailrace of the reservoir (Haller).

Fluctuations in pool elevation leave 80 to 155 feet of exposed banks in the reservoir below the ordinary high water mark (OHWM). These banks (Figures 12 and 13) were historically submerged under reservoir water, and were stripped of trees and vegetation during construction of the reservoir. The now exposed banks release a great deal of suspended sediment and routinely create turbidity in the reservoir because of rising and lowering reservoir elevations, as well as wind and water erosion events.

Figure 12 Example of Exposed Banks in Dworshak (in Elk Creek Meadows Area).

Figure 13 Example of Exposed Banks in Dworshak (in Elk Creek Meadows Area).



The reservoir area has a great deal of existing and historic roads. Some of the roads are in use, some are historic logging roads. Roads adjacent to the reservoir are generally limited to old logging road beds, with the exception of recreation areas such as Dworshak State Park, Three

Meadows, and roads such as Old Dent Road, Wells Bench Road, and Dent Bridge Road. The lack of roads is likely the result of the steep topography of the area.

There are a few un-named intermittent streams and small isolated wetlands within the action area. The intermittent streams run into Dworshak Reservoir**.** RHCAs will be used as a guideline for these streams and wetlands, 50 feet either side of the streambed, as described by INFISH. No trees will be harvested within the RHCA in accordance with INFISH guidelines. No measurable impacts to water quality are expected from this project.

5.1. Matrix of Pathways and Indicators (MPI)

NMFS uses the "Matrix of Pathways and Indicators" (MPI) (NMFS 1996) to summarize important environmental parameters and levels of condition for each. USFWS adopted a similar strategy in 1997 based on NMFS' matrix. The NMFS matrix is divided into six overall pathways (major rows in the matrix):

- Water Quality
- Channel Condition and Dynamics
- Habitat Access
- Flow/Hydrology
- Habitat Elements
- Watershed Conditions

Each represents a significant pathway by which actions can have potential effects on anadromous salmonids and their habitats, and could be used for analyzing bull trout habitat as well.

After review of the description of the proposed action, the environmental baseline, and using the matrix to determine if the potential impacts of the proposed action, the Corps has determined that the proposed action will not restore or degrade the function of habitat indicators of the environmental baseline, but will maintain existing baseline conditions within the action area. For the purposes of the MPI checklist, "maintain" means that the function of an indicator does not change (i.e., it applies to all indicators regardless of functional level).

Table 7 Checklist for Documenting Environmental Baseline and Effects of Proposed Action on Relevant Anadromous Salmonid Habitat Indicators

PATHWAYS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION		
Indicators	Properly Functioning	At Risk	Not Properly Functioning	Restore	Maintain	Degrade
Water Quality:						
Temperature			X		X	
Sediment			X		X	
Chem. Contam./Nut.			X		X	
Habitat Access:						
Physical Barriers			X		X	
Habitat Elements:						
Substrate			X		X	
Large Woody Debris	X				X	
Pool Frequency			X		X	
Pool Quality			X		X	
Off-Channel Habitat			X		X	
Refugia			X		X	
Channel Cond. & Dyn.:						
Width/Depth Ratio			X		X	
Streambank Cond.			X		X	
Floodplain Connectivity			X		X	
Flow/Hydrology:						
Peak/Base Flows			X		X	
Drainage Network Increase			X		X	
Watershed Conditions:						
Road Dens. & Loc.		X			X	
Disturbance History			X		X	
Riparian Reserves			X		X	
Watershed Name: Lower North Fork Clearwater subbasin (HUC 17060308)			Location: Dworshak Reservoir, Clearwater County, Idaho			

5.2. Baseline Conditions Justification

All habitat indicators are not properly functioning in Dworshak Reservoir, except for the large woody debris and road density indicators. Baseline conditions improve in streams once out of the influence of the reservoir and its elevation fluctuations, but the overall condition at a watershed scale is as shown in Table 7 (above).

Large woody debris. There are adequate sources of woody debris in riparian areas throughout the reservoir. Density and diameter of woody pieces in every area of the reservoir is more than enough to justify properly functioning.

Road density. Dworshak encompasses approximately 45,697 acres, or 71.4 square miles. There are 139.2 miles of roads, so the road density at Dworshak is 1.95 miles per square mile, which is less than the 2 miles per square mile that qualifies as properly functioning in the MPI (NMFS 1996).

6. Effects of the Action

The proposed project area includes areas upstream of Dworshak Dam identified in the Action Area section of this document. This area encompasses a watershed that has very different baseline elements than it would if it were on a flowing river or stream because of its location above the dam and the existence of the reservoir.

Effects are analyzed for Access, Boundary, Fire, Forest, Road, Wildlife Habitat, and Recreation Management activities, as many of the elements are common to more than one activity (Table 8), and will have the same potential effects.

Table 8 Dworshak management activities.

Management Activity							
Activity Element	**Access**	**Boundary**	**Fire**	**Forest**	**Road**	**Wildlife**	**Recreation**
Gates	X			X		X	X
Signs	X			X		X	X
Fences	X						
Trails	X						X
Monumentation		X					
Broadcast Burning			X	X		X	X
Pile Burning			X	X		X	X
Slashing and/or Pruning			X	X		X	X
Fire Lines			X	X		X	X
Selective Harvest			X	X		X	X
Snag Removal			X	X	X		X
Road Construction			X	X	X	X	X
Road Reconstruction			X	X	X	X	X
Road Maintenance	X	X	X	X	X	X	X
Road Obliteration	X		X	X	X	X	
Road Demolition	X		X	X	X	X	X
Culverts			X	X	X	X	X
Planting			X	X	X	X	X
Wetland Enhancement						X	

6.1. Project Effects

The proposed project area includes areas upstream of Dworshak Dam identified in the Action Area section of this document. This area encompasses watershed that has very different baseline elements than it would if it were on a flowing river or stream, because of its location above the dam and the existence of the reservoir.

6.1.1. Access Management

Access management activities have the potential to create turbidity and sedimentation, as well as toxic contamination. However, given the extremely limited nature of the work associated with Access Management, the Impact Minimization Measures, and the limited disturbance, the potential for adverse effects will be greatly reduced.

The effects of trail development and maintenance are the same (albeit lesser than) those for road construction and maintenance, and are discussed in the road management section (below).

Blasting activities have the potential to produce hydroacoustic stressors for bull trout in the area. However, given the use of BMPs designed to protect fish (ADFG 1991) (see Appendix B), bull trout may be exposed to, but are not likely to respond to the hydroacoustic stressors produced, if exposed, as the BMPs will spatially separate bull trout from the blasting-related effects. Those few individuals that may be in the reservoir during blasting activities are not likely to have responses sufficient to reduce their individual performance.

6.1.2. Boundary Management

Boundary management activities have the potential to create turbidity and sedimentation, as well as toxic contamination. However, given the extremely limited nature of the work associated with Boundary Management, the Impact Minimization Measures, and the limited disturbance, the potential for adverse effects will be greatly reduced.

6.1.3. Fire Management

6.1.3.1. Burning

Under-burning intensity will be low and localized. Fire line construction will expose soil but will also help protect against the loss of streamside shade. Fire lines will be rehabilitated and seed will sprout within a year. Fire line construction will not disturb the stream bank. Under-burning will be monitored by Corps personnel, and burn units will be field checked after prescribed fire treatments to determine whether prescriptions (*i.e.* tree mortality, mineral soil exposure, fuel load reductions) have been met. Further burning may be delayed and future prescriptions modified if prescription objectives have not been met. Activities associated with under-burning are extremely unlikely to reduce shade or deliver sediment to streams due to these minimization measures, and therefore such effects are discountable. Under-burning will leave overstory trees intact; therefore, reduction in large wood recruitment will not occur.

6.1.3.2. Fire Lines

Fire lines constructed around camp sites or around designated burn units have similar effects to Road Management Activities, and, as such, will be discussed in the Road Management section below.

6.1.3.3. Slashing

There should be no measurable effect from slashing.

6.1.4. Forest Management

6.1.4.1. Selective Harvest

Trees identified for retention will be marked by a crew and remaining trees will be available for harvest using a tractor, or line skidder. Harvest treatments would primarily use cable yarding methods. Logging on steep slopes exceeding 40 % will use line skidding machines to yard logs to landings where they will be prepared for truck transport to mills. This process greatly reduces ground disturbance on these slopes.

Timber harvesting can increase sediment delivery to streams, diminish large wood recruitment to streams, reduce stream shade, and alter hydrology within and downstream of the action area. In the proposed action, ground-based yarding will expose soil within the thinning units. Exposed soil heightens the risk that sediment will be eroded and delivered to nearby streams. Increased sediment delivery results in: (1) Increased stream turbidity; (2) increased substrate embeddedness; (3) loss of interstitial spaces and decreases in forage abundance; (4) reduced pool quality; and (5) increased width/depth ratios. Increased width: depth ratios elevate the risk of stream warming and reduce habitat quality for rearing individuals.

Measures such as using existing skidder and forwarder trails, limiting trail size and frequency, and trail rehabilitation will reduce the amount of exposed soil. All ground-based hauling will occur outside RHCAs. Vegetation within the no-cut buffers will act as a filter and reduce the amount of suspended sediment reaching streams. A review by Belt *et al*. (1992) of studies in Idaho (Burroughs and King 1985, Ketcheson and Megehan 1990) and elsewhere (Trimble and Sartz 1957, Packer 1967, Swift 1986) concluded that non-channelized sediment flow rarely travels more than 300 feet and that 200- to 300-foot riparian "filter strips" are generally effective at protecting streams from sediment. Streams located within 300 feet of the thinning units may experience increases in sedimentation, however, well vegetated buffers of at least 150 and 100 feet will substantially reduce the amount of sediment delivered to those streams. RHCA buffers and measures to reduce exposed soil will reduce sediment delivery to streams to immeasurable amounts (NMFS 2009).

Forest management activities within a distance equal to one site-potential tree height of streams have the potential to change the distribution, size, and abundance of woody material available for recruitment into streams (Ralph *et al.* 1994, Murphy 1995, Spence *et al.* 1996). Because wood recruitment potential declines rapidly moving away from the stream, a buffer of 50 feet likely includes the majority of streamside large wood recruitment potential, depending on stand age and other factors (McDade *et al.* 1990, Van Sickle and Gregory 1990, Welty *et al.* 2002). All tree thinning will occur outside of the RHCA buffers that have widths of at least 50 feet. That combined with the minimal thinning likely precludes any measurable reduction of wood recruitment to streams from streamside stands of trees (NMFS 2009).

All tributaries to the reservoir within the project boundary are intermittent streams. INFISH guidelines suggest a RHCA encompassing 50 ft either side of these streams. The Corps' plan is to meet the INFISH guideline as a minimum on all intermittent streams unless the topography is such that inside of 50 ft the slope breaks and surface water would no longer drain into the stream

in question. The land type within the project boundary is classified as "breaklands" by the USFS. Due to the type of landscape associated with breaklands, there are frequent changes in relief among these drainages creating narrow drainages less than 100 ft in width. For example, if a given stream drainage is only 40 ft wide (20 ft either side), protecting vegetation (prohibiting harvest) for 50 ft either side of the stream does nothing but limit the opportunity for ponderosa pine restoration. Using the same understanding the Corps will likely protect well over 50 ft if the slope breaks over 50 ft (e.g. 75 ft). In terms of the conditions within the RHCAs described by INFISH the Corps plans to adhere to all once the RHCAs are established.

Timber harvesting can change the distribution of precipitation that reaches the ground, the evaporation rate from the ground, rates of interception or evaporation by foliage, soil water storage capacity, and the amount of water that reaches streams. Stednick (1995) found that in general, 20% of the forest cover must be removed before a measurable increase in annual water yield was observed. In a local study in the Upper Umatilla River Watershed, effects on water yield and peak stream flows were not observed below 50% removal of forest cover (Hervey and Fowler 1995). Because forest cover reduction will be below the thresholds stated above, no measureable change in water yield or peak stream flows should result (NMFS 2009).

Trees that have imminent or likely potential to fall and constitute public safety issues (*i.e.* hazard trees) will be felled along some of the forested roads in the project area. Hazard trees cut within RHCAs will be left on site, adding to the recruitment of wood to the riparian area, as RHCAs buffers will be left during prescribed burns. Trees selected for hazard removal will mostly be dead snags, which lack the crown that provides the majority of stream shade, and therefore, this activity will cause only localized reductions in shade that are unlikely to measurably increase stream temperatures. The remaining hazard trees to be removed will be trees that are overhanging or leaning in the direction of the road and not in the direction of adjacent streams.

Effects from road work as part of Forest Management Activities are included in the effects from Road Management section (below).

6.1.5. Road Management

During project design, a concerted effort was made to minimize the potential for sedimentation of streams through the use of existing roads and implementing sediment control measures. Where possible, existing roads will be used to minimize the need to construct new roads. Blading off existing roadbeds drastically reduces the amount of potential erosion compared to constructing new roads. All roads used during harvest and burning operations will be maintained following sale activities to a standard appropriate for their future intended use. Existing roads will be used to transport logs to mills. Also ignition of prescribed fires will not occur within RHCAs.

The potential effects from roads are likely to be the same as the potential effects from constructing firebreaks in the burn areas, and will, therefore, be analyzed as such, and included in the effects portion of this document in the following as part of road construction effects.

It should be emphasized that culverts will be placed in intermittent non ESA-listed fish bearing

streams as part of the proposed action. These intermittent streams are above the OHWM of the reservoir.

Roads can significantly elevate erosion and sediment delivery, disrupt subsurface flows essential to the maintenance of base flow, and can contribute to increased peak flows (Rhodes et al.1993). Increases in fine sediment delivery to streams reduce pool volume, embed substrate, reduce forage abundance, increase channel widths, and exacerbate seasonal water temperature extremes. The proposed new road construction includes the placement of culverts in intermittent, non-fish-bearing streams.

Increases in fine sediment delivery to these streams are likely if sediment from the instream culvert construction area is suspended during high flows. The IMMs stated above will reduce sediment reaching downstream ESA-listed fish habitat in the reservoir to insignificant amounts. The limited amount of sediment suspended during higher flows will not be measurable compared to turbid background conditions. The amount of sediment created by road construction and culvert installation is unlikely to result in any measurable changes in substrate embeddedness, forage abundance, pool volumes, or channel widths.

The proposed roads will bisect intermittent, non-fish-bearing streams at culvert sites. These roads may affect drainage network through increased surface runoff due to road surface compaction. Precipitation landing on the road surface will be transported to streams rapidly through ditch lines and then into the reservoir. This may affect the magnitude of peak flows, as the hardened road surfaces will accelerate water transport during precipitation events. However, the seasonal nature of these intermittent streams will limit any observable change to peak flows or floodplain connectivity.

Riparian vegetation that is disturbed during road construction and culvert installation will be left on site and added to the riparian system. When streamside vegetation is removed, summer water temperatures usually increase in direct proportion to the increase in sunlight that reaches the water surface (Meehan 1991). However, the limited amount of disturbed vegetation will not result in measureable reductions in shade or increases in water temperatures. The lack of water in the intermittent streams during the driest and hottest time of the year precludes any water temperature increase in summer as a result of shade reduction along the stream crossings. Seeding with native species after culvert installation will eventually replace the disturbed vegetation as seedlings establish mature heights and seeds sprout within a year.

Rebuilding road prisms and conducting maintenance on existing roads will expose soil, increasing the risk of sediment being delivered to nearby streams. RHCA buffers between exposed soil and streams, and IMMs such as sediment fencing, working in the dry whenever possible, minimizing the construction area, and planting and seeding, will reduce sediment delivery to streams. Reconditioned roads inside RHCAs have a greater risk of delivering sediment to nearby streams than those outside RHCAs, especially those approaching stream crossings. However, except for steam crossings, thick stands of vegetation of 50 feet or more in width occur between rehabilitated roads and streams. It is unlikely that measurable amounts of sediment will be delivered to streams due to the well vegetated buffers and impact minimization methods stated above.

It is unlikely that the proposed reconstruction of existing roads (some of which are in RHCAs) will increase sediment delivery to streams for the following reasons: 1) most of the reopened roads are outside RHCA buffers; and 2) existing road beds and culverts will be used (no new further construction only reconditioning). Fallen vegetation lying across the reopened road and hazard trees will be the only vegetation removed due to reopening of the closed roads.

Blasting activities have the potential to produce hydroacoustic stressors for bull trout in the area. However, given the use of BMPs designed to protect fish (ADFG 1991) (see Appendix B), bull trout may be exposed to, but are not likely to respond to the hydroacoustic stressors produced, if exposed, as the BMPs will spatially separate bull trout from the blasting-related effects. Those few individuals that may be in the reservoir during blasting activities are not likely to have responses sufficient to reduce their individual performance.

