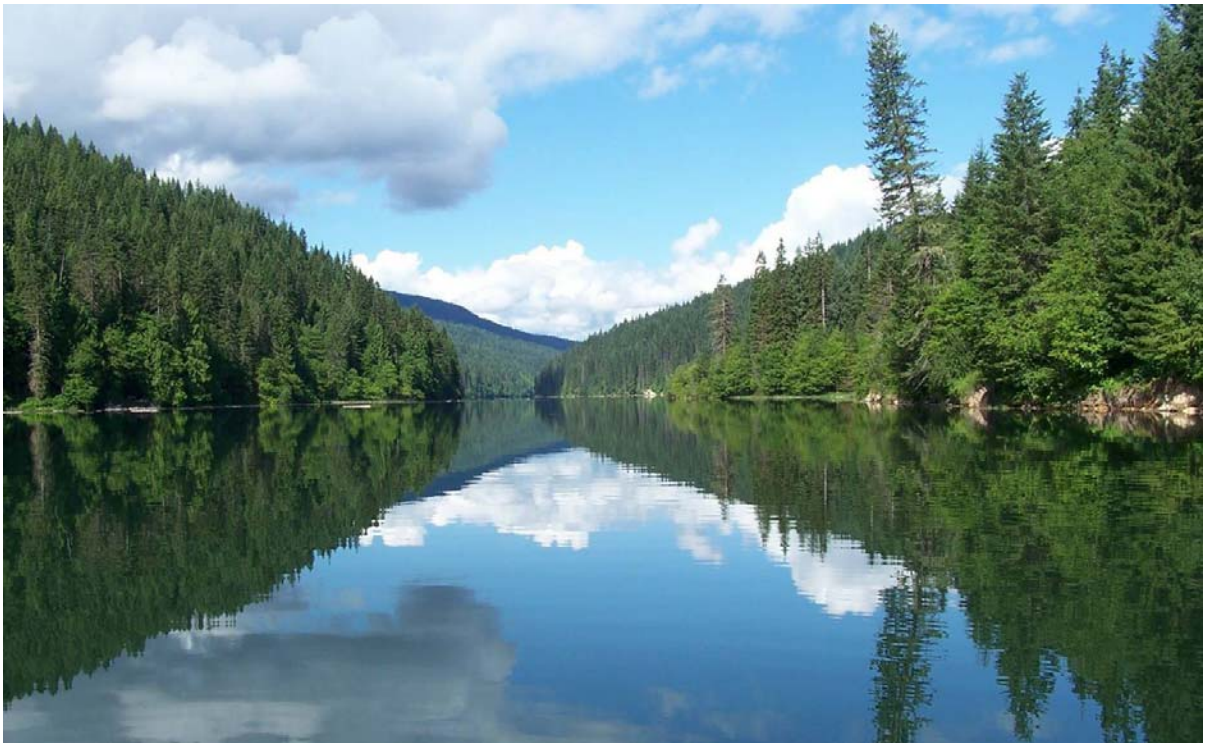
DWORSHAK RESERVOIR PROJECT MASTER PLAN



US Army Corps
of Engineers ®
Walla Walla District

June 2015

DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
201 NORTH THIRD AVENUE
WALLA WALLA, WA 99362-1876

CENWW-OD (1200A)

3 June 2015

MEMORANDUM FOR Commander, Walla Walla District (CENWW-DE/LTC Vail)

SUBJECT: Dworshak Reservoir, Ahsahka, Idaho, Master Plan

1. The Dworshak Resrvoir Master Plan is enclosed for your review and approval in accordance with ER/EP 1130-2-550.

2. Point of contact in Operations Division for this request is Mr. Richard D. Werner, 509-527-7101.

RICHARD D. WERNER P.E.
for Chief, Operations Division

1 Encl
Master Plan

Approved X
Disapproved

06/10/15
Date

Timothy R. Vail
LTC, EN
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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

The *Dworshak Reservoir Master Plan* has been prepared in accordance with Engineer Regulation and Engineer Pamphlet 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, Change 7, 30 January 2013, to guide the comprehensive management, development, and use for recreation, natural resources, and cultural resources that is efficient and cost-effective throughout the life of the Dworshak Dam and Reservoir project. Dworshak Dam and Reservoir is owned by the federal government with the U.S. Army Corps of Engineers holding responsibility for its operation and maintenance under the Walla Walla District, United States Army Corps of Engineers.

This master plan is a tool for the responsible stewardship of natural and cultural resources to benefit present and future generations, and to promote the awareness of environmental values and the need for protection, conservation and restoration. It identifies and assigns the resource management practices being considered and implemented and is the basis for preparation of the *Operational Management Plan* to achieve the objectives outlined in this Plan.

Dworshak Dam and Reservoir are primary components of a comprehensive hydropower plan for the Pacific Northwest. The Corps of Engineers administers a total of 31,256 acres at this facility, above and below full pool. This land has been organized into land allocation and classification categories to prescribe management practices that are appropriate for the primary authorized purpose—flood damage reduction. Land allocation and classification categories above full pool consist of Operations: Project Operations (231 acres), Operations: Recreation (1,087 acres), Operations: Multiple Resources Management (18,140 acres), and Operations: Environmentally Sensitive Areas (3,101 acres). Operations: Mitigation includes 6,937 acres, and Operations: Easement Land totaling 1,760 acres. *Note: Land classification acreage is approximate and represents only land that was not inundated by the reservoir at full pool when the aerial photographs were flown, unless otherwise specified.*

The following actions should be taken to ensure orderly use, development, and management of Dworshak Dam resources: (1) periodic re-evaluation of the identified resource objectives and updating of this Plan as appropriate; (2) preparation of and regular updates to the *Operational Management Plan* as specified in the regulation listed above; and (3) preparation of and appropriate updates to the *Historic Properties management Plan*.

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SECTION 1 – INTRODUCTION

1.1 PROJECT AUTHORIZATION

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 at Dworshak Dam and Reservoir as a full project purpose.

Early in its planning stages, the Dworshak Dam and Reservoir was referred to as the Bruce's Eddy Project. Its name was changed by Congressional action in August 1963 to honor the late Idaho Senator Henry C. Dworshak.

1.2 AUTHORIZED PURPOSES

Following the severe floods of 1948 on the Columbia River, serious attention turned to plans to authorize water resources development. The site was studied and briefly discussed in House Document 531, 81st Congress, 2nd Session, dated 20 March 1950. More specific plans were formulated and published as Senate Document 51, 84th Congress, 1st Session, dated 14 June 1955. The report recommended adoption of the project as part of the main Columbia River drainage control plan. Detailed planning was authorized by Public Law 85-500, 85th Congress, 2nd Session, approved 2 July 1958. Recommendation by the Chief of Engineers, with concurrence from local interests, was to create a dam and reservoir in the interest of flood damage reduction. This included construction of four major components: (1) Dworshak Dam, (2) Dworshak Reservoir, (3) the powerhouse, and (4) Dworshak Fish Hatchery.

Dworshak Reservoir is a major storage project in the Columbia River system. It has sufficient storage to provide regulation for downstream flood damage reduction, power generation for use in the Northwest hydropower system, and regulation for water quality, recreation, and other downstream requirements. Operation of Dworshak Reservoir in conjunction with the total system of Columbia River reservoirs is essential to meet requirements of the Endangered Species Act (ESA) for fish, power system load requirements, and flood regulation on the lower Columbia, lower Clearwater, and lower Snake Rivers. Dworshak Dam and Reservoir currently operates in the interest of a variety of purposes as described below.

1.2.1 Flood Damage Reduction. The primary purpose of the Dworshak Dam and Reservoir project is flood damage reduction for the lower Clearwater River area (Ahsahka to Lewiston, Idaho) and on the lower Snake River. Water levels in the reservoir are drawn down in July and continue to drop through mid-September. This provides cool water to the main stem

Snake River for migrating salmonids in the summer, and allows for flood storage behind the dam through the winter and early spring run-off season. Storage capacities are evaluated throughout the winter and reservoir levels are adjusted based on snow levels. The reservoir refills from April to July.

1.2.2 Navigation. Dworshak Dam was authorized to provide navigation for the movement of harvested timber from the upper North Fork Clearwater River Basin. The regional logging industry no longer transports timber using this method so the log dumps along the reservoir are no longer used. However, navigation remains an authorized project purpose.

1.2.3 Hydropower. Water released from the reservoir is typically passed through turbines for the generation of electrical power. Throughout the year, daily operation reflects hydropower needs and constraints. Water is also released on a seasonal basis to meet flood risk management and ESA requirements.

1.2.4 Fish and Wildlife Management. Fish and wildlife management is a high priority on all project lands. Project lands are managed for either direct or incidental benefit to fish and wildlife based on lands classification through a variety of techniques, including vegetative management.

1.2.5 Recreation. Dworshak Reservoir is managed to provide a high quality outdoor recreation experience with plenty of diversity. Recreation is predominantly water-based, with boating and fishing as the major activities. A significant amount of hunting also takes place on project lands. Recreation areas range from boat accessible mini-camps to highly developed and extensively used group campgrounds.

1.3 PURPOSE AND SCOPE OF THE MASTER PLAN

The *Dworshak Reservoir Master Plan,* hereafter referred to as Plan or master plan, is the strategic land use document that guides the comprehensive management, development, and use for recreation and natural resources throughout the life cycle of the project. It is a vital tool for responsible stewardship and sustainability of the facility's resources for the benefit of present and future generations. This Plan guides and articulates Corps of Engineers (Corps) responsibilities pursuant to federal laws to preserve, conserve, restore, maintain, manage, and develop the land, water, and associated resources. This Plan focuses on goals and objectives. This Plan does not address regional water quality, water level management, shoreline management, or the operation and maintenance of project operations facilities.

1.4 PROJECT DESCRIPTION

Dworshak Dam and Reservoir (Photo 1-1) was completed in 1973 by the U.S. Army Corps of Engineers. The dam is located at River Mile (RM) 1.9 on the North Fork Clearwater River in Clearwater County, Idaho (Plate 1). A portion of the Project is located within the Nez Perce Indian Reservation (Plate 1A). Ahsahka, Idaho, is the closest community to the city of Orofino four miles to the east. The larger communities of Lewiston, Idaho, and Clarkston, Washington, are 45 miles west of the project with Moscow, Idaho, and Pullman, Washington, located 60 miles to the northwest.

Photo 1-1: Aerial view of Dworshak Dam and Reservoir at full pool.

Dworshak Reservoir lies within the steep, narrow canyon of the North Fork Clearwater River. At full pool elevation (1,600 feet msl) the reservoir extends 53.6 miles upstream on the North Fork, with a shoreline of 175 miles. The widest sections of the reservoir are in the lower third of its length, where the widths generally range from one-half to one mile, with the widest point (at the mouth of Elk Creek) being nearly two miles. The upper two-thirds of the reservoir are narrower, ranging between 1,000 and 2,000 feet. Two major tributaries, Elk Creek and Little North Fork, enter on the north shore of the reservoir.

The project has the capacity to protect surrounding lands up to a one percent, (i.e. 100-year) flood event. Public access and recreation facilities can be found at many locations along the reservoir. The largest recreation areas are Big Eddy,

Dworshak State Park, and Dent Acres. Last year, close to 150,000 visitors enjoyed its unique beauty and recreational opportunities (Photos 1-2 and 1-3). Pertinent data about Dworshak Dam and Reservoir is included in Appendix A.

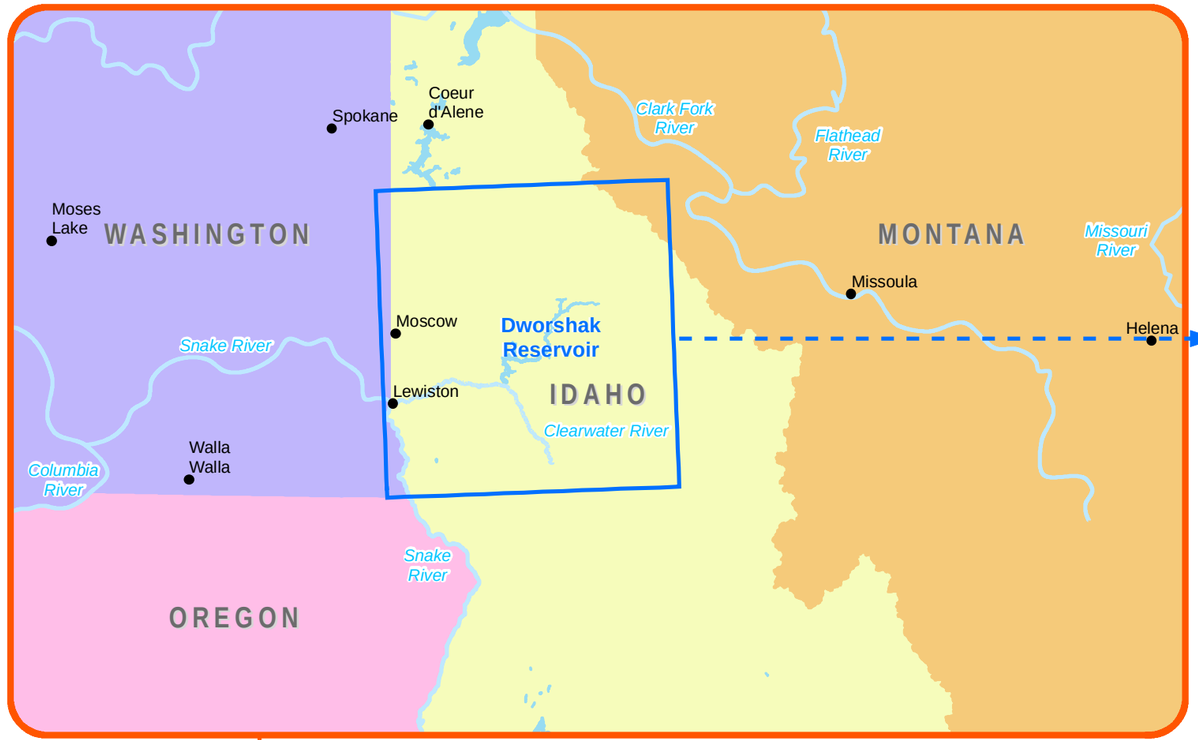
Photo 1-2: Boating on Dworshak Reservoir.

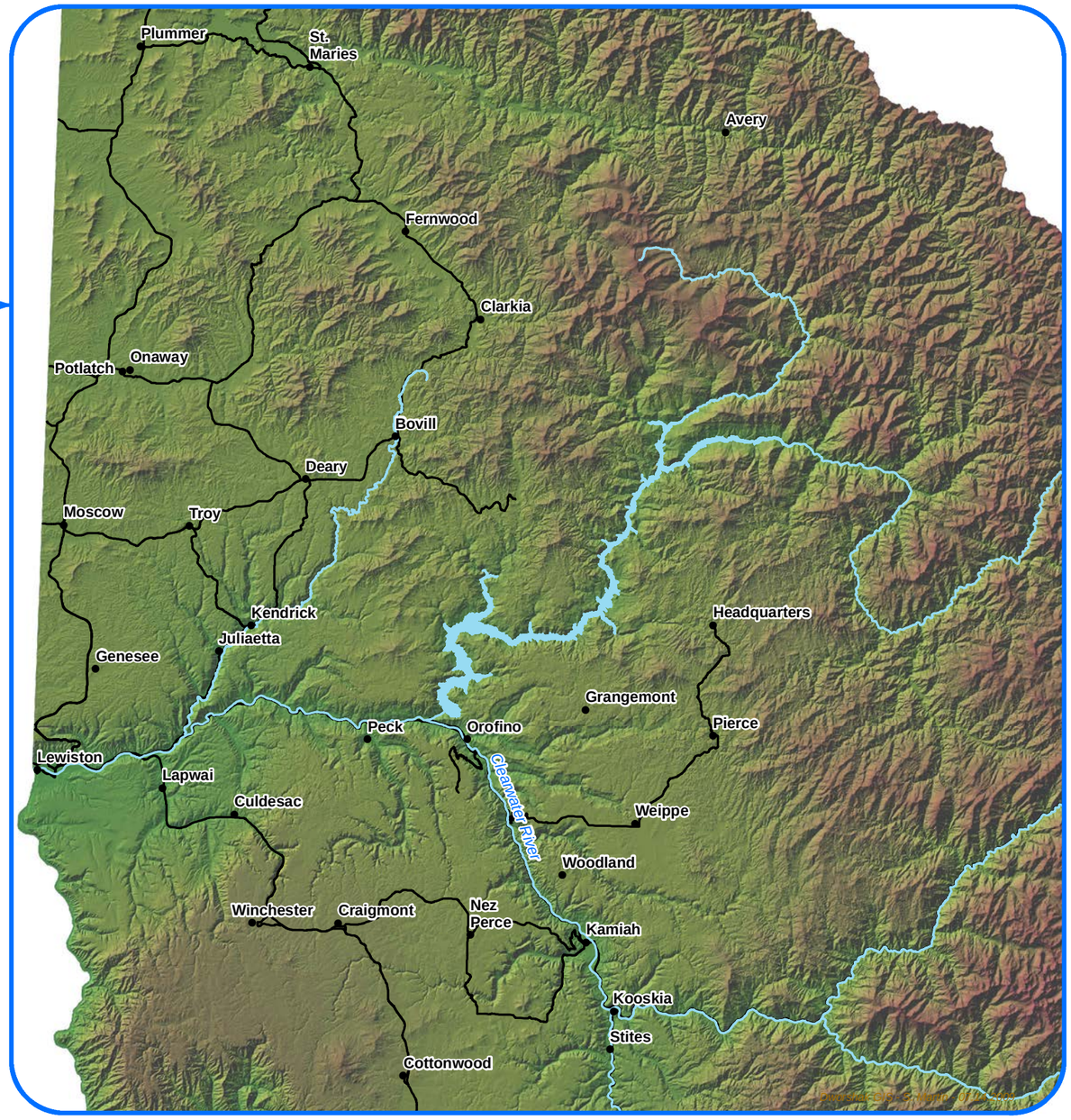
Photo 1-3: Camping at Dworshak.

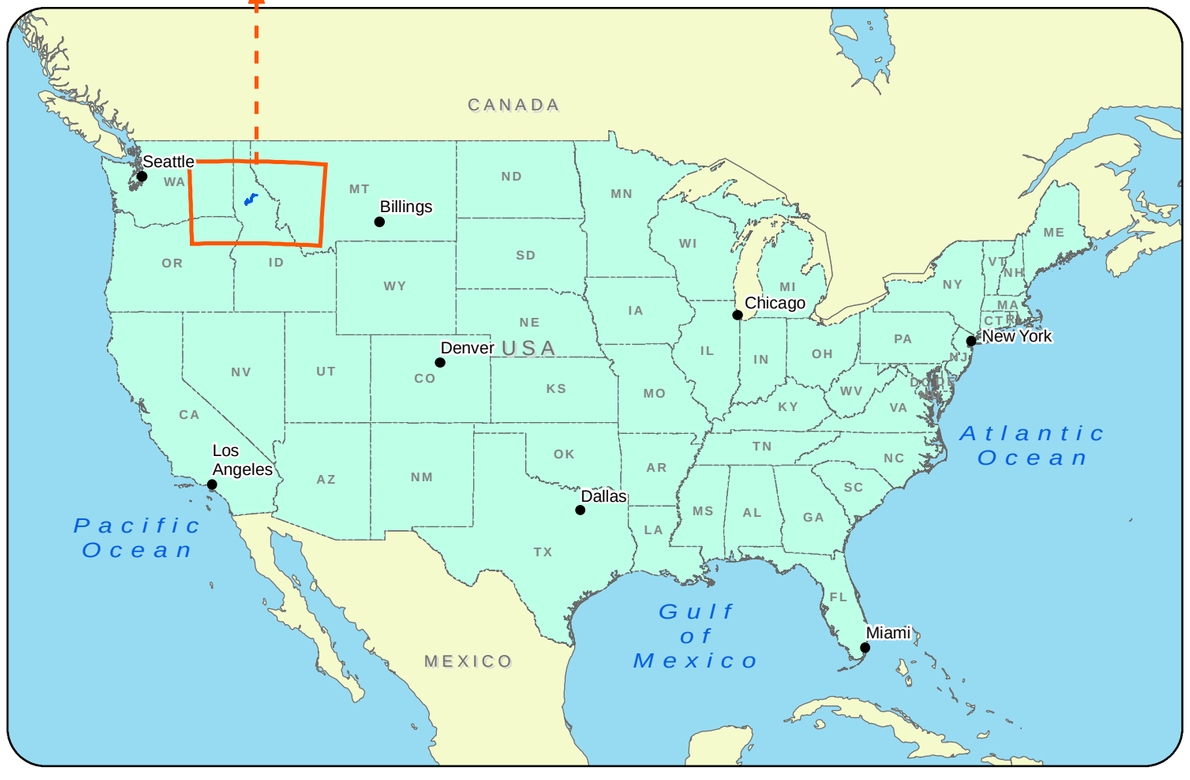
Dworshak Reservoir was originally designed to maintain a pool level around 1,600 feet above mean sea level (msl) during the recreation season. In 1992, Snake River Chinook salmon (*Oncorhynchus tshawytscha*) and steelhead trout (*Oncorhynchus mykiss*) were listed as endangered species under the Endangered Species Act (ESA). As a result, the Corps was required, and continues, to draw on cold water from the reservoir to facilitate fish migration on the Snake River. These drawdowns typically begin after July 4 each year, and drop the pool level from 80 to 155 feet, targeting elevation 1,520 msl by September 15 each year (Photos 1-4 and 1-5). Additional drawdowns for other purposes can lower the lake level 155 feet to 1,445 msl.

Photo 1-4: Dworshak Reservoir at high pool.

Photo 1-5: Reservoir minus 80 feet.







Map Legend

- City or Town
- U.S. / State Highway
- Stream or River
- Dworshak Reservoir

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Dworshak Master Plan

PLATE 1

DWORSHAK LOCATION MAP

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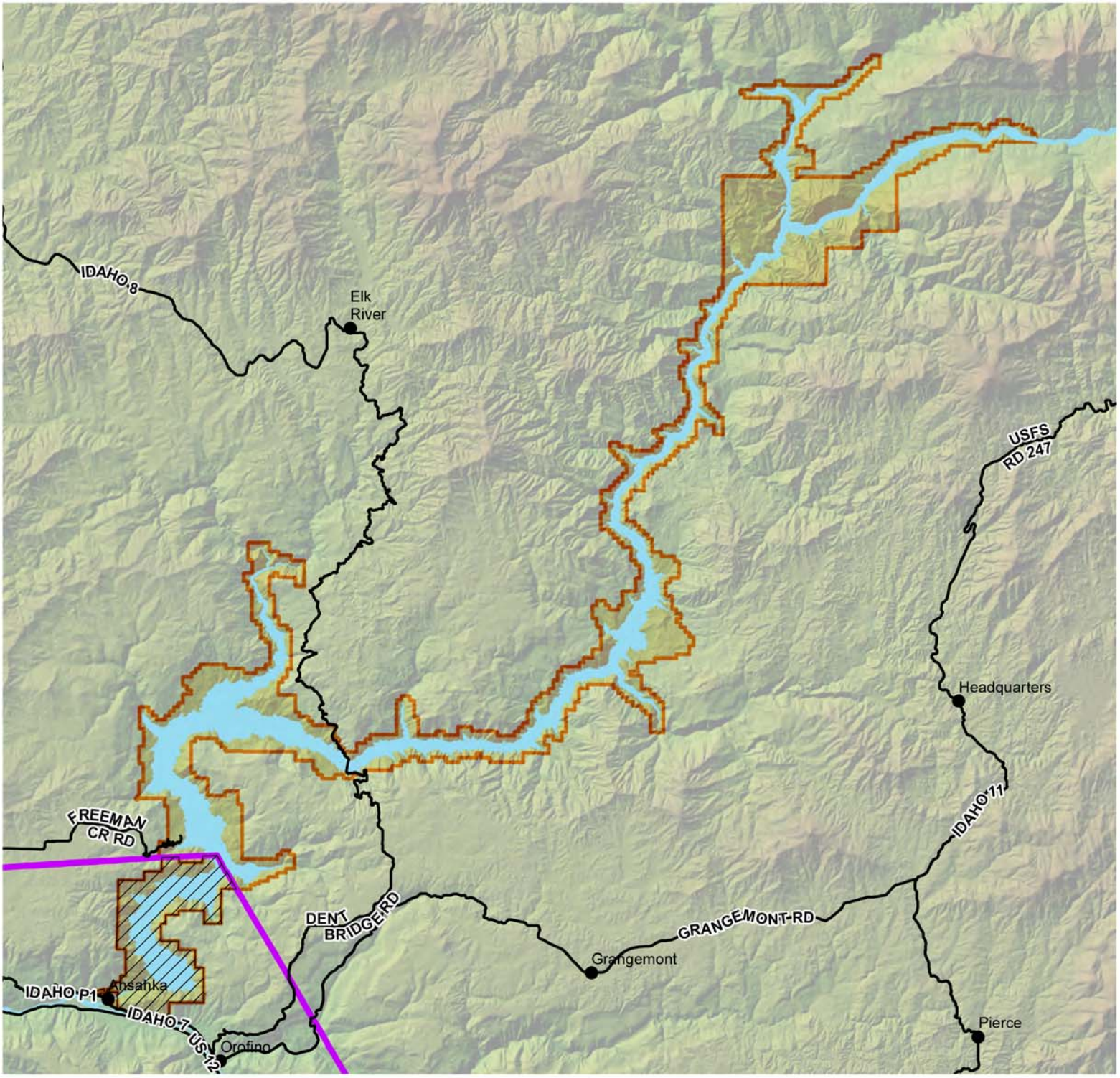

Dworshak Master Plan

Plate 1A

Nez Perce Tribe 1863 Reservation Lands
Within Dworshak Boundary

Map Legend

- Dworshak Lands within Reservation
- Nez Perce Reservation 1863 Boundary
- USACE Dworshak Lands

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US Army Corps of Engineers

1.5 PUBLIC USE PLAN (2011)

A *Dworshak Reservoir Public Use Plan for the Development and Management of Public Access at Dworshak Reservoir, Supplement to Design Memorandum 10*, February 2011 (PUP) was developed by the Walla Walla District to address management changes necessary to accommodate current conditions at Dworshak Reservoir. The original Design Memorandum, DM 10, was developed in 1970. Since the completion of DM 10, land management philosophies, as well as scientific knowledge of multiple resource use management has changed dramatically. Reservoir operation has been altered since 1992, with lake levels dropping approximately 80 feet each summer to provide cold water for juvenile salmon migrating in the Snake River. The change in reservoir elevations has decreased visitor use of designed recreation facilities and has increased visitor requests for alternative forms of recreational access to the reservoir.

The Public Use Plan updates existing land classifications to meet current Corps regulations and addressed site conditions. Information from the PUP has been incorporated into this master plan. Implementation actions will be incorporated into the Dworshak Reservoir Operational Management Plan.

1.6 DWORSHAK DAM RESOURCE USE GOALS

Resource Use goals provide the overall framework that guide the use of resources administered by the Corps of Engineers at a project site. The goals listed below and objectives listed within this master plan are specific to Dworshak Reservoir and its individual areas, and specify attainable options for resource development and management. They have been developed through study and analysis of regional needs, expressed public desires, and resource capabilities and potentials, and is formulated to guide and direct the overall resource management program.

1.6.1 Project Operations.

a. To continue to safely, effectively, and efficiently provide benefits to the public consistent with the authorized project purposes of first reducing flood damage, then hydropower.

1.6.2 Natural Resources Management.

a. To allow public access and use of Corps fee owned land, as appropriate, around Dworshak Dam and Reservoir.

b. To make Dworshak Dam land specifically available to school groups for environmental educational activities.

c. To protect and preserve archeological and historical sites.

d. To protect and enhance fish and wildlife habitat.

e. To control noxious weeds and other undesirable weed species.

1.6.3 Recreation and Interpretation.

a. To encourage public visitation.

b. To provide high quality, safe recreational facilities year-round to a wide segment of society, including individuals with disabilities.

c. To minimize conflicts between user groups and Corps of Engineers operational requirements.

d. To enhance visitor enjoyment of public lands at Dworshak Dam and Reservoir.

1.6.4 Coordination.

a. To maintain communication and coordination with appropriate Indian tribes; federal, state, and local agencies; citizen groups and organizations for proper management of the manmade and natural resources of Dworshak Dam and Reservoir.

1.7 CONCEPTUAL FRAMEWORK. Master plan processes encompass a series of interrelated and overlapping tasks involving the examination and analysis of past, present, and future environmental, recreational, and socioeconomic conditions and trends. With a generalized conceptual framework, the process focuses on four primary components: (1) regional and ecosystem needs, (2) project resource capabilities and suitability, (3) expressed public interests that are compatible with Dworshak Dam's authorized purposes, and (4) environmentally sustainable elements. This Plan ensures that analysis completed in the Public Use Plan was used in the completion of this master plan.

The Corps follows a six-step planning process: (1) identification of problems and opportunities; (2) inventory and forecast conditions; (3) formulation of alternative plans; (4) evaluation of alternative plans; (5) comparing alternative plans; and (6) selecting a plan of action.

Dworshak staff and the recreating public identified problems related to access of recreation sites due to fluctuating reservoir levels immediately after drawdowns began. Scoping meetings in support of the master plan and the PUP updates presented the public with opportunities to identify further problems and issues. Scoping meetings, along with recommendations from community working groups, helped Corps planners identify opportunities for recreation under a fluctuating water

regime. Those recommendations ultimately facilitated the formulation and evaluation of proposed plans. Figure 1-1 below illustrates the planning process.

Information gathered in the scoping meetings and work groups was combined with the detailed project inventory to form a list of opportunities, constraints, and other influencing factors for future recreation development and management at Dworshak Reservoir. Refer to Appendix B for responses from the scoping meetings.

From this inventory and input, updated land classifications were developed. After addressing comments on the proposed classifications, a final land classification map was created. The new map is now used for management zoning for locating appropriate development and management actions that will be detailed in the *Dworshak Reservoir Operational Management Plan*.

Conceptual implementation plans were created by addressing public input, the resource inventory, and the updated land classifications. These plans are designed to guide future development and management of Dworshak Reservoir. The intent is to provide public access and recreational opportunities that meet public desire and are compatible with natural resources stewardship at the project. Natural Resources staff at Dworshak Dam and Reservoir will prioritize these plans and implement them in their *Operational Management Plan* as funding becomes available. Prior to implementation each recommended action must be reviewed for environmental impact and compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act. A list of previous NEPA actions can be found in Appendix C.