6.1.6. Wildlife Habitat Management

6.1.6.1. Planting

Planting activities have the potential to create turbidity and sedimentation, as well as toxic contamination. However, given the extremely limited nature of the work associated with planting, the Impact Minimization Measures, and the limited disturbance, the potential for adverse effects will be greatly reduced.

6.1.6.2. Wetland Enhancement

Blasting activities have the potential to produce hydroacoustic stressors for bull trout in the area. However, given the use of BMPs designed to protect fish (ADFG 1991) (see Appendix B), bull trout may be exposed to, but are not likely to respond to the hydroacoustic stressors produced, if exposed, as the BMPs will spatially separate bull trout from the blasting-related effects. Those few individuals that may be in the reservoir during blasting activities are not likely to have responses sufficient to reduce their individual performance.

6.2. Effects on Listed Species

Effects on listed species will be similar for most of the management activity elements, and are therefore, for the sake of simplicity, analyzed collectively.

Bull trout use Dworshak Reservoir for overwintering. However, due to the nature of the action, reservoir conditions, and proposed IMMs and BMPs, it is unlikely that the fish or habitat in the reservoir will be adversely affected.

6.2.1. Elevated Suspended Sediment and Turbidity

No measurable elevations of suspended sediment and turbidity will occur in the reservoir as a result of timber harvest, yarding, slashing, or prescribed burning activities due to impact minimization measures reducing the amount of exposed soil and RHCA buffers between the

harvest units and streams will act as sediment filters. Therefore, the effects of elevated suspended sediment and turbidity on listed species of fish as a result of proposed timber harvest, yarding, slashing, and prescribed burning are insignificant.

Due to the current management of Dworshak water reserves, the effects of this project on the water quality of the reservoir would be minimal due to the high background levels of suspended sediment, and the common turbidity. Current objectives of flow augmentation to enhance downstream conditions for migration of threatened and endangered salmon result in dramatic drawdowns (80 to 155'), exposing up to 200' of mineral soil around the perimeter of the 54 mile reservoir for most of the year. This creates potential for high levels of erosion and sedimentation. Impacts to water quality resulting from this project would be negligible in comparison to erosion caused by annual drawdowns, and will likely be undetectable beyond background levels in the reservoir.

Road construction and rehabilitation are likely to increase sediment delivery to adjacent streams. Minimizing the amounts of exposed soil and IMMs will limit the amount of suspended sediment and minimize adverse effects to ESA-listed fish. Based on previous projects of a similar nature, the turbidity plume resulting from culvert installation and road construction is not likely to extend beyond 600 feet (NMFS 2009), and therefore will not reach locations inhabited by ESA-listed fish which are greater than 600 feet away. The disturbance and turbidity created by culvert installation will cause some juvenile fish to temporarily abandon these areas (Lloyd *et al.* 1987). However, some fish are likely to remain in the affected areas despite the perturbation (Quigley 2003). During that time, these remaining juvenile fish are likely to experience decreased feeding and stress (Redding *et al.* 1987, Lloyd *et al.* 1987, Servizi and Martens 1991), thereby increasing the likelihood that they will be killed or injured. However, given that the culvert installation will be on intermittent streams that are non-fish bearing, combined with the use of RHCAs, it is unlikely that any individual fish would be affected, either upstream or downstream of the dam.

6.2.2. Chemical Contamination

Operation of equipment requires the use of fuel and lubricants, which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can cause lethal and sub-lethal chronic effects to other aquatic organisms (Neff 1985). Construction equipment will be staged outside of RHCAs, and all equipment will be cleaned and fueled in these staging areas. Equipment will be inspected and cleaned prior to any instream work. These impact minimization measures will significantly reduce hydrocarbon and other contaminant levels.

The IMM stated above will reduce the risk of chemical contamination to a level not likely to kill or injure any listed species or have any population-level effect, or have an effect on critical habitat. Because of the IMMs, effects from chemical contamination on ESA-listed species and their designated and proposed critical habitat are not reasonably certain to occur, and are therefore discountable.

6.2.3. Blasting

Blasting activities have the potential to produce hydroacoustic stressors for bull trout in the area. However, given the use of BMPs designed to protect fish (ADFG 1991) (see Appendix B), bull trout may be exposed to, but are not likely to respond to the hydroacoustic stressors produced, if exposed, as the BMPs will spatially separate bull trout from the blasting-related effects. Those few individuals that may be in the reservoir during blasting activities are not likely to have responses sufficient to reduce their individual performance.

6.2.4. Riparian Vegetation Reduction

As described above, the proposed action will not remove enough streamside shade to cause a measurable increase in stream temperature. Therefore, no measurable effect on listed species is likely as a result of the minimal amount of stream shade reduction.

Timber harvesting has the potential to displace some wolves during harvesting activities. However, as the reservoir area is used for recreation on a regular basis, and lands adjacent to Corps managed lands are regularly used for harvesting, the wolves in the area should be accustomed to such activities, and the displacement should be minimal.

Overall, harvesting activities should help promote forest health, and promote better health within the local elk populations, which should, in turn, promote better health of the local wolf populations. The benefit may take time to be realized, and may not be easily quantified in the short-term.

6.3. Effects on Critical Habitat

Effects on designated critical habitat and associated PCEs will be similar for most of the management activity elements, and are therefore, for the sake of simplicity, analyzed collectively.

Since there is no designated critical habitat for SR fall Chinook salmon or SRB steelhead upstream of Dworshak Dam, the proposed action will have no effect on any SR fall Chinook salmon or SRB steelhead designated critical habitat.

6.3.1. Bull Trout

Water quality: The proposed action will have no significant effect on short-term and long-term water quantity. Timber harvest may slightly reduce water loss to evapotranspiration, resulting in increased water yield from the watershed. Any increase in water yield should be so small that it could not be detected or measured. The effect on this PCE is expected to be insignificant.

Migration corridors: Migration is not likely to be significantly altered because of the lack of migration occurring in the work in the area, the intermittent nature of the affected streams affected, the fact that the affected streams are non fish bearing, the fact that the culvert sites are

located well above the OHWM of the reservoir, and the short duration of the instream work during culvert placement. The effect on this PCE is expected to be insignificant.

Food availability: A minor decrease in the abundance of macroinvertebrates may occur up to 600 feet downstream of instream work sites for a period of a few weeks as a result of increased fine sediment in stream substrates. However, these streams are intermittent and non ESA-listed fish bearing. It is likely that any decrease in the abundance of macroinvertebrates will occur only at culvert installation sites. Because of the conditions on-site (as seen in Figures 12 and 13) and the fluctuation in reservoir levels, it is likely that the reduction in abundance of macroinvertebrates will be immeasurable, and any potential adverse effects are expected to be insignificant.

Instream habitat: The proposed project will have no effect.

Water temperature: The proposed project will have no effect.

Substrate characteristics: The turbidity generated by instream work may eventually be deposited as fine sediment in downstream substrates of the reservoir. Substrates in the reservoir portion of the action area are not suitable for bull trout spawning. Substrate fine sediment and embeddedness may temporarily increase as a result of the proposed action in the reservoir, with little to no effect on suitability for bull trout spawning. Most of the fine sediment will be remobilized downstream from culvert installation sites during the next high flow event. IMMs limiting exposed soils and suspended sediment will limit any increases in substrate embeddedness. The effect on this PCE is expected to be insignificant.

Stream flow: The proposed project will have no effect.

Water quantity: The proposed project will have no effect.

Nonnative species: The proposed project will have no effect.

6.3.2. Canada Lynx

No critical habitat for Canada lynx has been designated within the proposed action area.

6.3.3. Gray Wolf

No critical habitat rules have been published for the gray wolf.

6.4. Cumulative Effects

The action area is used heavily for year-round recreation activities. These activities are reasonably certain to continue, and will not result in any increased measurable cumulative effects on ESA-listed species when analyzed with the proposed action. Seasonal drawdowns of the reservoir will continue for the foreseeable future, continuing the annual fluctuation of the reservoir, and perpetuating the current conditions within the reservoir.

6.5. Effects Determination

Tables 8 and 9 contain a summary of the effects determination and determination rationale for bull trout and bull trout critical habitat. The term “action component” describes the potential effect or pathway for potential effect for a given activity or element.

Table 9 Tracking table for species effects.

Effects Tracking Table for Corps Projects Dworshak Recreation and Forest Health Timber Sales									
Species	**Action Component 1**	**Action Component 2**	**Action Component 3**	**Action Component 4**	**Action Component 5**	**Action Component 6**	**Action Component 7**	**Action Component 8**	**Action Component 9**
Bull Trout	**Access, Boundary Management**	**Access, Boundary Management**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Wildlife Habitat Management**	**Road, Wildlife Habitat Management**	**Wildlife Habitat Management**
Effects of the Action (Predicted Stressor)	Sediment and Turbidity	Toxins	Sediment and Turbidity	Toxins	Felling of Trees in Streams	Riparian Vegetation Reduction	Sediment and Turbidity	Blasting	Toxins
Impact Minimization Measure(s)	Hand Tools for all but gate installation	Hand Tools for all but gate installation	Erosion control, reseeding, selective harvest, RHCA buffers	Spill Prevention Plan, spill kit	RHCA buffers	RHCA buffers	Hand Tools for planting, RHCA buffers,	ADFG 1991	Spill Prevention Plan, spill kit
Stressor Likely to be Produced?	yes	no (insignificant)	yes	yes	no	no	yes	yes	yes (insignificant)
Species Likely to be Exposed to Stressor?	no	no	yes	yes (insignificant)			no	yes	no
Species Likely to Respond to Stressor?			yes (insignificant)	no				yes (insignificant)	
Response Likely to be Sufficient to Reduce Individual Performance?			no					no	
Effects Determination	no effect	no effect	NLAA	NLAA	no effect	no effect	no effect	NLAA	no effect

Table 10 Tracking table for critical habitat.

Effects Tracking Table for Corps Projects Dworshak Recreation and Forest Health Timber Sales									
Critical Habitat	**Action Component 1**	**Action Component 2**	**Action Component 3**	**Action Component 4**	**Action Component 5**	**Action Component 6**	**Action Component 7**	**Action Component 8**	**Action Component 9**
Bull Trout	**Access, Boundary Management**	**Access, Boundary Management**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Fire, Forest, Road Management, Recreation**	**Wildlife Habitat Management**	**Road, Wildlife Habitat Management**	**Wildlife Habitat Management**
Effects of the Action (Predicted Stressor) (should not introduce effects not listed for species)	Sediment and Turbidity	Toxins	Sediment and Turbidity	Toxins	Felling of Trees in Streams	Riparian Vegetation Reduction	Sediment and Turbidity	Blasting	Toxins
Impact Minimization Measure(s)	Hand Tools for all but gate installation	Hand Tools for all but gate installation	Erosion control, reseeding, selective harvest	Spill Prevention Plan, spill kit	RHCA buffers	RHCA buffers	Hand Tools for planting, RHCA buffers,	ADFG 1991	Spill Prevention Plan, spill kit
Stressor Likely to be Produced?	yes	no (insignificant)	yes	yes	no	no	yes	yes	yes
Effects on PCEs									
Water Quality	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant
Migration Habitat	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant
Food Availability	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant
Instream Habitat	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Water Temperature	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Substrate Characteristics	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant
Stream Flow	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Water Quantity	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Nonnative Species	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect	no effect
Effects(s) on Conservation Value of PCEs-5th Field HUC	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant
Effects Determination	insignificant	insignificant	insignificant	insignificant	no effect	no effect	insignificant	insignificant	insignificant

6.5.1. Listed Species

The Corps determined that the proposed action will have **no effect** on SR fall Chinook salmon SRB steelhead, wolverine and **may affect, but is not likely to adversely affect** bull trout.

The effects of the action will include minor and temporary increases in turbidity and fine sediment in the substrate, and a slight, temporary reduction in natural cover in the reservoir and would be insignificant (Table 9). Although sediment effects are harmful to ESA-listed fish species, they will be limited in intensity, extent, and duration.

Any potential sediment effects on bull trout that may be present in the reservoir during activities associated with the proposed action would be **insignificant** when compared to the levels of suspended sediment within the reservoir that are part of the baseline condition, and the distribution of bull trout in the reservoir.

Because of the implementation of IMMs, effects from riparian vegetation reduction on ESA-listed species are not reasonably certain to occur.

The proposed action will have **no effect** on Canada lynx (Table 10).

6.5.2. Critical Habitat

Because of the limits on the intensity, extent and duration of the adverse effects on the environment, the PCEs of the bull trout designated critical habitat in the action area are likely remain functional, or retain their current ability to become functionally established, to serve the intended conservation role for the species. Therefore, the Corps has determined that the proposed action **may affect, but is not likely to adversely affect** bull trout designated critical habitat.

There is no designated or proposed Canada lynx critical habitat in the area.

6.5.3. Summary.

Table 11 Effects determination summary.

Species	Species Determination	Critical Habitat Determination
NMFS		
SR Fall Chinook	No Effect	No Effect
SRB Steelhead	No Effect	No Effect
USFWS		
Bull trout	May Affect, Not Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect
Canada lynx	No Effect	No Effect
North American Wolverine	No Effect	None Designated

7. Conclusions

The proposed project is designed to programmatically manage forest and wildlife resources within Corps-managed lands at Dworshak Dam and Reservoir. The primary purposes for this action are to enhance ecosystem integrity, forest health, wildlife habitat, and recreational opportunities. This will be accomplished through a series of activities, along with their associated elements, as outlined in this document.

The Corps has proposed a number of IMMs as part of the proposed action that will alleviate the certainty for any potential adverse effects to likely adversely affect ESA-listed species or their designated and proposed critical habitats. The analysis of others in relation to baseline conditions also leads to the conclusion that other potential adverse effects that may result from the proposed action would be insignificant.

8. Essential Fish Habitat

The action area (as discussed in the Action Area section of the ESA portion of this document) includes areas designated as EFH under the MSA for various life-history stages of Chinook and Coho salmon. The Lower North Fork Clearwater sub-basin (HUC 17060308) has been identified as inaccessible historic EFH for Chinook salmon (PFMC 1999).

8.1. Description of the Proposed Action

The Pacific Fishery Management Council (PFMC) designated EFH for groundfish, coastal pelagic species, and Chinook salmon, Coho salmon, and Puget Sound pink salmon (PFMC 1999). The proposed action and action area for this assessment are described in the ESA portion of this document.

8.2. Effects of the Proposed Action

Based on information provided above, and the analysis of effects presented in the ESA portion of this document, the Corps concludes that the effects on Chinook salmon EFH are the same as those for designated and proposed critical habitat for the fish species listed in this document designated critical habitat and are described in detail in *Effects on Critical Habitat* section of the ESA portion of this document. The proposed action may result in short-term adverse effects on a variety of habitat parameters, but will be minimal. These adverse effects are:

- Increased turbidity and sedimentation will occur from construction activities. A turbidity plume is likely to extend up to 600 feet downstream of culvert installation sites or roads.
- A short-term minor decrease in macroinvertebrates may occur as a result of increased fine sediment in stream substrates due to work associated with these activities. However, there is no proposed work in fish-bearing streams, and the streams in which work will be performed are intermittent. Therefore, the effect on EFH is de minimis.

- Removal of a few hazard trees currently providing stream shade will reduce natural cover. However, adherence to RHCA buffers will reduce the effect to a level that is insignificant or discountable.
- Due to the use of heavy equipment, there is an increased risk of chemical contaminant release. However, proposed IMMs and BMPs reduce the risk to a level that is insignificant or discountable.

8.3. Proposed Conservation Measures

Proposed conservation measures include:

- IMMs and BMPs listed in the ESA portion of this document.
- Environmentally critical habitats such as spawning gravels that may be encountered, and endangered species habitats should be avoided.

8.4. Conclusions by EFH

Based upon the project description, the project design, the minimal short-term potential impacts associated with the project above the dam, the unlikelihood of impacts below the dam, and the proposed conservation measures (BMPs and IMMs), the Corps believes there will **be no adverse effects to EFH**.

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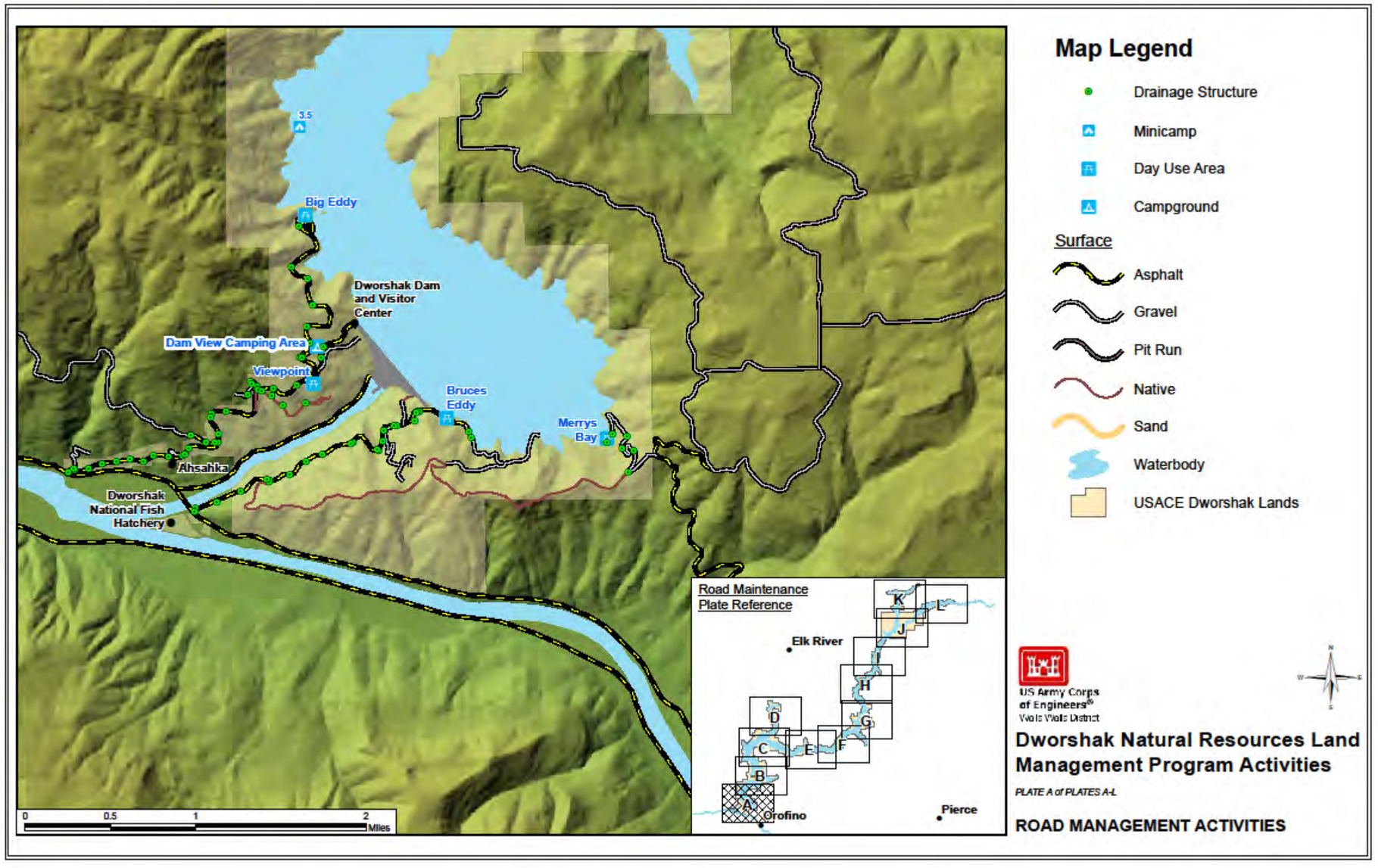
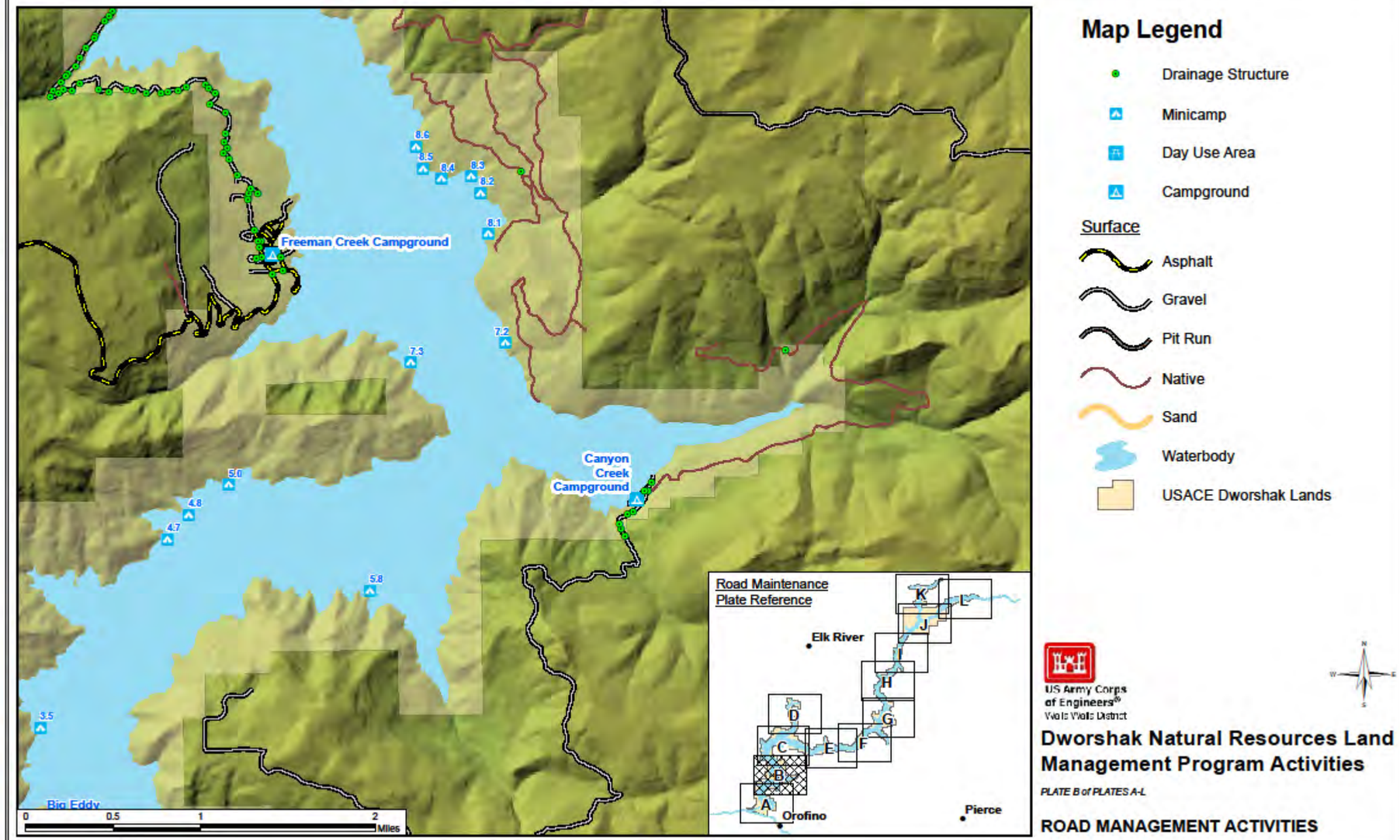
10. Appendix A: Road Management Maps





Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

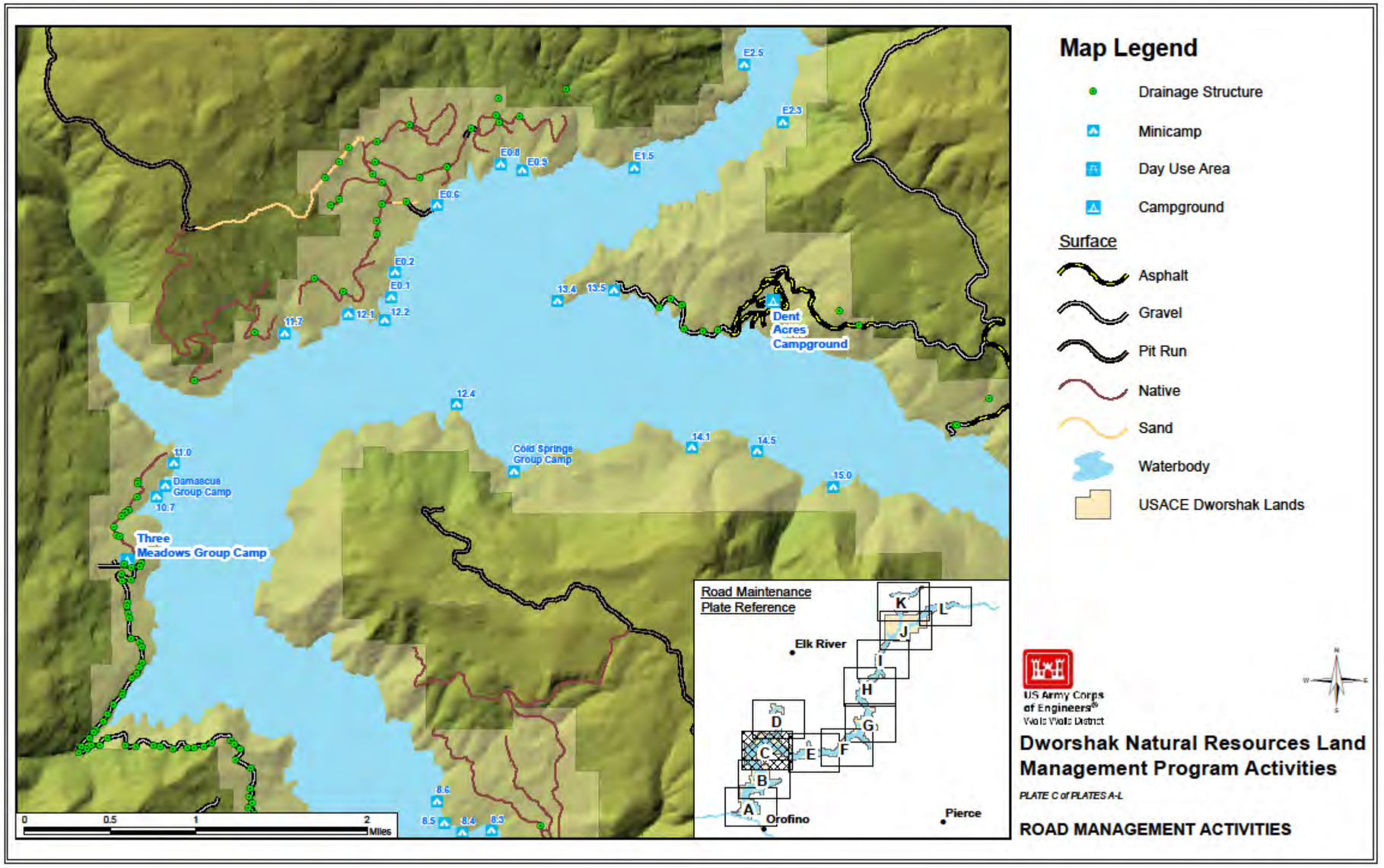
- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

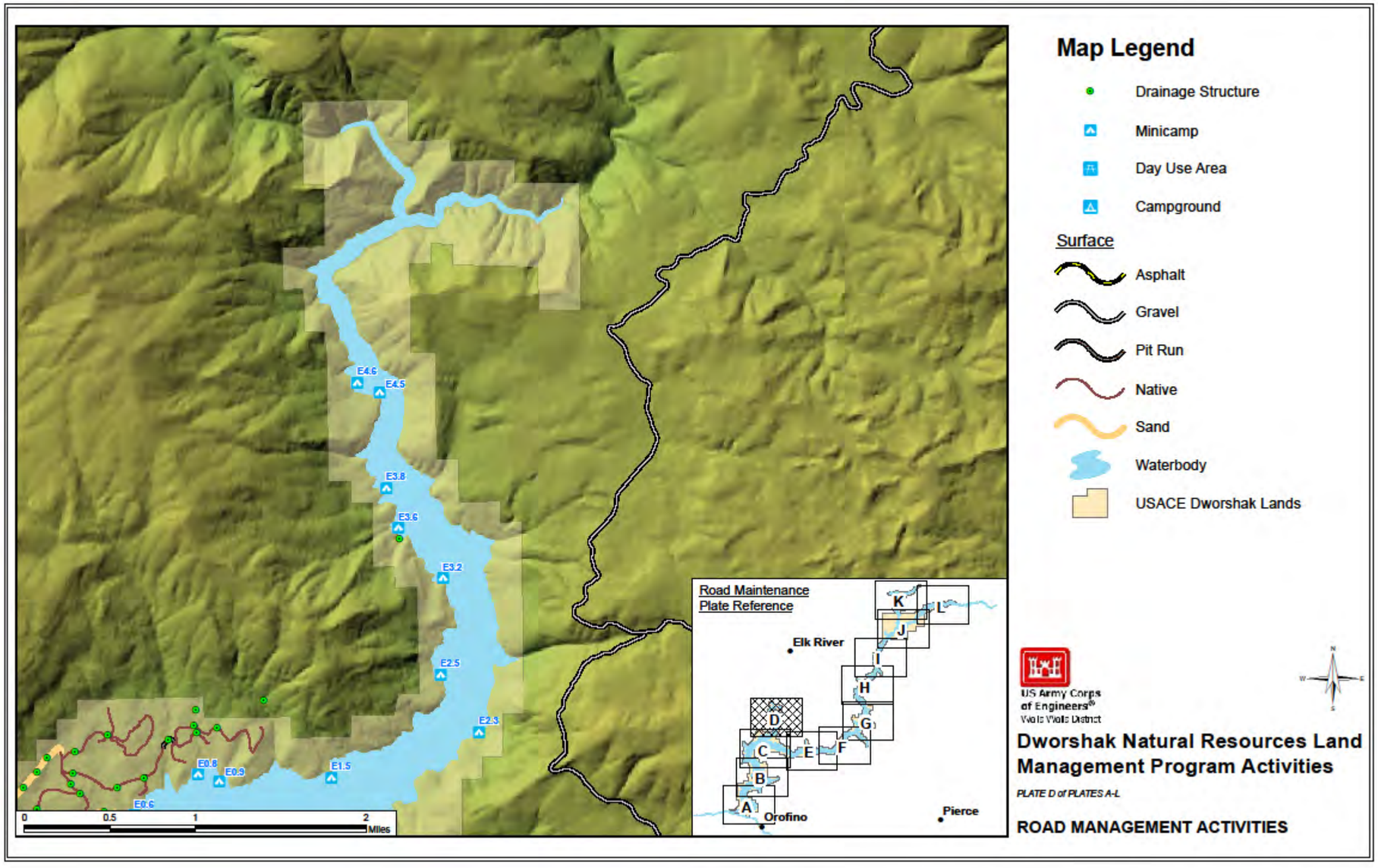
US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE B of PLATES A-L

ROAD MANAGEMENT ACTIVITIES


E2.5
E2.3
E1.5
E0.8
E0.9
E0.6
E0.2
E0.1
12.1
12.2
11.7
13.4
13.5
Dent Acres Campground
12.4
Cold Springs Group Camp
14.1
14.5
15.0
11.0
Damascus Group Camp
10.7
Three Meadows Group Camp
8.6
8.5
8.4
8.3
0
0.5
1
2
Miles
Road Maintenance Plate Reference
K
L
J
I
H
G
F
E
D
C
B
A
Elk River
Orofino
Pierce
Map Legend
Drainage Structure
Minicamp
Day Use Area
Campground
Surface
Asphalt
Gravel
Pit Run
Native
Sand
Waterbody
USACE Dworshak Lands
US Army Corps of Engineers®
Walla Walla District
Dworshak Natural Resources Land Management Program Activities
PLATE C of PLATES A-L
ROAD MANAGEMENT ACTIVITIES