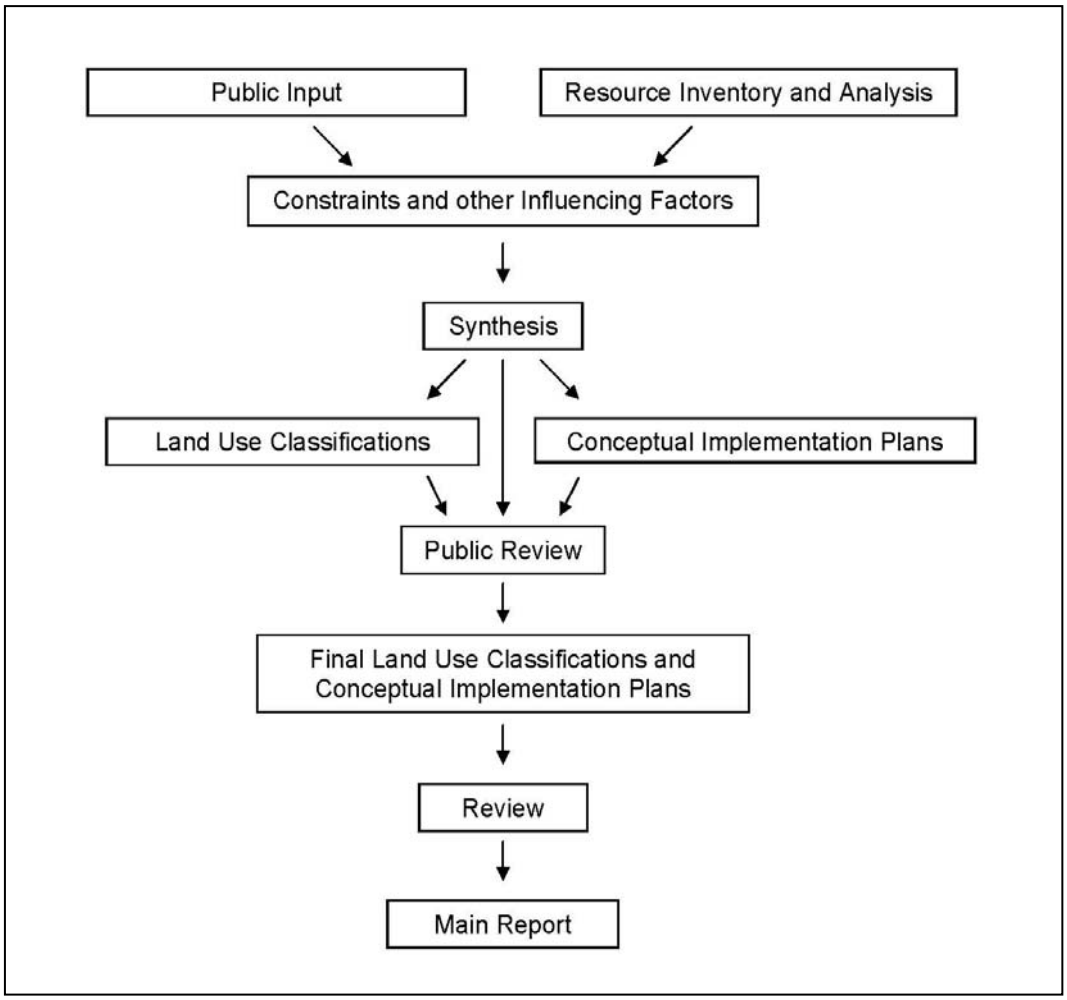

Figure 1-1. Planning process for Dworshak Reservoir Public Use Plan and Master Plan.

1.8 DESIGN MEMORANDUMS

Prior to 1999, formal documents were prepared that defined engineering responsibilities, requirements, and procedures during the planning, design, construction, and operations phases of civil works projects. This system is no longer used per Engineer Regulation (ER) 1110-2-1150, but a list of Design Memorandums (DM) previously submitted can be found in Appendix D.

1.9 REFERENCES

This master plan was prepared in accordance with the following Corps of Engineers guidance.

Engineer Manual (EM) 1110-1-400, *Engineering and Design – Recreation Planning and Design Criteria, 31 July 1987.*

Engineer Pamphlet (EP) 1105-2-35, *Public Involvement and Coordination*, 5 February 1982 (Change 1).

EP 1130-2-540, *Environmental Stewardship Operations and Maintenance Policies*, 15 November 1996, revised 11 August 2008.

EP 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 November 1996, as amended.

EP 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, (Change 5, 30 January 2013).

EP 1130-2-500, *Project Operations – Partners and Support (Work Management and Support),* 27 December 1996.

ER 200-1-5, *Environmental Quality – Policy for Implementation and Integrated Application of the U.S. Army Corps of Engineers Environmental Operating Principles (EOP) and Doctrine*, 30 October 2003.

ER 200-2-2, *Environmental Quality – Procedures for Implementing the National Environmental Policy Act (NEPA)*, 4 March 1988.

ER 1105-2-100, *Planning Guidance*, 22 April 2000 (with Appendices D and G revised June 2004 and Appendix F revised January 2006).

ER 1120-2-400, *Recreation Resource Planning*, 1 November 1971 (Changes 1 through 3).

ER 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 November 1996 (Changes 1 through 5).

ER 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 November 1996 (Change 7, 30 January 2013).

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SECTION 2 - PROJECT SETTING AND FACTORS INFLUENCING MANAGEMENT AND DEVELOPMENT

Section 2 provides an overview of the key factors that influence and constrain present and future options for the use, management, and development of land and water resources at Dworshak Dam and Reservoir. These factors fall into three general and interrelated categories: natural resources, historical and social resources, and administration and policy. An analysis of these factors, as well as regional needs and desires, results in a framework to minimize adverse impacts to the environment and resolve competing and conflicting uses. Information presented in this section was used to identify land classifications, developing project-wide resource objectives, and identifying specific facility needs.

2.1 DESCRIPTION OF DWORSHAK PROJECT

Dworshak Dam and Reservoir is located in the Mountain-Snake Province, Clearwater River Basin. Dworshak Dam is located at the mouth of the North Fork Clearwater River which winds through timbered canyons on the western slopes of the Bitterroot Mountain Range. The Corps of Engineers owns 29,494 acres of land surrounding the reservoir and manages the land for wildlife conservation, recreation, and other purposes. Generally, the slopes at the reservoir's edge are very steep and densely covered by coniferous forest that is attractive for important wildlife habitat and to recreational users.

2.2 RESERVOIR REGULATION

In 1992, Chinook salmon and steelhead trout were listed as endangered under the ESA. The prevailing biological opinion for the recovery of the species requires the Corps to draw down the reservoir level in early July to facilitate fish outmigration. This policy has continued since 1992 with only minor adjustments in timing. In a year with normal snow pack, the Corps lowers the reservoir up to two feet per day, usually beginning on July 5. The reservoir is evacuated until it reaches 80 feet below normal full pool, 1,600 feet msl, usually between August 30 and September 15. Timing of drawdown however, is dependent on snowpack and weather conditions. The pool remains at a consistent level until rain and snowmelt gradually raise the pool between spring and July 4. High snow years require drawdown in the spring to create adequate flood storage space. Low snow years require less storage space and the reservoir is often allowed to fill earlier in the recreation season. Further detail and explanation of the implications of reservoir drawdowns is presented in Section 6.1.

2.2.1 Effects of Operations on Recreation. Construction of Dworshak Dam and creation of the reservoir changed recreation on the North Fork Clearwater River. River fishing has primarily been converted to lake fishing. Hunting continues to be an important recreational activity. Water-based activities

(boating, waterskiing, and boat-in camping) have also been introduced, along with other opportunities including hiking, car and recreational vehicle camping, and picnicking.

Reservoir drawdowns result in an exposed shoreline rising steeply to the forest above. Mini-camps designed for boat access only, have become increasingly difficult to access, some boat ramps become unusable, and access to boats in the Big Eddy Marina (via stairs) becomes difficult. These challenges discourage many recreational users from late July to early September, which were previously the periods of most intense recreational boating activity. However, visitors that do use the reservoir in late summer find the water warm, calm, and the lake wide open for all types of water sports.

The Plan takes into account the changes in operation of the project and provides conceptual plans to address these issues to ensure responsible stewardship of natural resources to benefit present and future generations.

2.2.2 Effects of Operations on Fish and Wildlife. Construction of the dam and reservoir has affected fish and wildlife conditions. The dam blocks passage of anadromous fish; consequently, anadromous fish are prevented from accessing most all habitat in the North Fork Clearwater River Basin. Due to the loss of migratory fish species, marine-derived nutrients have been altered, resulting in efforts to manage nutrient levels in the reservoir. A fish hatchery was constructed in 1969 by the Corps of Engineers at the mouth of the North Fork Clearwater River and is co-managed by the U.S. Fish and Wildlife Service (USFWS) and the Nez Perce Tribe. The hatchery provides some level of mitigation to the upper reaches of the North Fork Clearwater River.

Summer drawdowns provide cool water to the Snake River. This benefits the migration of juvenile Chinook and steelhead species in the Clearwater and Snake rivers. Bull trout may be negatively impacted by drawdowns by being entrained and carried into the main stem of the Clearwater River. Kokanee may also be entrained, which is a major food source for bull trout.

Another negative impact of reservoir fluctuations is turbidity, which affects nutrient dynamics and biological production. Low reservoir levels may also create thermal and physical barriers, reducing fish access to tributaries (Clearwater Basin Bull Trout Technical Advisory Team, 1998; USFWS, 2002). A variety of species (i.e., non-native smallmouth bass and other shoreline spawners) experience drastic negative impacts to reproductive success because of the fluctuating water levels. These species spawn in shallow areas because the areas optimize egg survival based on water temperature. Beds are often dry or too far underwater due to fluctuations to support production.

There are also impacts to wildlife in the area. The reservoir flooded acres of important wildlife habitat, including important wintering habitat for large game species. While crossing lake ice during winter migration, deer and elk have been killed falling through the ice. Summer drawdowns affect other wildlife, specifically amphibians, waterfowl, and some small mammals.

2.3 NATURAL RESOURCES

2.3.1 Hydrology. The Clearwater River Basin encompasses about 9,600 square miles (15,450 square kilometers) in North Central Idaho. The majority of Annual runoff for the Clearwater River Basin is from a combination of winter rain and spring snowmelt. Streamflow patterns in the North Fork Clearwater River is characterized by low flows from late July through February, increasing flows during March, high flows April through May or June, and receding flows in late June and July. The magnitude of flows generated by spring runoff varies with the amount of snow accumulated, air temperatures, and the amount of rainfall.

2.3.2 Water Quality. Corps water quality management is described in ER 1110-2-8154, *Water Quality and Environmental Management for Corps Civil Works Projects*. Updated in 1995, it encourages a holistic, ecosystem-level approach to management. As stewards of a significant percentage of the nation's aquatic environment, the Corps has a responsibility to preserve, protect and, where necessary, restore water quality altered by Corps projects. This requires a comprehensive understanding of the interactions of the uses and users of the aquatic environment, and the impact structures and operation has on water quality.

Much of Dworshak Reservoir is thermally stratified during the summer. A deep section of the pool near the marina at the Big Eddy Recreation Area typically mixes vertically once a year with turnover occurring in January or February. Upper strata of warm water occupy the top 13-23 feet (4-7 meters) during the summer. Water temperatures in this layer may reach or exceed 77°F (25°C) during July and August. Warm surface water, combined with low nutrient concentrations, can create an environment advantageous to blue-green algae during late summer and early fall. Nuisance algal blooms have been observed at Merry's Bay and Bruce's Eddy recreation areas, but are more common in the upper reaches of the reservoir in late summer above the nutrient application zone. The deeper strata of the reservoir occupy a larger volume than the upper strata; temperatures range from 39.2-44.6°F (4-7°C) year-round.

Anticipating water quality changes, the Corps contracted a reservoir limnological study with the University of Idaho in March 1972 (C.M. Falter, et al., 1977). Post-impoundment conditions for Dworshak Reservoir and the

main stem Clearwater River (downstream from Dworshak Dam) differ greatly from those of the free flowing river. Corps personnel monitor water quality parameters at five reservoir stations and one station downstream from the dam. Dworshak hatchery personnel also monitor the chemical quality of Dworshak releases.

2.3.3 Air Quality. Air quality in Clearwater County is generally very good. Smoke from prescribed burns, uncontrolled forest fires, and agricultural field burning all contribute to lower air quality. The Nez Perce Tribe has operated a particulate matter (PM2.5) monitor in Orofino, Id from Aug-Oct since 2008 as part of their air quality monitoring network. All burning performed on the Nez Perce Reservation is regulated by the Tribe and the U.S, Environmental Protection Agency. Any open, prescribed, or agricultural burning taking place outside of Reservation boundaries is regulated by the Idaho Department of Environmental Quality. In 1990, the Montana/Idaho Airshed Group was established to minimize and prevent the accumulation of smoke in order to meet state and federal ambient air quality. The Montana/Idaho Airshed Group, the Nez Perce Tribe, and the Idaho Department of Environmental Quality work together to coordinate burn decisions. Additionally, the Montana/Idaho Airshed Group Operating Guide was developed to report and coordinate burning operations on all forest and range lands.

2.3.4 Climate. The Clearwater River Basin has mild summers and long cold winters. Mean annual temperature 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 October-May when temperatures reach well below 0°F (-17.8°C), while mild temperatures prevail during the summer. Average daytime summer temperature is around 88°F (31°C), while the winter evening average is approximately 28°F (2.2°C).

Precipitation averages 51 inches annually for the overall basin and 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 November-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.

Wind speeds are typically low around the dam and reservoir, averaging around three miles per hour from the southeast. High winds occasionally occur on the reservoir, at times reaching up to 40 miles per hour. Such winds can cause wave erosion against the shoreline and can pose a safety risk to boaters. In the past, high winds have caused damage to recreation areas, including the marina at Big Eddy.

2.3.5 Topography, Geology, and Soils.

a. Topography. Elevations in the Clearwater River 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 basin that lies west of Dworshak is characterized by barren hills and plateaus intersected by cultivated valleys. A 53.6-mile-long reservoir is formed in the North Fork and Little North Fork valleys. Steep slopes dominate the shoreline and Corps land (Plates 2A and 2B). Majority of existing developed recreation sites are located on the few flat or gently sloped areas.

b. Geology. The North Fork Clearwater River originates in a mountainous area underlain by metamorphic and igneous granite rock. In the lower portion of the reservoir, the valley floor is mantled by stream-deposited material. 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 two-thirds of the reservoir and are interspersed throughout the entire reach of the reservoir.

c. Soils. Soils around the dam and reservoir are diverse, varying from desert soils to the forest soils more typical of the area (Plates 2C and 2D). Many unstable soils have developed on parent rock subjected to tremendous heat and pressure. These soils are generally thin and underlain by an impervious parent rock that contributes to the basin's high runoff characteristics. Many soils around Dworshak are highly susceptible to erosion and prevent these areas from being developed.

In many places, higher slopes along the reservoir are covered in residual soil that is the product of weathering metamorphic rock. Due to 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 clay and shale. Clay-deposited areas have the hummocky topography, seep areas, and ponding water typical of slide areas.

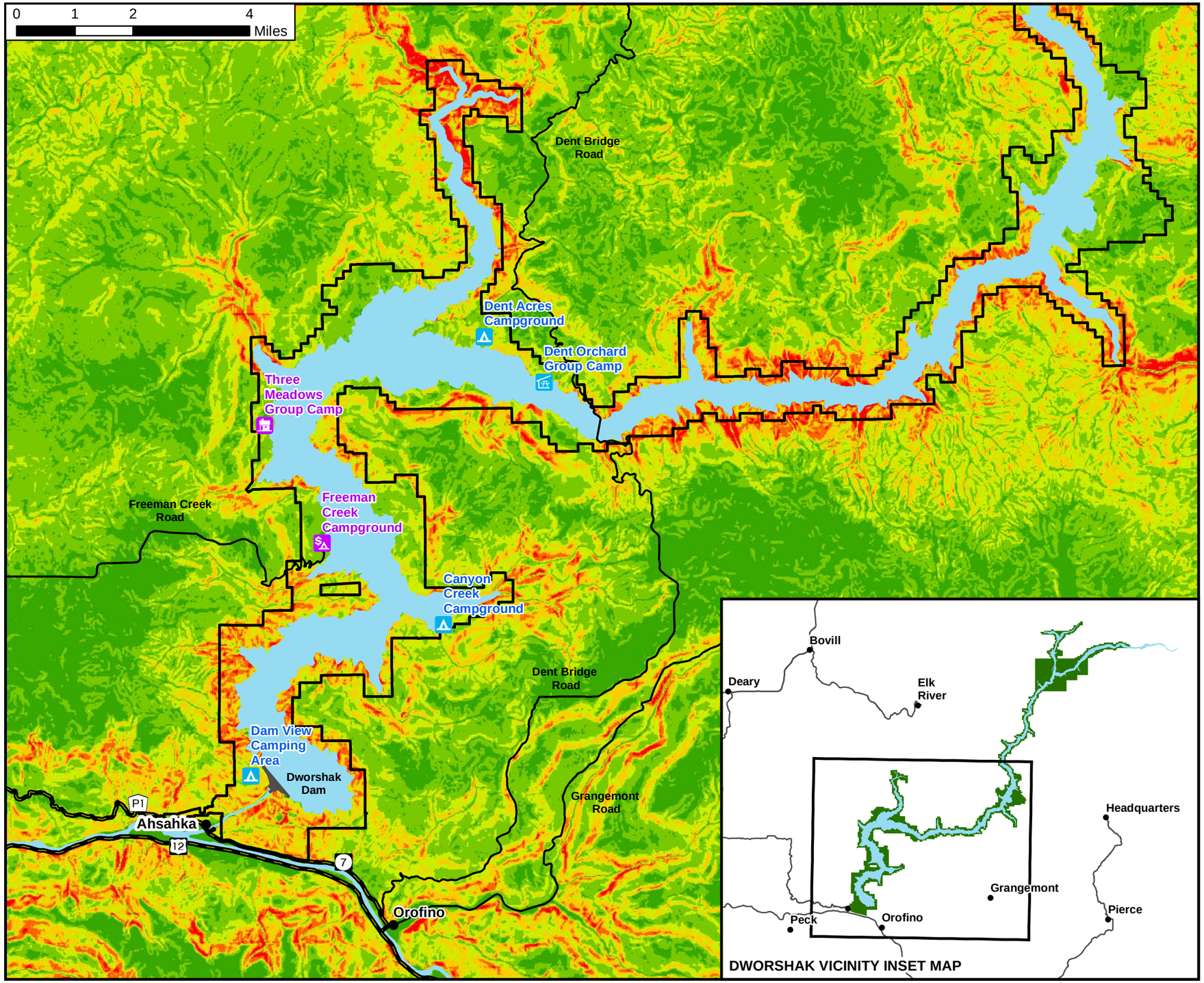
The most common types of surface soil are sandy loam, loam, and silt loam, with some clay content indicated in each. In natural forest conditions, layers of organic material accumulate on the surface soil. Soils and slopes are a significant influencing factor at Dworshak. The National Resources Conservation Service (NRCS) Soil Capability

Class Classification System describes the soils at Dworshak for the purposes of this report (refer to Table 2-1 below).

Capability Class/Subclass	Description
Class 1	Soils have slight limitations that restrict their use.
Class 2	Soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.
Class 3	Soils have severe limitations that reduce the choice of plants or require special conservation practices, or both.
Class 4	Soils have very severe limitations that restrict the choice of plants or require very careful management, or both.
Class 5	Soils have little or no hazard of erosion but have other limitations, impractical to remove, that limit their use mainly to pasture, range, forest land, or wildlife food and cover.
Class 6	Soils have severe limitations that make them generally unsuited to cultivation and that limit their use mainly to pasture, range, forest land, or wildlife food and cover.
Class 7	Soils have very severe limitations that make them unsuited to cultivation and that restrict their use mainly to grazing, forest land, or wildlife.
Class 8	Soils and miscellaneous areas have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, or water supply or for aesthetic purposes.
Subclass e	Made up of soils for which the susceptibility to erosion is the dominant problem or hazard affecting their use. Erosion susceptibility and past erosion damage are the major soil factors that affect soils in this subclass.
Subclass w	Made up of soils for which excess water is the dominant hazard or limitation affecting their use. Poor soil drainage, wetness, a high water table, and overflow are the factors that affect soils in this subclass.
Subclass s	Made up of soils that have soil limitations within the rooting zone, such as shallowness of the rooting zone, stones, low moisture-holding capacity, low fertility that is difficult to correct, and salinity or sodium content.
Subclass c	Made up of soils for which the climate (the temperature or lack of moisture) is the major hazard or limitation affecting their use.

Table 2-1. The NRCS Soil Capability Classification System. Capability Class is the broadest category in the system with codes 1-8 used to represent irrigated and non-irrigated land capability classes. Capability Subclass represents the dominant limitation that determines the Capability Class, with codes e, w, s, and c used for land capability subclasses.

All the soil at Dworshak has erosion potential, but for the purpose of forest and wildlife management, this is not a major concern. Erosion potential is a significant factor when determining location for recreation features, including campgrounds, trails, roads, and other amenities.



Map Legend

- City or Town
- Dworshak Boundary
- Dworshak Reservoir
- Federal / State Highway
- Secondary Road

Percent Slope

- 0 - 10%
- 10.01 - 25%
- 25.01 - 40%
- 40.01 - 55%
- 55.01 - 70%
- > 70%

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Walla Walla District

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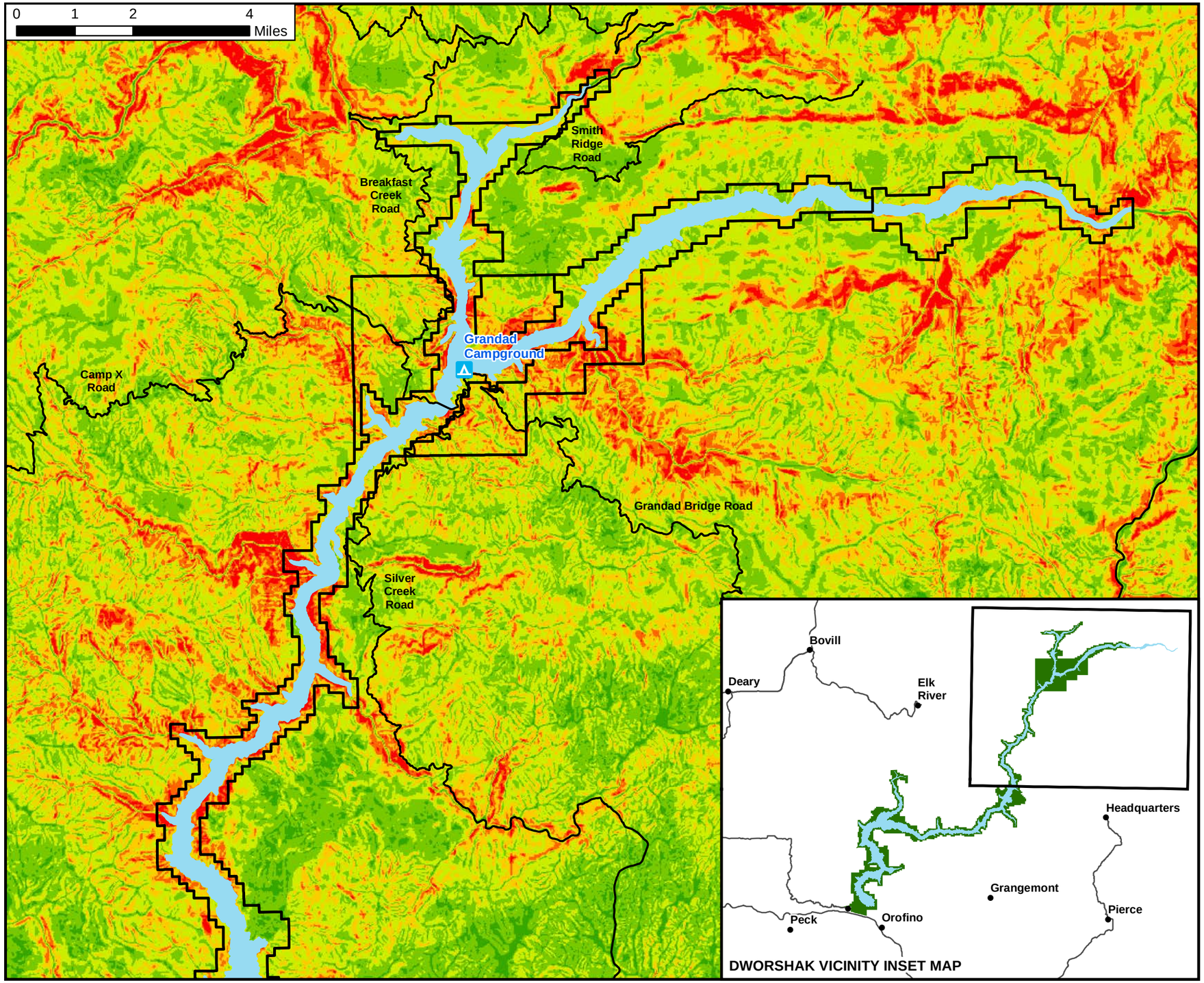
Dworshak Master Plan

PLATE 2A

SLOPE MAP
LOWER DWORSHAK RESERVOIR



Map Legend

- City or Town
- Dworshak Boundary
- Dworshak Reservoir
- Federal / State Highway
- Secondary Road

Percent Slope

- 0 - 10%
- 10.01 - 25%
- 25.01 - 40%
- 40.01 - 55%
- 55.01 - 70%
- > 70%

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Dworshak Master Plan

PLATE 2B

SLOPE MAP
UPPER DWORSHAK RESERVOIR

0 1 2 4 Miles

Dent Bridge Road

Dent Acres Campground

Dent Orchard Group Camp

Three Meadows Group Camp

Freeman Creek Road

Freeman Creek Campground

Canyon Creek Campground

Dent Bridge Road

Dam View Camping Area

Dworshak Dam

Grangemont Road

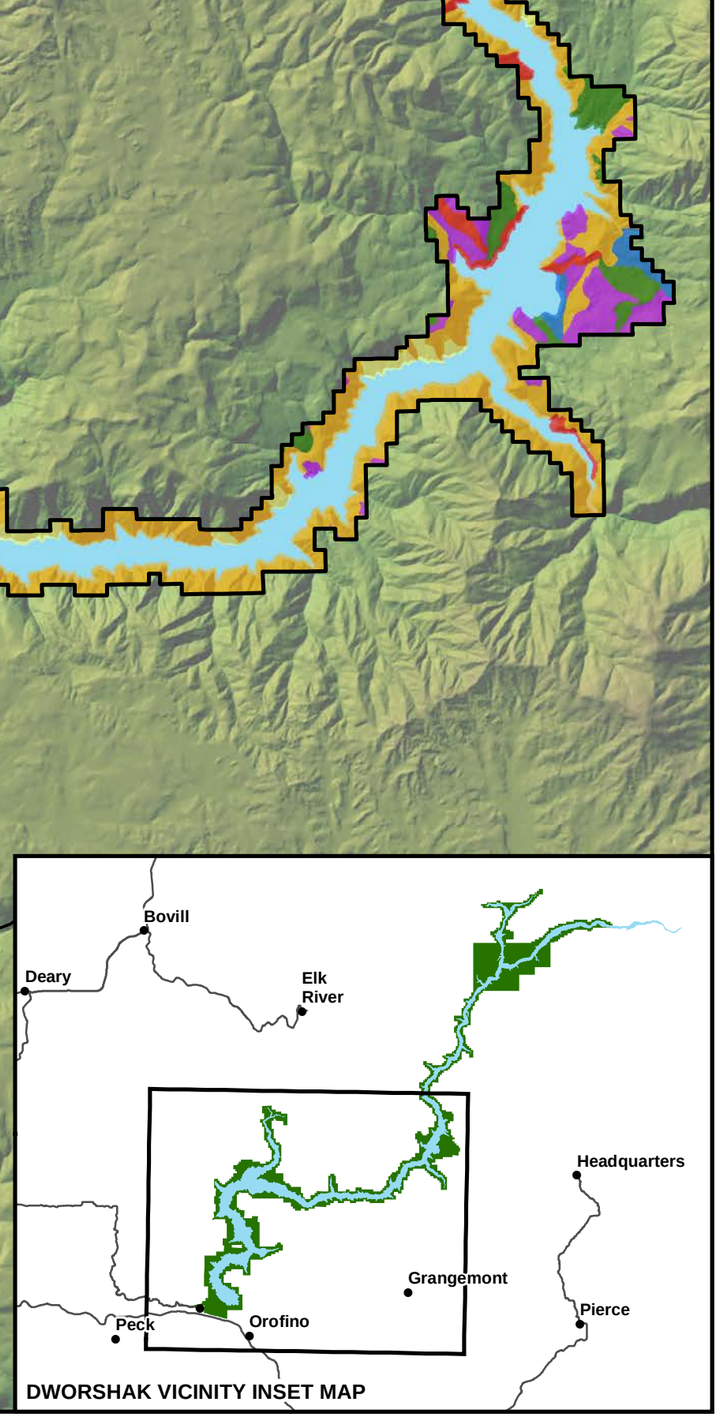
P1

Ahsahka

12

7

Orofino



DWORSHAK VICINITY INSET MAP

Map Legend

- City or Town
- Dworshak Boundary
- Dworshak Reservoir
- Federal / State Highway
- Secondary Road

Dworshak Soils

- Class 3
- Class 4
- Class 6
- Class 7
- Class 8
- Rock Outrcrop

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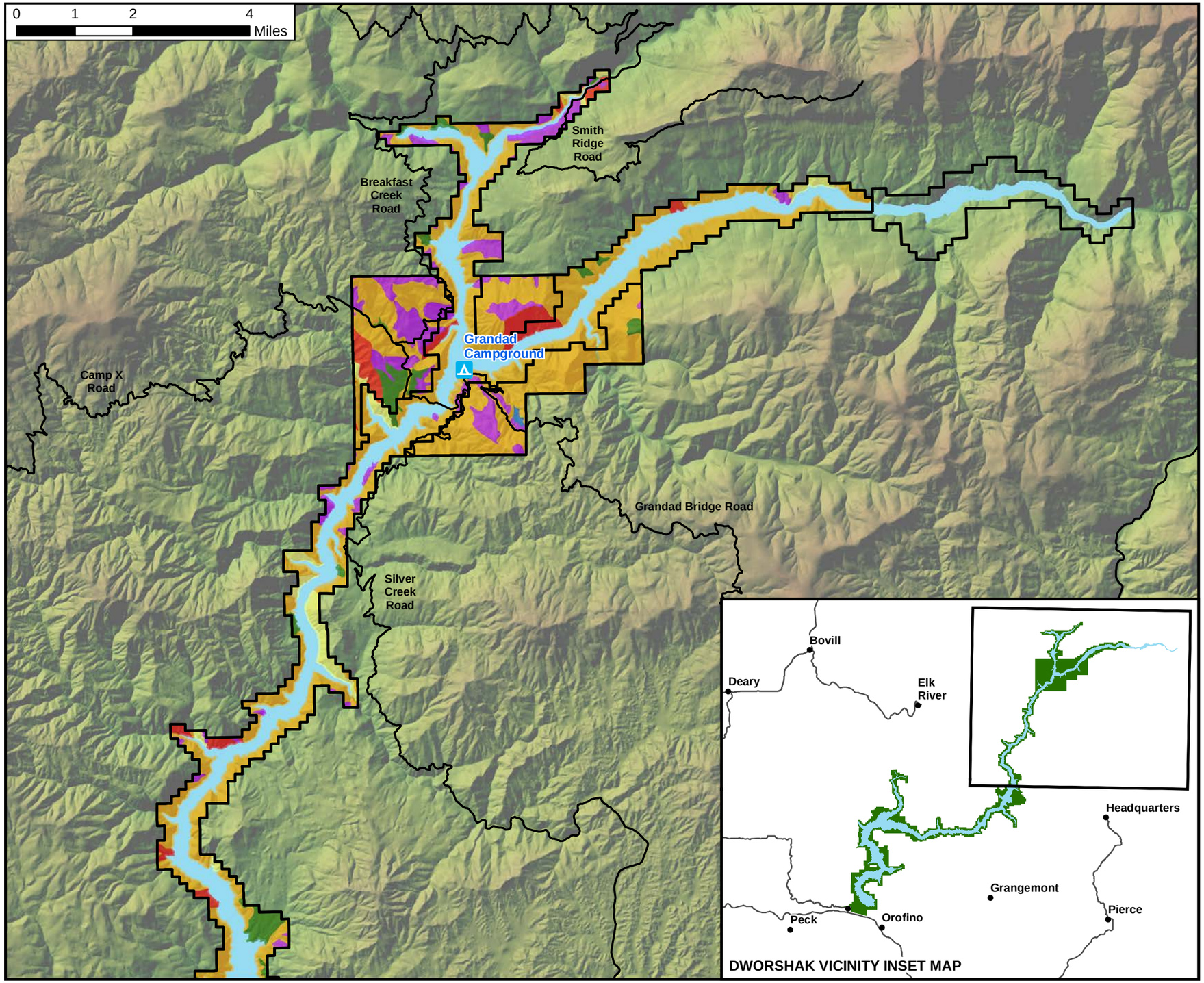
Dworshak Master Plan

PLATE 2C

SOILS CAPABILITY CLASS MAP LOWER DWORSHAK RESERVOIR



Map Legend

- City or Town
- Dworshak Boundary
- Dworshak Reservoir
- Federal / State Highway
- Secondary Road

Dworshak Soils

- Class 3
- Class 4
- Class 6
- Class 7
- Class 8
- Rock Outrcrop

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Dworshak Master Plan

PLATE 2D

SOILS CAPABILITY CLASS MAP
UPPER DWORSHAK RESERVOIR

2.3.6 Land Cover and Vegetation Resources. Dworshak Reservoir and its environment encompass a diversity of forest habitats and contain several rare plant species and unique plant communities. Unusual flora in 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. 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 (Lane, 1995).

a. Forests and Forest Management. Soil data for the Clearwater River Basin indicates that fourteen forest habitat types occur on Corps-managed land surrounding Dworshak Reservoir (Cooper, et al., 1991). 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 deposit of ash through volcanic activity, glaciations, flooding, landslides, wind events, indigenous peoples, and wildfire. Several of these processes occurred with high enough frequency and severity that are considered when managing natural resources, especially when planning road construction to minimize landslide potential. Similarly, overharvesting can leave few trees with little protection to withstand moderate wind events.