E4.6
E4.5
E3.8
E3.6
E3.2
E2.5
E2.3
E1.5
E0.8
E0.3
E0.6
0
0.5
1
2
Miles
Road Maintenance
Plate Reference
K
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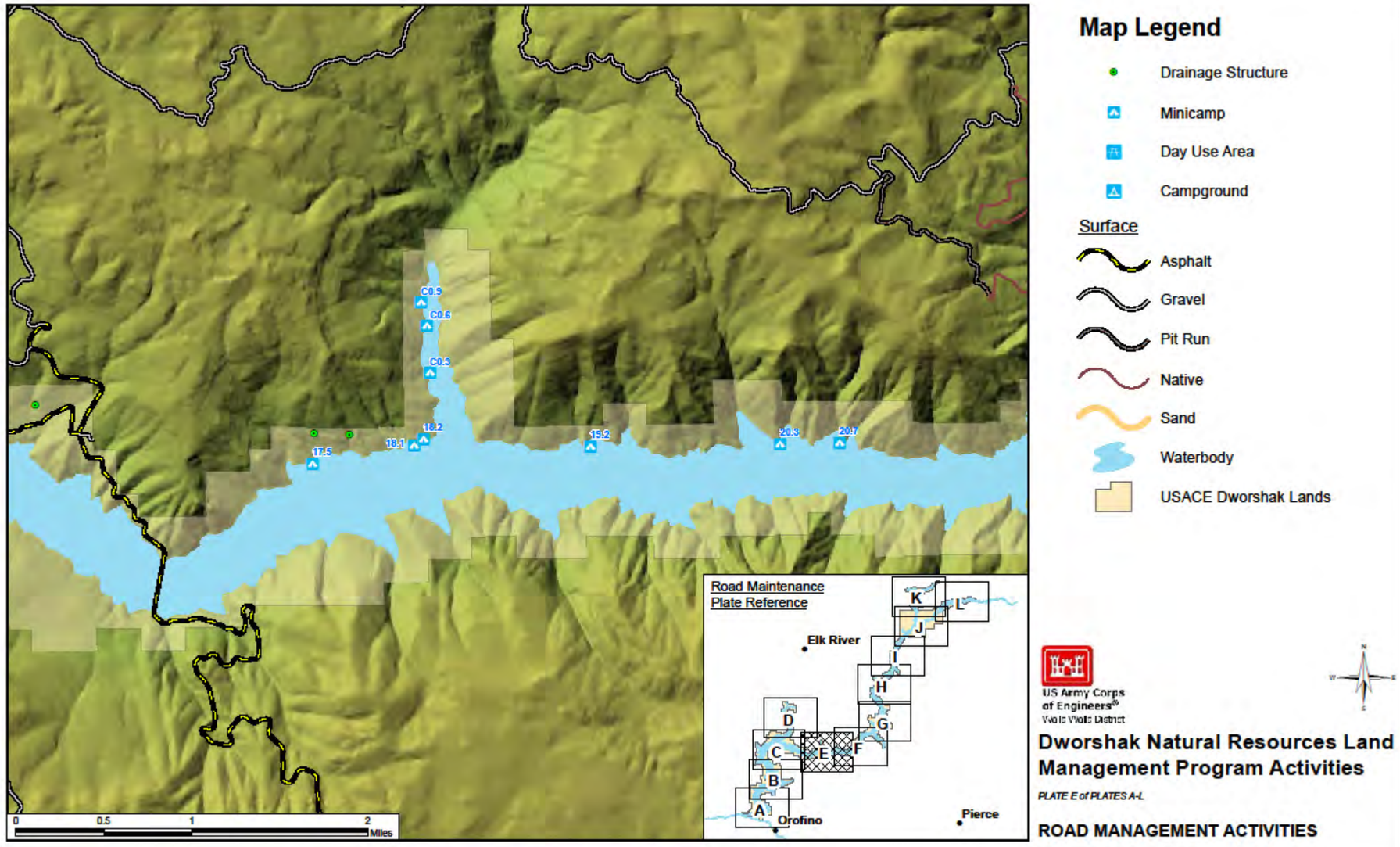
Elk River
Orofino
Pierce
Map Legend
Drainage Structure
Minicamp
Day Use Area
Campground
Surface
Asphalt
Gravel
Pit Run
Native
Sand
Waterbody
USACE Dworshak Lands
US Army Corps
of Engineers
Walla Walla District
Dworshak Natural Resources Land
Management Program Activities
PLATE D of PLATES A-L
ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

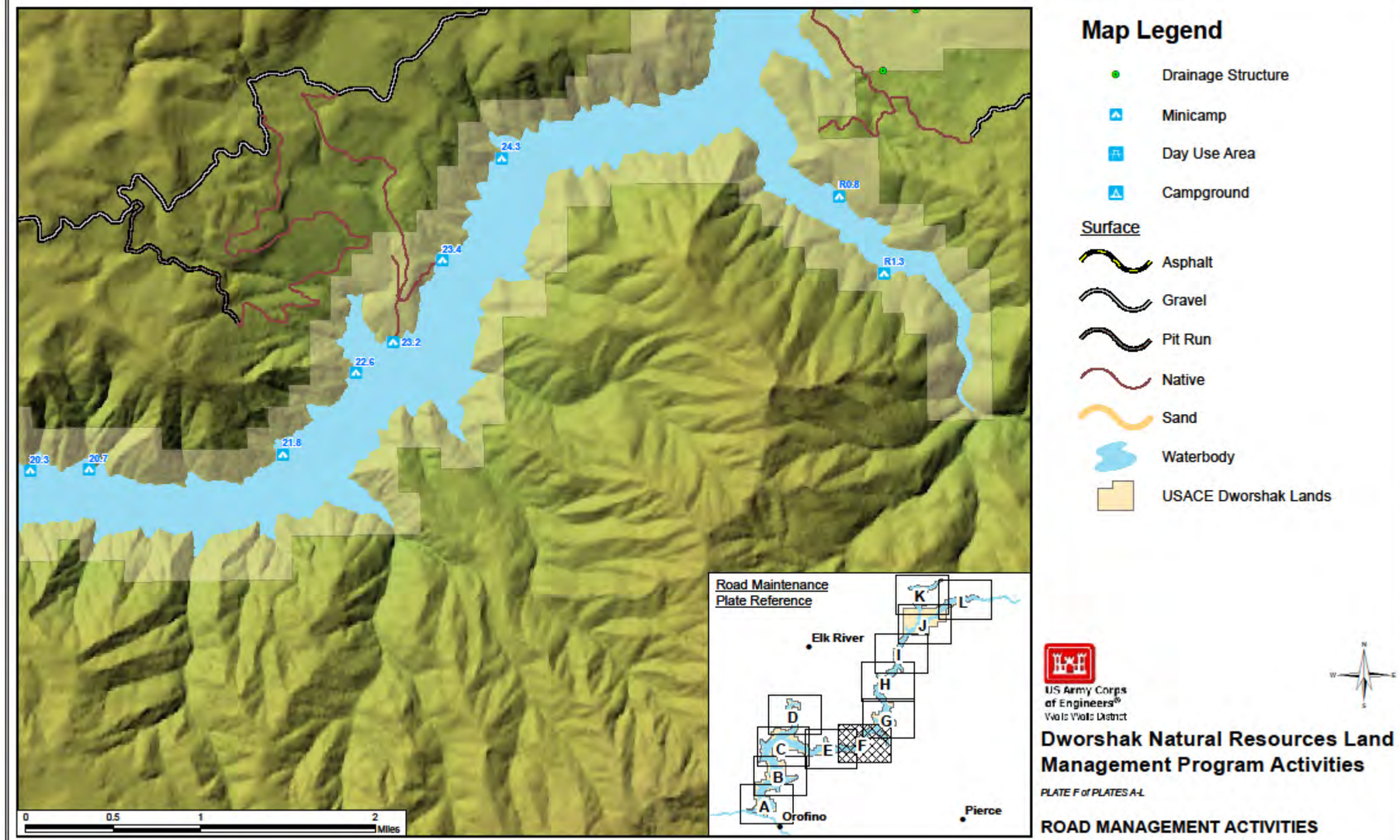
- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE E of PLATES A-L

ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

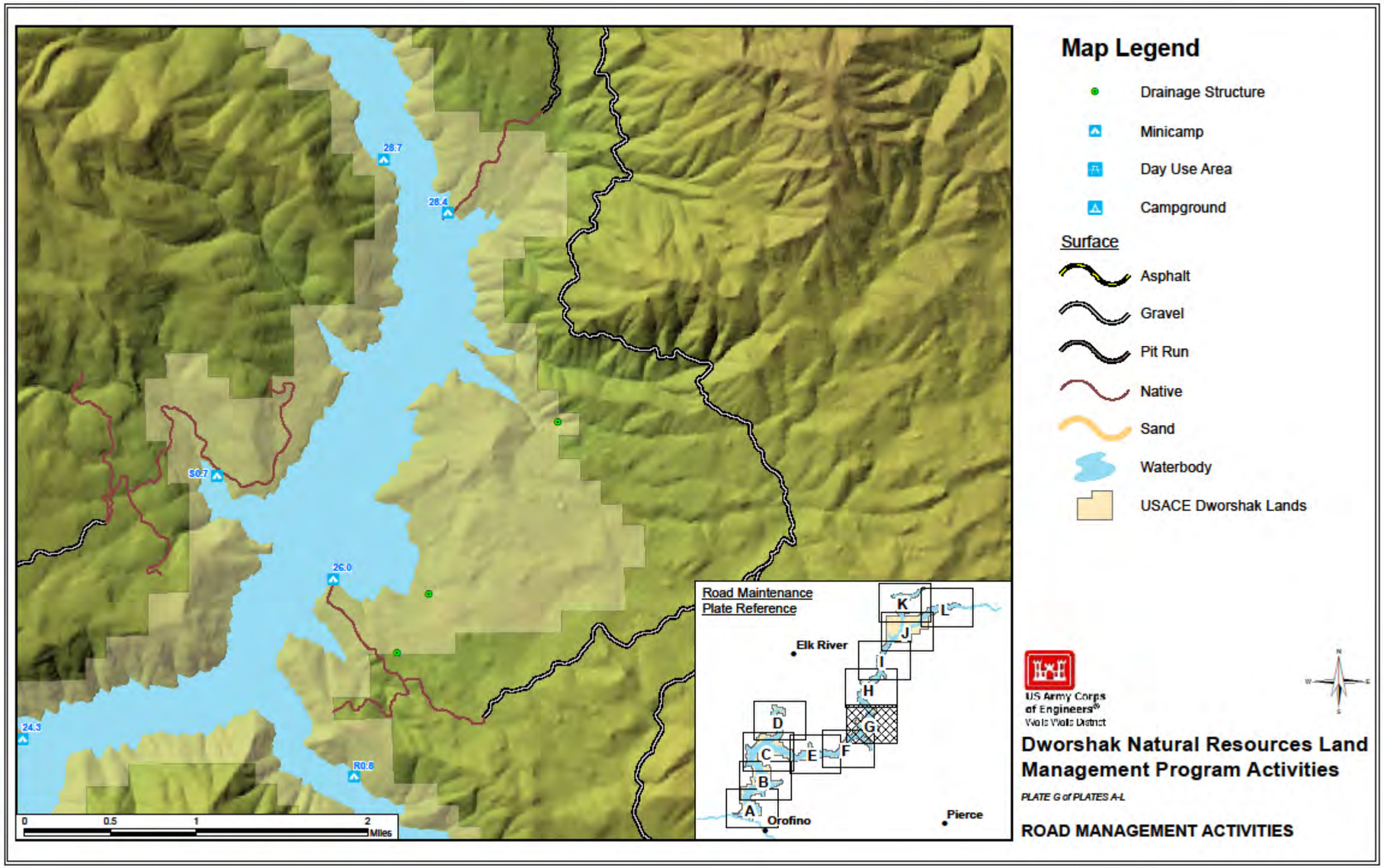
- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

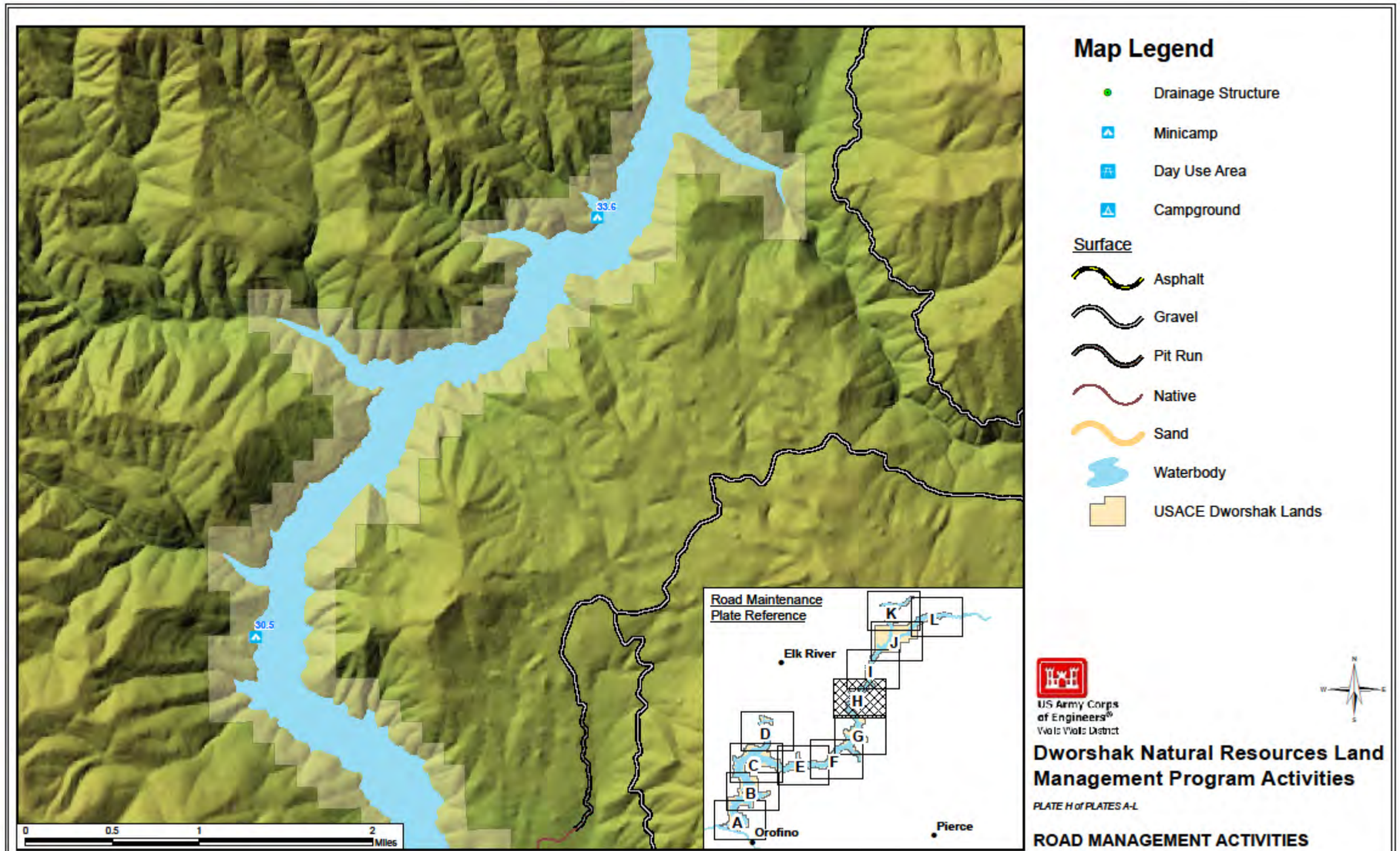
US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE F of PLATES A-L

ROAD MANAGEMENT ACTIVITIES


28.7
28.4
S0.7
26.0
24.3
R0.8
0
0.5
1
2
Miles
Road Maintenance
Plate Reference
K
L
J
Elk River
I
H
D
G
C
E
F
B
A
Orofino
Pierce
Map Legend
Drainage Structure
Minicamp
Day Use Area
Campground
Surface
Asphalt
Gravel
Pit Run
Native
Sand
Waterbody
USACE Dworshak Lands
US Army Corps of Engineers
Walla Walla District
Dworshak Natural Resources Land Management Program Activities
PLATE G of PLATES A-L
ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