Historically, wildfire was the most dramatic process to shape northern Idaho forests. Fire impacts to an ecosystem are dependent on the localized fire regimen (Appendix E). 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 land surrounding Dworshak Reservoir, began in the early 1900s. Years of fire suppression (i.e., a reduction in the frequency of ground fires) has shifted the forest to a more unnatural state by allowing fire intolerant tree species (e.g., grand fir) to mature and take over areas historically dominated by fire tolerant species (e.g., ponderosa pine). Reduced fire frequency results in a build-up of forest fuel loads that result in more severe fires.

Understanding the ecological processes that have shaped these forests historically, as well as the resulting composition, form, and structure, is used in natural resource planning. Land managers recognize that forests created by these processes influence wildlife species diversity. Corps land surrounding the reservoir is managed based on this ecological understanding. Drier forest types are managed to promote natural forest conditions, given a historic fire regimen, which involves forest thinning followed by prescribed under-burns. Wetter forest types are managed with much less frequency as the natural disturbance regimen is less frequent.

Managing vegetation at Dworshak is of high importance. Development of a Vegetation Management Plan provides guidance on maintaining and improving vegetated resources on Corps land. The Veg. Mgmt. Plan is being developed as a separate document from this master plan and covers the three primary management programs– Forest Management, Wildlife Management, and Fire Management. A separate Environmental Analysis is being completed with greater detail of actions and impacts.

b. Priority Habitats. Based on vegetation types present, wildlife habitat needs, and an understanding of native ecological processes, five priority habitats have been identified: Ponderosa Pine Ecosystems, Old Growth Forest Communities, Western White Pine Communities, Wetland Communities, and Coastal Disjunct Plant Communities. Each is described in Appendix F and is considered critical for protection and enhancement.

c. Sensitive Plants. During vegetative inventories of the Dworshak area conducted by IDFG in 2000 and 2001, 450 different vascular plants were recorded (Bowers and Nadeau, 2002). These included 15 tree species, 50 shrub species, 18 ferns and their allies, 82 grasses, and 283 forbs. Of these species 1 fern, 1 graminoid, and 9 forbs are on the state list of Special Status Plants (Appendix G). Management to protect these plants and their habitats is critical. The Jessica’s aster populations around the reservoir should have special protection.

d. Land Use. Corps fee land is managed for ecological conservation and mitigation, and for recreation. It is actively managed against wildfires and, as a result, is selectively harvested and burned at specified intervals through stewardship projects. Developed campsites and primitive mini-camps are located on Corps land around the reservoir. Trails are located in different areas around the lake where topography allows. Adjacent properties are used primarily for timber production, but portions of the land below Dent Bridge on the lower reservoir are being sold off as private residential building lots.

2.3.7 Fish and Wildlife Resources. Recreation activities can cause significant impacts to fish, wildlife, and their habitats. The loss of winter elk habitat has been mitigated through specific mitigation management areas and actions, but populations are lower than they were prior to construction of the dam and impoundment. Refer to Section 5.33 for more information on the elk mitigation area.

a. Fish. Twenty-one fish species of concern were documented as occurring in Dworshak Reservoir in 1980 (Appendix G). 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. Because of the steep shorelines and drastic fluctuations in pool level, in some years little shallow water habitat is available to support natural reproduction of smallmouth bass. Maximum shoreline spawning habitat exists at full pool. Cutthroat and rainbow trout spawn in the tributaries in the spring. Bull trout and kokanee spawn in the fall primarily in the tributaries (Maiolie, 1988).

Westslope cutthroat trout is listed as a sensitive species in Idaho. Since the late 1800s, distribution and abundance of 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 non-native species (especially stocked rainbow trout), and habitat destruction. Westslope cutthroat trout occur in the reservoir and spawn in most tributaries (StreamNet, 2009). Protection of riparian habitat in support of suitable spawning habitat for cutthroat trout is considered in land use planning.

b. Birds. A total of 42 waterfowl and shorebird species were observed on and around Dworshak Reservoir during terrestrial resource surveys conducted by the IDFG (Bowers and Nadeau, 2002). Six of these species are known to nest along the reservoir: 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, the reservoir is primarily used by waterfowl and shorebirds as a loafing area during 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. Extreme fluctuations in pool level limit the growth of aquatic vegetation, reducing the amount of food available for waterfowl. Fourteen species of waterfowl and shorebirds are currently listed as “Species of Greatest Conservation Need” (Appendix G).

Sixteen raptors species were documented as occurring at Dworshak by IDFG (Bowers and Nadeau, 2002). Among these are eagles, hawks, ospreys, falcons, and owls. Four species are listed by the state as sensitive species: bald eagle, Swainson's hawk, merlin, and flammulated owl. A large population of bald eagles winter on the reservoir, but only five nests have been documented. Over 150 osprey nests have been documented on Corps land.

Six upland game bird species were documented during IDFG surveys: 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 turkeys are not native to Dworshak. 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 land 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 surveys. Four land birds occur as special status species in Idaho. Two of these, flammulated owl and pygmy nuthatch, are associated with ponderosa pine ecosystems.

c. Mammals. Thirty-nine species of mammals, excluding domestic species, were documented during IDFG surveys at Dworshak. Those include small mammals (14), bats (7), mid-sized mammals (3), furbearers and carnivores (11), cervids (4), and domestic species. Of the 39 mammal species detected, only 2 are on Idaho's "Species of Greatest Conservation Need" list: Townsend's big-eared bat (*Corynorhinus townsendii*) and the gray wolf (*Canis lupus*). Undocumented sightings of fisher (*Martes pennanti*) and wolverine (*Gulo gulo*) have also been reported to Dworshak staff.

Townsend's big-eared bats are found in a variety of xeric to mesic habitats, including desert scrub, sagebrush, chaparral, and deciduous and coniferous forests. They are strongly associated with caves and mineshafts (Pierson et al., 1999). The Townsend's big-eared bat

captured during the surveys was found in an adit (entrance to underground mine) located 0.25 miles (approximately 0.4 kilometer) south of Dworshak Dam in ponderosa pine habitat. Since then, surveys of the adit by Dworshak's wildlife biologist have documented numerous Townsend's big-eared bats using the adit as shelter. In 2007, the Corps modified the two adit access gates to improve ingress and egress for hibernating bats. Although limited pre-modification survey data was compiled, the steady increase in observations is striking—39 bats observed in 2007, 155 in 2011, and 230 in 2014.

California myotis (*Myotis californicus*) occurs throughout western North America from British Columbia to Guatemala. Distribution in Idaho is incompletely understood. Most authorities consider the species to occur in the northern and extreme western parts of the state. California myotis have been reported in dry conifer forest, sagebrush steppe, riparian, and juniper habitats. Mines and caves are also reportedly used. Although Dworshak Reservoir is not within the predicted distribution of this species, one California myotis was documented in ponderosa pine habitat during this study. The bat was captured in a mist net at the entrance to the abandoned adit located above the Dworshak resource management office during 2000-2001 surveys.

Gray wolves have large home ranges, and are habitat generalists. They are not associated with any particular habitat but, instead, inhabit areas with sufficient prey bases to support their populations. Primary prey species include deer, elk, moose (*Alces alces*), caribou (*Rangifer tarandus*), and other ungulates. Three documented wolf packs are known to occur around Dworshak Reservoir: the Chesimia Pack, the Tangle Creek Pack, and the Grandad Pack. Wolves have been observed on Corps land around the reservoir.

The fisher occurs throughout most of Canada and in the northern United States. Within Idaho, this species occurs in the northern and central parts of the state. Species in Idaho occur in a mosaic of mesic conifer, dry conifer, and subalpine forests. Mature and old growth forests are used during summer, and young and old growth forests are used during winter. Forested riparian habitat is also important, and stream courses may be used as travel corridors. Occupied habitat often has a high percentage of canopy coverage, although tree cover may be quite low in some areas. The fisher is an opportunistic predator; prey includes rabbits, squirrels, and porcupines. Regional efforts to identify fisher territories have documented fishers within two kilometers of the reservoir. It is expected they occur on Corps land.

The red-tailed chipmunk is endemic to western North America and occur in northeastern Washington, northern Idaho, and western Montana. A large portion of their range is in Idaho. Mesic coniferous forests that include Engelmann spruce, ponderosa pine, and subalpine fir communities are commonly associated with the species in Idaho. Individuals use burrows associated with fallen logs, large boulders, and brush piles for nesting and over-wintering. The red-tailed chipmunk is also arboreal, foraging and rearing young in tall, live and dead, standing trees. Movement of young from burrows to tree nests before weaning may be a predator avoidance strategy. Red-tailed chipmunks were trapped at four different forested sites during the surveys.

d. Amphibians and Reptiles. Eight amphibian species were detected in the 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 as occurring 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, and in other moist upland environments. 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 Dworshak provide valuable habitats for amphibian reproduction. These wetlands are being protected and/or enhanced. Recreational planning will minimize impacts to wetlands.

Six species of reptiles occur around Dworshak, as documented 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 (C.R. 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 in (H.A. Brown, et al., 1995).

e. Habitat Mitigation. Construction of the dam and consequent impoundment of the reservoir were ultimately responsible for losses to fish and wildlife populations. Concerns over the potential impact of the reservoir on big game led to extensive pre-impoundment studies and a focus on the need for elk mitigation. Under guidelines established in the Fish and Wildlife Coordination Act of 1958 (PL 85-624 and amendments), the Corps agreed to replace elk wintering habitat to partially compensate for the loss of approximately 15,000 acres of river-bottom vegetation. Design Memorandum No. 15, *Plan for Development of Rocky Mountain Elk Habitat* (Corps, 1977), addressed the development of elk habitat on Corps land along the upper reservoir (above Grandad Bridge). A total of 6,937 acres were acquired for mitigation.

In the 1970s and 1980s, the Corps conducted extensive treatments to enhance elk habitat within the previously defined elk mitigation area. Approximately 2,800 acres were clear-cut and burned to optimize 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) as mitigation for Dworshak Reservoir. This land was deeded to the state of Idaho to be managed in perpetuity by 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 percent of the Corps' mitigation obligations were met through the purchase of this land and the establishment of the trust funds. The Corps is still obligated to annually maintain the "hard core" wildlife mitigation area for its designated purposes. Work continues to improve elk habitat within the mitigation area and throughout the reservoir. The Corps and IDFG are committed to maintaining the mitigation area for the purposes in which it was purchased. Recreational use in the mitigation area will not negatively impact those purposes.

2.3.8 Rare and Endangered Species and Communities.

Variations in topography, soils, hydrology, and vegetation allow a variety of rare species to exist on Dworshak land and water. Federally listed rare, threatened, and endangered species must be considered in all planning, operations, and management activities in order to reduce the level of ecological degradation within project boundaries.

A Biological Opinion, a document prepared by the USFWS or NOAA in response to the Corps' assessment of the effects of a proposed action to Threatened and Endangered Species, is prepared as part of the environmental compliance process. Consultation with USFWS is required for each individual project the Corps intends to implement. It is possible to prepare a larger, programmatic report to encompass a broader range of proposed activities.

Federally listed species occurring or potentially occurring near Dworshak Dam and Reservoir are Canada lynx (*Lynx canadensis*), steelhead (*Oncorhynchus mykiss*), Chinook salmon (*Oncorhynchus tshawytscha*), and bull trout (*Salvelinus confluentus*). Each of these species is listed as threatened under the ESA.

a. Canada Lynx (*Lynx canadensis*). The contiguous United States distinct population segment of Canada lynx was listed as threatened in March 2000. Mesic coniferous forests with cold, snowy winters and a prey base of snowshoe hare provide good habitat for lynx (Quinn and Parker, 1987; Koehler and Brittell, 1990; Koehler, 1990). In North America, lynx distribution is nearly coincident with that of snowshoe hares (McCord and Cardoza, 1982). Snowshoe hares inhabit early successional forests, typically with conifer overstories, low-growing understories, and high stem densities (USDA, 1994). Lynx also utilize late successional forests with a high component of deadfalls for denning and rearing young. Intermediate successional stages may be used for travel, cover, and connectivity, but such habitats are not as critical to lynx survival as foraging and denning habitats (USDA, 1994).

In western states, most lynx occurrences (83 percent) were associated with Rocky Mountain conifer forest, and most (77 percent) were within the 4,920-6,560 foot (1,500-2,000 meter) elevation zone (K.S. McKelvey, et al., 2000). Primary vegetation contributing to lynx habitat is lodgepole pine, subalpine fir, and Engelmann spruce (K.B. Aubry, et al., 2000). In central Idaho, Douglas fir on moist sites and at higher elevations may also be considered primary vegetation.

Using 12 remote camera stations and live traps, IDFG conducted surveys for furbearers and carnivores throughout Dworshak Reservoir in 2000-2001. Eleven species of furbearers and carnivores were documented. No lynx were observed within the study area. Additional surveys for furbearers and carnivores were conducted by the Corps between 2002-2008, employing snow tracking, remote camera bait stations, and hair snag traps. Lynx were not documented during Corps surveys. However, lynx have been documented within the lower North Fork subbasin in two locations north of Breakfast Creek, one on

Floodwood Road (1997) and one at Stocking Meadows Ridge (1998). These sightings were approximately 40 miles from Dworshak.

Based on the characteristics of lynx habitat, primarily elevational and vegetative, and the lack of lynx observations within the area, it is highly unlikely that Canada lynx would occur around Dworshak Reservoir. Most documented sightings of lynx occur above 5,000 feet elevation in western states, while the highest elevation within the Dworshak boundary is 3,500 feet. No lynx have been documented around Dworshak Reservoir and sightings in the lower north fork drainage occurred over 40 miles from the project.

b. Bull Trout (*Salvelinus confluentus*). Bull trout were listed as a threatened species by the USFWS in June 1998. The species spawns August-November in larger tributaries of the reservoir (Corps, 1997), and can exhibit both resident and migratory life history stages. Migratory bull trout spawn in tributary streams; juvenile fish rear from one to four years before migrating to either a lake (adfluvial) or river (fluvial) where maturity is reached. Growth and maturity vary with environmental conditions and first spawning is often noted after four years of age (Rieman and McIntyre, 1993). Resident and juvenile migratory bull trout prey on terrestrial and aquatic insects, macro-zooplankton, and small fish. Adult migratory bull trout are freshwater piscivores, apex predators, and opportunistic feeders. At all life history stages they need access to an adequate prey base. For adults, this necessitates habitats with suitable temperature, habitat complexity, and passage that is accessible through migratory corridors (USFWS, 1998).

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, but 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 used by adfluvial populations of bull trout (USFWS, 2000).

Available historical data does not suggest that bull trout spawning/early rearing habitat was inundated when Dworshak or the lower Snake River 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).

In December 2000, the USFWS issued a Biological Opinion in response to a request by BPA, the Corps, and the U.S. Bureau of

Reclamation (BOR) regarding the effects of hydroelectric facilities on Kootenai River white sturgeon (*Acipenser transmontanus*), bull trout (*Salvelinus confluentus*), and bald eagle (*Haliaeetus leucocephalus*). Actions for implementation by the action agencies (i.e., increased monitoring; and studies to evaluate distribution, timing, and usage of Dworshak Reservoir) would provide further information that may be beneficial to future actions.

Spatial and temporal distribution, migration patterns, spawning sites, and basic life history information of bull trout in Dworshak Reservoir were investigated by IDFG from spring 2000-2003. In total, 192 adult bull trout were captured, radio-tagged, and monitored. Results indicated extensive use of the reservoir by bull trout for overwintering. Bull trout spend the entire winter in the reservoir, beginning their upstream migration in late May to early June. Highest concentrations of wintering bull trout have been documented between Cranberry and Elkberry Creeks (personal communication with Dani Schiff, IDFG project supervisor, 2003). Although bull trout are found within Dworshak Reservoir, it is unlikely that spawning exists within Corps boundaries.

c. Chinook Salmon and Steelhead. Snake River fall Chinook (*Oncorhynchus tshawytscha*) and steelhead (*Oncorhynchus mykiss*) were listed as threatened July 2000. These species historically migrated up the North Fork Clearwater River in the 1970s prior to the construction of Dworshak Dam. The dam permanently prevents upstream fish passage and, as a result, no anadromous fish species occur in Dworshak Reservoir or within any of its tributaries. Mitigation efforts have established strong hatchery runs of Chinook and steelhead on the main stem Clearwater River. Kokanee salmon stocked in the reservoir and reproducing in its tributaries provide a salmon fishery.

2.3.9 Invasive Species. Vegetative species of special concern are specified in the *Noxious Weed Management Plan* for Dworshak (Appendix G). They are classified as noxious by law by the state of Idaho. Dworshak has been a member of the Clearwater River Basin Weed Management Coordination Committee since 1998. Natural resources staff have viewed these species as a threat to native vegetation and wildlife and have increased weed control since 1998.

2.4 CULTURAL RESOURCES

Archaeological records indicate continuous human habitation in the Dworshak area for the past 10,000 years (Ames 1980). Subsistence patterns of prehistoric inhabitants of the Clearwater Valley were based on a hunting, fishing, and gathering

economy. Stable use of the resources were reflected through time with slightly greater dependence on fishing and processing of plant foods reflected in the tool assemblages of the last few millennia. Many of the archaeological resources at Dworshak are closely related to Nez Perce culture as the Clearwater River and its tributaries have been used by the tribe since pre-contact times. A Euro-American presence in the area began with Lewis and Clark's journey along the Clearwater River in 1805 and continues to the present day.

Several types of cultural resources have been documented on Dworshak, including archaeological sites, Traditional Cultural Properties, and isolated finds. There are 365 recorded archaeological sites with the majority related to prehistoric occupation of the area and a smaller number dating to the historic period. Only 23 have been formally evaluated for National Register of Historic Place eligibility, with 4 found eligible and 19 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 they are considered eligible for listing on the Register.

Traditional Cultural Properties 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. Details can be found online at www.nps.gov/nr/publications/bulletins/nrb38. Identification and evaluation of Traditional Cultural Properties on Dworshak managed land is ongoing.

A number of isolated finds are documented at Dworshak. 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 archaeological sites recorded at Dworshak 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 but are likely present. Other resources present include remnants of historic camps, often times with associated structures such as trash scatters, fences, and structure remnants. When lying exposed on the ground surface, these types of resources can be easily impacted by activities, including artifact collection, wildland and prescribed fire, erosion, dragging (such as dragging downed trees to logging trucks), and trampling. Unauthorized use, including creation of user defined roads, trails, and campsites, cause an effect by opening new areas to use and shifting recreation into sensitive areas, leading to effects on nearby cultural resources.

A majority of the land located in the drawdown zone were surveyed by archaeologists from the University of Idaho and the Nez Perce Tribe. A plan for surveying the remainder of Dworshak land was completed in 2011 (Norman and

Glindeman, 2011), and surveys are ongoing. A variety of smaller surveys have been completed 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. Thousands of acres of Dworshak land still require archaeological survey as numerous unrecorded archaeological sites are likely present.

2.5 VISUAL QUALITIES

Prior to Dworshak Dam and Reservoir construction, the free-flowing North Fork Clearwater River offered all of the aesthetic characteristics associated with a mountainous river and stream watershed. The natural setting outweighed even the visual effects of logging and recreational activities. The area was dominated by the river and canyon, disrupted only by a road, scattered cabins, and logging activities.

Aesthetics are extremely subjective and are absorbed in varying degrees by every individual. When evaluating aesthetic qualities of natural settings (as opposed to modified settings), many relevant features are considered; among these are river velocity, irregularity of shoreline, bank erosion, water color, special views and vistas, land use, and accessibility. Since the completion of the dam and reservoir, positive and negative aesthetic qualities have emerged. Portions of the reservoir are bordered by forested slopes and a mountainous setting. As long as the reservoir is at near-full capacity, bare banks are not visible and the setting retains its pristine, natural qualities. During drawdown periods, bare, muddy shorelines are visible and perceived by some as a negative aesthetic impact.

2.6 SOCIO ECONOMICS

2.6.1 Demographics.

a. Historic Perspective. Clearwater County has been primarily a timber, mining, and agricultural-based area. County populations have experienced a number of fluctuations in direct correlation to the health of the timber industry. Figure 2-1 illustrates the fluctuation over the past 50 years. Peak population around 1970 was, in large part, due to the construction of Dworshak Dam.

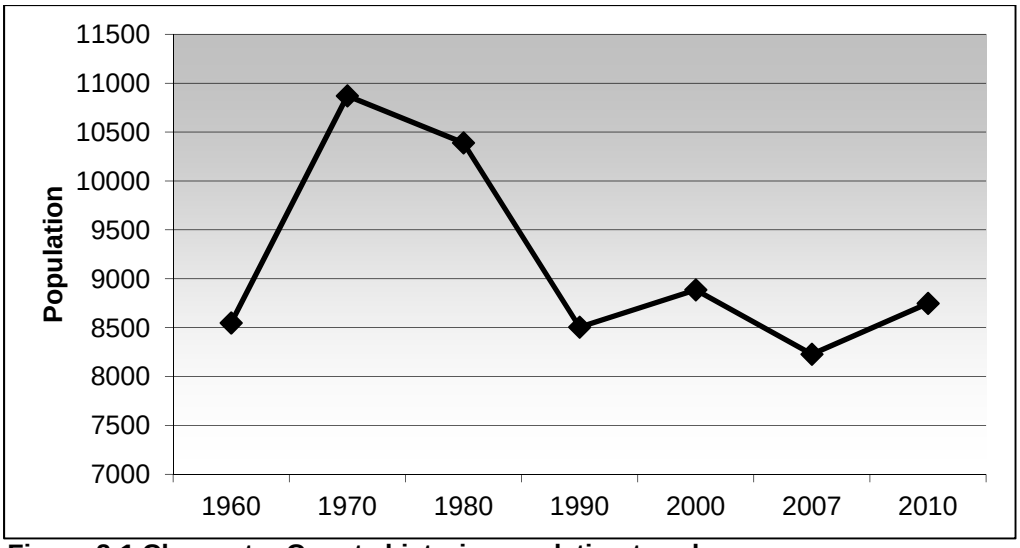


Figure 2-1 Clearwater County historic population trends.

Racial composition of the region is predominately white. Native Americans, Pacific Islanders, and Hispanics account for a percentage of the area's demographics. Table 2-2 shows the numbers have not changed significantly in 50 years.

Race	White	Black or African American	American Indian and Alaskan Native	Asian	Native Hawaiian or other Pacific Islander	Other Race
Percentage	93.9	0.2	2.2	0.7	0.1	2.9

Table 2-2. Racial composition 1960-2010.

Average per capita income for the area is $30,493 (Figure 2-2). There are 4,462 homes in the area with a median home value of $141,000. Around 80 percent of the population graduated from high school, while 13 percent have higher education (www.census.gov).

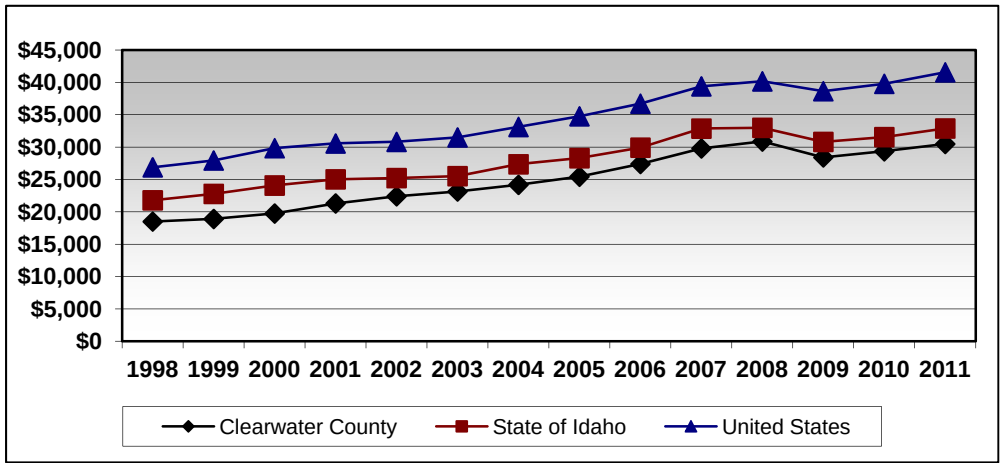


Figure 2-2. Clearwater County per capita income.

b. Current Population Trends. During the early 1990s, the population in Clearwater County grew, peaking at 9,232 in 1996. Hard economic times caused the population to drop to 8,231 in 2007, a decrease of 10 percent. At the same time, the population of the United States grew 11 percent and the population of the state of Idaho increased 22 percent. New registrations for driver's licenses and job registrations indicated the few people who did move to Clearwater County came from other parts of the Pacific Northwest and California. People moved to Clearwater County to enjoy the area's scenery, recreational opportunities, and rural lifestyle. Orofino is the county seat with a population of 3,142. The next three largest cities are Pierce (population 508), Weippe (population 441), and Elk River (population 125).

A projected population for Clearwater County is expected to remain relatively consistent with a slight decline over the next ten years. Area population fluctuates based on timber harvest regulations, current production, and the ability of the forest to sustain continued harvesting.

c. Summary of Demographic Effects on Visitation. Most visitors to Dworshak Reservoir come from a five-county region (Clearwater, Latah, Nez Perce, Lewis, and Idaho counties). Figure 2-3 depicts historic populations for these counties. Based on historic population levels, it is likely to grow steadily in Latah and Nez Perce counties, but unclear what future projections will look like for the other three counties. However, anticipated increases will result in a minimal demand increase for recreational opportunities.

Other demographic indicators (age, income, education) have less impact on reservoir visitation. In general, lower incomes limit the ability of individuals to participate in more costly forms of recreation (e.g., boating). There is strong public demand to create more shore-based recreation features that do not require boat usage or ownership.

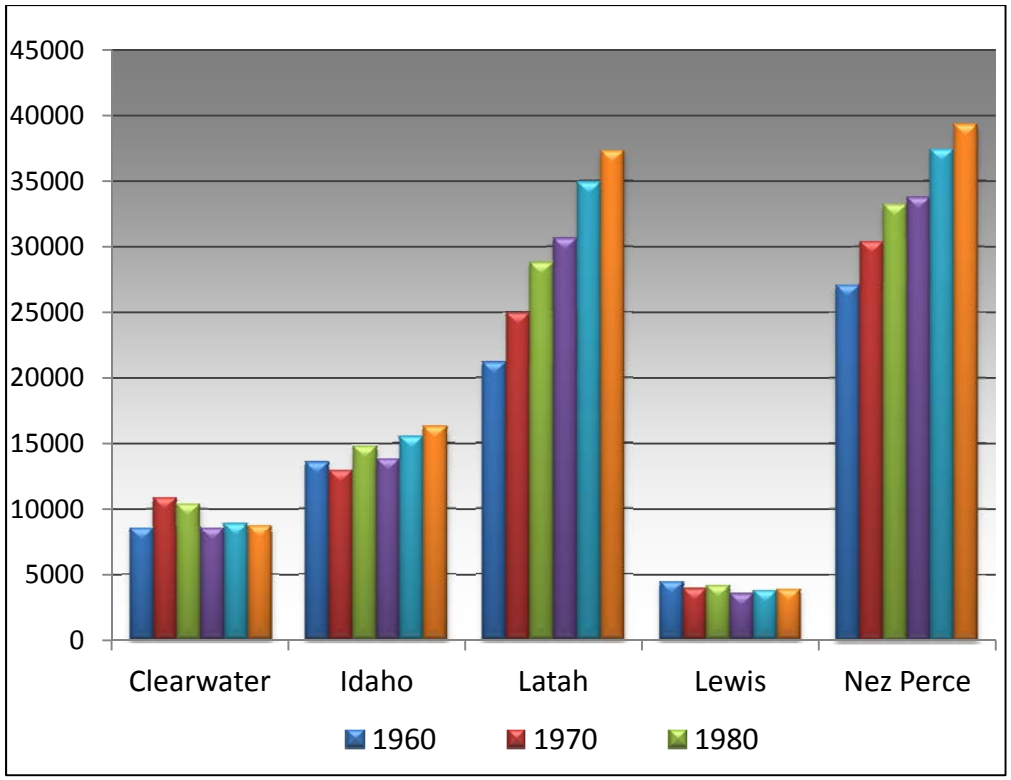


Figure 2-3. Five-county historical populations.

2.6.2 Economic Characteristics.

a. Income and Employment. Orofino and other surrounding communities are historically resource dependent economies. Most of the population and workforce either worked for timber or other resource industries, or supported those industries with the necessary service businesses. Currently, major employers include Clearwater County, Clearwater Healthcare LLC, Clearwater Valley Hospital and Clinic, Idaho Department of Health and Welfare, Idaho State Penitentiary, Orofino Joint School District 171, Tri-Pro Forest Products, the U.S. Forest Service (USFS), and the U.S. Army Corps of Engineers.

A decline in the forest products industry in the late 1990s climaxed with the closure of Potlatch Corporation's Jaype Mill in Pierce, Idaho. Clearwater County has experienced significant employment decreases in almost all industries. Economic development groups have worked hard to diversify the economy, attract new businesses, and help existing businesses grow. To assist with business expansion, an industrial park in Orofino was constructed. Architectural Signs and Engraving, Inc. and SJX Jet Boats have been successful tenants.

In 2006, Clearwater County began to show signs of a recovery. State and federal employment has provided some stability to the local

employment base. Jobs have been added in manufacturing, retail trade, tourism, and health care. However, instability in the timber industry and the national economy as a whole has resulted in setbacks. Clearwater County has struggled with high unemployment since the mid-1990s (Figure 2-4). It has long been believed the area would transition from resource-dependent to growth in manufacturing, retail, tourism, and government services. The Clearwater County Economic Development Council and other local and state officials are leading efforts to strengthen and diversify the county's economy.

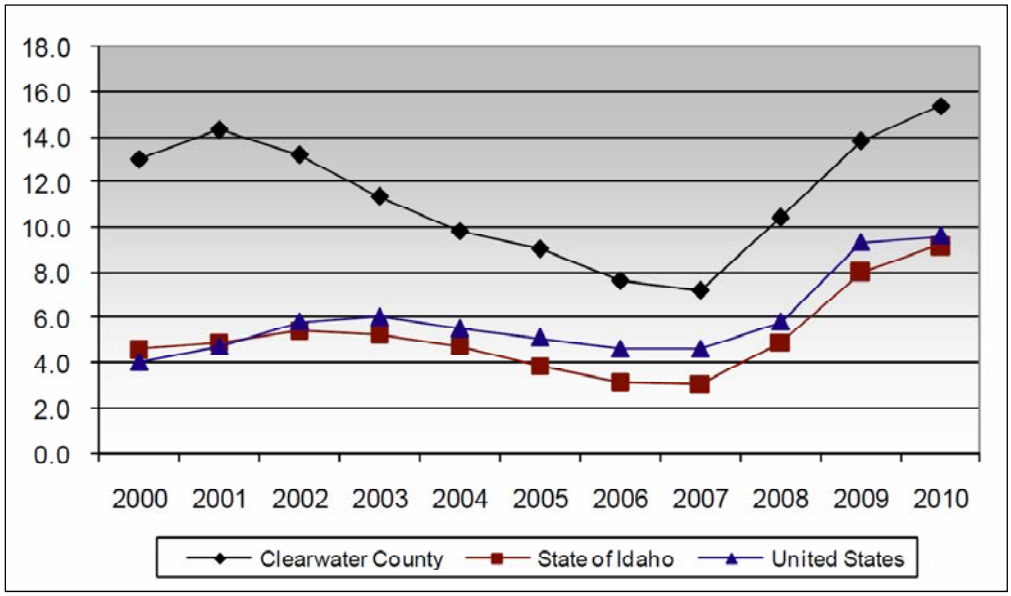


Figure 2-4. Clearwater County unemployment.

b. Tourism. Tourists come to enjoy hunting, fishing, and boating opportunities at Dworshak and to learn about the area's role in the Lewis and Clark Expedition. A variety of motels, hotels, and bed and breakfast establishments provide lodging for a wide array of tourists. Other than lodging, typical expenditures include food, fuel, recreation gear, and specialty shops.

The current policy of reservoir drawdowns for ESA species in the Clearwater, Snake, and Columbia rivers has had measurable effects on tourism in this region. In an economic study commissioned by the Clearwater County Economic Development (April 2002) it was estimated the drawdowns caused a short-term decline of $1.2 million in nearby community retail sales, a medium-term decline of $3.2 million, and a long-term decline of $4.5 million (H.A. Brown, et al, 1995). Brown, et al. estimated this economic decline reduced employment by 36 jobs in the short-term, 90 jobs in the medium-term, and 125 jobs in the long-term. Brown, et al. estimated the net adverse impacts of the

drawdown ranged from 0.5-1.5 percent of the Clearwater County's regional economy. The numbers were not verified by the Corps.

2.7 PUBLIC ACCESS, RECREATION FACILITIES, ACTIVITIES AND NEEDS

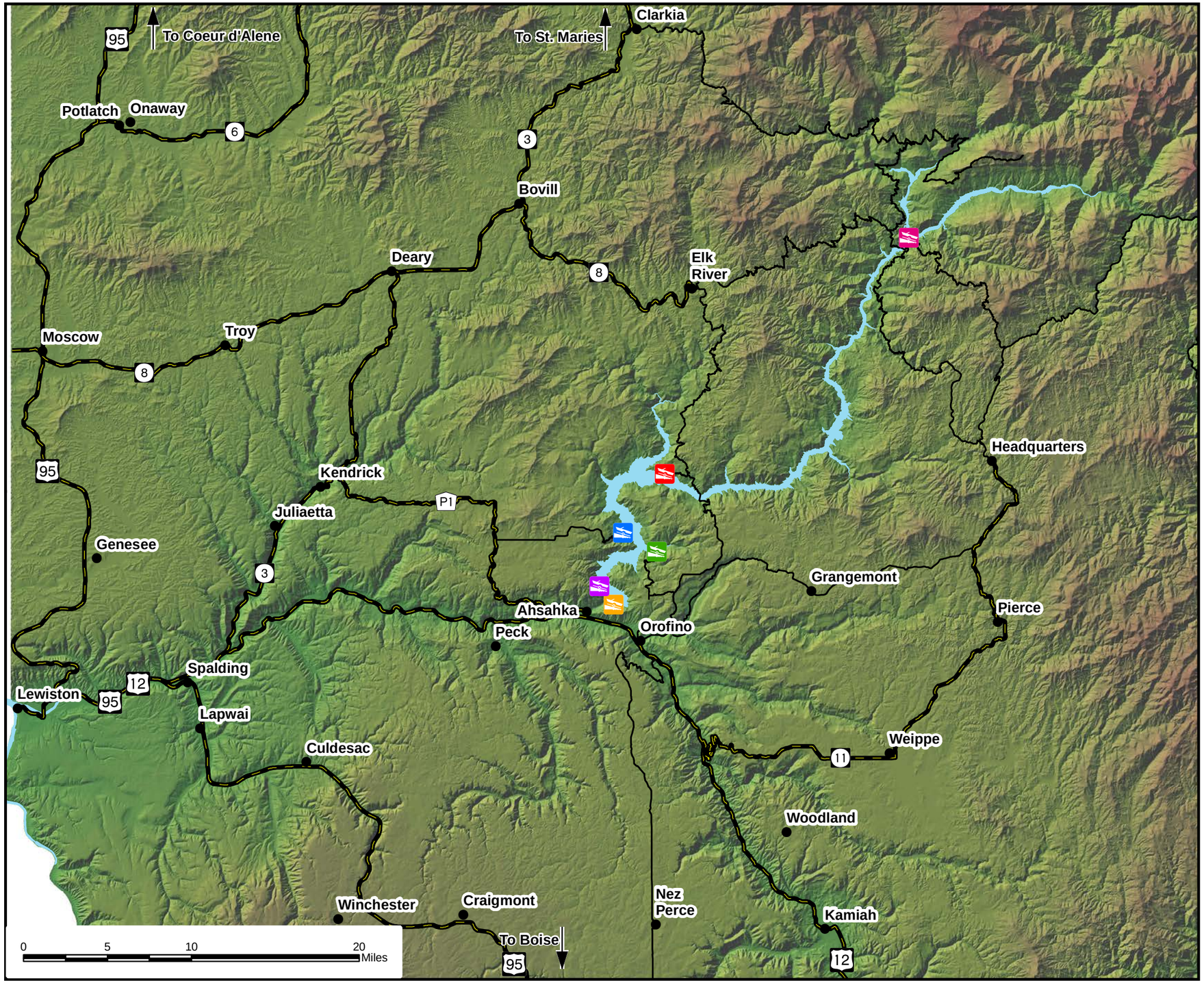
2.7.1 Accessibility.

a. Land Access. Access to Dworshak Reservoir includes a complex system of roads and trails that serve project operations and the public. Due to the remoteness of the reservoir's upper end, road access is limited by road surface and weather conditions. The lower reservoir from Dent Bridge to the dam has paved and improved road access that accommodates most vehicles. Most of the project is accessible only by boat or on foot. A network of old logging and homestead roads throughout the reservoir, most originating beyond Dworshak boundaries, are overgrown. Some may be of value for future transportation routes or trails.

Five historical log dump sites were located at Little Meadow Creek, Benton Creek, Breakfast Creek, Little North Fork, and Robinson Creek. After the dissolution of the Log Handlers Association and subsequent relinquishment of the lease, the original sites are no longer used for log transport or vehicular traffic. Hardened gravel surfaces that extend to the edge of the reservoir and access roads were left in place and may prove beneficial for future access.

Although restricted by past regulations, a number of other sites, including several mini-campsites, are accessible by vehicle on remote road systems. Hiking trails provide access, but drawdowns create exposed banks and high pool erosion creates ledges that are difficult to negotiate.

b. Water Access. There are seven vehicle access points for boat launching around Dworshak Reservoir; most are located in the lower third, while the upper third provides only one boat launch. The reservoir is readily accessible at full pool by boat, canoe, and other watercraft, but annual drawdowns limit opportunities to launch. Efforts have been made to lengthen launch ramps for greater accessibility. Boat launch water depths and launch facilities are presented below in Figure 2-5 and Table 2E, respectively.



Map Legend

- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Boat Launch

- Big Eddy
- Bruce's Eddy
- Canyon Creek
- Dent Acres
- Grandad
- Freeman Creek (IDPR)

US Army Corps of Engineers ®
Walla Walla District

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Dworshak Master Plan

PLATE 2E

DWORSHAK RESERVOIR BOAT LAUNCH LOCATIONS

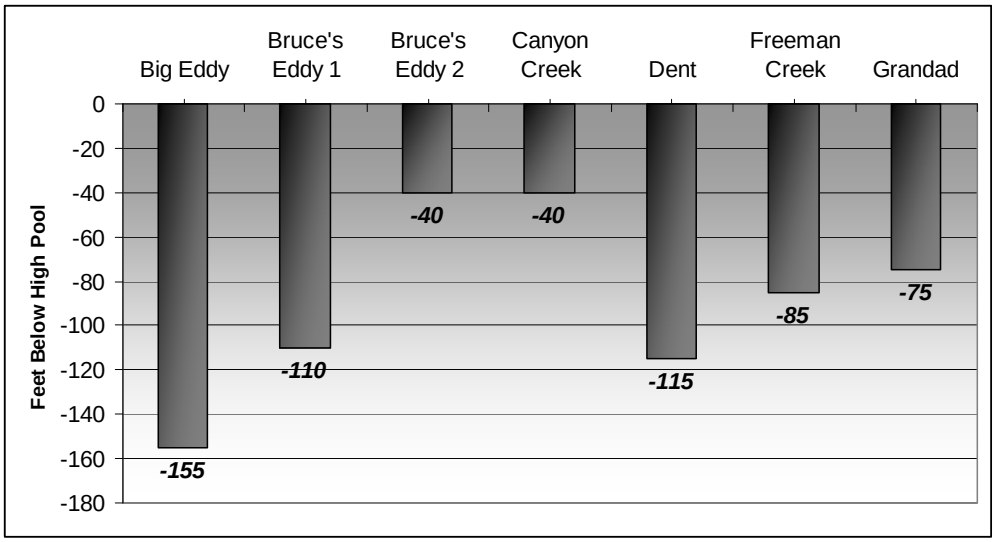


Figure 2-5. Dworshak boat launch water depths.

Boat Launch	Boat Ramp Use Elevation	Boat Launch Amenities
Big Eddy Recreation Area	1,445 msl (-155 feet)	2 lanes, handling dock, tie-up dock, marina dump station, floating fuel
Bruce's Eddy Rec. Area 1	1,490 msl (-110 feet)	1 lane, handling dock
Bruce's Eddy Rec. Area 2	1,560 msl (-40 feet)	2 lanes, handling dock
Canyon Creek Rec. Area	1,560 msl (-40 feet)	1 lane, handling dock
Dent Acres Rec. Area	1,485 msl (-115 feet)	2 lanes, handling dock, tie-up at high water
Dworshak State Park (Freeman Creek)	1,515 msl (-85 feet)	2 lanes, handling dock, 3 tie-up docks (2 at Freeman Creek, 1 at 3 Meadows)
Grandad Recreation Area	1,525 msl (-75 feet)	1 lane, handling dock

Table 2-3: Dworshak boat launch facilities around the reservoir.

Dworshak Reservoir is remote and removed from major population centers. Table 2-4 shows an estimated travel time from nearby cities to the boat launches. The same information is graphically depicted on Plate 4.

City	Big Eddy	Bruce's Eddy	Canyon Creek	Freeman Creek	Dent Acres	Grandad
Orofino	20	15	45	60	35	140
Weippe	60	55	85	100	80	90
Pierce	55	50	60	90	60	75
Elk River	65	60	60	120	35	50
St. Maries	160	165	210	160	175	170
Lewiston	70	75	105	95	100	185
Moscow	100	95	120	100	125	115
Deary	140	135	105	75	120	85
Potlatch	165	160	140	120	150	115
Kamiah	45	40	70	75	65	130
Lapwai	60	55	80	85	90	180
Clarkston, WA	80	85	115	105	110	195

Table 2-4: Estimated travel times from city to boat launch in minutes.

2.7.2 Recreation Facilities.

a. History of Recreation Development at Dworshak. Recreation facilities at Dworshak provide for a wide range of pursuits. With the exception of Dworshak State Park (Freeman Creek and Three Meadows) and the marina at Big Eddy Recreation Area, which are leased to the state of Idaho, all recreation sites are operated and maintained by the Corps of Engineers. Most recreation activities occur from Dworshak Dam to Dent Bridge. Major recreation developments are located at Big Eddy Recreation Area, Dworshak State Park, and Dent Acres Recreation Area. These sites were built with construction money when the dam was built.

Dworshak provides recreation opportunities for over 150,000 visitors annually. The number of recreational facilities has increased, and many improvements have been made over the past 35 years. Some facility improvements have been initiated and implemented by staff as part of the operation and maintenance program. While most recreation occurs in the lower section of the reservoir, there are recreation opportunities in the upper section (camping, fishing, hunting, and boating).

Dworshak is vital to the communities of Orofino and Lewiston because it provides a large percentage of the region's recreation opportunities. In many cases, Dworshak provides the only access to the upper reaches of the North Fork Clearwater River and its tributaries and perennial streams. Although about 150,000 people visit Dworshak each year, it has never come close to reaching its estimated potential in terms of recreational development and visitor use.

Historically, the reservoir remained at full pool Memorial Day through Labor Day, allowing use of recreation areas during the peak summer season. The 1995 Biological Opinion for Operation of the Federal Columbia River Power System changed procedures so reservoir drawdowns begin earlier to reduce water temperatures in the Clearwater and Snake rivers. Today, full pool occurs only a few weeks around July 4. This change limits access to recreation areas and necessitates an analysis of alternative resource planning.

In 2004, the Corps analyzed the potential for houseboat moorage as a possible way of creating additional boating and access opportunities. In 2005, the Corps evaluated the possibility of introducing all terrain vehicle (ATV) trails. To further access opportunities, the Corps has installed floating destination docks, lengthened boat ramps, and installed houseboat buoys for moorage.

b. Existing Recreation Facilities. Corps-owned recreation facilities vary from well developed campgrounds to primitive areas with few facilities. Because of topography, road access, and location relative to population centers, development of intensively used recreation facilities has been concentrated in the lower third of the reservoir (Table 2-5).

Facility Type	Number
Recreation Areas	17
Camping Sites	423
Picnic Sites	8
Playgrounds	3
Swimming Areas	2
Trails	8
Miles of Trail	15
Boat Ramps	8
Marina Slips	100

Table 2-5: Recreation facility types and quantity in the lower third of Dworshak Reservoir.

Staff at Dworshak Dam conducted facility analyses to determine which facilities were adequate to meet current and projected recreation demands, and to identify those facilities that should be improved, consolidated, or closed. This information was used in determining future management and maintenance of current facilities. Table 2-6 below is a summary of recreation facilities and amenities. Most of these facilities are accessible April 1 through November 30 although some can be accessed year-round (boat ramps at Big Eddy and Bruce's Eddy recreation areas). The mini-camps are open year-round although access may be difficult or impossible at lower water elevations and these do not receive year-round maintenance. Table 2-7 below provides the time of year each area is open.

Recreation Facilities	Day Use	Primitive Camping	Camping Fee	Utility Hook-Ups	Trailer Dump Station	Hot Showers	Picnic Area	Swimming	Boat Launch	Hiking Trails	Universal Access	Group Picnic Shelter	Marine Dump Station	Floating Public Toilet	Marina and Fuel	Public Phone	Reservations Accepted	Boat/RV Storage	Public Tours
Big Eddy Rec. Area	x						x	x	x	x	x	x	x	x	x	x			
Bruce's Eddy Rec. Area	x								x	x	x					x			
Canyon Cr. Rec. Area	x	x					x		x	x				x					
Cold Springs group camp	x	x					x			x									
Dent Acres Rec. Area	x		x	x	x	x	x		x	x	x	x		x		x	x		
Dent Acres Rec. Area group camp	x	x	x				x			x		x					x		
Dworshak St. Pk. (Freeman Cr.)	x	x	x	x	x	x	x	x	x	x	x	x				x	x	x	
Dworshak St. P (Three Meadows group camp)	x		x	x		x		x		x	x	x					x		
Big Eddy Rec. Area marina															x		x		
Grandad Rec. Area campground	x	x					x		x					x					
Merry's Bay Rec. Area	x						x			x									
mini-camps	x	x					x			x									
Dam View Camping Area	x	x					x												
Dworshak Dam Viewpoint	x						x				x	x							
Dworshak Visitor Center	x						x				x					x			x

Table 2-6: Dworshak recreation facilities around the reservoir.

Recreation Area	Open Date	Close Date	Add'l. Information
Big Eddy	Year-round	--	
Bruce's Eddy	Year-round	--	
Canyon Creek	April 1	November 30	Tentative dates, weather permitting
Dworshak Dam Viewpoint	April 1	November 30	No hookups
Dent Acres boat ramp	March 10	November 30	Tentative dates, weather permitting
Dent Acres campground - early season	April 10	May 21	$10/night
Dent Acres campground - main season	May 22	September 1	$18/night
Dent Acres campground - late season	September 2	November 30	$10/night
Dent Acres group camp	May 22	September 1	$50/night
Dworshak State Park	Year-round	--	Amenities vary by season
Grandad	April 1	November 30	Tentative dates, weather permitting and snow/road conditions
Merry's Bay	April 1	November 30	Tentative dates, weather permitting
mini-camps	Year-round	--	Weather permitting
Dworshak Visitor Center	Year-round	--	Varies

Table 2-7: Dworshak recreation facilities available during the year.

c. Planned Recreation Facilities. The original Public Use Plan, DM 10, focused on boating as a means to recreate and travel on the reservoir and assumed water levels would remain constant. The framework set up in DM 10 limits the ability for the Corps to implement management measures that allow for alternative means of access, such as motorized vehicle use. Despite the limitations caused by DM 10, the Corps has created new hiking trails, upgraded campground facilities, and extended boat launch ramps to provide alternatives to recreation focused solely on boating.

In 2004 the Corps conducted a large boat marina site analysis. An economic feasibility report was contracted in 2006 by the Clearwater Economic Development Council (Jennings and Associates, 2006). It determined a houseboat marina was a feasible means to offset the effects of reservoir drawdowns to boat-in access recreation facilities. The plan for this project expanded the marina at Big Eddy from 101 slips to 150 slips, installing a wave attenuator at Big Eddy to facilitate marina expansion, providing fueling opportunities at the upper end of the reservoir, and a houseboat marina at Bruce's Eddy Recreation Area. Design Memorandum 10 contained many proposed recreation areas that were never constructed. Several areas were to be

constructed when visitation increased high enough to justify the development. Due to low visitation numbers, changing public recreation patterns, and a lack of funding, many recreation areas identified for future construction will not be realized.

Changes in social values and concern for environmental resources throughout the nation led to a number of laws and policies that protect the environment—most notably, NEPA. When DM 10 was written most of these laws were not yet in effect. The Corps is obligated to follow the laws and, as a result, many developments originally planned did not comply with law and policy. This master plan addresses the potential for future development of recreation facilities on Dworshak Reservoir. Recommended future areas will be evaluated for environmental compliance and feasibility at the point in time when visitation numbers, public desire, and funding justify the need for development.

2.7.3 Recreational Activities and Needs.

a. Fishing. The North Fork Clearwater has long been a premier location for fishing. Prior to the construction of the Dworshak Dam, Bruce's Eddy was an important fishing location for the Nez Perce Tribe. Construction of the dam changed the fishery from a trout and salmon fishery to a lake fishery. To mitigate for the loss of an anadromous fishery above Dworshak Dam, The Corps construed the Dworshak Hatchery of which produces Steelhead, Chinook, and Coho Salmon.

Fishing for kokanee, smallmouth bass, and rainbow trout is the major recreation activity of visitors to Dworshak Reservoir (Photo 2-1). People can access the water for fishing at any of seven boat launch facilities. Anglers have indicated a need for boat ramp extensions and additional parking areas during low water conditions. Fish cleaning facilities are provided at the Big Eddy, Dent, and Freeman Creek recreation areas. The Dworshak Nutrient Enhancement Program helps to keep a balanced reservoir system that contributes to a healthy resident fish population.

Photo 2-1: Fishing is a major activity on Dworshak Reservoir. The Idaho State record was a smallmouth bass caught in 2006.

b. Hunting. Dworshak Reservoir is an important regional resource for hunting. All land, excluding the project operations land and developed recreation facility areas, are open for hunting. White-tailed deer, elk, black bear, and mountain lion are the primary big game species. Upland game birds (turkey and water fowl) are important to visiting hunters.

Because of restrictions on motorized use, hunters at Dworshak must travel by foot, boat, or horseback. Staff have received requests for motorized access, particularly to those with disabilities or for the elderly. Currently, the only roads accessible for vehicles are roads that access the primary recreation areas and Corps operation facilities. While some hunters would like to be able to access campsites and backcountry areas using ATVs, others prefer to restrict motorized

access to the backcountry to facilitate a quiet, more primitive hunting experience. Future access management will seek to balance both requests and may include motorized access in selected areas, keeping. Any area opened to motorized access may be subject to seasonal use or closure to protect wildlife and other natural resources.

c. Camping. Camping is a popular activity for visitors. Most campgrounds are owned and managed by the Corps; Dworshak State Park (Freeman Creek) is leased to the Idaho State Parks and Recreation. Dworshak offers a diversity of camping opportunities, from highly developed campsites with electricity, water, and sewer, to primitive camping at any of the 100-plus mini-camps around the reservoir. There is a high demand for updated and modernized facilities to accommodate recreational vehicle campers.

Primitive campsites (mini-camps) are expensive to maintain, but are an important resource to visitors seeking solitude and a more nature-oriented camping experience. Access by water to some of the mini-camps is almost impossible when the reservoir is drawn down. Consequently, many visitors would like the Corps to provide access to the mini-camps using motorized vehicles.

d. Boating. Boating is a primary activity for most visitors. Much of the boating is related to fishing, however, waterskiing, tubing, wake-boarding, jet skiing, power boating, and casual boating are also important boating activities. Boating provides the most efficient means of transportation to recreation facilities. A challenge faced by boaters is the lack of a fueling station on the upper end of the reservoir. There is also a demand for more access points to launch boats, specifically in the mid-reservoir area.

The Corps installed floating docks at various locations on the reservoir. These docks have been widely successful and there is a demand to increase the number. Although only a few houseboats are currently using the reservoir, expansion of the marina at Big Eddy Recreation Area to accommodate houseboats, or a separate, dedicated houseboat marina, has been proposed by local interests. A number of buoys used to moor houseboats have been installed near Bruce’s Eddy Recreation Area that are outgranted to the marina as temporary moorage until more suitable facilities are constructed.

Fluctuating water levels contribute to boating hazards caused by submerged facilities and the inflow of debris from the upper North Fork Clearwater River Basin. Debris, such as floating logs, has been an issue since the creation of the reservoir, and continues to be a safety issue for boaters. In the past, Corps staff removed large floating debris,

but this practice was discontinued due to elevated costs of equipment labor and the relatively short window of operation at or near full pool due to summer drawdowns. Safety issues related to debris were brought up in the public meetings held in support of the Public Use Plan update, and this may be an issue that will be revisited in the future.

e. Swimming. Swimming is a popular activity. Designated swim areas are located at Big Eddy Recreation Area and Freeman Creek, both best suited for use at full pool. They have been adapted for use as the water is drawn down to a certain point, but cannot be safely managed as swim areas at most low pool elevations. A community swimming pool in Orofino was closed and resulted in additional pressure on the Corps to provide safe areas for swimming. Reservoir drawdown and the steep local topography create numerous challenges to creating new swim beaches. Additionally, the current swim beach at Big Eddy does not meet Corps design standards.

Seven destination docks on the reservoir provide swimming opportunities in a relatively safe environment. The square docks are open in the middle, and provide a nice area for swimming that is protected from boat traffic. More docks are being planned, but are inaccessible to anyone without a boat.

f. Winter Activities. Fishing and hunting take place year-round at Dworshak. Any vehicle capable of travel over snow is allowed on designated trails as they cross Dworshak project boundaries. Currently, there are no Corps designated snowmobile trails within Corps boundaries other than those that are part of the designated trail systems that cross Corps land. Snowshoeing and cross-country skiing are permitted on all Dworshak land. Because the reservoir and its environs are at a relatively low elevation, snow cover is unpredictable and winter recreational activities are less than reliable.

g. Picnicking. Picnic tables are located at almost all campsites and on the floating docks. There are designated day use areas that visitors can use for picnicking. Overall, the picnic facilities meet the current demand though some areas may require updating in the future.

h. Trails. Recreation trails are emerging as an important outdoor activity for walking, jogging, and bicycling. ATV use is only authorized currently for Little Meadow Creek and Elk Creek Meadows trails. Current land management practices of adjacent land owning agencies and other regional agencies have significant impacts on the demand for trails on Dworshak land. This issue is discussed further in Section 6. Table 2-8 below provides a list of trails around Dworshak.

Trail Type	Trail Length	Trial Difficulty
Hiking		
Placid View Trail*	1 mile loop	Easy
Little Meadow Creek off-highway vehicle (OHV) trail	1.25 mile loop	Easy
Elk Creek Meadows OHV Trail System	5 mi. one-way	Easy
Ahsahka Ridge Trail System – Merry's Bay Trail	1.25 mi. one-way	Easy to Moderate
Canyon Creek Trail	1.5 mi. one-way	Easy to Moderate
Dent Trail	1.5 mi. one-way	Easy to Moderate
Ocean Spray Trail*	2 mile loop	Easy to Moderate
Ahsahka Ridge Trail System – West Ridge Trail	2 mi. one-way	Easy to Moderate
Cold Springs Trail	5.0 mi. one-way	Easy to Moderate
Big Eddy Trail	9.25 mi. one-way	Easy to Moderate
*Part of Dworshak State Park outgranted to Idaho State 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 being used to test impacts of ATVs on the environment.		

Table 2-8: Dworshak trail inventory.

i. Sightseeing. The rugged landscape of Dworshak makes it attractive to sightseers. The area is rich in vegetation diversity and is home to many wildlife species that provides opportunities for wildlife viewing and scenic and wildlife photography. Although many of the visitors to the reservoir participate in sightseeing, this may not be the reason for their visit. The peace, solitude, and beauty of the area make it attractive to visitors. Plates 2F – 2K depict recreation facilities at the reservoir.

2.7.4 Visitation Profile – Trends and Demands.

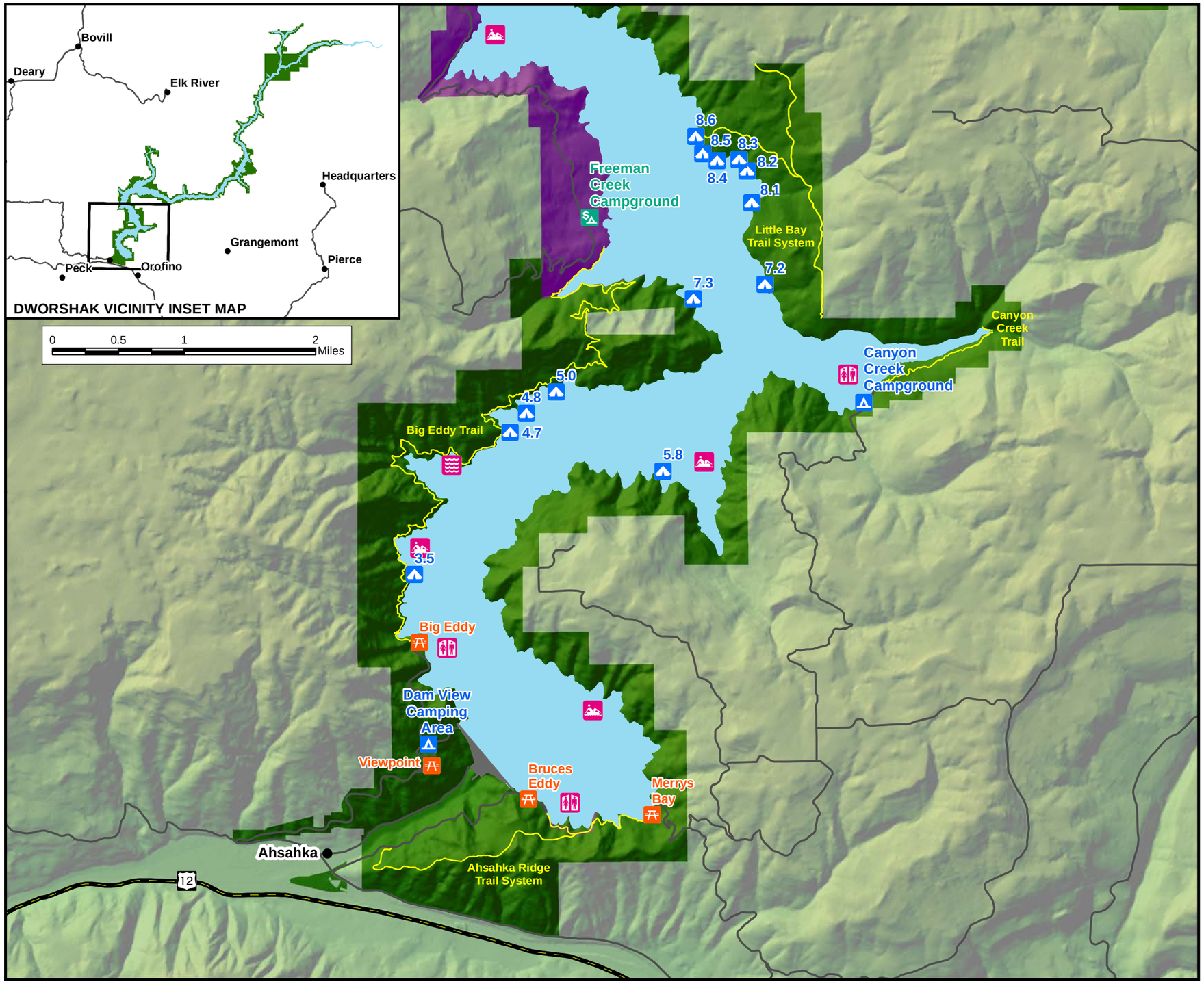
a. Zones of Influence. An analysis of visitation information indicates that approximately 75 percent of the people who use Corps facilities live less than 75 miles away. Due to the sparse population concentrations, access, and location of the recreational areas, local participation will determine future access demands. The greatest influence comes from the five counties surrounding the project (Latah, Nez Perce, Lewis, Clearwater, Idaho counties). Based on a visitor survey of distance, population location, and visitor origin, the zone of influence can be broken down into primary, secondary, and tertiary zones.