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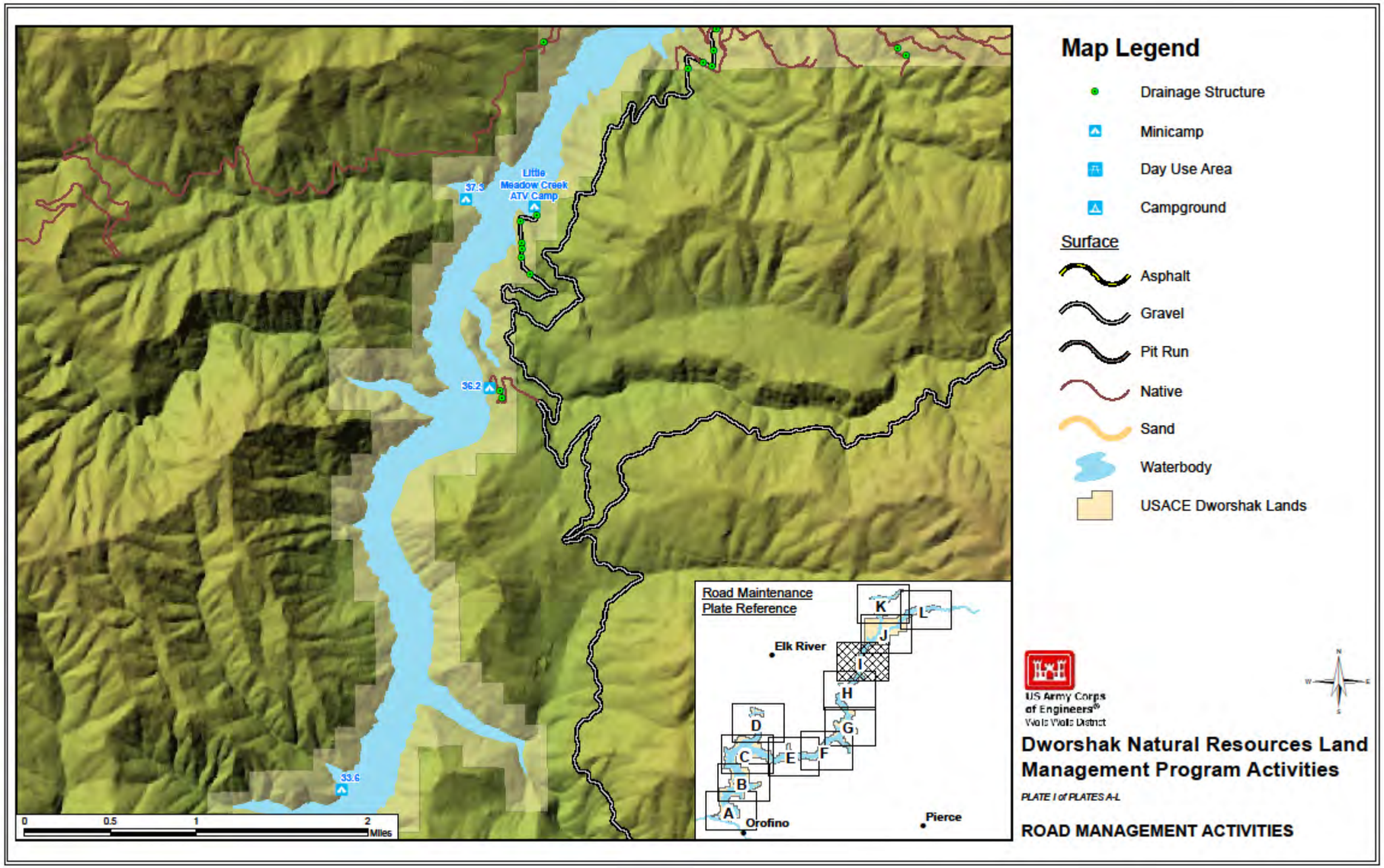
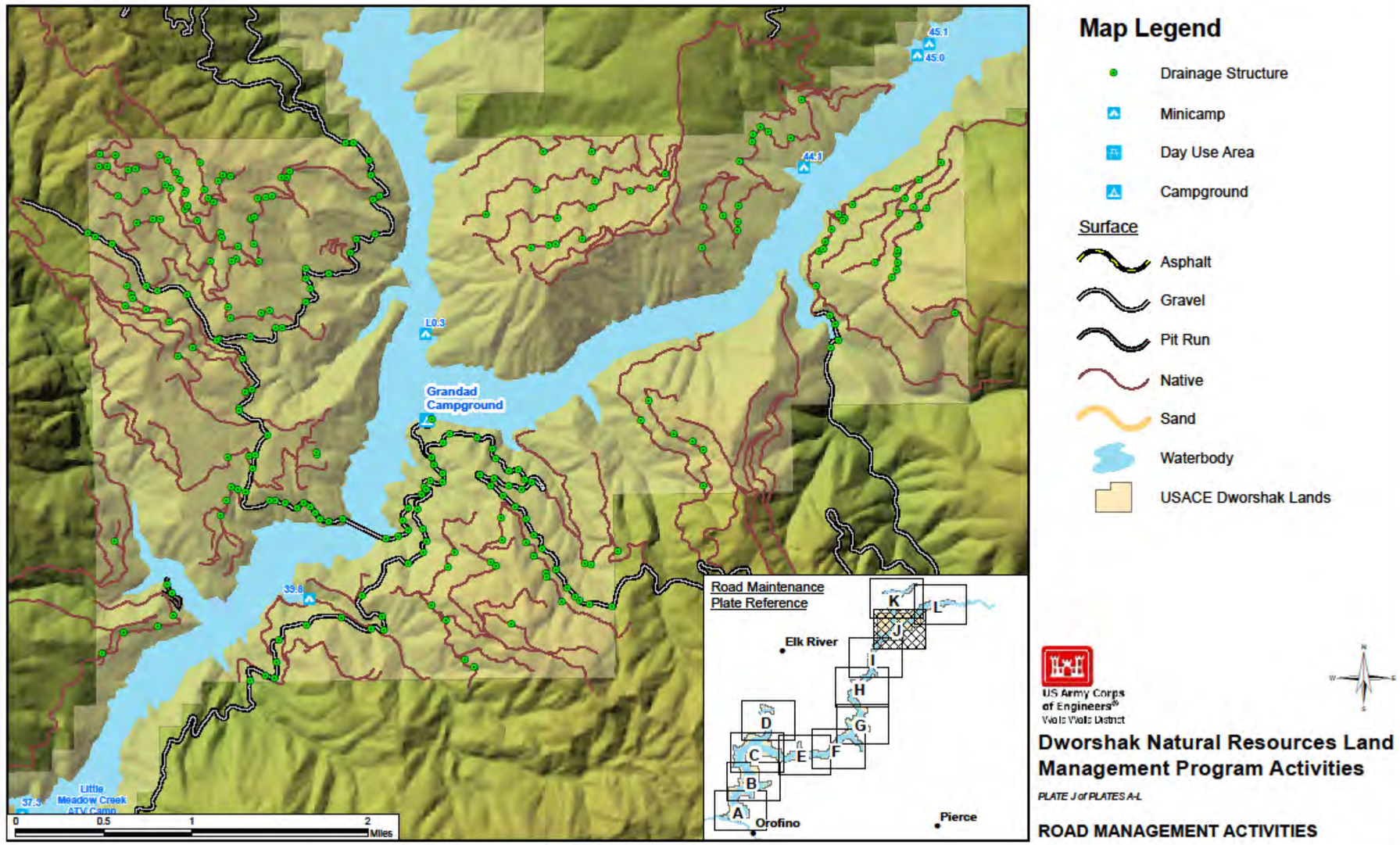
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE H of PLATES A-L

ROAD MANAGEMENT ACTIVITIES


Little Meadow Creek ATV Camp
37.3
36.2
33.6
0
0.5
1
2
Miles
Road Maintenance Plate Reference
A
B
C
D
E
F
G
H
I
J
K
L
Elk River
Orofino
Pierce
Map Legend
Drainage Structure
Minicamp
Day Use Area
Campground
Surface
Asphalt
Gravel
Pit Run
Native
Sand
Waterbody
USACE Dworshak Lands
US Army Corps of Engineers
Walla Walla District
Dworshak Natural Resources Land Management Program Activities
PLATE I of PLATES A-L
ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

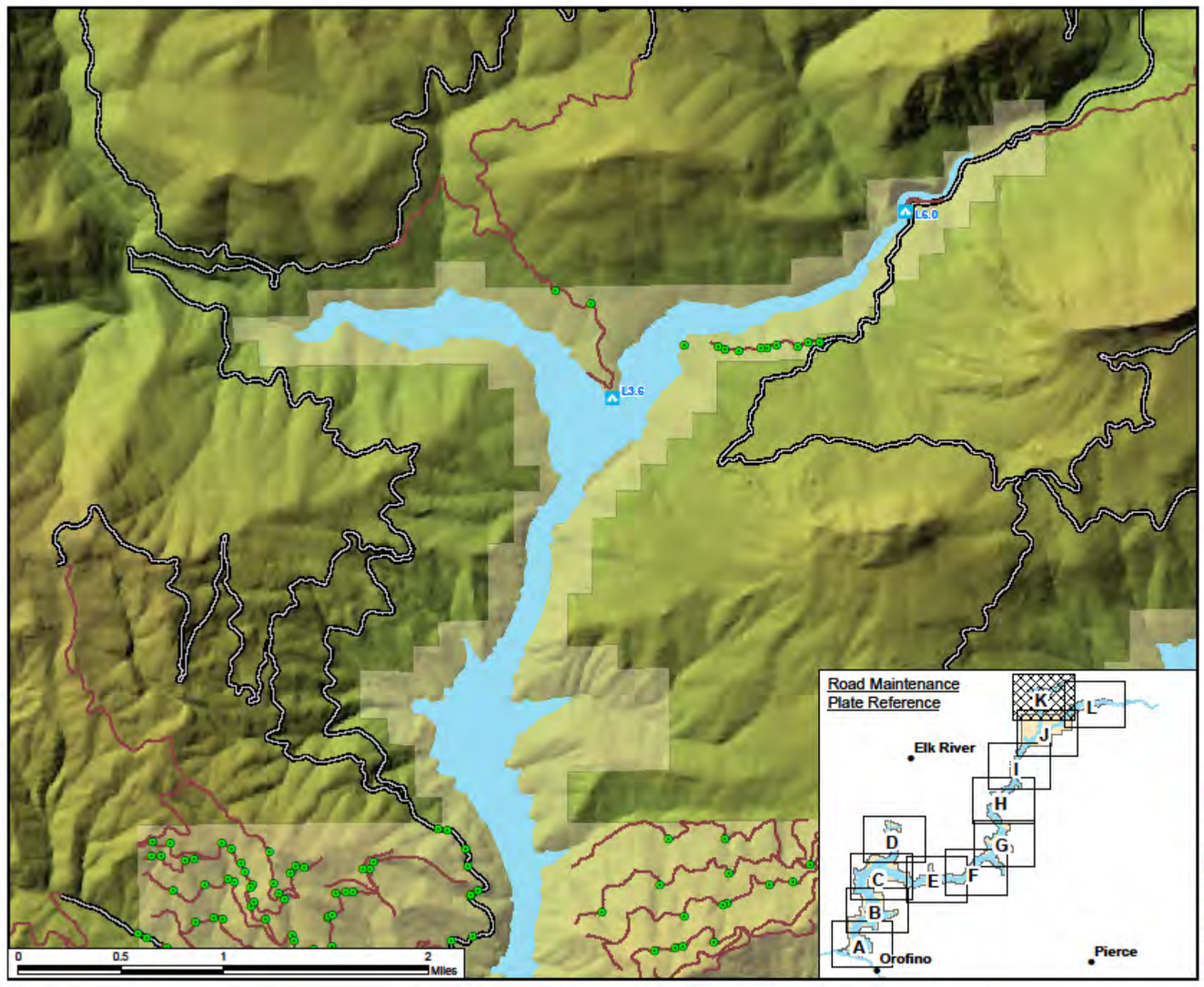
- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE J of PLATES A-L

ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

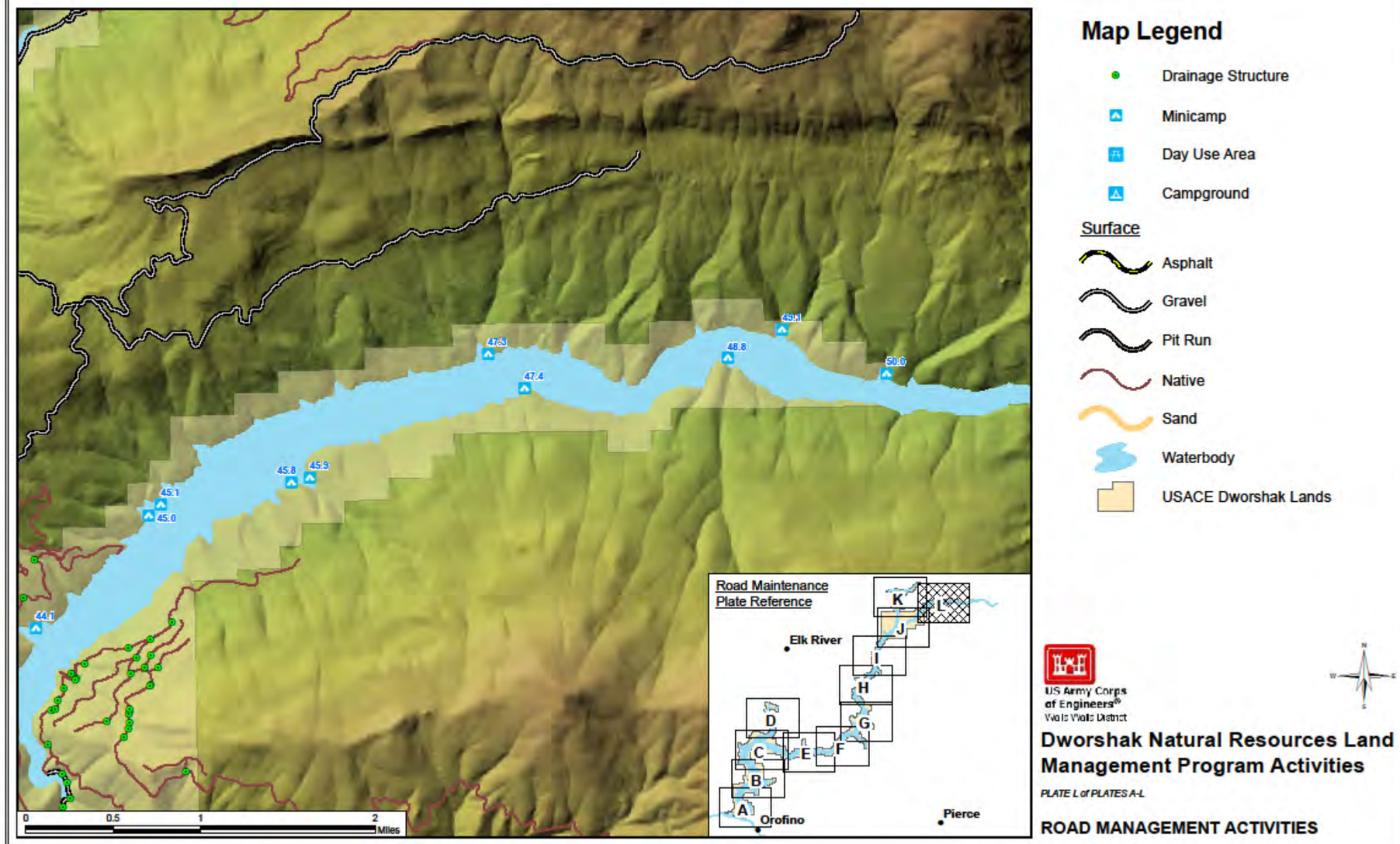
- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE K of PLATES A-L

ROAD MANAGEMENT ACTIVITIES



Map Legend

- Drainage Structure
- Minicamp
- Day Use Area
- Campground

Surface

- Asphalt
- Gravel
- Pit Run
- Native
- Sand
- Waterbody
- USACE Dworshak Lands

US Army Corps of Engineers®
Walla Walla District

Dworshak Natural Resources Land Management Program Activities

PLATE L of PLATES A-L

ROAD MANAGEMENT ACTIVITIES

11. Appendix B: Dworshak Blasting Activities

Dworshak Blasting

11.1. Purpose and Need

The Walla Walla District of the US Army Corps of Engineers proposes to use explosives to enhance the habitat suitability for amphibian reproduction at small isolated wetlands and to reduce unauthorized vehicle use.

11.1.1. Wetland Enhancement

Dworshak has a number of small isolated wetlands that warrant protection and/or enhancement.

11.1.2. Road Obliteration

There is a large volume of unauthorized motor vehicle use on Corps land surrounding Dworshak Reservoir resulting in negative impacts to soils, vegetation, wildlife, water quality and aesthetics as well as having the potential to affect resident fish and aquatic ecology, recreation, cultural resources and T&E species. The Dworshak access management program utilizes one or a combination of education, signage, and physical barriers (when necessary) to prevent unauthorized access. Many of these are gates and barricades, which require annual inspection and maintenance. Obliterating all or portions of roads and trails could be used to prevent unauthorized access at a lower maintenance cost. Road obliteration may be the only physical barrier option in areas where access is limited. In these cases explosives will be used to obliterate a portion of these roads.

11.1.3. Trail Construction / Maintenance

Hiking, horseback riding, and mountain biking are increasingly popular authorized activities on reservoir lands. Currently, there are no motorized trails on Dworshak lands with the exception of one pilot project for an ATV trail at Little Meadow Creek to analyze potential impacts to Dworshak lands. Significant demand by area OHV users, coupled with the need to update DM-10, culminated in the creation of the Dworshak Public Use Plan authorizing motorized recreation. Given the nature of the terrain around Dworshak, and the myriad of trail types on Dworshak, the necessity may arise to use explosives to remove rocks and other hard surfaces that cannot be altered by conventional methods.