1) Primary–75 Mile Radius. The primary zone of influence is the area within a one-half-hour travel time from the dam. This includes the cities of Orofino, Kamiah, Kooskia, Nez Perce, Lenore, Ahsahka, Cavendish, Southwick, Kendrick, Juliaetta, Lapwai, Grangemont, Pierce, Weippe, Troy, Lewiston, and Moscow, Idaho; and Pullman and Clarkston, Washington.

2) Secondary–75-200 Mile Radius. The secondary zone of influence for Dworshak is the area within a 75-200-mile radius. Major cities include Missoula, Montana; Sandpoint, Coeur d'Alene, and Boise, Idaho; Spokane, Kennewick, Richland, Pasco, and Yakima, Washington.

3) Tertiary–200-plus Miles. The tertiary zone of influence is outside the 200-mile radius and primarily encompasses out-of-state visitors. The majority of these come from Washington, Oregon, California, and Arizona.

b. Project Visitation. Dworshak provides recreational opportunities for over a 150,000 people each year. The number of facilities and activities has increased and many improvements have been made over the past 25 years. Dworshak Reservoir was originally forecasted to have hundreds of thousands of visitors each year, but those numbers have dropped since the drawdowns for fish migration began. Visitation in the past 15 years (since drawdowns began) has been relatively stable with only minor fluctuations (Figure 2-6). Visitation has decreased since 2001, in part, because traffic across the dam has been prohibited due to the terrorist attacks on September 11, 2001. Prior to that, visitors were allowed to drive across the dam and observe the natural beauty of the reservoir. Other factors may include the effects of the drawdowns, the rise in gasoline prices, and social and economic factors.



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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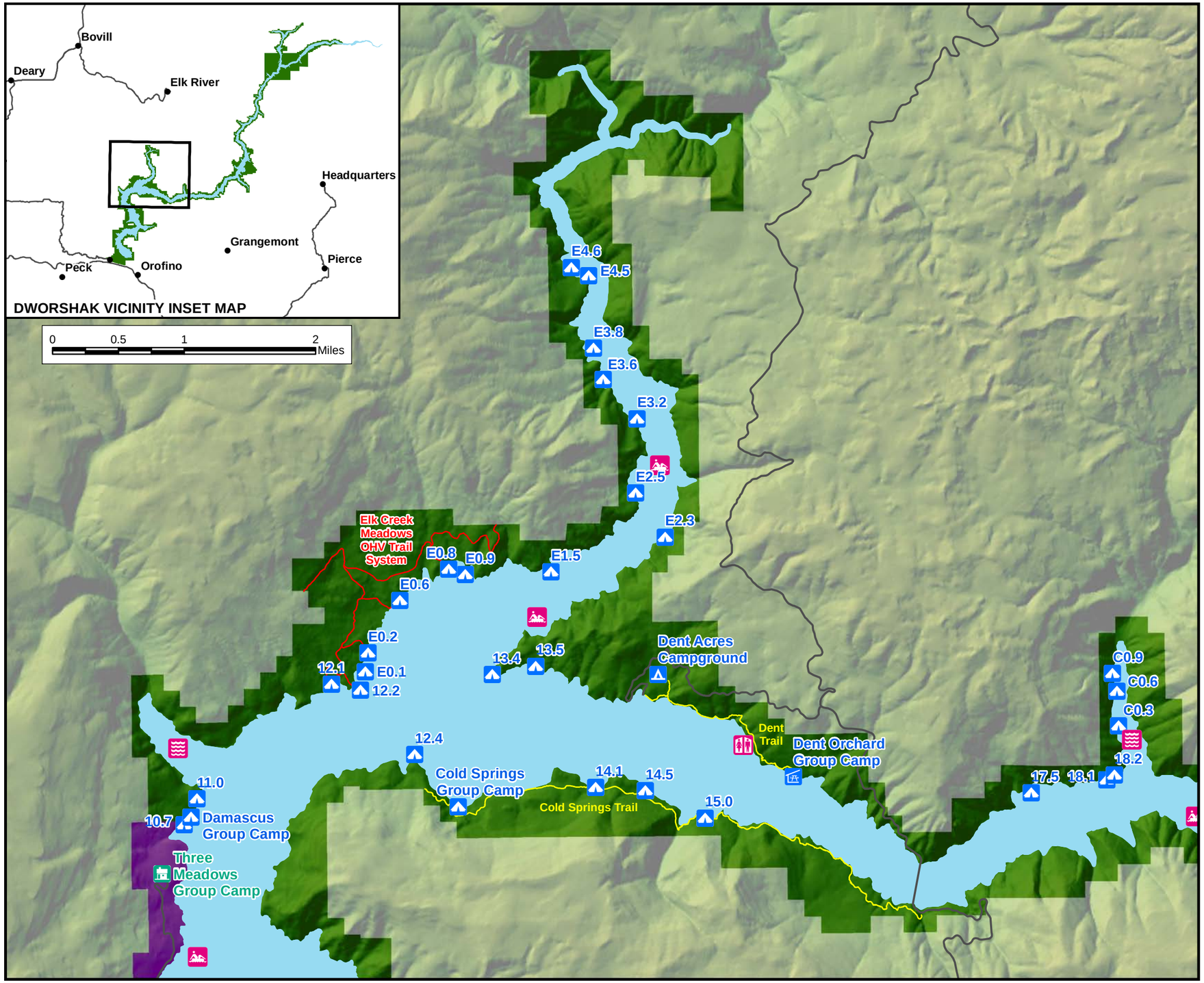
PLATE 2F

EXISTING RECREATION FACILITIES MAP
CLEARWATER RIVER - CRANBERRY CR



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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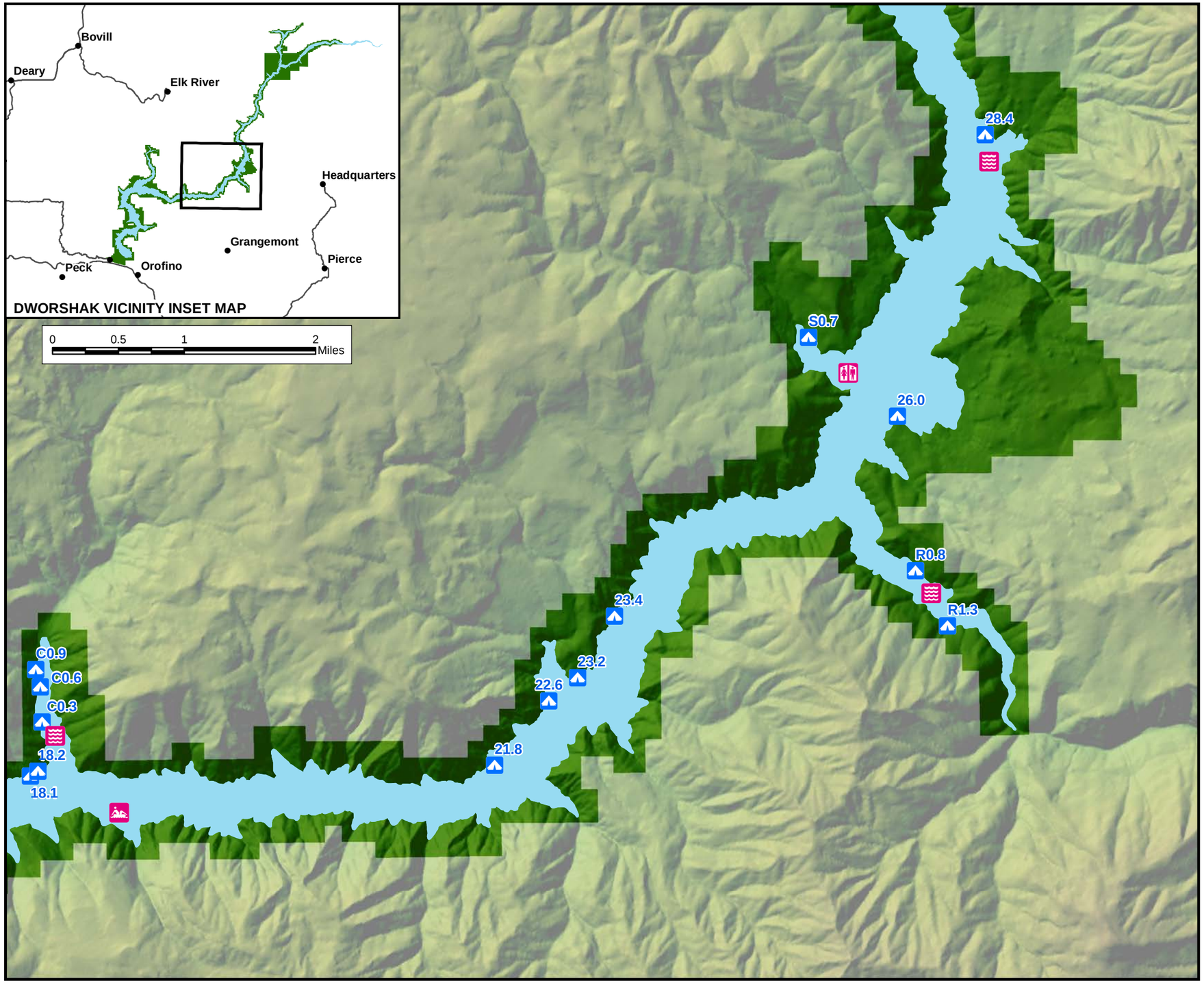
PLATE 2G

EXISTING RECREATION FACILITIES MAP
DRIFT CREEK - CRANBERRY CREEK



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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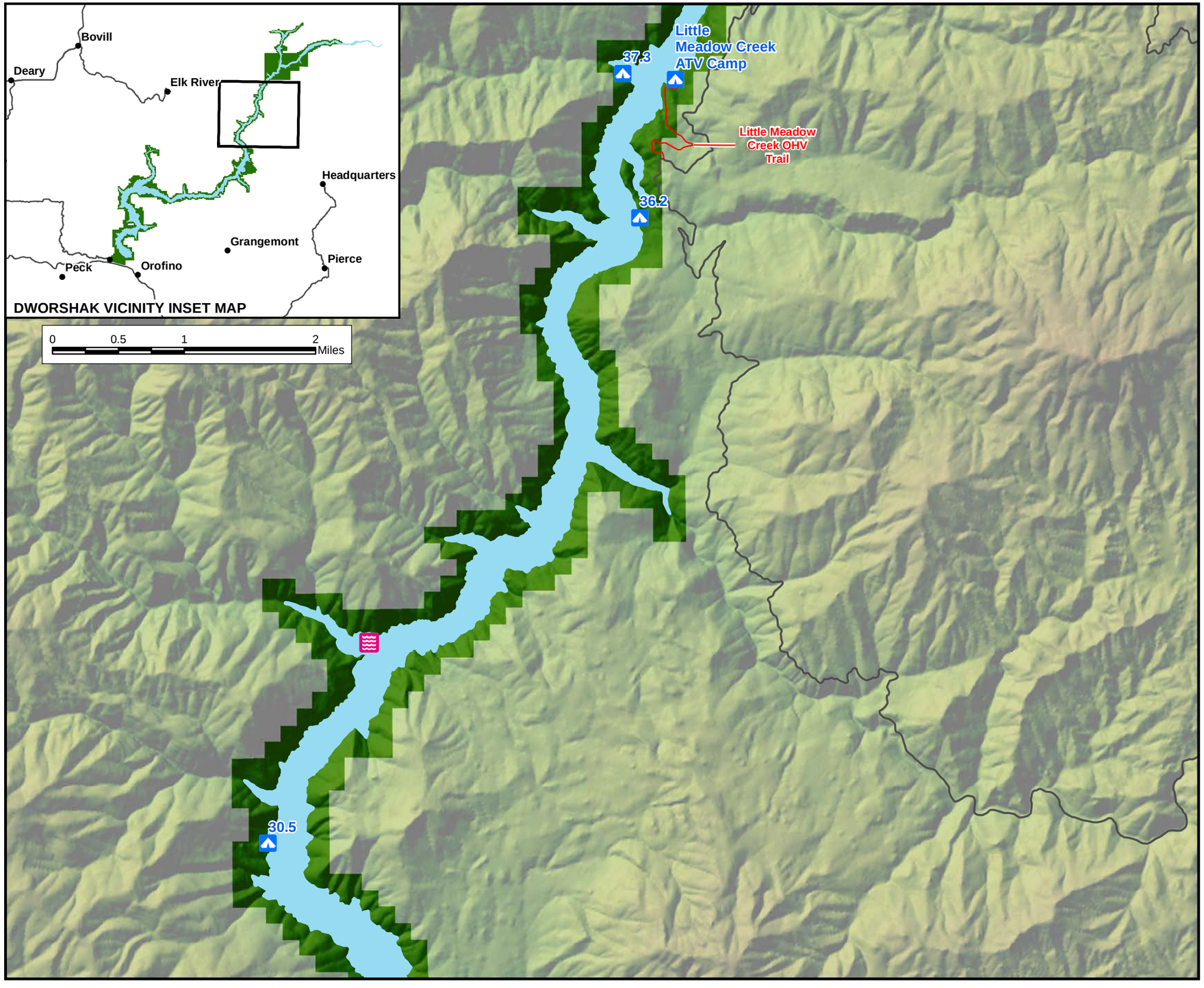
PLATE 2H

EXISTING RECREATION FACILITIES MAP
CRANBERRY CREEK - EVANS CREEK



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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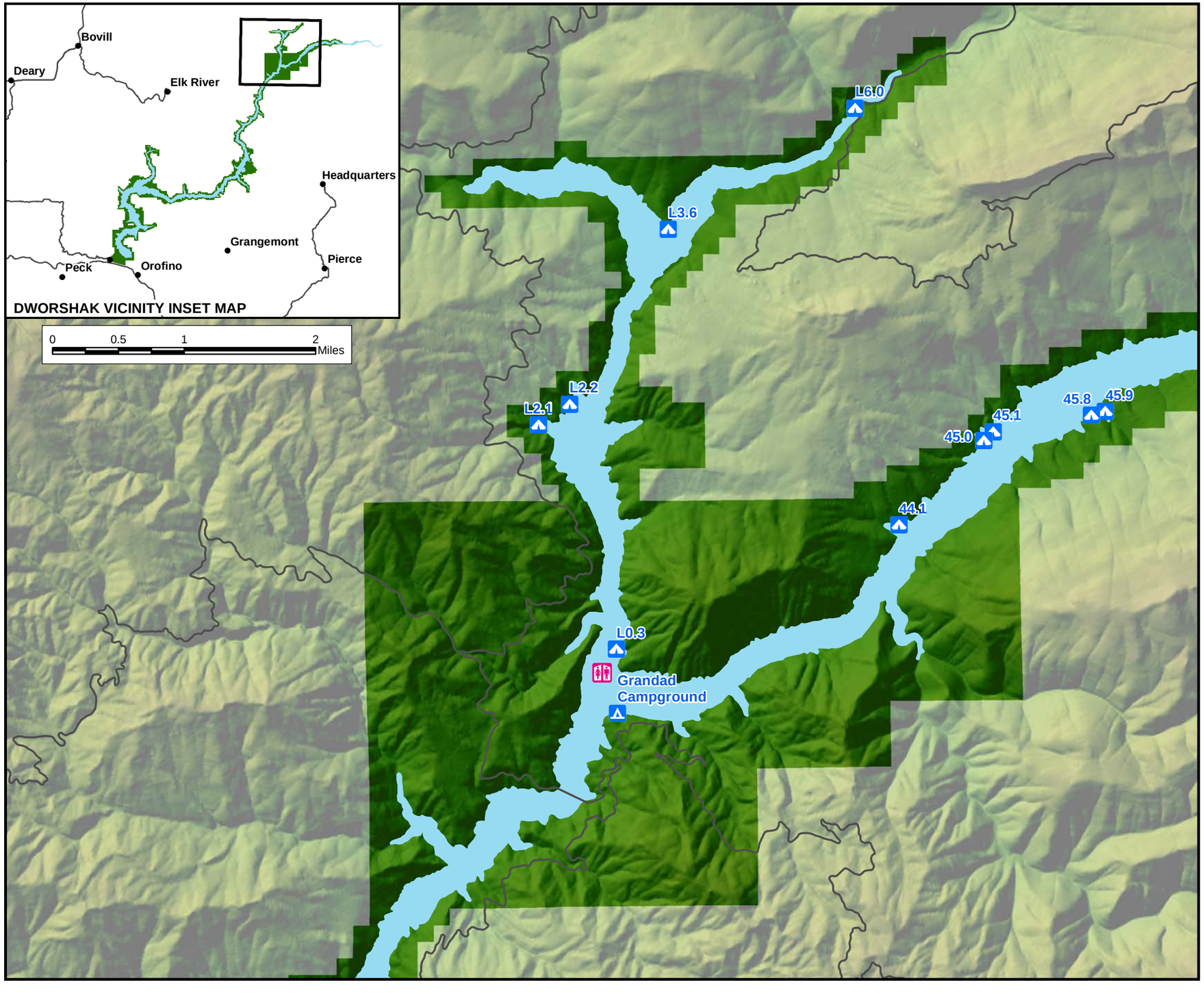
PLATE 2I

EXISTING RECREATION FACILITIES MAP
EVANS CREEK - LITTLE MEADOW CR



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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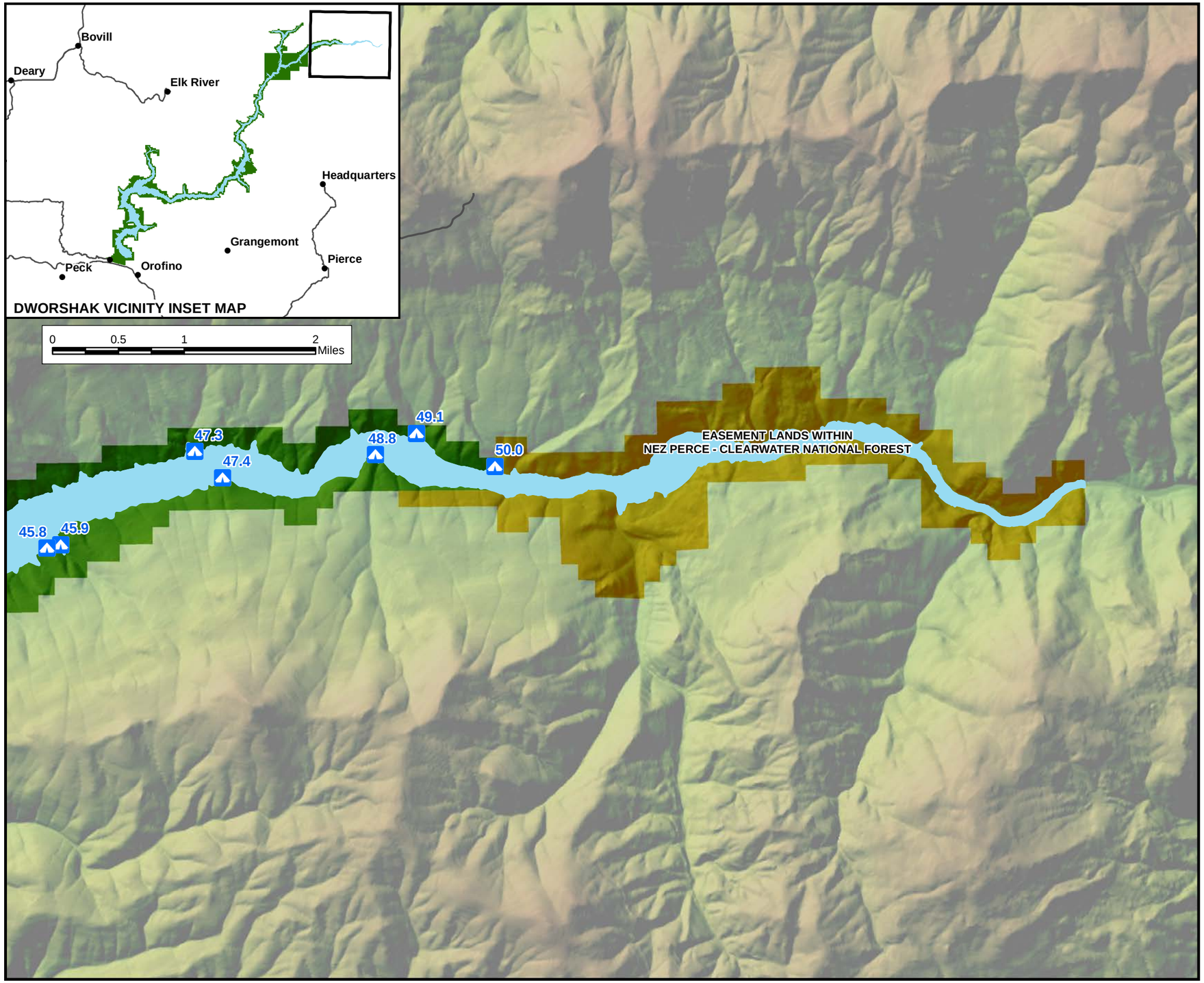
PLATE 2J

EXISTING RECREATION FACILITIES MAP
GRANDAD - LITTLE NORTH FORK



Map Legend

- City or Town
- U.S. Highway
- Secondary Road
- Dworshak Reservoir
- Dworshak Project Lands
- Dworshak State Park (IDPR)

Water Based Recreation Facility

- Destination Dock
- Safe Harbor Dock
- Floating Restroom

Land Based Recreational Facility

- USACE Campground
- USACE Group Camp
- USACE Primitive Camp
- IDPR Campground
- IDPR Group Camp
- USACE Day Use Area

Recreation Trail

- Non-Motorized Trail
- OHV < 50" Wide Trail

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PLATE 2K

EXISTING RECREATION FACILITIES MAP
UPPER RESERVOIR - EASEMENT LANDS

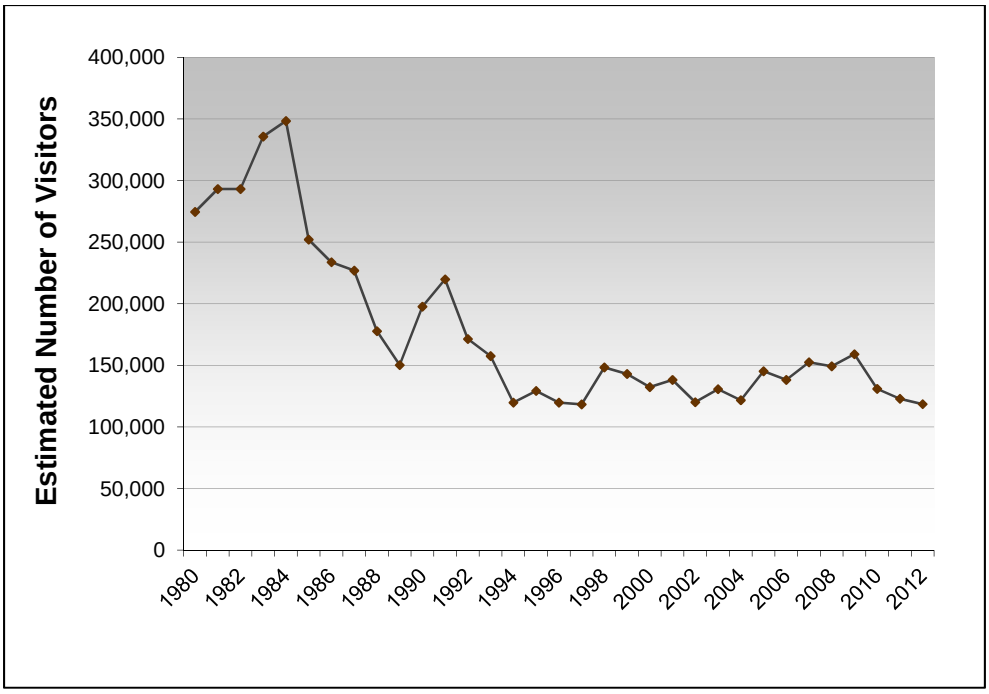


Figure 2-6. Dworshak Reservoir visitation fluctuates based on reservoir water levels. The pattern over 33 years shows a slow decrease due to water drawdowns during the peak summer season.

The majority of visitors come during the peak summer months (June-September; Table 2-7). The short period when the reservoir is at full pool experiences dramatically more visitation. Extreme drawdowns impact the availability of recreation site access to users from the water. As a consequence, the demand had increased for more land-based recreation.

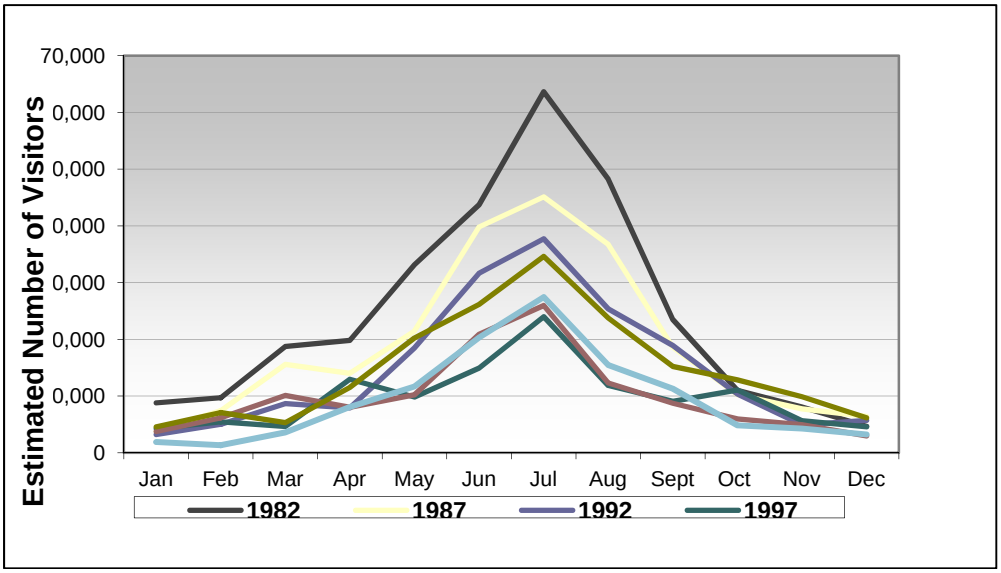


Figure 2-7. Dworshak historical monthly visitation.

c. Visitor Distribution. Most of the recreation facilities are located on the lower third of the reservoir. Development in this portion of the river was chosen because of its close proximity to the area's population base and ease of access. Users expect recreation areas will continue to be provided near Orofino, and that present facilities will be expanded as demand warrants and funding is secured. The upper two-thirds of the reservoir draws visitors from smaller population centers (Elk River and St. Maries). These visitors have indicated a desire for a fuel station, more boat launch facilities, and more camping opportunities on the upper end of the reservoir.

d. Carrying Capacity. Recreation carrying capacity is a measure of the capability of a recreation resource to provide the opportunity for satisfactory recreation experiences, over a period of time, without significant degradation of the resource. Carrying capacity has two components: social and resource capacity.

Social capacity is the level of density beyond which the user does not achieve a reasonable level of satisfaction. Social capacity at Dworshak Reservoir is most frequently limited by the level of recreational facility development (such as parking spaces and restrooms), or by the expectations of different recreational users. Density of existing facilities is generally appropriate for the region and social capacity limits in most areas are only reached during the few weeks the reservoir is at full pool.

Resource capacity is the level of use beyond which irreversible biological deterioration takes place, or degradation of the resource makes it unsuitable or unattractive for recreational use. Resource capacity is usually a seasonal or long-term issue as most areas will tolerate some short-term overuse without significant adverse effects. Resource capacity at Dworshak Reservoir is typically controlled by factors such as the presence of nesting sites, highly erodible soils, cultural resources or steep terrain. Resource capacity must be accommodated in the design and location of facilities, as well as the regulation of use.

Some portions of the reservoir are more heavily used than others. This is related to the proximity of recreation sites to nearby cities and highways. Based on total visitor numbers collected from 2003-2012, 75 percent of visitor use takes place in the lower third of the reservoir closest to the dam, the town or Orofino, Idaho, and Highway 12. Table 2-9 shows distribution of visitor use by recreation site around the reservoir. The upper two-thirds of the reservoir is more remote in terms of access and nearby population centers. Dent Acres Recreation Area,

Dworshak State Park (Three Meadows group camp), and Grandad Recreation Area receive the majority of visitors in the upper portion.

Recreation Area	Reservoir Location	Total Visitors 2003-2012
Big Eddy Recreation Area	Lower	308,978
Powerhouse Road Fishing Access	Lower	243,229
Bruce's Eddy Recreation Area	Lower	148,663
Dworshak State Park (Freeman Creek)	Lower	98,843
Dworshak Visitor Center	Lower	73,410
Dworkshak Dam Viewpoint	Lower	66,302
Merry's Bay Recreation Area	Lower	36,458
Canyon Creek Recreation Area	Lower	30,684
Dam View Camping Area	Lower	8,363
Dent Acres Recreation Area	Middle-Lower	207,925
Dworshak State Park (Three Meadows group camp)	Middle-Lower	56,353
Magnus Bay Recreation Area	Middle-Upper	1,464
Grandad Recreation Area	Upper	48,011
Little Meadow Creek Campground	Upper	502
Lake-based Recreation Facilities	Project-wide	31,791

Table 2-9: Visitor Distribution. Visitation is generally more favorable closest to the dam. Three recreation areas receive the majority of visitors in the upper reservoir.

Peak visitation occurs two weeks either side of the July 4th weekend when the reservoir is at full pool (Figure 2-8). During this timeframe, boat ramps, camping, and day use facilities are at full capacity. Outside of the peak visitation period, however, current recreation facilities meet visitor needs.

Figure 2-8: Dworshak monthly visitation trend 1982-2012.

Using data and methodology from "U.S. Outdoor Recreation Participation Projections 2010 to 2060" by J.M. Bowker, Ashley Askew and Ken Cordell, along with the Idaho Statewide Comprehensive Outdoor Recreation and Tourism *Plan* (SCORTP) 2013-2017, future outdoor recreation demand was calculated for Dworshak reservoir. Table 2-10 shows the future projected visitor participation at based on national data and trends.

Activity	Est. 2010 Rec. Use	Rec. Use 2020	Rec. Use 2030	Rec. Use 2040	Rec. Use 2050	Rec. Use 2060
Picnicking/ Sightseeing	9,814	9,863	9,932	10,051	10,242	10,508
Camping	9,029	9,074	9,137	9,247	9,423	9,668
Swimming	8,374	8,558	8,849	9,336	10,092	11,192
Waterskiing	1,439	1,471	1,507	1,584	1,733	2,000
Boating	49,464	50,552	51,816	54,459	59,578	68,753
Fishing	68,700	68,081	66,311	64,056	61,814	59,960
Hunting	654	616	545	459	370	289
Other	27,873	28,152	28,433	29,087	30,629	33,416

Table 2-10: Projected future visitor participation in selected activities.

Projections for recreation demand at Dworshak Reservoir over the next 50 years are shown below in Figure 2-9. Projections are based on several scenarios and subject to change. Of the most common activities that visitors engage in, boating sees the greatest increase. Activities that fall under "other" include hiking, OHV use, and snowmobiling that will see a slight increase. Picnicking, camping,

swimming, and waterskiing will remain relatively steady according to these projections.

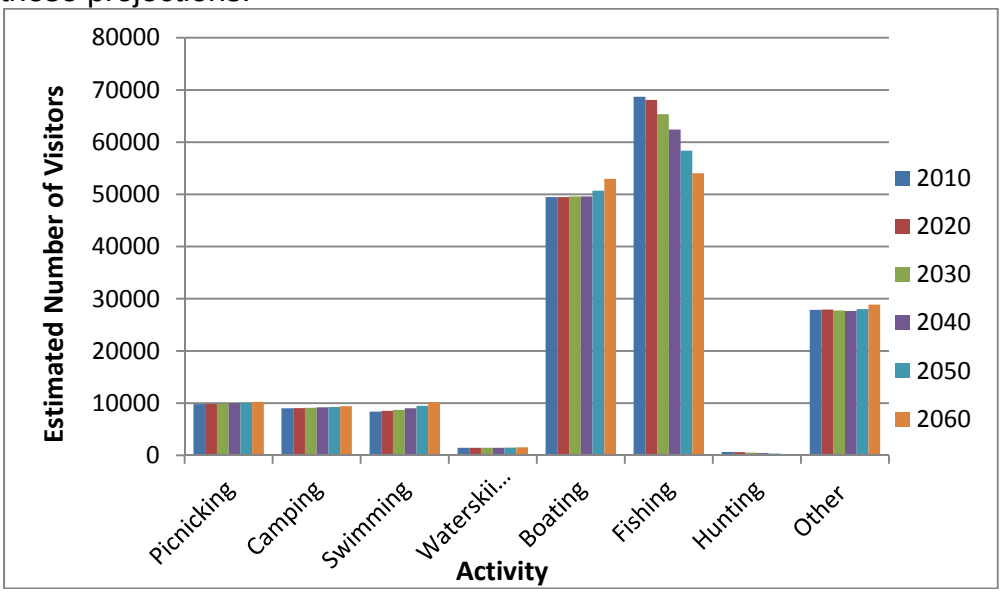


Figure 2-9: Projected future visitation.

Currently, no more than 120 (plus or minus) watercraft are active on the reservoir at any one time. This equates to a carrying capacity of 158 acres per boat, a mere fraction of the ultimate carrying capacity of the reservoir. While each reservoir has its own optimum recreation carrying capacity, the Corps has typically estimated that 1-20 acres per boat are reasonably required, depending on the type of activities (i.e., waterskiing might require the upper range, while fishing could exist within the lower range). Using those numbers and the surface area (17,090 at Elevation 1,600 ft.), the carrying capacity of the reservoir would be between 1,000-20,000 boats at any given time. Because of other constraints, including parking and remoteness of access points, visitation is actually much lower than carrying capacity. Small boat numbers on the reservoir at any given time help to create a more natural, quiet, and pristine recreational experience. The type and feel of the recreation experience at Dworshak is extremely important to visitors and is what draws them to the area. Through the public involvement process for this master plan, users expressed their interest in improving access while still protecting the rural nature of this project.

Recent private home development around Dent Acres Recreation Area boat ramp have created additional usage of the boat ramp and facilities. If parking becomes an increasing issue, there is potential to construct additional parking spaces at the ramp. Grandad Recreation Area receives heavy use during the peak season (June-August). The ramp is currently damaged and larger boats are unable to launch at levels 40 feet down while smaller boats can launch till 75 feet down.

Dworshak staff believe that if facilities are repaired and improved, it would receive greater use throughout the year. Other areas, including Big Eddy, Bruce's Eddy, Canyon Creek, and Freeman Creek recreation areas, have limited potential for expansion if needed in the future to meet boater demands.

e. Activity Mix. On a periodic basis, frequency of participation in various activities is estimated (Table 2-11 below). The total is greater than 100 percent because visitors may participate in more than one activity at a given recreation area.

Activity	Annual Participation Rate (percent)
Fishing	52.5%
Boating	37.8%
Other	21.3%
Sightseeing	20.6%
Picnicking	7.5%
Camping	6.9%
Swimming	6.4%
Water Skiing	1.1%
Hunting	0.5%
Total	**154.8%**

Table 2-11: Dworshak activity participation shows a percent of total visitors in specific activities, calculated monthly under an older visitation estimation system. The above data is from 2006 and more recent data is unavailable until the new system is completely online.

f. Recreation Demand. The majority of comments from the public are requests for recreation opportunities that address the low water elevations. As stated earlier, reservoir drawdowns make it hard, if not impossible, to access mini-camps on the lake. Low water levels also make it difficult, or impossible, to launch boats at certain locations. Motorized access, including ATV access, is high priority for many visitors. Other facilities requested by the public include more floating docks, extended boat launch ramps, upper reservoir boat launch ramps, and universal access to the marina at the Big Eddy Recreation Area at all water levels.

2.7.5 Other Recreational Opportunities.

a. Local. Clearwater River provides many recreation opportunities to those who live in Clearwater County, Idaho, including hunting and fishing. The Nez Perce-Clearwater National Forest provides diverse recreation opportunities as well (hiking, bird watching, camping, ATV trails, etc.).

b. Regional. Numerous recreation areas are in close proximity to Clearwater County. Opportunities abound for boating, camping, sightseeing, hiking, whitewater rafting, kayaking, golfing, snow skiing, ATV usage, snowmobiling, fishing, hunting, and numerous other activities. The USFS, Idaho Department of Lands, Potlatch Corporation, and other landowners allow public use of their land for many activities. Nearby recreation areas include the Salmon River Breaks primitive area, Sawtooth primitive area, White Cloud Peaks area, Salmon River, Middle Fork Clearwater River, Hells Canyon-Seven Devils scenic area, Wenaha-Tucannon wilderness, Eagle Cap wilderness, Lewis-Clark Highway, and Nez Perce National Historical Park. Plate 2L is a map of some recreation areas in the region. Although there are many other opportunities in the region, motorized water sports (waterskiing, jet skiing, etc.) are unique to Dworshak.

2.8 REAL ESTATE

2.8.1 Land Acquisition History. Under the auspices of the Flood Control Act of 1944, the Corps acquired large acreages of land for the Dworshak project. At the time of acquisition, it was the general desire of the administration that new land be restricted to minimum operation and maintenance requirements and meet the readily foreseeable public access demand. Original acquisition criteria followed by the Corps were generally consistent with that policy.

The initial authorized project purpose, as set forth in PL 87-874, was flood control. All Corps land were originally allocated to project operations, in accordance with the initial acquisition purposes. Subsequent legislation related to such civil works projects has authorized other project purposes, including recreation and fish and wildlife management. Original land use allocations are provided in Plates 2 through 4 of the Dworshak Final Environmental Impact Statement (Corps, 1975). Some boundaries shown in those plates are not accurate portrayals of actual Corps boundaries as some land was not purchased as planned. A specific example is the elk mitigation area that was much smaller than originally planned.

2.8.2 Current Landholdings. The Corps is responsible for the reservoir and surrounding land totaling 45,473 acres. The Corps leases Dworshak State Park (Freeman Creek and Three Meadows campground) to the Idaho State Parks and Recreation, as well as the marina facility and adjacent building at the Big Eddy marina.

2.8.3 Boundary Monumentation and Encroachments. Approximately 74% of the boundary of Corps-managed land at Dworshak is monumented to clearly identify project property lines. Despite this clear delineation, encroachments from livestock and timber trespass still occur with increasing frequency. This

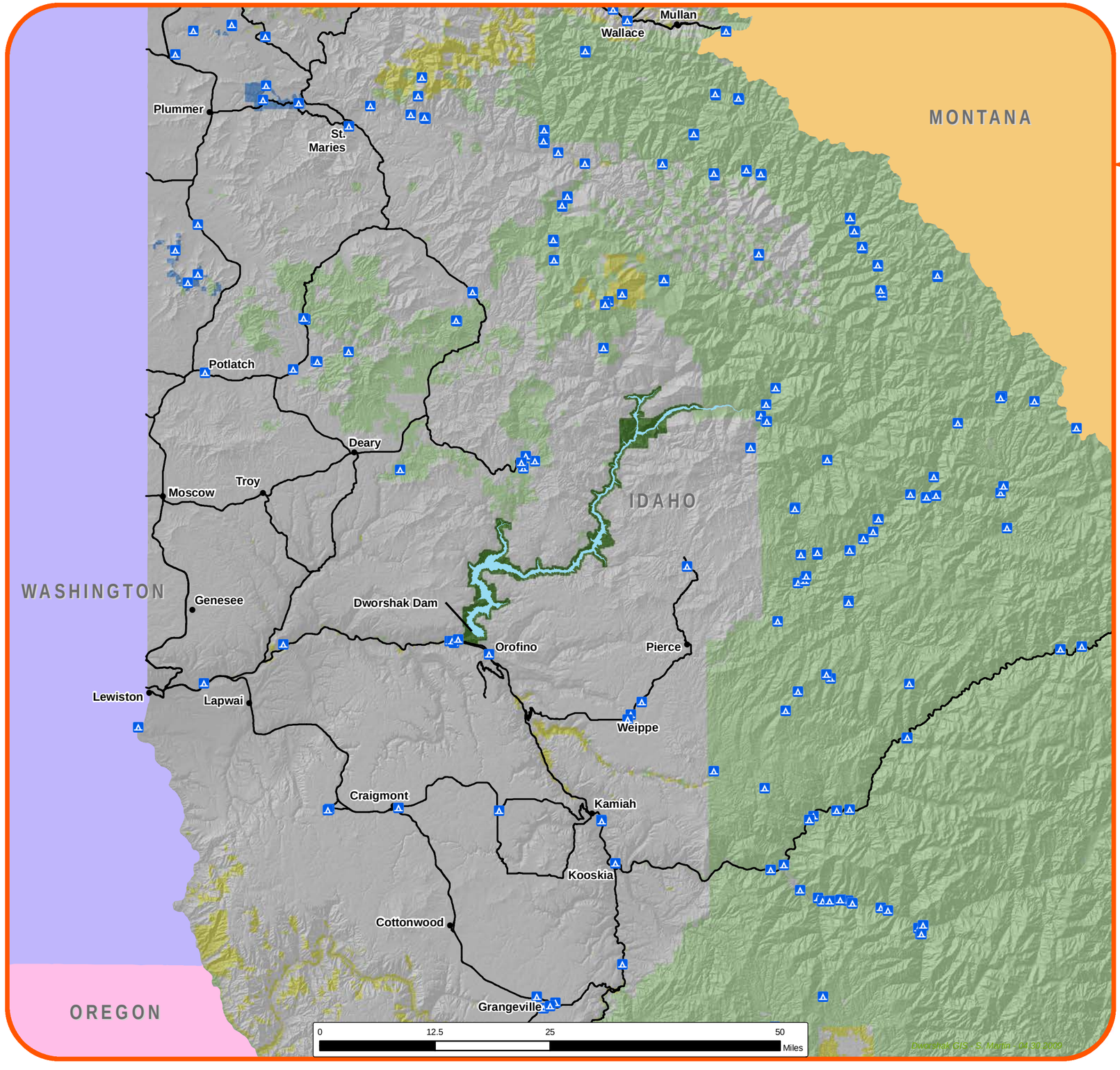
can be directly attributed to the increase in private land ownership adjacent to the reservoir. Timber has been removed to create views of the lake. Off-road vehicles from adjacent land cut fences, break and/or cut gate locks, and create trails on Corps property. The Corps is presently collaborating with landowners and land management agencies to survey mutual boundaries.

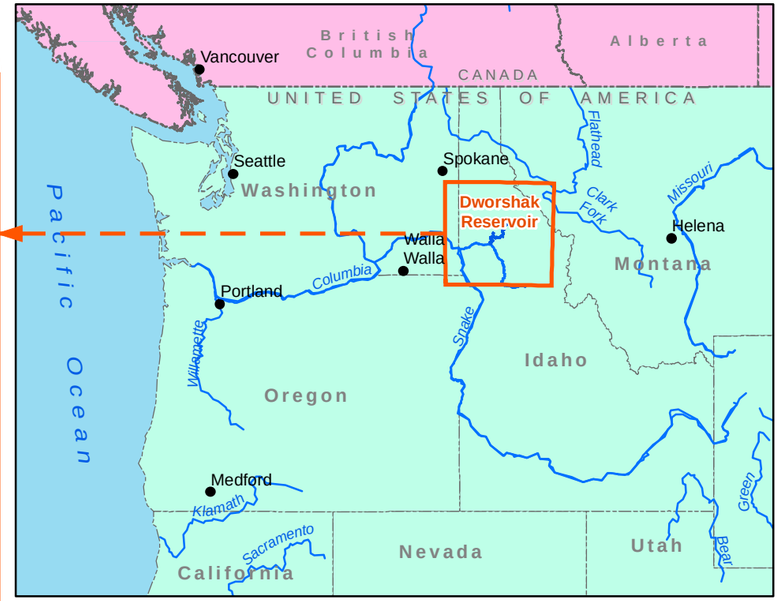
2.8.4 Fences and Gates. Currently, 34.4 miles of fencing exist at Dworshak. Of that, 30.9 miles are boundary fencing, while the other 3.6 miles lie within the project and provide security, guidance, and barriers. Due to the rough terrain, fencing the entire project is not cost effective. However, boundary delineation with increased signage is called for by Corps policy (EP 310-1-6a), and will be beneficial.

Gates are located throughout the project. These gates not only provide security, but are also used to keep vehicles from entering land where they are not allowed. Fences are frequently damaged by adjacent landowners' logging operations, as well as by ATV users cutting fences to gain access.

Fences around Dworshak are not in place to keep private livestock off Federal lands. The Idaho Open Range Law requires landowners to "fence-out" livestock if they do not want open range animals on their land. This law, however, does not apply to Federal property. Livestock owners must keep their animals off Federal property at their own expense. The presence of unauthorized livestock on Corps property is a trespass in violation of Title 36, Part 327 of the Code of Federal Regulations (CFR, 327.11); and may be subject to citation and fines. The trespassing livestock may be subject to removal and impoundment (with associated impoundment fees). Efforts have been made to educate adjacent landowners and grazers, as the Corps recognizes that the present situation is untenable. A long-term solution to keep livestock off Federal land, at the livestock owners' expense, must be sought. Partnerships between the Corps, Idaho Department of Lands, and individual grazers have been presented that would provide fencing materials to the grazers who would, in turn, perform the maintenance.

2.8.5 Leases, Easements, and Outgrants. Many leases, easements, and outgrants have been granted to public utilities and individuals for a variety of uses, including access roads, power transmission lines, and utility lines. Development and use of land by others outside of the Corps may be allowed when in accordance with this approved master plan. Use must be consistent with policies, procedures, and regulations prescribed by Corps. Prior to their approval, any future leases, easements, and outgrants must be carefully examined to ensure compatibility with project resource objectives and updated land classifications.





Map Legend

- City or Town: Population > 500
- Non USACE Campsite
- Federal / State Highway
- U.S. Army Corps of Engineers Lands
- U.S. Forest Service Lands
- Bureau of Land Management Lands
- State of Idaho Parks and Recreation Lands
- Other Lands

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PLATE 2L

NORTH CENTRAL IDAHO
REGIONAL RECREATIONAL OPPORTUNITIES

2.9 PERTINENT PUBLIC LAWS, REGULATIONS, AND POLICIES

Rules and regulations governing the public use of water resources development projects administered by the Corps are contained in 36 CFR 327. Other authorities specifically related to the management of recreation and public access are found in Public Laws; Executive Orders (EO); and the Corps' Engineer Regulations (ER), Engineer Pamphlets (EP), and Engineer Manuals (EM). A list of applicable laws applicable to recreation and public access is included in Appendix I.

2.10 ENVIRONMENTAL CONSIDERATIONS

This Plan will evaluate the impacts of land use classification changes and set conditions and parameters for future development. Implementation of each recommended recreation facility and development, as detailed in Dworshak's *Operational Management Plan* (OMP), requires separate environmental compliance evaluations.

2.10.1 Environmental Compliance Process. Before implementation of tasks or actions that may result from this Plan, the Corps is required to comply with numerous federal laws, rules, and regulations. There may be additional requirements under state and/or local jurisdictions.

2.10.2 Environmental Laws and Regulations. Appendix J contains a list of the major federal laws and Executive Orders that may be applicable to task implementation. The list is not comprehensive but is provided to display some of the potential requirements that may need to be addressed before implementation of proposed projects.

2.11 MANAGEMENT PLANS

2.11.1 Project/District Management Plans. Several management plans direct activities and expenditures for Dworshak Reservoir. These plans are interrelated and discussed in the following paragraphs. Each must be considered when planning future actions.

a. Operational Management Plan. The OMP is a management action document that describes in detail how the resource objectives and concepts prescribed in this master plan will be implemented. The last OMP for Dworshak Reservoir was approved in 1999. An update was submitted in 2012 and updated again in 2014.

b. Public Use Plan Supplement to DM 10 (2011). The *Dworshak Reservoir Public Use Plan for the Development and Management of Public Access at Dworshak Reservoir, Supplement to Design Memorandum 10*, February 2011 is described in Section 1.5. It serves

as a continuing guide for development and management of water and associated lands.

c. Public Use Plan DM 10 (1970). The *Public Use Plan for Development and Management of Dworshak Reservoir, DM 10,* April 1970, contained land classifications and other guidelines and regulations prior to the current regulations. It no longer supports current Corps policy, environmental laws, or desired public use.

d. Design Memorandum No. 15, Plan For Development of Rocky Mountain Elk Habitat Dworshak Dam and Reservoir. The primary purpose of this report, approved November 1977, was to present a plan for the development and maintenance of winter range for Rocky Mountain elk at Dworshak Dam and Reservoir. Additional items (water and pasture development) that influence the annual distribution of Rocky Mountain elk are also incorporated into the plan. The report established the legal mitigation lands and requirements around Dworshak Reservoir.

2.11.2 Regional Management Plans.

a. Comprehensive State Water Plan–North Fork Clearwater River Basin. This plan contains a series of policies formulated by the Idaho Water Resource Board in consultation with local citizens and public officials to provide direction to the Corps and other federal agencies regarding the operation of Dworshak Dam and Reservoir.

b. The 2008 Federal Columbia River Power System Biological Opinion. This report contains provisions for modifying spring and summer flow releases from Dworshak Dam to provide benefits for the migration of certain ESA-listed fish (steelhead, and subyearling and adult fall Chinook and Sockeye salmon). During the summer, releases of lower water temperatures into the river provides ecological benefits for these ESA-listed fish. Benefits come from the volume of water released and the cooler temperature infused into the Lower Granite reservoir.

c. Nez Perce–Clearwater National Forest Plan. This plan is currently in the process of updating their forest plan that was originally completed in 1987. It provides a broad program-level direction for management of the land and its resources. The plans are programmatic in nature, covering large geographic areas, and the direction is broad in scope.

2.12 SUMMARY–IMPLICATIONS FOR PLANNING

Earlier discussion of natural and historic resources identified important implications for the use, management, and development of land and water resources at Dworshak Reservoir. Each item identified has been used in the planning process to help develop plans that balance the demands of the public with the policy and regulations the Corps must follow. Each Section in this Plan provides information important in the planning process for this updated master plan.

SECTION 3 - RESOURCE OBJECTIVES

Resource objectives are clearly written statements that set forth measureable and attainable current and future management and development activities that support the stated goals in this master plan, the Environmental Operating Principles (Appendix J), and take into consideration any current applicable Corps performance measures. They are guidelines for obtaining maximum public benefits while minimizing adverse impacts and protecting and enhancing environmental quality. They are developed with full consideration to the project's authorized purposes; applicable federal laws and directives; resource capabilities; regional needs; recreational and natural resources carrying capacity; State Comprehensive Outdoor Recreation Plans; cultural and natural resources significant to the Nez Perce Tribe; and public input.

The over-arching project-wide resource objective for Dworshak Reservoir is to continue to safely, effectively, and efficiently provide benefits to the public from the congressionally-authorized purposes of Flood Damage Reduction, Navigation, Hydropower, Fish and Wildlife, and Recreation. Navigation, originally authorized for the purpose of log transport, is not presently used.

The vision of the resource objectives is to:

- Manage vegetation along Dworshak Reservoir in accordance with ecosystem management principles, to ensure the continued viability of ecosystems, enhance elk habitat, and to protect habitat for threatened, endangered, and sensitive species in concurrence with the Idaho Department of Fish and Game and the U.S. Fish and Wildlife Service.

- Manage the reservoir to maintain a full range of recreational opportunities ranging from a few highly developed full service campgrounds and marinas to natural sites with minimum facilities, while maintaining the general forest environment at all locations and maintaining the remote nature found in much of the upper reservoir.

- Develop a plan for motorized and non-motorized recreational use and work with adjacent landowners to provide trail systems for the public. Work with user groups to develop off-highway vehicle education, enforcement plans, and maintenance of roads and trails.

The design and management concepts necessary to meet the over-arching resource objectives are intended to provide the best possible combination of responses to regional needs consistent with authorized project purposes. The resource objectives should provide a high degree of regional recreation diversity, emphasize the special characteristics of the project, and be consistent with national objectives and regional goals. Resource objectives are divided into three

categories—General, Environmental Stewardship, and Recreation—to better address specific management needs.

3.1 General

3.1.1 Boundary Management.

a. Objective. Prevent timber and livestock trespass and other unauthorized use of government property.

b. Discussion. Continued efforts in surveying, marking, and posting of the operating project boundary, sharing data with adjacent land owners, public education, and enforcement will help prevent trespass on federal land.

3.1.2 Safety.

a. Objective. Provide public use areas and facilities that are safe.

b. Discussion. Developed areas designated for recreation use will be evaluated regularly for safety hazards. Conditions determined detrimental will be evaluated and feasible corrective actions implemented. New facilities will be designed with consideration to public safety.

3.1.3 Aesthetics.

a. Objective. Plan all management actions with consideration given to landscape quality and aesthetics.

b. Discussion. Visitors are attracted to Dworshak Reservoir for its natural setting and quality of environment. To create a quality recreation experience, it is important that all planned improvements be reviewed and contributes to the rural Idaho nature of Dworshak.

3.2 Recreation

3.2.1 Access Management.

a. Objective: Actively address unauthorized motorized access to reduce impacts to fish and wildlife habitat and conflicts with non-motorized recreation users.

b. Discussion. Public outreach and education regarding federal boundaries, enforcement, and installing control structures will reduce unauthorized access and degradation to natural resources on

operating project land. Continually addressing customer requests and seeking opportunities for improved authorized access (motorized, horse, hike, bike, etc.) where appropriate will create additional recreation opportunities for multiple user groups. Information regarding boundaries and expected recreation use types provided on maps, kiosks, brochures, signs and through ranger contacts will better inform and prepare user expectations to reduce conflict and boundary violations.

3.2.2 Road Management.

a. Objective. Manage the road system within the operating project boundaries to meet transportation needs and to prevent resource damage.

b. Discussion. Roads are frequently discovered and used by the public when timber harvest activities occur. Performing inventory, assessment, construction, demolition, and maintenance of the operating project roads will help meet transportation needs and prevent resources damage. Dworshak will continue to consider and evaluate opportunities for future use and develop as warranted.

3.2.3 Interpretive Services and Outreach Program (ISOP).

a. Objective. Interpretive services will focus on the agency, district, the operating project missions, benefits, and opportunities. It will be used to enhance public safety through promoting increased public awareness, understanding, and appreciation of Dworshak Reservoir and its resources.

b. Discussion. The Dworshak ISOP includes the management of public affairs, community relations, marketing, publications, tourism, special events, and the visitor center. It will provide community outreach through interpretive displays and programs at the visitor center, campgrounds, community organizations, Chambers of Commerce, outdoor shows, press releases, etc. Interpretive displays and programs should highlight on several of the following subjects:

- The Corps
- Operating project authorized purposes and public benefits
- Impacts of the operating project (historical, cultural, ecological)
- Historical and traditional uses of the Area by the Nez Perce Tribe
- Operating project benefits to the nation, region, and local community

- Recreation opportunities
- Wildlife and fish associated with the operating project land, water, and opportunities to passively and actively utilize
- Water safety
- Ongoing management activities
- Challenges and possible solutions

3.2.4 Water-based Facilities and Infrastructure.

a. Objective: Provide well designed water-based facilities and infrastructure to alleviate problems associated with recreation on a reduced pool.

b. Discussion. Recreation facilities were originally designed for a nearly full pool during the summer. The Federal Columbia River Power System ESA Biological Opinion for the Recovery of Salmon has changed the conditions and, as a result, recreation opportunities that depend on full pool have been significantly impacted. Steep topography, limited road access, short summer season, and reduced summer water levels all impact access to water based recreation facilities at Dworshak. Efforts should be made to provide well designed and maintained boat ramps, destination docks, safe harbor docks, shoreline campsites, and trails to alleviate problems associated with recreation on a reduced pool level.

3.2.5 Day Use and Camping Facilities.

a. Objective: Maintain and improve day use and camping facilities to meet public demand and reduce operation and maintenance costs while maintaining the integrity of the natural resources.

b. Discussion: Whether at individual shoreline camps, remote self-service campgrounds, or full service campgrounds, the facilities must meet the needs of the user while maintaining the rural atmosphere of Northern Idaho. Due to the remoteness of Dworshak Reservoir, visitors often plan their trips for multiple days and nights where camping is the primary mode of overnight stay. Seeking opportunities where possible to improve motorized access to boat-in mini-camps would provide additional recreation options and alternatives during low pool levels. Day use recreation typically consists of local lake users and those traveling through the area. Facilities should focus on safe and easy access to the lake, adequate parking, picnic sites, and a staffed information visitor center.

3.2.6 Recreation Quality and Optimization.

a. Objective. Focus on development and/or rehabilitation of recreation facilities for all seasons at all water levels for more users.

b. Discussion. These actions should include opportunities for adapting to new recreation trends and providing alternate modes of access to the lake. The operating project must seek to balance resources and developments. Opportunities should be sought to provide, where possible, recreation opportunities and development that expand recreation seasons and resource availability for more users.

- Balance demand and cost to operate
- Balance demand and impact to environment
- Balance demand and user conflict
- Recognize unique recreation niche of boat-only access to much of the operating project. Preserve and expand alternative methods of access where practical.

3.2.7 Universal Access.

a. Objective: Provide safe and accessible recreation opportunities for all visitors.

b. Discussion. When developing new, or rehabilitating existing recreation facilities/opportunities, effort should be made to comply with reasonable universal accessible accommodations. In addition, special emphasis should be placed on programs that increase participation of people with physical, developmental, and sensory disabilities in outdoor activities.

3.3 Environmental Stewardship

3.3.1 Cultural Resource Management.

a. Objective. Carry out legal requirements of the National Historic Preservation Act in support of existing and ongoing work around Dworshak Dam and Reservoir.

b. Discussion. Planning and development will include considerations to protect and preserve culturally sensitive sites. Cultural resource review will be coordinated with district specialists and NPT Tribal Historic Preservation Office for final approvals.

3.3.2 Fire Management.

a. Objective. Minimize wildfire effects, including impacts to federal land and the recreating public.

b. Discussion. By maintaining a fire protection system capable of providing wildland fire prevention, detection, pre-suppression, and suppression, the potential for negative effects of wildfires, including impacts to the recreating public and federal property, will be minimized. Performing prescribed burns will continue to be an effective tool to help meet the ecological, wildlife, and forest health objectives of the operating project.

3.3.3 Forest Management.

a. Objective. Manage forest land along Dworshak Reservoir to meet various resource objectives, including ecosystem integrity, forest health, wildlife habitat and recreational opportunities.

b. Discussion. Forest management strategies, methods of assessment, and implementation will vary based on specific resource objectives for the particular operating project land. Management activities currently used at Dworshak include, but are not limited to, the following:

- Use of small and large scale timber sales
- Pre-commercial thinning
- Brush slashing
- Prescribed burning
- Road construction, reconstruction, and obliteration
- Planting/seeding
- Plant protection

3.3.4 Weed Management.

a. Objective. Minimize negative impacts to the native flora and fauna by reducing and/or eradicating noxious weeds.

b. Discussion. Managing the spread of invasive species will be achieved by monitoring, assessment, and treatment efforts that include herbicide treatment, bio-control releases, and seeding with native plant species. The Corps will work with local stakeholders to establish a prioritization of noxious weeds for treatment.

3.3.5 Wildlife Habitat Management.

a. Objective. Conserve, protect, monitor, restore, and/or enhance habitat and habitat components important to the survival and proliferation of threatened, endangered, special status, and other regionally important species.

b. Discussion. The operating project will continually assess the Priority Habitats identified and 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). Combining information from assessments of priority habitats with management objectives will help initiate suitable forest management actions.

3.3.7 Fisheries.

a. Objective. Continue work with Idaho Fish and Game and other possible partners to improve the aquatic ecosystem.

b. Discussion. Sport fishing is a nationally recognized at Dworshak Reservoir and is an important activity to many who visit. Seeking creative solutions and partnerships to improve the fishery and access to shoreline/bank fishing on the reservoir and below the dam will allow for sport fishing to improve at the Dworshak. The nutrient supplement pilot program will continue to be monitored and evaluated for its effects and successes.

SECTION 4 - LAND ALLOCATION, LAND CLASSIFICATION, WATER SURFACE, AND PROJECT EASEMENT LAND

4.1 GENERAL

Land allocations and classifications, combined with project-wide and site-specific resource objectives, provide a guide for use, management, and permissible development of Corps fee land. During the planning process, Dworshak land was divided into management areas based on physical, administrative, operational, and use characteristics. Each area was assigned the most appropriate allocations and then classification.

4.2 LAND ALLOCATION

Land administered by the Corps of Engineers is allocated to any of four categories depending on the authorized purpose for which it was acquired. Chapter 3 of EP 1130-2-550 defines these categories as Operations, Recreation, Fish and Wildlife, and Mitigation.

4.2.1 Operations. All Dworshak Dam and Reservoir, land above and below the take line, other than the elk mitigation land, is allocated to Operations. A 300-foot horizontal take line landward of the high pool elevation (1,600 ft. msl) was the guidance used for land acquisition. Land above the 300-foot take line was acquired for access and public use as described in the *Preliminary Master Plan DM 10A*, 1966.