11.1.4. Road Construction/Maintenance

Roads to be constructed or maintained for natural resource management activities, such as harvest operations, may require blasting of rocks and other hard surfaces that cannot be altered by conventional methods. The potential for this work is extremely low as generally rocky outcroppings and the like are nearly always avoided during road layout. However, the possibility that a particular rocky outcropping cannot be avoided and must be blasted exists, but is remote.

11.2. Proposed Action

Once a wetland, trail or a road is identified for blasting the work would include the following:

Exact locations of each hole will be marked on the ground based on potential to improve the wetland habitat or obliterate the road surface.

- Holes will be dug into the soil using either a rock bar or a post-hole digger.
- Explosives will be placed in the holes; charges may be tied together, and set off.
- Explosives will be discharged in such a manner as to adhere to the best management practices mentioned below for fish protection.
- Guards and warning signs will be posted during the entire blasting procedure.

11.3. Best Management Practices

11.3.1. Protection of Fish

The Alaska Department of Fish and Game (ADFG) developed blasting standards for the protection of fish. These guidelines were established to prevent adverse impacts to adults, larvae and eggs. The Corps proposes to use those guidelines as a practice to avoid impacts to fish. The standards are summarized as follows;

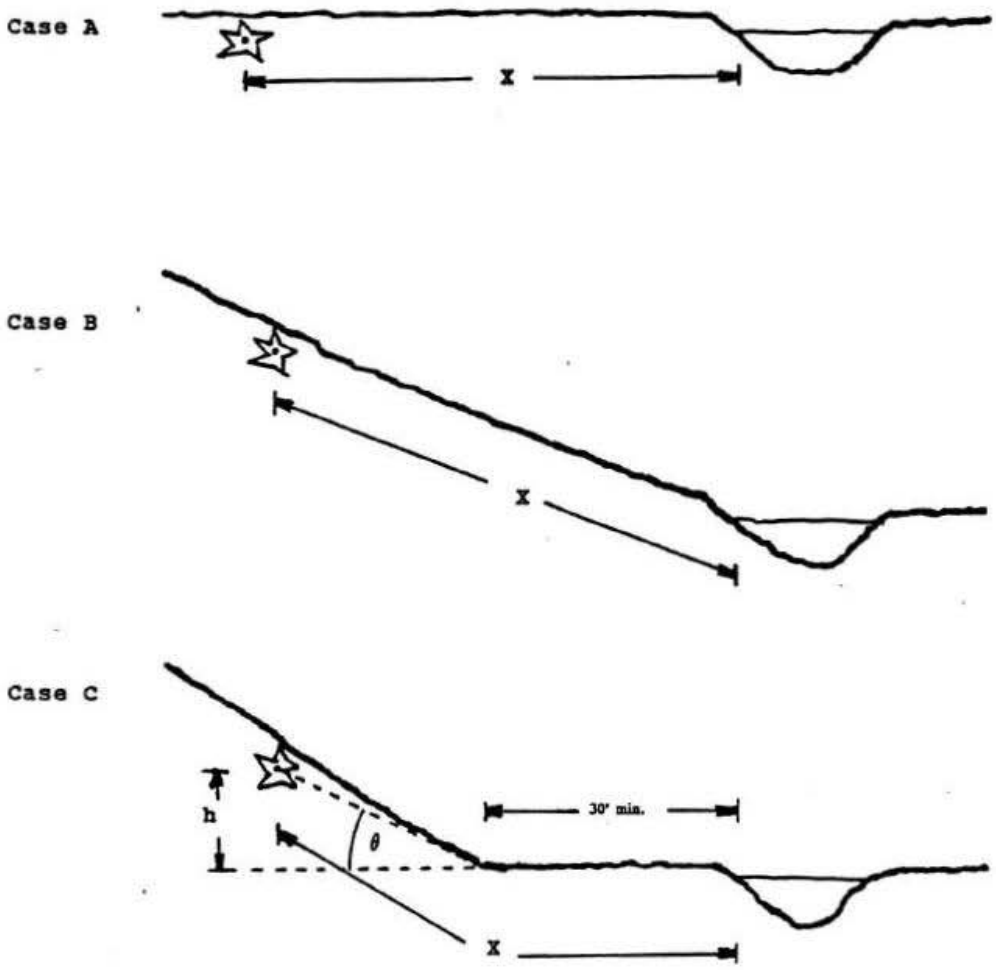
> "no person may discharge an explosive that produces or is likely to produce an instantaneous pressure change greater than 2.7 pounds per square inch (psi) in the swim bladder of a fish or produces or is likely to produce a peak particle velocity greater than 0.5 inches per second (ips) in a spawning bed during the early stage of egg incubation."

The report, "Blasting Standards for the Protection of Fish" put out by the ADFG states that these standards are the result of a thorough review of the available literature.

The guidelines present several figures and tables that guide personnel to calculate the size of charge allowable given a variety of environmental conditions (distance, angle and height from water, substrate material). Three of the most pertinent figures and tables are presented below.

Figure 14 Topographic cases considered in ADFG's proposed blasting standards.

FIGURE 4. THREE TOPOGRAPHIC CASES CONSIDERED IN ADF&G'S PROPOSED BLASTING STANDARDS



X = Total setback in feet from blast point to high value fish habitat. X is less than 30 feet only when reviewed on a case by case basis.

θ = Angle in degrees between valley floor and blast point.

h = Height in feet of center of charge above valley floor.

DRAFT -13- FEBRUARY 15, 1991

Figure 15 Table 3 from ADFG's proposed blasting standards.

DRAFT

TABLE 3: CASE A AND B SETBACKS FROM ANADROMOUS FISH WATERS (2.7 psi Standard) (in feet)[1/]

Material	Explosive Charge Weight (in pounds)[2/] 1	2	5	10	25	100	500	1000
Rock	34	49	77	109	172	344	769	1088
Frozen Soil	32	45	72	102	161	322	719	1017
Ice	30	41	64	91	144	288	644	910
Saturated Soil	30	41	65	91	145	289	647	915
Unsaturated Soil	30	30	45	63	100	200	448	633

-20-

FEBRUARY 15, 1991

1/ The straight line distance through the material from the center of the charge to the waterbody, assuming that the blast energy is confined within the material. Uncontained blasts or explosive charges with a detonation velocity of less than 5,000 feet per second will be reviewed on a case-by-case basis.

2/ The scaled distance relationships apply to single shots of a given weight of explosive or single shots in a multiple charge if each charge is separated by an eight millisecond or longer delay. For example, a 500 pound shot on level ground in rock requires a setback distance from a waterbody of 769 feet; a 500 pound shot in rock in charges of 100 pounds each separated by eight millisecond or longer delays requires a setback distance of 344 feet.

Figure 16 Table 5e from ADFG's proposed blasting standards.

DRAFT

TABLE 5e: CASE C SETBACKS FROM ANADROMOUS FISH WATERS (2.7 psi Standard) (in feet)[1/]

Material: Unsaturated Soil

Explosive Charge Weight (in pounds)[2/]

		1	2	5	10	25	100	500	1000
Slope	10°	30(0)	30(0)	44(0)	62(1)	99(1)	197(2)	441(4)	624(5)
	20°	30(0)	30(0)	42(1)	60(1)	94(2)	188(3)	421(8)	595(11)
	30°	30(0)	31(1)	39(1)	55(2)	87(2)	173(5)	388(11)	548(16)
	40°	31(1)	31(1)	34(1)	49(2)	77(3)	153(6)	343(14)	485(20)
	50°	31(1)	31(1)	32(2)	41(2)	64(4)	129(8)	288(17)	407(24)
	60°	31(1)	31(1)	32(2)	33(3)	50(4)	100(9)	224(19)	317(27)
	70°	31(1)	31(1)	32(2)	33(3)	35(5)	68(9)	153(21)	217(30)
	80°	31(1)	31(1)	32(2)	33(3)	35(5)	40(10)	78(22)	110(31)
	90°	31(1)	31(1)	32(2)	33(3)	35(5)	40(10)	52(22)	62(32)

(N) = Minimum height in feet of center of charge above valley floor (see text and Figure 4).

1/ The straight line distance through the material from the center of the charge to the waterbody, assuming that the blast energy is confined within the material. Uncontained blasts or explosive charges with a detonation velocity of less than 5,000 feet per second will be reviewed on a case-by-case basis.

2/ The scaled distance relationships apply to single shots of a given weight of explosive or single shots in a multiple charge if each charge is separated by an eight millisecond or longer delay. For example, a 500 pound shot on a 10° slope in unsaturated soil requires a setback distance from a waterbody of 441 feet; a 500 pound shot in unsaturated soil in charges of 100 pounds each separated by eight millisecond or longer delays requires a setback distance of 197 feet.

-26-

FEBRUARY 15, 1991

11.3.2. Protection of Migratory Birds

Recommendations established by the United States Fish and Wildlife Service (USFWS) will be used to protect nesting bald eagles. These recommendations state; "To avoid disturbing nesting eagles and their young, we recommend that you avoid blasting and other activities that produce extremely loud noises within 1/2 mile of active nests (or within 1 mile in open areas), unless greater tolerance to the activity (or similar activity) has been demonstrated by the eagles in the nesting area."

These will be applied to all breeding migratory birds. In nearly all instances blasting will occur outside of the general avian breeding season (February 1 through August 15th). If blasting will occur within this season the above USFWS recommendations will be followed.

11.4. References

ADFG (Alaska Department of Fish and Game). 1991. Blasting standards for the protection of fish. Available at: http://www.adfg.alaska.gov/static/license/uselicense/pdfs/adfg_blasting_standards.pdf

12. Appendix C: Example Monitoring Plan

Little Bay Stewardship Project
Monitoring Plan
10-7-08

Background

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) determined that the North Fork of the Clearwater River subbasin is below the historical range of variability for the lower montane late seral forest and lower montane early seral forest, as a result of logging practices and fire suppression.
The elimination of the historical pattern of frequent low-intensity fires in both ponderosa pine and pine-mixed conifer forests has resulted in major ecological disruptions (Arno 1996). Without frequent fire, timber stands become overstocked and stressed as individual trees compete for limited moisture and nutrients. As a result, stands are more susceptible to beetle infestation, disease, and stand-replacing wildfires. As a result of the present condition, ICBEMP has also documented a scarcity in associated wildlife

Location

The project area is located along Dworshak Reservoir north of Canyon Creek, between river miles 7 and 11 comprising approximately 1,300 acres with actual effects to approximately 800 acres.

Legal Location: T38N R1E; Sections 25 & 36
T38N R2E Section 31
T37N R2E Sections 6, 7 & 8

Project Objectives

- Restore fire as a process that restores and maintains the ecosystem
- Restore habitats for wildlife and plant species,
- Reduce forest fuels
- Create seedbeds for Ponderosa pine and Western larch

Monitoring Plan Objectives

- **Inventory Plots:** Establish 19 (1/10 acre) pre-treatment inventory plots to assess current conditions.
    - Monitoring shall consist of photos and gathering of the following information:
        - Overstory species & size class
        - Canopy cover
        - Number and percent cover of browse species
        - Percent cover of noxious weed species
        - Fuel loading (photo interpretation) and duff depth
        - Number, size and species of snags

- **Monitoring Plots:** Of the 19 plots, 9 will be selected for post-treatment monitoring to measure change vegetation, fuel loading and big game use. Plot selection will allow for evaluation among varying habitat types, aspects and slopes. Photos will also be taken at each post-treatment plot.
    - Fuel loading and duff/litter depth will be measured within a 100^{th} acre plot centered within the original 1/10 acre plot. The number of 10, 100 and 1000 hour fuels will be recorded and average length will be estimated for each. Duff/litter depth will be measured in 5 locations within the 100^{th} acre plot. Fuel loading and duff/litter depth will be recorded pre-harvest (original survey), post-harvest/pre-burn, and post-burn. Fuel loading and duff/litter depth for plots that fall within the machine/pile and burn unit will be surveyed during first post-treatment vegetation survey.
    - Vegetation information will be collected 2.5-3 years post-treatment and every 5 years following. Prescribed burns within the Little Bay project will be accomplished over a two+ year period. To keep monitoring results consistent and comparable the permanent monitoring points will be sampled in two groups consistent with the year burned SEE TREATMENT SCHEUDLE.

- **Wildlife Monitoring:** Conduct pre-treatment and post-treatment surveys to monitor change in select species use including flammulated owl, goshawks, pigmy nuthatch and white-headed woodpecker. Surveys will include resident owl surveys, landbird surveys, woodpecker surveys, late season owls (flammulated) and raptor nest surveys. Post-treatment surveys are to be accomplished the first, third and fifth years after all treatments are completed and every 5 years after that.

- **Sensitive Plant Monitoring:** Locate and document sensitive plant species use within the project boundary. Once found populations of these species should be monitored following treatment to determine effect from treatment.

Implementation

- **Inventory Plots:** Nineteen (19) Inventory Plots were established in 2003, representing all but one of the planned timber sale units. Pre-harvest vegetation and fuel loading information was collected. From these nine representative sites were selected for post-treatment monitored. These are; 3, 5b, 6a, 6b, 8b, 9a, 11.

- **Monitoring Plots:**
    - FUEL MONITORING: Of the nine established permanent monitoring plots, 5 fell within burn units and fuel loadings will be taken pre-harvest (inventory effort), post-harvest/pre-burn, and post burn.
        - In August 2005, post-harvest/pre-burn fuel loading was measured within plots 3, 5b, 8b and 9a.
        - In November 2005 post-burn fuel loadings were taken at these plots.
        - Unit 12 was prescribed burned in October of 2007. The final burn unit did not include plot 12A. In the spring of 2008 plot 12b was visited. The area surrounding plot 12b did not burn and no data was collected. In general the burn was excellent on the south facing slopes, best burn to date. However, on the north facing slopes it was very spotty.

    - VEGETATION MONITORING:
        - We decided to do some additional slashing and burning in the middle and south units of the Little Bay project. As a result we have chosen to wait on the monitoring. We have not yet (10/7/08) been able to burn those new units. The burn is again planned for fall 2009.
        - No window for burning in 2009 was available. Decided to not burn any more units in Little Bay as the ground fuels are no longer available.
        - NEXT: <u>Conduct monitoring at 3, 5b, 6a, 6b, 8b,9a and 11 in 2011</u>.

Little Bay Vegetation Monitoring Schedule		
Year	Harvest Units 1-11, burn units south and middle (monitoring plots 3, 5b, 6a, 6b, 8b, 9a & 11)	~~Harvest Unit 12, burn unit north (monitoring plots 12a & 12b)~~
2007		~~Burned~~
2008	Additional Slashing and Burning	
2009		
2010		~~Survey~~
2011	Survey	
2012		
2013		
2014		
2015		~~Survey~~
2016	Survey	
2017		
2018		
2019		
2020		~~Survey~~
2021	Survey	
2022		
2023		
2024		
2025		~~Survey~~
2026	Survey	
2027		
2028		
2029		
2030		~~Survey~~

-
- **Wildlife Monitoring:**
    - Resident Owls: An owl survey transect with 7 point locations was established in 2003. Two surveys were conducted in 2004. Two surveys were conducted in 2010. RUN TWICE IN 2012.
    - Woodpeckers: The survey transect previously established by Idaho Fish and Game for landbird monitoring will be used to monitor woodpecker use. One survey was conducted in 2010. RUN TWICE IN 2012.
    - Landbirds: The survey transect previously established by Idaho Fish and Game was used to monitor landbird use. This transect was ran once in 2006. This transect was ran twice in 2010. RUN TWICE IN 2012.
    - Raptors: Surveyed for goshawks in 2006 using playback calls of goshawks within characteristic goshawk habitat. Monitored know osprey nests in 2004, 2005 and 2006. CONTINUE TO LOCATE AND MONITOR RAPTOR NESTS.
    - Late Season Owls: Two surveys were conducted in 2010. RUN TWICE IN 2012.

- **Sensitive Plants:** Monitoring the population of Jessica's aster was conducted by the Idaho CDC in 2003 and 2004.
    - 2008: Hired CDC to monitor Jessica's Aster populations.

- SUPPORT IDAHO CDC WHEN DESIRING TO MONITOR SENSITIVE PLANT POPULATIONS IN THE AREA.