4.2.2 Mitigation. The initial authorized project purpose for Dworshak Dam and Reservoir, as set forth in PL 87-874, was flood control. Approximately 6,937 acres were acquired for elk mitigation to offset land loss associated with Dworshak's construction.

4.2.3 Recreation, Fish and Wildlife. Subsequent legislation authorized other purposes, including recreation and fish and wildlife management. Separable lands were not acquired for recreation or fish and wildlife management purposes.

4.3 LAND CLASSIFICATIONS

Allocated land is broken down further into classifications to provide for development and resource management consistent with authorized purposes and the provisions of the National Environmental Policy Act of 1969, as well as other federal laws. Engineer Pamphlet 1130-2-550 land classification categories include Project Operations, High Density Recreation, Mitigation, Environmentally Sensitive Areas, Multiple Resource Management Land, and Water Surface.

Management and use of the lands assigned to each land classification are discussed, in connection with the appropriate resource objectives, in the following paragraphs. Locations for each land classification are shown on Plates 4A through 4M following Section 4.

4.3.1 Project Operations. Land required for the operation and maintenance of the dam and reservoir, associated structures, administrative offices, maintenance compounds, and other areas is under the Project Operations classification. Where compatible with operational requirements, this land may be used for wildlife habitat management and low density recreational uses (refer to Section 5.4.5.1 and 5.4.5.2). Licenses, permits, easements, or other outgrants are issued only for uses that do not conflict with operational requirements. Some Project Operations land are always closed to public access for safety or security reasons, while other areas may be subject to closure for operational requirements or other purposes. Motorized recreation within Project Operations land is allowed only on designated routes. Table 4-1 below contains primary and secondary uses for land classified as Project Operations.

PROJECT OPERATIONS, 231 ACRES	
Primary Use Manage lands required for the operation and maintenance of the dam and reservoir. **Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities	**Secondary Uses, con't.** Low Density Recreation - Hunting/Fishing - Hiking - Bicycling - Horseback riding - Primitive camping (designated sites) - Picnicking - Sightseeing and nature observation - Other recreation activities of a primitive nature

Table 4 -1: Operations allocation, Project Operations classification.

4.3.2 High Density Recreation. Land developed for intensive recreational activities for visitors, including day use and/or overnight facilities, commercial concessions, and quasi-public development. High Density Recreation at Dworshak are areas with improved road access, more than 15 campsites, and/or allow for intensive day use. Motorized access is allowed only in designated areas, subject to seasonal or permanent closure based on road conditions, presence of important species that would be impacted by the presence of motorized vehicles, or other reasons deemed appropriate by Corps staff.

Facilities may include developed campgrounds, separate day use facilities, lake access for boats, marina facilities and services, opportunities for the elderly and handicapped to participate in a variety of activities, trees for shade and wildlife use, and vegetative controls for shoreline and soil

erosion. Criteria such as spacing, buffer zones, vegetative screening, and other considerations are used in the design of facilities to ensure visitors have adequate access to the lake and a quality experience.

Low density recreation and wildlife management activities that are compatible with intensive recreation use are acceptable. No agricultural uses are permitted on these lands except on an interim basis for the maintenance of scenic or open space values. Licenses, permits, easements, or other outgrants are issued only for use that does not conflict with recreation use. Hunting is not allowed on land classified as Recreation, although fishing is an appropriate recreational activity. Table 4-2 below contains primary and secondary uses for land classified as Recreation.

HIGH DENSITY RECREATION, 1,087 ACRES	
Primary Use Manage land for developed recreation sites that have more than 15 campsites and improved access. - Campgrounds - Picnicking - Swimming - Fishing - Sightseeing and nature observation - Nature/Interpretive trails - Hiking - Bicycling - Horseback riding - Playgrounds/Games/Sports/Other - Concessionaires - Motorized Recreation - Boat Ramps	**Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities Low Density Recreation - Primitive camping (designated sites) - Motorized access trails and roads - Non-motorized trails - Other recreation activities of a primitive nature

Table 4-2: Operation allocation, High Density Recreation classification.

4.3.3 Mitigation. Only land under the Mitigation allocation can be included under the Mitigation classification. It is specifically designated to offset losses associated with development of a project. For Dworshak, it is for the lost elk habitat during construction. Under guidelines established in the Fish and Wildlife Coordination Act (PL 85-624), ER 1105-2-129, ER 1120-2-400, and ER 1165-2-104, the wintering habitat lost from construction was mitigated by the development and improvement of selected land acquired specifically for elk mitigation.

Mitigation land around Dworshak Reservoir was identified by the U.S. Fish and Wildlife Service (USFWS), and the Idaho Department of Fish and Game (IDFG), in the USFWS' DM 15, *Plan for Development of Rocky Mountain Elk Habitat: Dworshak Dam and Reservoir*, North Fork, Clearwater River, Idaho (Corps, 1977). Consultation with both groups in the late 1980s and early 1990s brought about change to the mitigation obligations identified

in those original guidelines. However, the general management of the mitigation land for its intended purpose still remains a legally required obligation for the Corps of Engineers. The Corps and IDFG continue to work collaboratively to set goals and objectives for these lands. Future changes to those goals and objectives require consultation with the USFWS and IDFG. Low density, low impact recreational opportunities that minimize impacts to elk populations are allowed, including sightseeing, wildlife viewing, primitive camping, hiking, horseback riding, and biking, as well as hunting, fishing, and trapping. Recreation must be primitive in nature. Motorized access is only allowed on Musselman Road (bridge road at Grandad Recreation Area), Breakfast Creek Road, Camp X Road, and Silver Creek Road. Consumptive uses of the vegetation (e.g., timber harvest for the purpose of habitat creation and forest health) are acceptable when compatible with the objectives and regulations required for Mitigation land. Table 4-3 below contains primary and secondary uses for land classified as Mitigation.

MITIGATION, 6,937 ACRES	
Primary Use Manage land for elk habitat as defined by regulation. **Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities	**Secondary Uses, con't.** Low Density Recreation - Primitive camping (designated sites) - Non-motorized trails - Hunting/Fishing - Hiking - Bicycling - Horseback riding - Picnicking - Sightseeing and nature observation - Other recreation activities of a primitive nature

Table 4-3: Mitigation allocation, Mitigation classification.

4.3.4 Environmentally Sensitive Areas. Areas identified with scientific, ecological, cultural, or aesthetic features, and not just land that is otherwise protected by laws. Typically, limited or no development of public use is allowed. Activities designed to promote and improve special features identified in the area are allowed, along with education and interpretation.

Motorized access is only allowed on existing designated roads within an environmentally sensitive area; no new public motorized access routes will be designated. Table 4-4 below contains primary and secondary uses for land classified as Environmentally Sensitive.

ENVIRONMENTALLY SENSITIVE AREAS, 3,101 ACRES	
Primary Use Manage land to protect unique and sensitive resources. - Scientific - Cultural - Ecological - Aesthetic **Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities	**Secondary Uses, con't.** Low Density Recreation - Nature observation - Education/Interpretation

Table 4-4: Operations allocations, Environmentally Sensitive Area classification.

4.3.5 Multiple Resource Management (MRM) Land. This classification allows for designation of a predominate use with the understanding that other compatible uses may also occur in the classification. Total MRM for Dworshak is approximately 18,140 acres.

a. Low Density Recreation. This land provides opportunities for dispersed and/or low-impact recreation. Emphasis is on minimal development or infrastructure that might support sightseeing, wildlife viewing, nature study, hiking, biking, horseback riding, primitive camping (less than 15 campsites), and picnicking. Consumptive uses of wildlife (i.e., hunting, fishing, and trapping) are allowed when compatible with the wildlife objectives for a given area and with federal, tribal, and/or state fish and wildlife laws and regulations. Motorized access is allowed on approved trails in designated areas. All motorized access is subject to seasonal or permanent closure based on road conditions, the presence of important species that would be negatively impacted by the presence of motorized vehicles, or other reasons deemed appropriate by the Corps.

Facilities may include boat ramps, boat docks, trails, parking areas and vehicle controls, vault toilets, picnic tables, and fire rings. Manmade intrusions (power lines, non-project roads, and water and sewer pipelines) may be permitted under conditions that minimize adverse effects on the natural environment. Vegetation management that does not greatly alter the natural character of the environment is permitted for a variety of purposes, including erosion control, retention and improvement of scenic qualities, and wildlife management. Table 4-5 below contains a listing of primary and secondary uses on lands classified under MRM – Recreation Low Density.

MRM - LOW DENSITY RECREATION, 1,930 ACRES	
Primary Use Manage land for low density, low impact recreation opportunities. - Hunting/Fishing - Hiking - Bicycling - Horseback riding - Campgrounds <15 sites - Primitive camping (designated sites) - Picnicking - Swimming - Sightseeing and nature observation - Motorized access trails and roads - Boat ramps - Non-motorized trails - Other recreation activities of a primitive nature	**Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities

Table 4-5: Operations allocation, Multiple Resource Management Land classification, sub classification Low Density Recreation.

b. Wildlife Management. This land is designated for stewardship of fish and wildlife resources in conjunction with other land uses. Habitat maintenance and/or improvements are for a designated species, group of species, and/or a diversity of species. These areas may be administered by other public agencies under a lease, license, permit, or formal agreement. Licenses, permits, and easements are normally not allowed for manmade intrusions such as pumping plants, pipelines, cables, transmission lines, or for non-Corps maintenance or access roads. Exceptions to this policy are allowable where necessary for the public interest or other reasons deemed important by the Corps.

Wildlife management land is available for sightseeing, wildlife viewing, nature study, hiking, biking, horseback riding, and primitive camping. Consumptive uses of wildlife (hunting, fishing, and trapping) are allowed when compatible with the wildlife objectives for a given area, as well as with federal, tribal, and/or state fish and wildlife laws and regulations. Limited motorized access is allowed in designated areas where access would not conflict with the primary purpose of managing for wildlife health. All motorized access is subject to seasonal or permanent closure based on road conditions, the presence of important species that would be impacted from the presence of motorized vehicles, or other reasons deemed appropriate by the Corps. Table 4-6 below contains a listing of primary and secondary uses on lands classified under MRM – Wildlife Management.

MRM - WILDLIFE MANAGEMENT, 15,350 ACRES	
Primary Use Manage land for stewardship of fish and wildlife resources. - General forest health - Habitat enhancement projects - Ecological restoration projects - Protection of specific habitat areas/ components (i.e., denning sites, calving sites, nests and wallows, etc.) - Other similar activities	**Secondary Uses** Low Density Recreation - Hunting/Fishing - Hiking - Bicycling - Horseback riding - Primitive camping (designated sites) - Picnicking - Sightseeing and nature observation - Designated motorized access trails and roads with seasonal closures - Non-motorized trails - Other recreation activities of a primitive nature

Table 4-6: Operation allocation, Multiple Resource Management Land classification, sub classification Wildlife Management.

c. Vegetative Management. Management activities in this classification focus on the stewardship of forest resources and native vegetative cover. All project land is managed to protect and develop vegetative cover in conjunction with other land uses. Vegetative management land is available for sightseeing, wildlife viewing, nature study, hiking, biking, and horseback riding, as well as hunting, fishing, and trapping. Consumptive uses of vegetation (e.g., timber harvest for the purpose of habitat creation and forest health) are acceptable when compatible with the vegetative objectives for a given area. Vegetative management also involves plant communities that are significant to Native American Tribes.

The Corps did not designate any Dworshak land as MRM - Vegetative Management. Instead, MRM - Wildlife Management was chosen to be the sub-classification for a large portion of the land. Its goals of the two classifications are similar and support similar uses and management actions. Vegetative Management, however, remains an important aspect of managing for wildlife.

d. Inactive and/or Future Recreation Areas. This sub-classification includes land with site characteristics compatible with potential future recreational development, or land that includes existing recreation areas temporarily closed. There is no guarantee these areas will be developed and/or reopened, but in the interim are managed for low density recreation or wildlife management. Input from stakeholder and working groups determined the land had future recreation potential if and when funding could be secured and with sufficient public demand.

Each proposed recreation development site would be evaluated under NEPA prior to development.

No land at Dworshak was identified as Inactive Recreation. However, Table 4-7 below contains a listing of primary and secondary uses for land under MRM – Future Recreation Areas.

MRM - FUTURE RECREATION AREAS, 860 ACRES	
Primary Use Manage land that will not limit the ability to develop or maintain an area as a recreation area. **Secondary Uses** Wildlife Management - General forest health - Ecological restoration projects - Other similar activities	**Secondary Uses, con't.** Low Density Recreation - Hunting/Fishing - Hiking - Bicycling - Horseback riding - Campgrounds <15 sites - Primitive camping (designated sites) - Picnicking - Swimming - Sightseeing and nature observation - Motorized access trails and roads - Non-motorized trails - Other recreation activities of a primitive nature

Table 4-7: Operations allocation, Multiple Resource Management Land classification, sub classification Future Recreation Areas.

4.3.6 Project Easement Land. The Corps holds an easement interest, but not fee title on this land, and has the right to enter the property in connection with the operation of the project. In most cases, the Corps has the right to occasionally flood these properties. Planned use and management is in strict accordance with the terms and conditions of the easement estate acquired for the project. The Corps of Engineers has acquired easements on approximately 1,760 acres at or adjacent to Dworshak Dam and Reservoir.

4.4 IMPLEMENTATION AND RECOMMENDATIONS

Land classifications are zoning plans in the sense they allow for different types of management and development within each land classification. The classifications are based on suitability of the resource, as well as their protection, capability, public desires, and agency missions and policies. An interdisciplinary team followed the four processes below to determine assignment of the land classifications described above. Original land classifications from DM 10 and the classifications recommended by the working groups, were also used in the processes. Recommendations by the Corps of Engineers for updated classifications are reflected in Plates 4A-4M at the end of this Section. Suitability, vulnerability, and

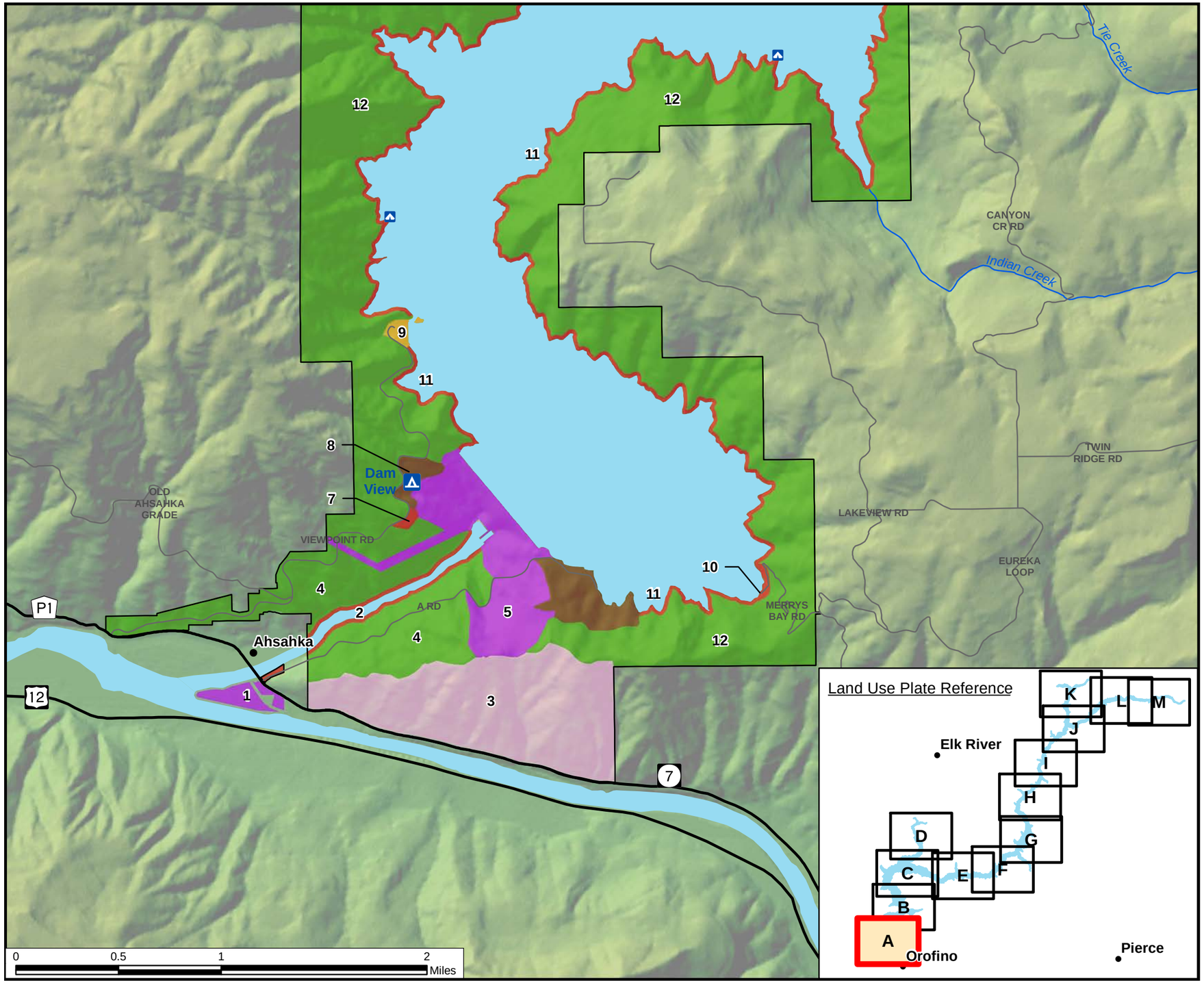
compatibility models were developed for each land classification using criteria from the regional and project inventory and analysis data.

4.4.1 Suitability. The first step in the process is to map those lands most attractive or best suited for a particular land classification. This is done by combining resource data maps (slope, existing facilities, and vegetation). For example, the most attractive land for recreation are those with slopes of 0-25 percent, are close to water, and have good vehicle access. Environmental impacts (both positive and negative) are considered under vulnerability rather than under attractiveness.

4.4.2 Vulnerability. The next step in the process is to identify and map those areas vulnerable to impact (positive and negative) for a particular land use by using resource data maps that identify sensitive resources (i.e., wildlife habitat, wetlands, or highly erodible soil). Impacts can be caused by construction, use, or maintenance, and other variables. For example, recreation development could impact certain wildlife species.

4.4.3 Compatibility. The next step in the process is to create a compatibility map by combining the suitability and vulnerability maps. A compatibility map identifies areas with high attractiveness and low vulnerability. Compatibility maps are subject to change as additional information is developed.

4.4.4 Tradeoff Analysis. After all compatibility maps are completed for each different land use, they are compared as the last step in the process. Sometimes, land best suited for recreation and wildlife are the same. When this situation arises, a tradeoff occurs, and a decision is made to which land use best serves both regional and project needs. This step uses the analysis of resources, the professional judgment of an interdisciplinary team, public input, and input from other agencies.



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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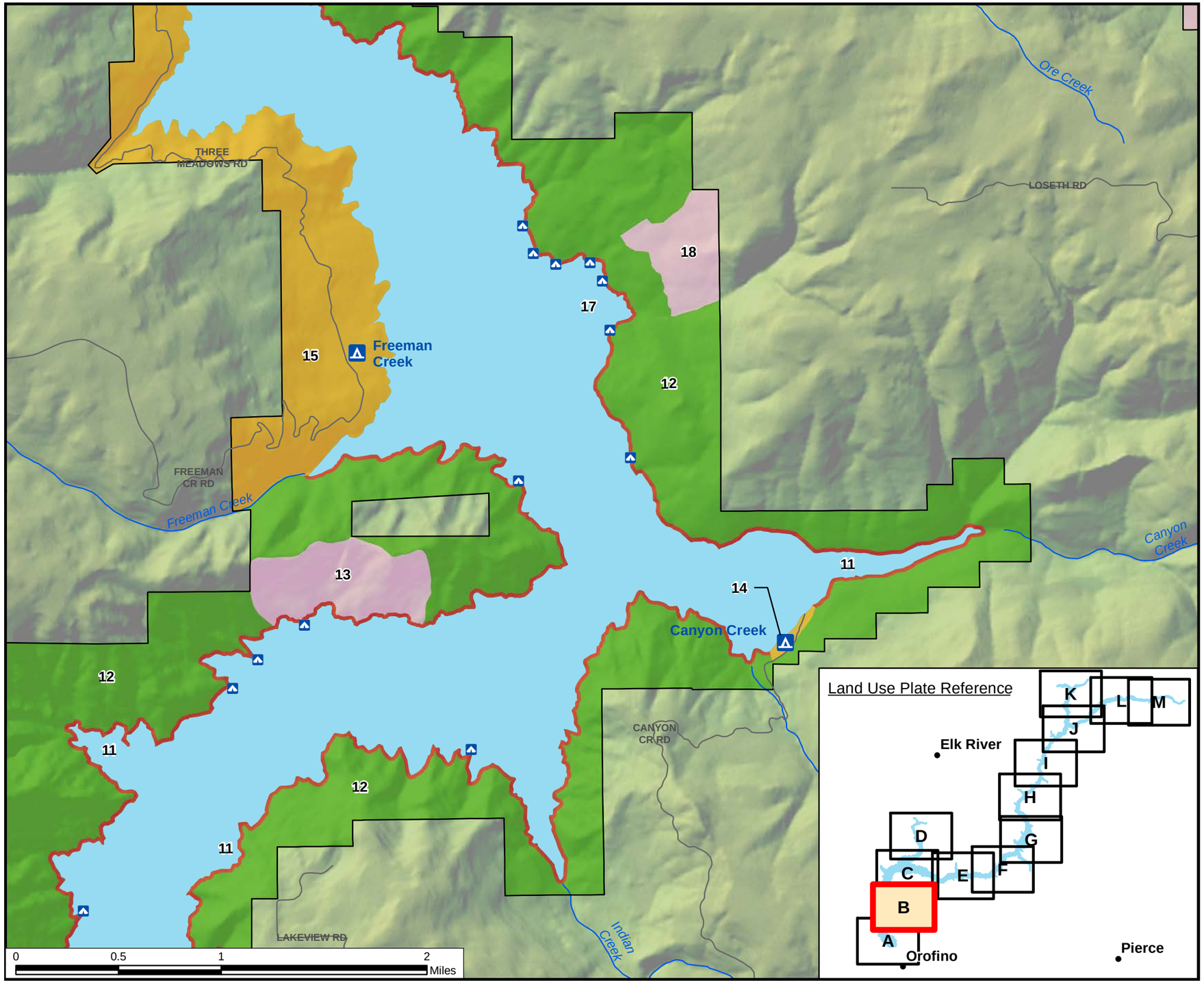
Dworshak Master Plan

PLATE 4A of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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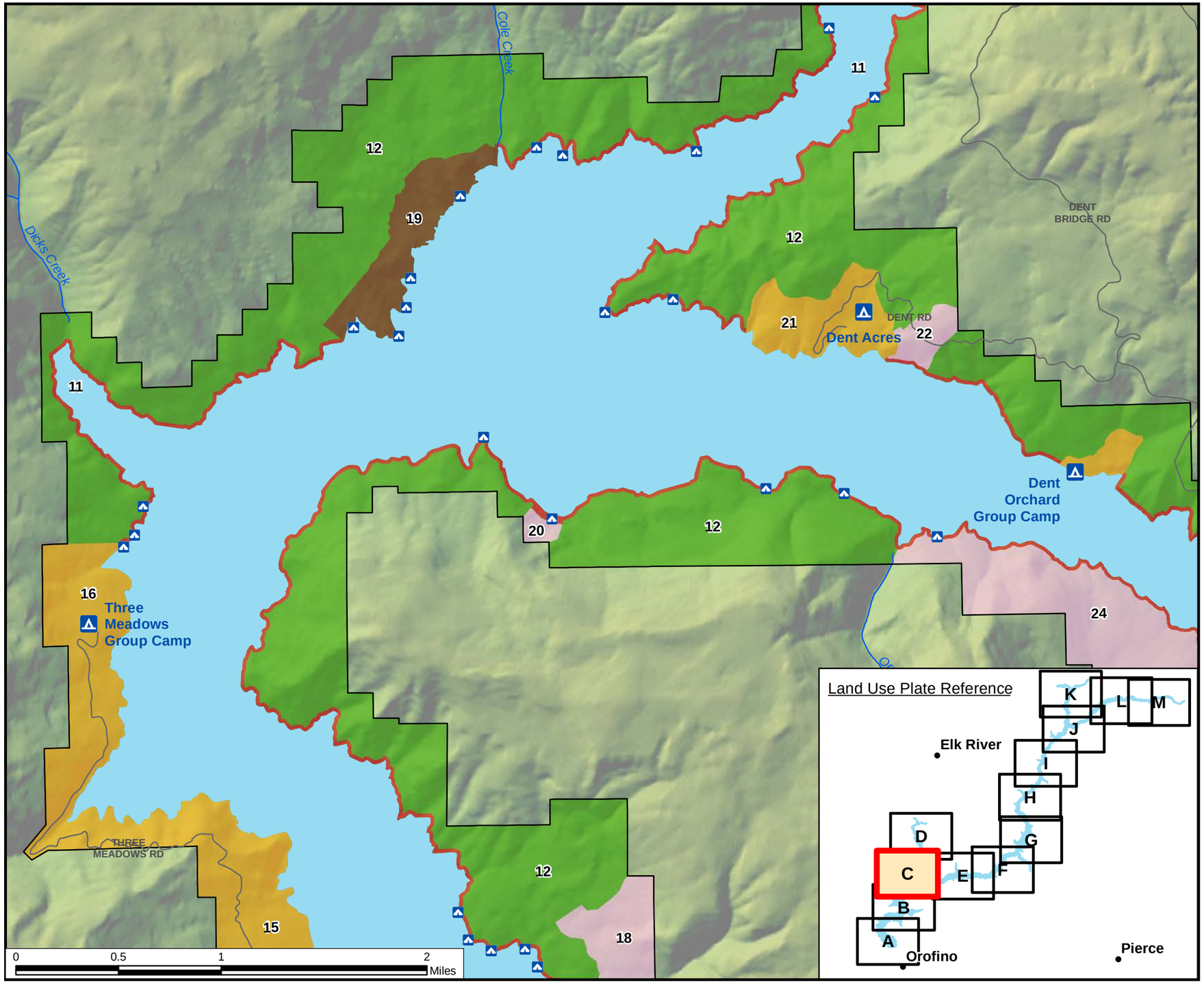
Dworshak Master Plan

PLATE 4B of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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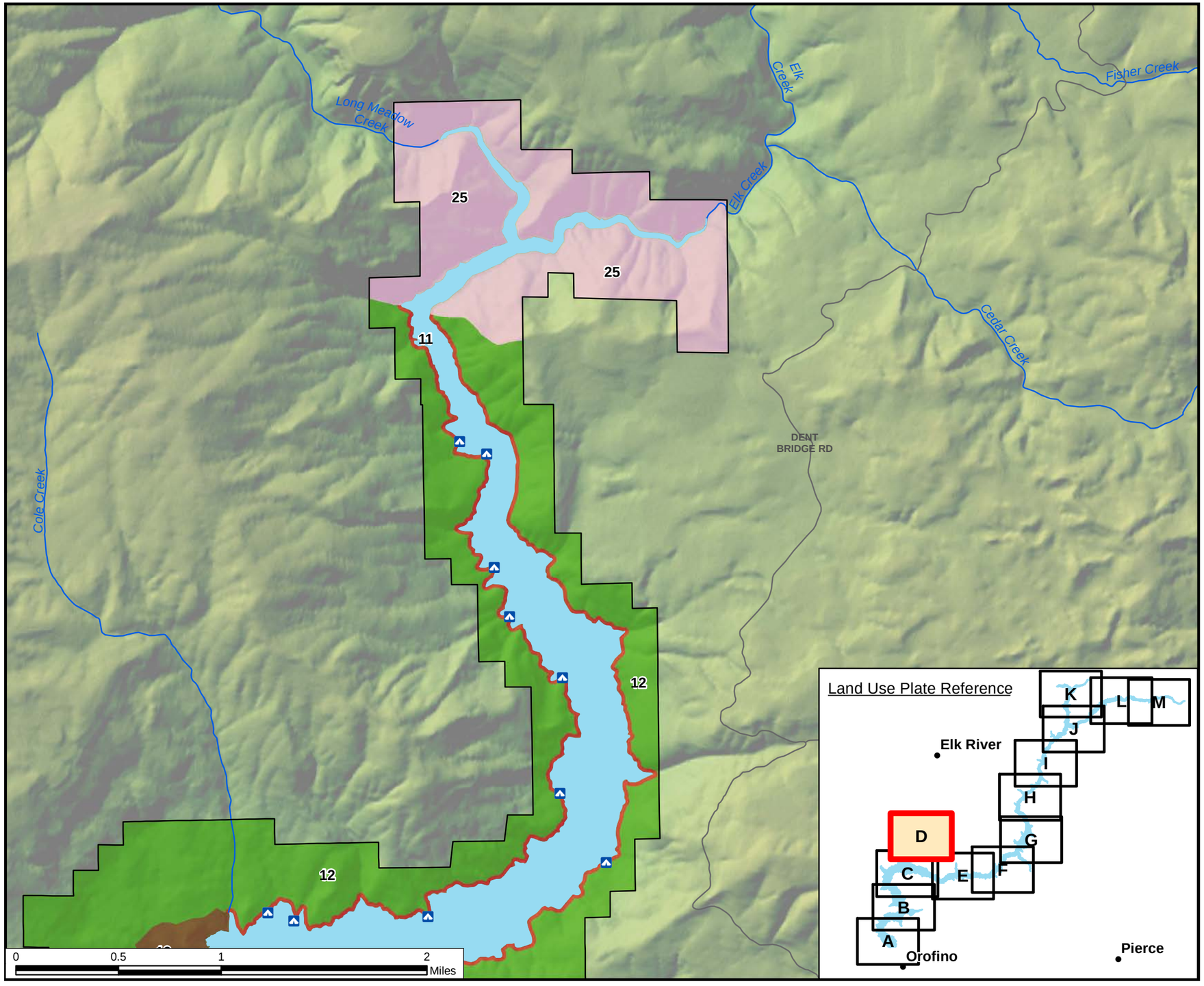
Dworshak Master Plan