APPENDIX C

DWORSHAK NATURAL RESOURCES LAND MANAGEMENT PROGRAM ACTIVITIES 2013 AMENDMENT TO THE BIOLOGICAL ASSESSMENT

United States Department of the Interior
U.S. Fish and Wildlife Service
Idaho Fish And Wildlife Office
1387 S. Vinnell Way, Room 368
Boise, Idaho 83709
Telephone (208) 378-5243
http://www.fws.gov/idaho

Michael S. Francis
Chief, Environmental Compliance Section
Department of the Army
Corps of Engineers
Walla Walla District
201 North Third Avenue
Walla Walla, Washington 99362-1876

AUG 2 7 2013

Subject: Trail Management Amendment to the Dworshak Natural Resources Land Management Program—Clearwater County, Idaho—Technical Assistance
In Reply Refer To: 01EIFW00-2013-TA-0338

Dear Mr. Francis:

This letter transmits the U.S. Fish and Wildlife Service's (Service) assessment of the Amendment (Trail Management) to the Dworshak Natural Resources Land Management Program (Program). In a letter dated July 22, 2013, and received by the Service on July 31[1], the Army Corps of Engineers (Corps) requested our review of the Amendment and our agreement with your conclusion that the effects to species listed under the Endangered Species Act (Act) of 1973 (amended) have already been addressed in the 2011 Program Biological Assessment (Assessment) and our December 7, 2011 letter of concurrence (01EIFW00-2012-I-0039). Specifically, the Service concurred with the determination that the Program is not likely to adversely affect the bull trout (*Salvelinus confluentus*) and its critical habitat. The Service also acknowledged that the Program will have no effect on the threatened Canada lynx (*Lynx canadensis*) and the North American wolverine (*Gulo gulo luscus*), a candidate species at the time but now a species proposed for listing.

The Corps proposes to amend the Program with the Trail Management Activity and associated elements as shown in Table 1 (along with the total quantities proposed for each element); the Trail Management Activity was not included in the original proposal. The Trail Management elements consist of:

- Creating up to seven off-highway vehicle (OHV) trail systems along Dworshak Reservoir.

  In general, designated OHV trails will follow existing primitive roads and some user-defined trails, although some segments of these existing user-defined OHV trails will be realigned to decrease erosion potential and to enhance user safety.

  Recreational OHV use will only be allowed on designated trails; cross-country travel is prohibited.

[1] The Corps sent a revised/corrected Amendment to the Service on August 15, 2013 via email.

- Creating a non-motorized multiple use trail system to expand opportunities for the hiking, mountain biking, and equestrian recreational users.
- Opening two existing roads to permit full size vehicle (4 x 4) access to two isolated primitive campgrounds.
- Continuing the management and improvement of the existing non-motorized trail system.

Implementing the Trail Management elements will occur to the extent available funding permits, but, as with the broader Program, implementation progress will be recorded and reported annually to the Service. Full implementation of the Trail Management Activity is likely to take several years between 2013 and 2022.

Table 1. Trail Management Activity and associated elements to be included as an Activity under the Dworshak Reservoir Natural Resources Land Management Program (see Table 1 of the Addendum showing all activities and elements included under the Program).

Trail Management	
Elements	**Total Miles to be Implemented**
OHV Trail Development	19.8
Non-Motorized Trail Development	12.8
4x4 Recreation Access Trail Development	0.7
Existing Trail Management and Improvement	20.4

The Program contains Impact Minimization Measures (IMMs) and Best Management Practices (BMPs) to reduce resource impacts and will be applied to the Trail Management Activity (as they are applied to all Program Activities). Refer to the Program Assessment and the Addendum for a complete description of the Program, including all IMMs and BMPs.

After reviewing the Trail Management Amendment, the Service agrees with the Corps' conclusion that all anticipated effects from implementing the Trail Management elements have been addressed in the Program Assessment and our letter of concurrence; no new effects to bull trout and bull trout critical habitat are expected.

This letter, our December 7, 2011 letter of concurrence, and all associated documentation, serve as the complete section 7 compliance decision record for the Dworshak Natural Resources Land Management Program. We also note that this letter only addresses the addition of the Trail Management Activity to the Program (as detailed in the Amendment), and confirms that all other Program Activities remain unchanged. If the future modifications to the Program are proposed, environmental conditions change, or additional information becomes available regarding potential effects on listed species, you should verify that your conclusions are still valid.

Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Clay Fletcher at (208) 378-5256 if you have questions concerning this letter.

Sincerely,

for Brian T. Kelly
State Supervisor

cc: NMFS, Moscow (Ries)
IDFG, Region II, Lewiston (Hennekey)
NPT, Lapwai (Lopez)
FWS, Spokane (Holt)

DWORSHAK NATURAL RESOURCES LAND MANAGEMENT PROGRAM ACTIVITIES

DWORSHAK RESERVOIR

PM-EC-2010-0065

Amendment to the Biological Assessment

for

Threatened and Endangered Species,
Critical Habitat, and Essential Fish Habitat

Under the Jurisdiction of:

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

U.S. Army Corps of Engineers
Walla Walla District
Environmental Compliance Section

Date
15 August 2013

If additional information regarding this document is required, please contact Jason Achziger, Fishery Biologist in the Environmental Compliance Section of the U.S. Army Corps of Engineers, Walla Walla District, at (509) 527-7262, or by email at jason.k.achziger@usace.army.mil. Other correspondence can be mailed to:

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For: Chief, Environmental Compliance Section
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TABLE OF CONTENTS

GLOSSARY ..... **IV**

1. INTRODUCTION ..... **- 5 -**

2. BACKGROUND / HISTORY ..... **- 5 -**

2.1. Documentation of Relevant Correspondence ..... - 6 -
2.2. Supplemental Information ..... - 6 -
2.3. Federal Action History ..... - 6 -

3. PROJECT DESCRIPTION ..... **- 6 -**

3.1. Action Area ..... - 6 -
3.2. Project Purpose and Objectives ..... - 6 -
3.3. Project Activities ..... - 7 -
3.3.1. OHV Trails ..... *- 10 -*
3.3.2. Non-Motorized Trail System ..... *- 11 -*
3.3.3. Existing Trail System ..... *- 12 -*
3.3.4. 4x4 Trail Recreation ..... *- 12 -*
3.3.5. Trail Inventory Procedures ..... *- 13 -*
3.4. Project Timeline ..... - 14 -
3.5. Proposed Conservation Measures ..... - 14 -
3.6. Project Tracking ..... - 15 -

4. STATUS OF SPECIES AND CRITICAL HABITAT ..... **- 15 -**

5. ENVIRONMENTAL BASELINE ..... **- 15 -**

5.1. Matrix of Pathways and Indicators (MPI) ..... - 16 -
5.2. Baseline Conditions Justification ..... - 16 -

6. EFFECTS OF THE ACTION ..... **- 17 -**

6.1. Effects Determination ..... - 17 -

7. CONCLUSIONS ..... **- 17 -**

8. REFERENCES ..... **- 18 -**

Glossary

Activity	Land Management Activity (Access, Boundary, Fire, Forest, Road, Wildlife Habitat, and Recreation Management)
BA	Dworshak Natural Resources Land Management Program Activities Biological Assessment
BMP	Best Management Practice
Corps	U.S. Army Corps of Engineers
DM-15	Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat*
Dworshak	Corps-managed Lands at Dworshak Dam and Reservoir
ESA	Endangered Species Act of 1973, as amended
mi	Miles
mi^2	Square Miles
NMFS	National Marine Fisheries Service
PCE	Primary Constituent Element
Plan	Dworshak Trail Management Plan
Program	Dworshak Natural Resources Land Management Program
USFWS	U.S. Fish and Wildlife Service

1. Introduction

The U.S. Army Corps of Engineers (Corps) proposes to amend the Dworshak Natural Resources Land Management Program Activities biological assessment (BA) (USACE 2011a) to include activities described in the draft Dworshak Trail Management Plan (Plan) (USACE 2013).

This amendment will allow the Corps to efficiently continue to programmatically manage forest and wildlife resources within Corps-managed lands at Dworshak Dam and Reservoir (Dworshak), Clearwater County, Idaho, as part of the Dworshak Natural Resources Land Management Program (Program), while allowing the Corps to efficiently and seamlessly include activities under the Plan. This will allow the Corps to comply with section 7 of the Endangered Species Act (ESA) and report to the U.S. Fish and Wildlife Service (USFWS) using the mechanisms already in place.

Additionally, the effects of road and trail management on ESA-listed species and critical habitat were analyzed in the BA. Addition of the Plan's activities to the BA will not result in any effects not already considered in the previous informal consultation (USACE 2011a; USFWS 2011a).

As with the BA, the addition of the Plan to the BA is proposed as programmatic management because it is distinguished by well-defined activity types with potential adverse effects that are minor, repetitive, and predictable. Individual consultation of these actions at the project scale would produce the same overall result and not provide any additional conservation benefit.

2. Background / History

The BA (USACE 2011a) described management activities under the Program and Program management activity "elements." The U.S. Fish and Wildlife Service (USFWS) concurred with the Corps' determinations in the BA on December 7, 2011 (USFWS 2011a), concluding informal consultation under section 7 of the Endangered Species Act (ESA).

As described in the BA, Dworshak's Program has traditionally been conducted under individual plans, and has been managed, in general, at the project scale. This approach resulted in several consultations that have involved similar activities, with similar effects, and added workload, both to the Services and the Corps. The Corps, in close coordination with USFWS, minimized consultation-related workload for the Corps and the Services, while producing the same overall result through a programmatic approach to management, and programmatic consultation with the BA (USACE 2011a).

The Dworshak Trail Management Plan (Plan) has been developed by the Dworshak Natural Resource Section to accommodate changes in public use at Dworshak Reservoir and to fulfill the intent of the Dworshak Reservoir Public Use Plan as approved on February 24, 2011 and in compliance with DM-15, the "Plan for Development of Rocky Mountain Elk Habitat."

2.1. Documentation of Relevant Correspondence

The design of this Program has been accomplished through great effort and coordination between the Dworshak Natural Resource Team, and the Corps' Environmental Compliance Section. Numerous emails, telephone calls, and exchange of information facilitated the development of this Program.

As with the development of the BA, numerous emails, telephone calls, and exchange of information between the Corps' Environmental Compliance Section and the U.S. Fish and Wildlife Service facilitated the successful and timely completion of informal consultation on the Dworshak Natural Resources Land Management Program Activities consultation.

Early coordination and email exchanges between the Corps' Environmental Compliance Section and the U.S. Fish and Wildlife Service has ensured integration of the Dworshak Trail Management Plan with the Dworshak Natural Resources Land Management Program Activities Program.

2.2. Supplemental Information

Supplemental information includes:

- Dworshak Natural Resources Land Management Program Activities Biological Assessment (USACE 2011a)
- Dworshak Trail Management Plan (USACE 2013)
- Dworshak Reservoir Public Use Plan (USACE 2011)[1]

2.3. Federal Action History

The Federal Action History can be found on page 7 of the BA, but also now includes the December 7, 2011 Dworshak Natural Resources Land Management Program-Clearwater County, Idaho-Concurrence (0IEIFWOO-2012-I-0039).

3. Project Description

3.1. Action Area

The action area has not changed from what was described on p. 13 of the BA.

3.2. Project Purpose and Objectives

The purpose of motorized and non-motorized trail systems development is to meet the intent of the Dworshak Public Use Plan; this action is needed to maintain and enhance opportunities for non-motorized recreation while minimizing user conflicts and impacts on natural resources.

[1] http://www.nww.usace.army.mil/Portals/28/docs/dworshak/pub-use-plan.pdf

3.3. Project Activities

Program management activities were broken down into Program management activity "elements" in the BA. Program activities and their associated activity elements are listed in Table 2 in the BA on p. 18, along with maximum annual quantities (e.g. miles, acres, etc.) for each activity element.

In addition to the BA and previous consultation, and in alignment with the Dworshak Public Use Plan, the Corps proposes the following actions:

- Continued management and improvement of the existing non-motorized trail system to expand opportunities for the hiking, mountain biking, and equestrian communities.
- Continued management of the Little Meadow Creek ORMV trail and camp.
- Creation of up to seven *off-highway vehicle* (OHV) trail systems along Dworshak reservoir[2].
- Creation of a non-motorized multiple use trail system.
- Opening two existing roads to permit full size vehicle access to two isolated primitive campgrounds.

The Corps has modified Table 2 from p. 18 in the BA to include Trail Management (Table 1). Trail Management activities under the Plan are subject to the availability of funding, and will be done as funding permits. As such, implementation of Trail Management activities under the Plan will be recorded and reported annually, as there are known quantities of trails under the Plan, but unknown annual quantities that could be implemented. However, it is reasonably certain that all of the work under the Plan will not be implemented at once. Implementation is likely to take several years, as the Plan calls for a phased approach.

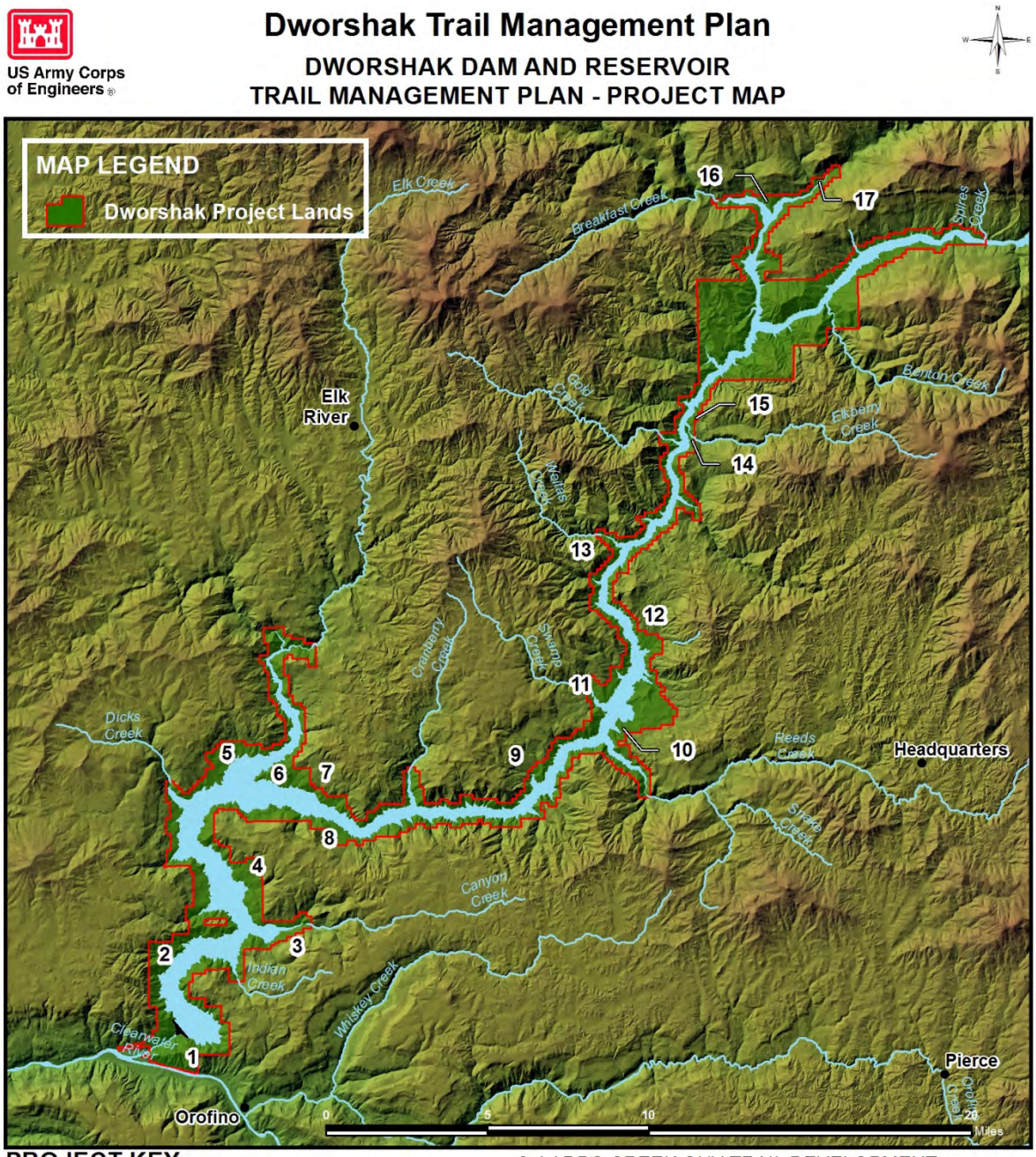
Amended Program activities and their associated activity elements are listed in Table 1, along with the quantities for each element. Locations for Trail Management Activities that are in addition to what was described in the BA are shown in Figure 1.

[2] Please note, presently there is an effort by the Idaho Department of Lands to acquire an easement for construction of an OHV trail to Camp 47.3 for which the Dworshak Project fully supports.

Table 1 Dworshak programmatic activity elements.

Dworshak Programmatic Activity Elements	Maximum Quantity per Year
Access and Trails Management	
Gate and/or Barricade Installations	5 per year
Gate and/or Barricade Modifications	5 per year
Gate and/or Barricade Refurbishing	10 per year
Sign Installation/Maintenance	20 per year
Fence Repair and Maintenance	5 miles per year
Fence Removal	5 miles per year
Trail Corridor Brushing and Tread Maintenance	50 miles per year
Bridge Installation/Maintenance	5 per year
Surface Water Control Structure Installation/Maintenance	50 per year
Boundary Management	
Boundary Monument Installation	5 miles per year
Fire Management	
Broadcast Burning	1,000 acres a year
Pile Burning	100 piles per year
Slashing and/or Pruning	200 acres per year
Fire Lines	25 mini camps (approx. 1.25 mi)
	designated burn units
Forest Management	
Selective Harvest	750 acres a year
Road Management	
New Construction	5 miles per year
Road Reconstruction	15 miles per year
Road Maintenance	50 miles per year
Road Obliteration	2 miles per year
Road Demolition	1/4 mile per year
Culverts	50 per year
Wildlife Habitat Management	
Wetland Enhancement	2 per year
Planting	1,500 plants per year
Recreation Management	
Recreation Foot Trails	10 miles per year
Trail Management (total Plan miles)	
OHV Trail Development	19.8
Non-Motorized Trail Development	12.8
4x4 Recreation Access Trail Development	0.7
Existing Trail Management and Improvement	20.4

Figure 1 **Trail development map.**



PROJECT KEY

1. AHSAHKA RIDGE TRAIL SYSTEM DEVELOPMENT
2. BIG EDDY TRAIL MANAGEMENT
3. CANYON CREEK TRAIL MANAGEMENT
4. LITTLE BAY TRAIL SYSTEM DEVELOPMENT
5. ELK CREEK MEADOWS OHV TRAIL DEVELOPMENT
6. DENT PENINSULA OHV TRAIL DEVELOPMENT
7. DENT TRAIL MANAGEMENT
8. COLD SPRINGS TRAIL MANAGEMENT
9. LADDS CREEK OHV TRAIL DEVELOPMENT
10. MAGNUS BAY 4X4 TRAIL DEVELOPMENT
11. SWAMP CREEK OHV TRAIL DEVELOPMENT
12. EVANS CREEK OHV TRAIL DEVELOPMENT
13. WEITAS CREEK OHV TRAIL DEVELOPMENT
14. ELKBERRY CREEK OHV TRAIL DEVELOPMENT
15. LITTLE MEADOW OHV TRAIL MANAGEMENT
16. L3.6 OHV TRAIL DEVELOPMENT
17. L6.0 4X4 TRAIL DEVELOPMENT

The following is a description of each Trail Management activity element.

3.3.1. OHV Trails

In general, designated OHV trails will follow existing primitive roads and some user-defined trails, although some segments of these existing user-defined OHV trails will be realigned to decrease erosion potential and to enhance user safety. Potential OHV trails are permitted in the following areas as classified in the 2011 Public Use Plan:

- Recreation
- Multiple Resource Management, including
    - Recreation Future Management
    - Recreation – Low Density
    - Wildlife Management

OHV trails will not be allowed in areas classified as Project Operations, Environmentally Sensitive or Mitigation, unless trail segments use existing public roads through those areas.

Recreational OHV use will only be allowed on designated trails with no cross-country travel permitted. OHV use will be permitted on exposed banks below the ordinary high water mark at designated locations to enable motorized transport from boat to camp from all normal pool elevations.

Trails will be built to the characteristics of Class 3 and Class 4 motorized trails as outlined in the Dworshak Public Use Plan and summarized below:

- Class 3 Motorized Trail
    - Trail wide and suitable for one lane and occasional two-lane passage for managed use types.
    - Occasional moderate tread protrusions and short awkward sections, which require speed and maneuvering adjustments.
    - Tread infrequently graded. Obstacles cleared if they substantially hinder the managed use and difficulty level.
    - Tread surface generally native materials, with occasional on-site fill or imported materials, if more stable surface is desired.
    - Crossings may be wet fords; likely with hardening and armoring or simple bridges for resource protection and to ensure appropriate access.
    - Trails have frequent markers and are readily followed.
    - Signing size and type appropriate for managed speeds and potential nighttime use (signs likely reflectorized).

- Class 4 Motorized Trails
    - Trail wide and suitable for the managed use type, and may consistently accommodate two-way passage.
    - Tread surface generally smooth with only small protrusions, which moderately affect speed and ease of travel.

- Tread graded as needed.
- Tread surface may include imported aggregate or intermittent paved sections if more stable surface is desired.
- Crossings are typically either hardened or armored or a substantial bridge.
- Recommended speeds or speed limits may be posted.
- Trails have frequent markers and are easily followed.
- Signing size and type appropriate for managed speeds and potential nighttime use (signs reflectorized).

3.3.2. Non-Motorized Trail System

The primary rationale for establishing a multiple use non-motorized trail system on Dworshak is to meet demand from the area horse riding and mountain biking communities. Based on meetings with groups and individuals involved in the collaboration process for development of the Dworshak Public Use Plan, the issue of a lack of adequate recreational opportunities for horseback riding and mountain biking arose. While Dworshak trails currently allow all forms of non-motorized use, the trails have been managed with an emphasis on day-use hiking.

The purpose of non-motorized trail system development is to meet the intent of the Dworshak Public Use Plan to maintain and enhance opportunities for non-motorized recreation while minimizing user conflicts and impacts on natural resources.

TRAIL CONSTRUCTION STANDARDS

Trails will be constructed and maintained to the characteristics of Class 2 and Class 3 non-motorized trails as adapted from the U.S. Forest Service Trail Class Matrix (2005) and summarized below:

- Class 2 Non-Motorized Trails
  - Trail discernible, continuous, and rough with few or no allowances for passing.
  - Tread is constructed from native materials.
  - Vegetation may encroach into trail corridor.
  - Blockages cleared to define route and protect resources.
  - Drainage functional.
  - Primitive foot crossings and fords.
  - Few destination signs present.
  - Minimum number of signs required for basic direction.

- Class 3 Non-Motorized Trails
  - Tread obvious and continuous with occasional allowances for passing.
  - Tread is generally constructed from native materials, but may have segments containing aggregate.
  - Tread surface is generally smooth with only small protrusions.
  - Vegetation is fully cleared within the trail corridor.
  - Trail structures may be common and substantial, such as:

        - Bridges
        - Retaining walls
        - Steps
        - Causeways
    - Crossings are typically either hardened or armored or a substantial bridge.
    - Trails have frequent markers and are easily followed.
    - Directional signs are typically present.
    - Informational and interpretive signs may be present.

3.3.3. Existing Trail System

Presently, there are approximately 20.37 miles of trails spread amongst six defined trails on Dworshak. Historically, these trails have been managed for pedestrian activities consisting of day hikes and short duration backpacking trips as maintenance for these types of activities generally require fewer resources than those for other types of non-motorized use. However, by managing for pedestrian use, there has historically been a lack of quality recreation for other non-motorized user groups, specifically the equestrian and mountain biking communities.

ALLOWED USE AND PROHIBITED USES

With the exception of the Little Meadow Creek ORMV trail, all existing Dworshak trails have no prohibited uses other than the prohibition of motorized vehicle use; this status is not expected to change unless resource damage occurs or un-resolvable user conflicts develop.

SEASON OF USE

Presently, all trails are open yearlong to any non-motorized activity and this use is not expected to change unless resource damage occurs or un-resolvable user conflicts develop.

3.3.4. 4x4 Trail Recreation

The primary rationale for formalizing the use of and re-commissioning two existing roads for 4x4 vehicle use is due to demand from members of the recreating public. Based on meetings with groups and individuals involved in the collaboration process for development of the Dworshak Public Use Plan, the issue of a lack of adequate recreational access for full size vehicles to the reservoir arose many times. Currently, full size vehicles are not allowed access to any primitive camping sites on Dworshak. However, there are suitable sites and roads in existence that can provide that opportunity. Maintenance on these roads would require few resources due to the layout, drainage, and material composition of the roads, as well as intended use of the roads for 4x4 use.

ROAD CHARACTERISTICS

Roads re-commissioned for use as a full size vehicle trail are only those roads accessing the following recreation sites:

- Camp 26.0: located in the vicinity of the Magnus Bay area (middle reservoir).

- Camp L6.0: located near the northern-most point of the reservoir.

Roads re-commissioned are located in the following land use classifications that support this type of development:

- Multiple Resource Management – Recreation Future Management
- Multiple Resource Management – Low Density Recreation
- Multiple Resource Management – Wildlife Management

Roads will be brushed, graded, ditched, and any drainage structures will be cleaned. If necessary, any ruts and gullies will be filled with native material and some overstory vegetation will be removed to enhance moisture evaporation from the road surface. Please see the Dworshak Road Management Plan for a detailed description of the activities associated with road re-commissioning.

COMPLIANCE MONITORING

Road users will be monitored by Dworshak Natural Resource staff for compliance with Corps rules and regulations and written warnings or citations may be served to non-compliant users. The Dworshak Natural Resource Management office reserves the right to close or reduce motorized access to any road on Dworshak lands.

The 4x4 trails will be assessed and monitored on an individual basis. A trail may be closed at any time based on, but not limited to, environmental degradation, impacts to wildlife, the presence of threatened or endangered species, or the lack of funding to adequately maintain the road.

SEASONS OF USE

Dworshak has chosen to not impose season of use restrictions on these access roads for the following reasons:

- Road Configuration
    - Roads to each primitive campsite allow for direct access only with little to no chance of motorized off-roading activities that may result in the creation of user-defined roads.
- Adjacent Road Access
    - Arterial roads leading to the proposed re-commission roads are subject to road restrictions imposed by their managing entities.
    - Arterial roads leading to the proposed re-commission roads are subject to the maintenance activities, or lack thereof, by their managing entities. In this case, the arterial roads are generally not maintained during the winter season due to the remoteness of the area and lack of winter activities in the area.

3.3.5. Trail Inventory Procedures

The proper documentation of existing trail conditions is critical to properly maintaining the infrastructure supporting any trail within the Dworshak trail system.

To support the Dworshak trail maintenance program, two levels of inventory are used in assessing the condition of Dworshak trails; annual review and five-year inventory. Annual reviews are designed to assess the trail for issues requiring immediate attention within the following recreation season. Five-year inventories are conducted to provide the data necessary for planning within the 5-year cycle associated with the Operational Management Plan.

ANNUAL REVIEW

Annual reviews of Dworshak trails will be conducted prior to Memorial Day weekend. Usually, these reviews can be accomplished at the same time as annual maintenance activities.

FIVE YEAR INVENTORY

As 5-year inventories are used for planning purposes, the amount of data collected is more detailed and in-depth to the information collected with annual reviews. The 5-year inventories require more tools and additional training to properly use these tools.

3.4. Project Timeline

The proposed action will occur annually between 2013 and 2021, with quantities of each activity limited to those described above for a given year.

3.5. Proposed Conservation Measures

The following Best Management Practices (BMPs) are extracted from p. 48-49 in the BA, and are specific to Trail Management.

1) Ensure diversion of surface runoff around road construction.
2) Place berms to prevent runoff to local creeks around road construction.
3) Use erosion bars and sediment traps for road construction.
4) Care will be taken to minimize the visual intrusiveness of the operation on the reservoir user.
5) Road obliteration work will be conducted during dry conditions when the potential for erosion is minimal.
6) All disturbed surfaced roads and trails shall be grass seeded with native grass species upon completion.
7) Ensure diversion of surface runoff around road obliteration work.
8) Place sediment traps and/or silt fences to prevent runoff to local creeks around road obliteration work.
9) Any instream work will be done under dry conditions either through dewatering or done when intermittent streams are dry.

3.6. Project Tracking

Project tracking in the form of a spreadsheet, sent to USFWS annually in conjunction with any monitoring reports, will continue to allow for tracking of which projects are implemented each year and the location of those projects.

4. Status of Species and Critical Habitat

On June 24, 2013 the Corps verified the current species list of threatened, endangered, and candidate species that pertain to the area affected by this action under jurisdiction of the National Marine Fisheries Service (NMFS)[3], as well as the list for species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) for Clearwater County, Idaho[4].

Whitebark pine (*Pinus albicaulis*) has been added as a candidate species to the USFWS list since the BA was written in 2011.

5. Environmental Baseline

The geographical area for which the environmental baseline is being established is discussed in the Action Area section of this document, and includes both Timber Management and Recreation and Reservoir Operation activities.

[3] http://www.nwr.noaa.gov/publications/protected_species/salmon_steelhead/status_of_esa_salmon_listings_and_ch_designations_map.pdf

[4] http://www.fws.gov/idaho/species/IdahoSpeciesList.pdf

5.1. Matrix of Pathways and Indicators (MPI)

Table 2 Checklist for Documenting Environmental Baseline and Effects of Proposed Action on Relevant Anadromous Salmonid Habitat Indicators

PATHWAYS	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTION		
Indicators	Properly Functioning	At Risk	Not Properly Functioning	Restore	Maintain	Degrade
Water Quality:						
Temperature			X		X	
Sediment			X		X	
Chem. Contam./Nut.			X		X	
Habitat Access:						
Physical Barriers			X		X	
Habitat Elements:						
Substrate			X		X	
Large Woody Debris	X				X	
Pool Frequency			X		X	
Pool Quality			X		X	
Off-Channel Habitat			X		X	
Refugia			X		X	
Channel Cond. & Dyn.:						
Width/Depth Ratio			X		X	
Streambank Cond.			X		X	
Floodplain Connectivity			X		X	
Flow/Hydrology:						
Peak/Base Flows			X		X	
Drainage Network Increase			X		X	
Watershed Conditions:						
Road Dens. & Loc.		X			X	
Disturbance History			X		X	
Riparian Reserves			X		X	
Watershed Name: Lower North Fork Clearwater subbasin (HUC 17060308)			Location: Dworshak Reservoir, Clearwater County, Idaho			

5.2. Baseline Conditions Justification

All habitat indicators are not properly functioning in Dworshak Reservoir, except for the large woody debris and road density indicators. Baseline conditions improve in streams once out of the influence of the reservoir and its elevation fluctuations, but the overall condition at a watershed scale is as shown in Table 7 (above).

Large woody debris. There are adequate sources of woody debris in riparian areas throughout the reservoir. Density and diameter of woody pieces in every area of the reservoir is more than enough to justify properly functioning.

Road density. Dworshak encompasses approximately 45,697 acres, or 71.4 square miles. There are 139.2 miles of roads, so the road density at Dworshak is 1.95 miles per square mile, which is

less than the 2 miles per square mile that qualifies as properly functioning in the MPI (NMFS 1996). The addition of 53.7 miles of trails would bring the density up to 2.7 miles per square mile. However, many of the proposed roads already exist in one form or another, and, as described in the BA, some roads will be decommissioned or demolished. Therefore, although it is extremely difficult to quantify at this point, the Corps anticipates a negligible net increase in the actual road density, and the density should remain at or around 2 miles per square mile.

6. Effects of the Action

The proposed action will generate effects on listed species and critical habitat in the same manner, frequency, and magnitude (due to BMPs) as Road and Recreation Management activities described in the BA. An analysis of the effects of the proposed action was captured in section 6.1.5 on p. 76 (Road Management) in the BA, and in sections 6.2 (Effects on Listed Species) (p. 78-80) and 6.3 (Effects on Critical Habitat) (p. 80-81).

The Corps does not anticipate any project-related effects from the proposed action that have not been previously considered (USACE 2011a; USFWS 2011a).

6.1. Effects Determination

The Corps determined that the effects of the proposed action have already been considered in previous consultation with USFWS, and that the proposed action **may affect, but is not likely to adversely affect** bull trout and bull trout designated critical habitat, as described in the BA (USACE 2011a).

The proposed action will have **no effect** on Canada lynx, and there is no designated or proposed Canada lynx critical habitat in the area.

7. Conclusions

This document was prepared as an amendment to the BA developed for the Dworshak Natural Resources Land Management Program Activities. The proposed project is designed to programmatically manage forest and wildlife resources within Corps-managed lands at Dworshak Dam and Reservoir, with the addition of the new (draft) Dworshak Trail Management Plan.

8. References

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