PLATE 4C of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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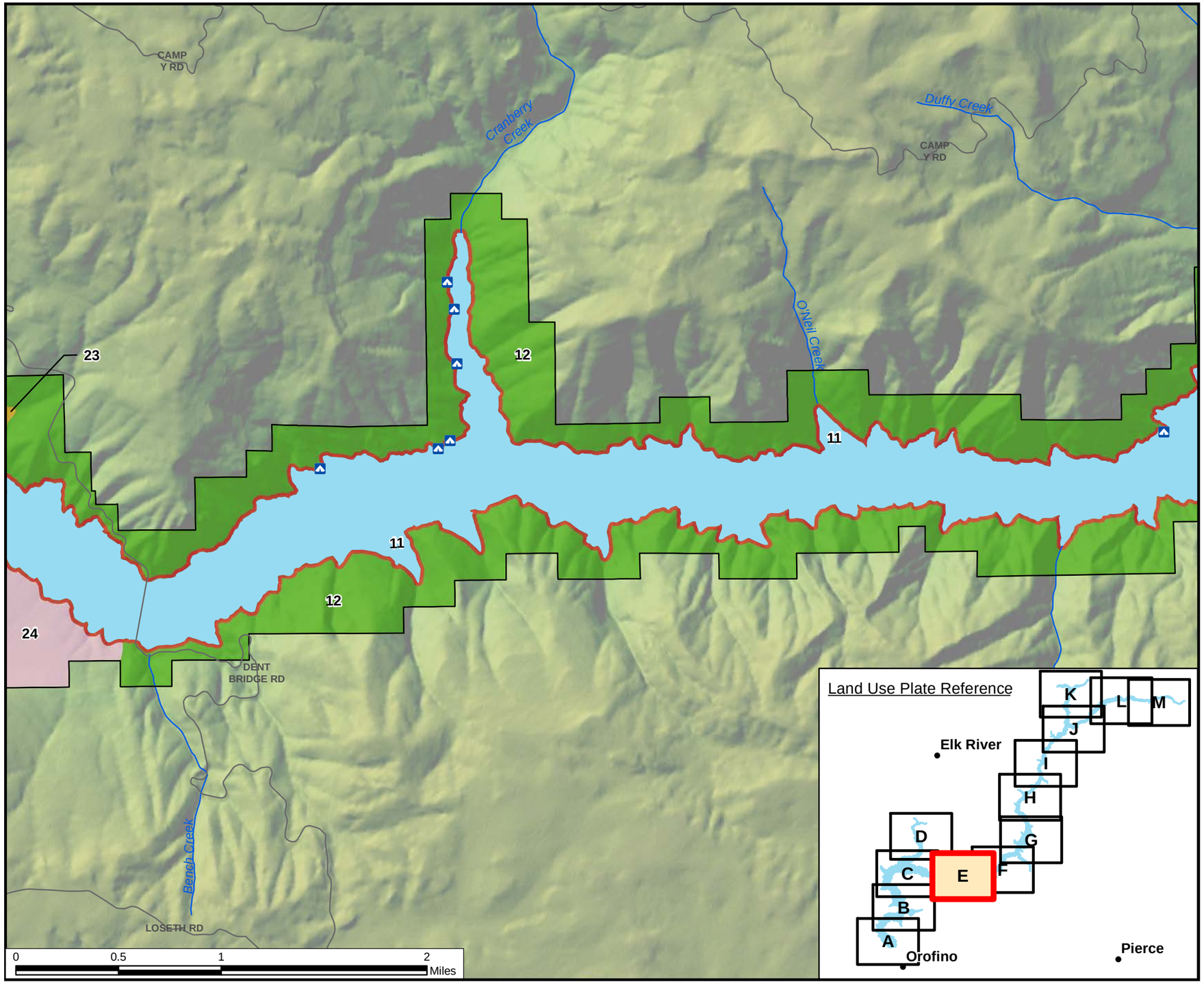
Dworshak Master Plan

PLATE 4D of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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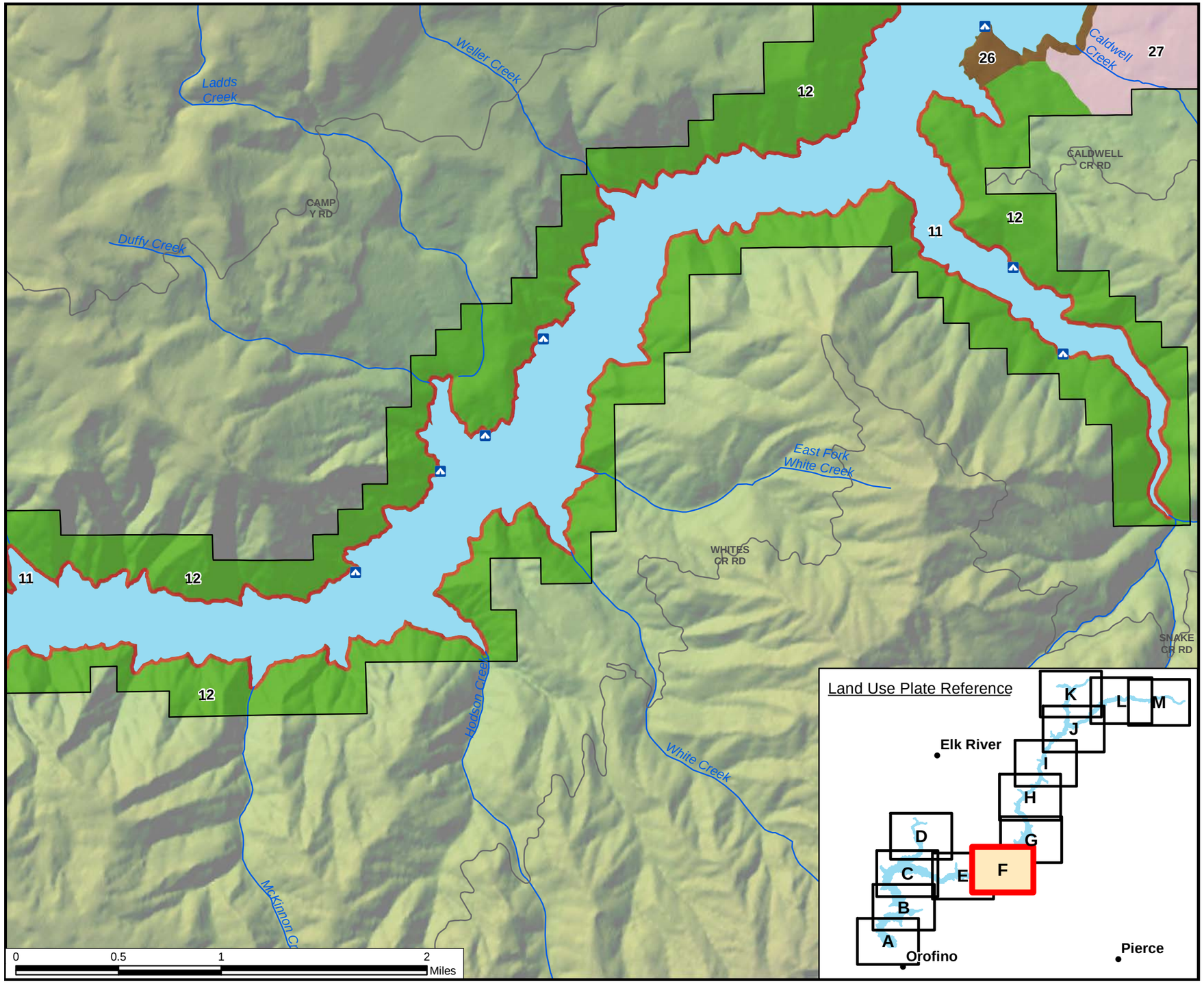
Dworshak Master Plan

PLATE 4E of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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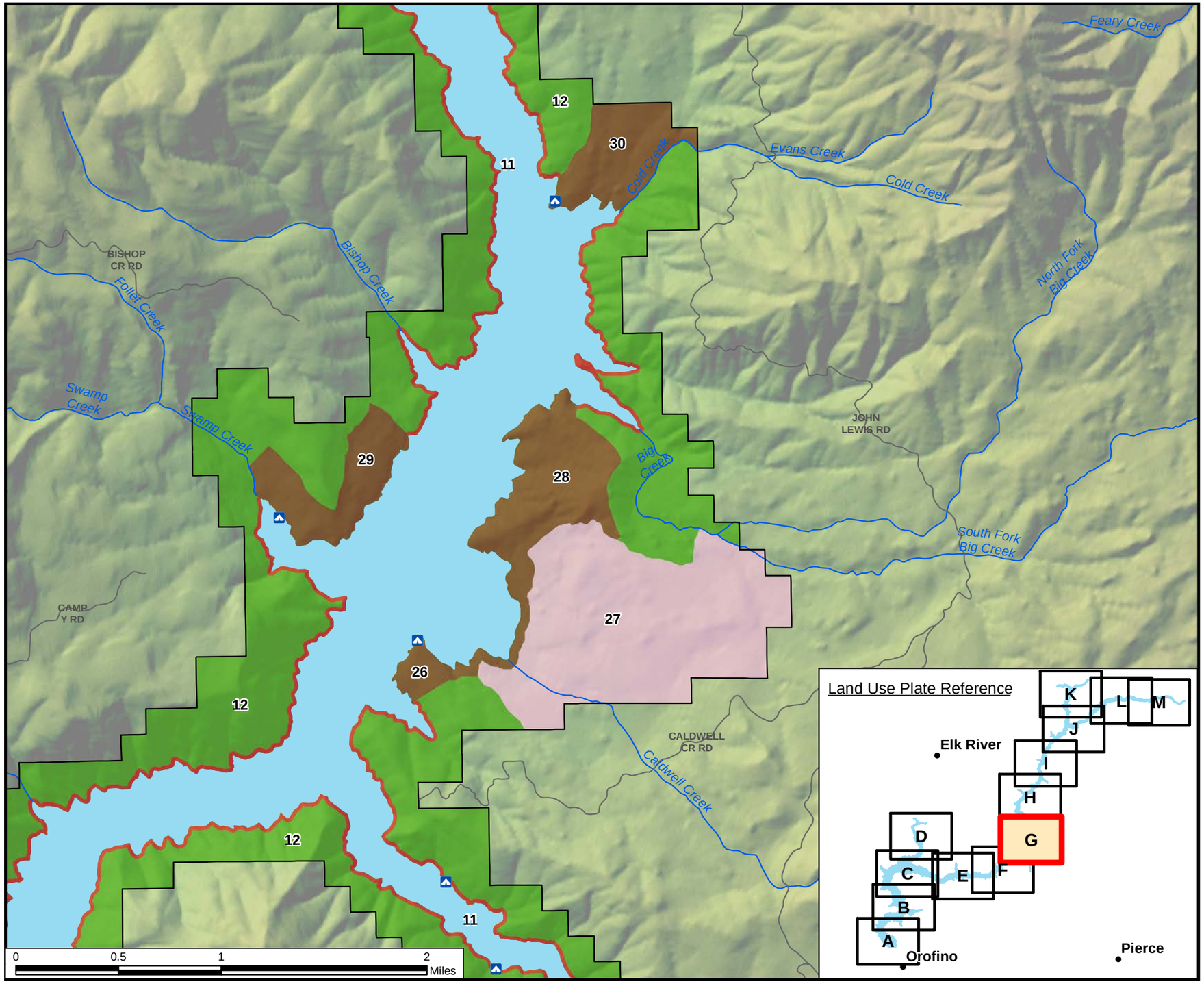
Dworshak Master Plan

PLATE 4F of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers
Walla Walla District

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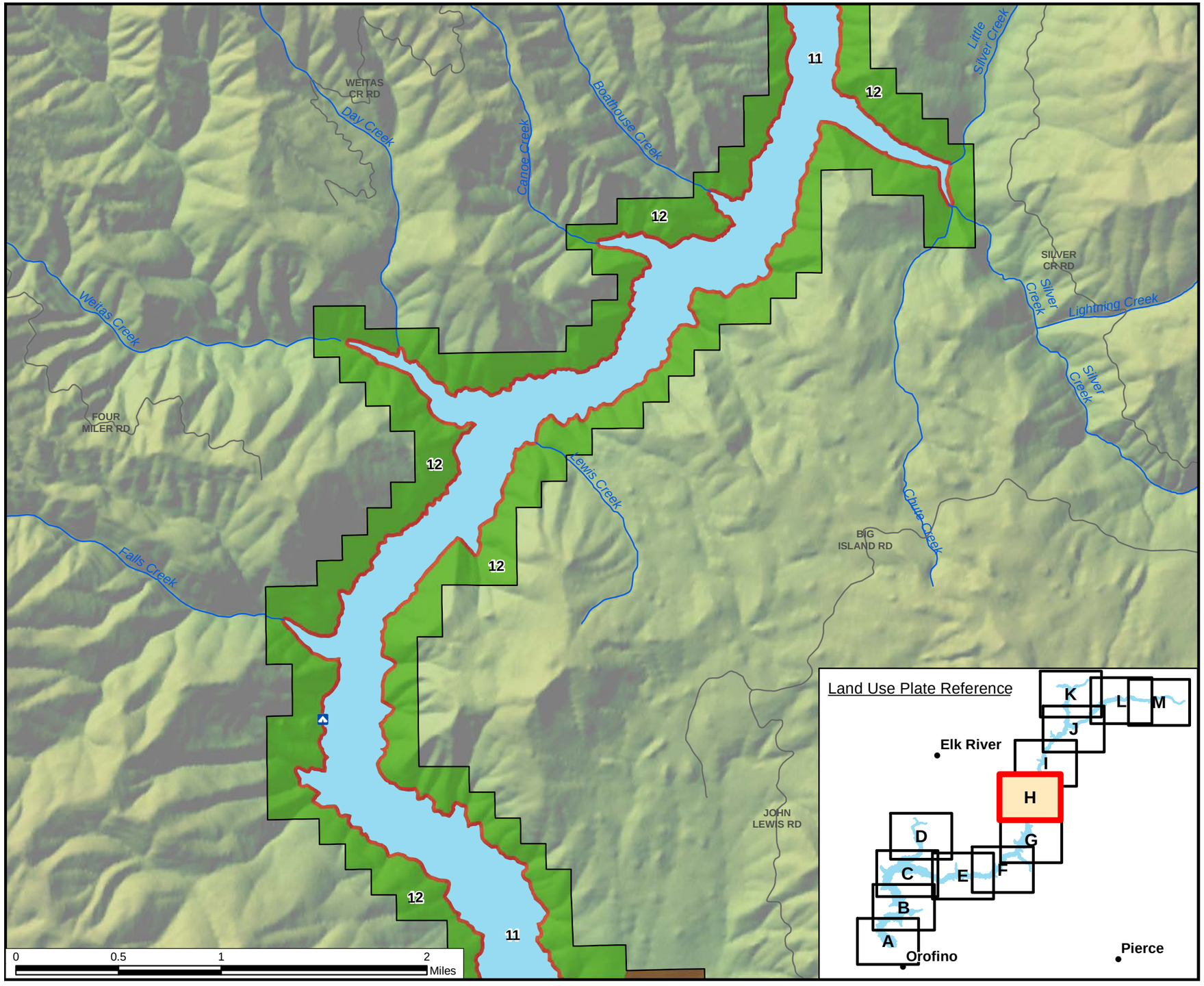
Dworshak Master Plan

PLATE 4G of PLATES 4A-4M

DWORSHAK
LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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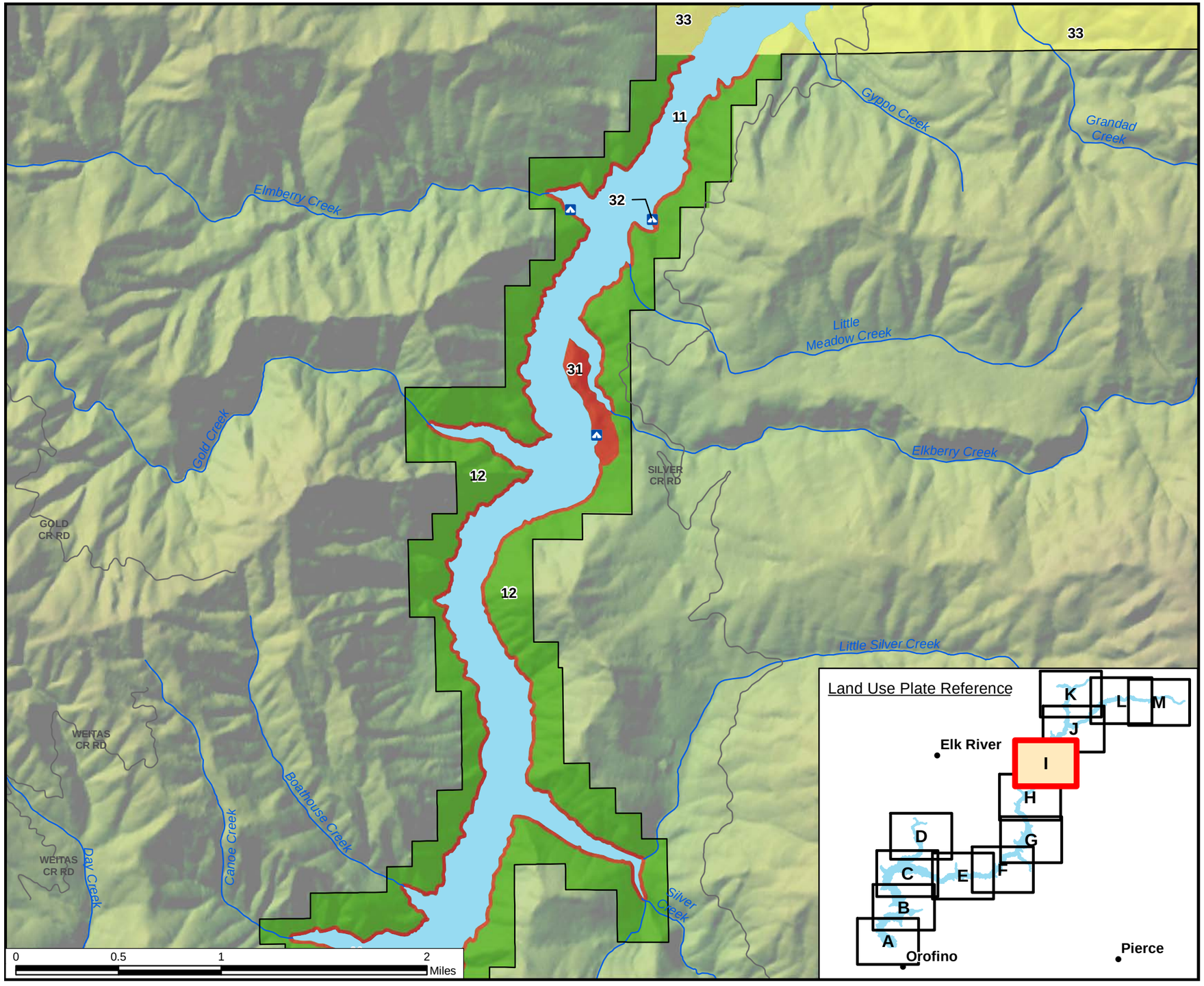
Dworshak Master Plan

PLATE 4H of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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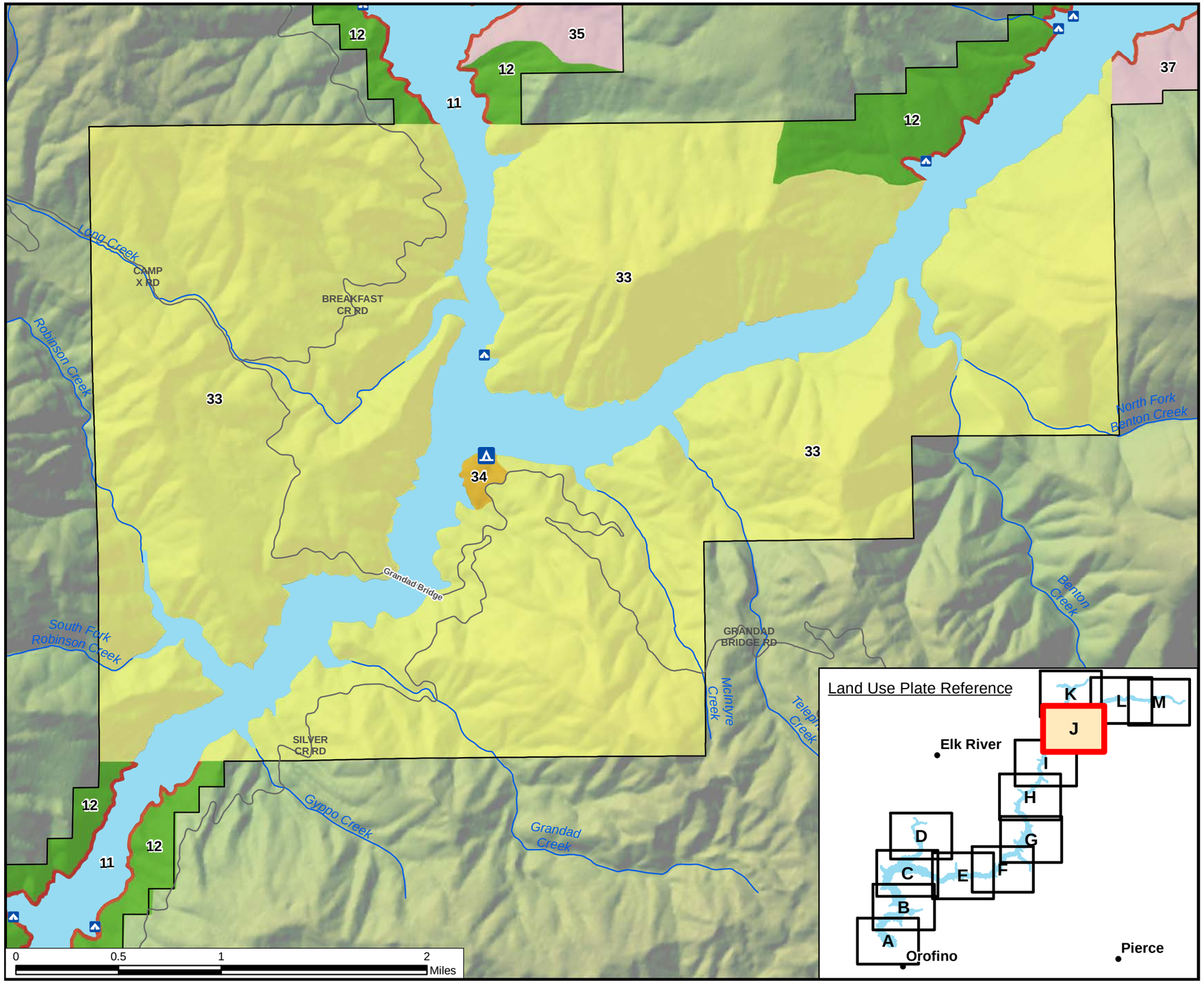
Dworshak Master Plan

PLATE 4I of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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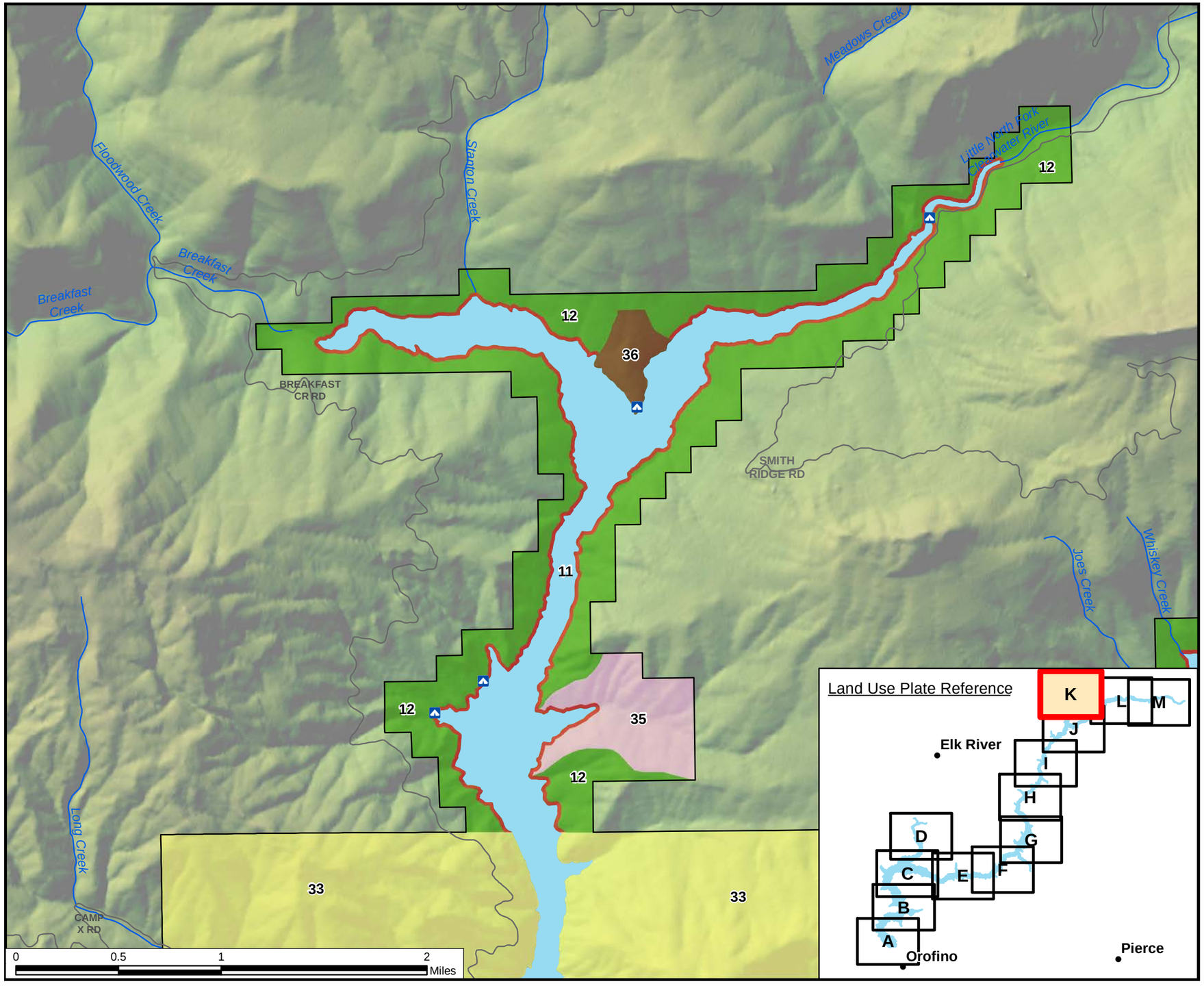
Dworshak Master Plan

PLATE 4J of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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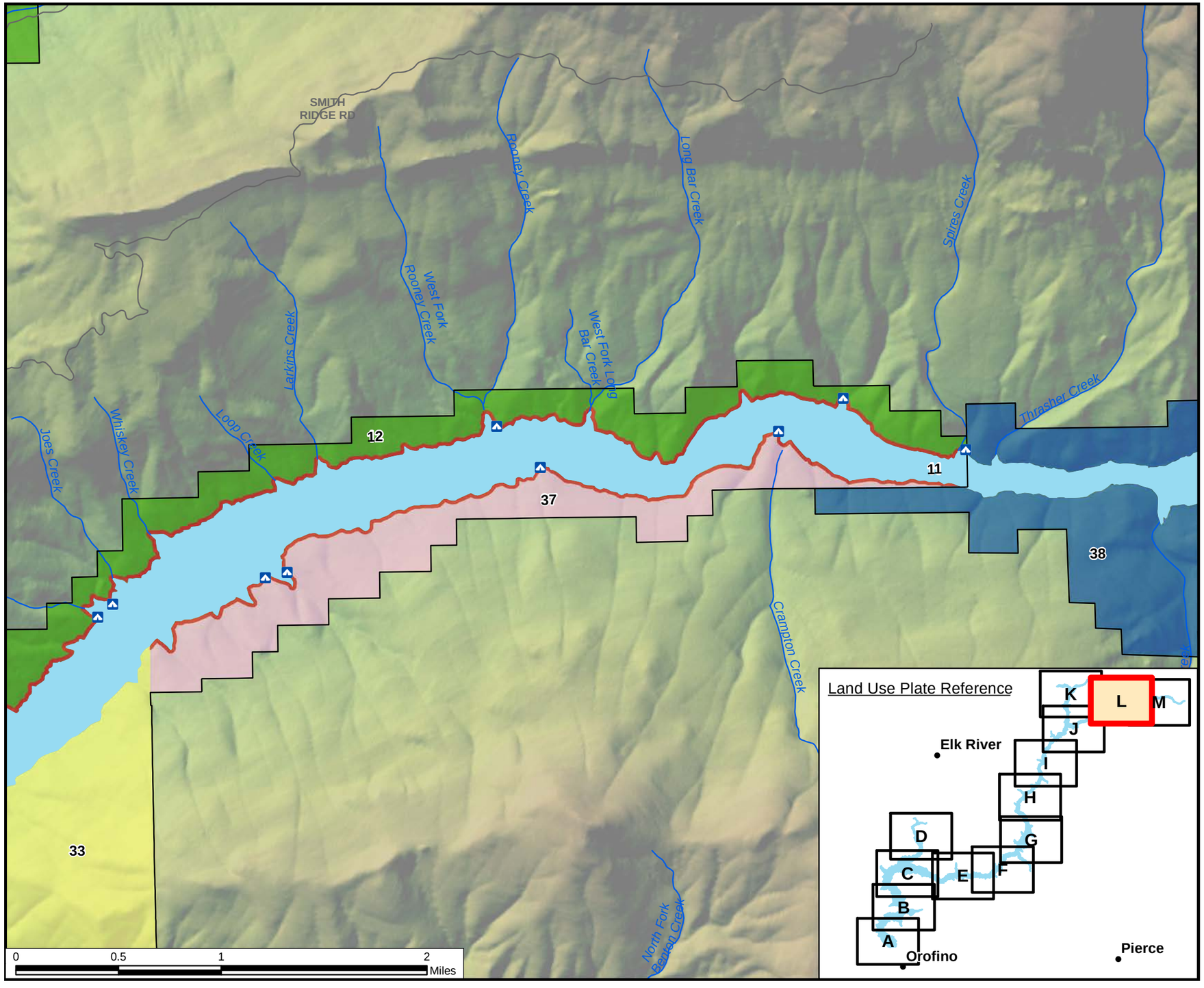
Dworshak Master Plan

PLATE 4K of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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Dworshak Master Plan

PLATE 4L of PLATES 4A-4M

DWORSHAK
LAND CLASSIFICATION

SMITH RIDGE RD

Spires Creek

Thrasher Creek

Milk Creek

Syringa Creek

Salmon Creek

Crampton Creek

Butte Creek

Butte Creek

West Fork Butte Creek

12

37

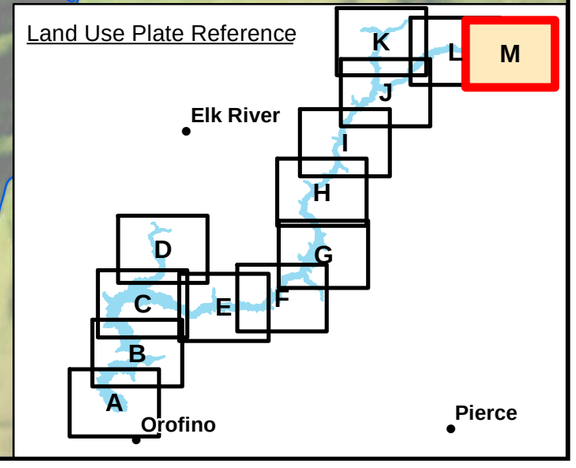
11

38

38

0 0.5 1 2 Miles

Land Use Plate Reference



Map Legend

- Campground
- Primitive Camp
- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir

Land Use Classification

- Environmentally Sensitive Area
- Project Operations
- High Density Recreation
- Mitigation
- Easement

Multiple Resource Management Lands

- Recreation - Future Development
- Recreation - Low Density
- Wildlife Management

US Army Corps of Engineers ®
Walla Walla District

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Dworshak Master Plan

PLATE 4M of PLATES 4A-4M

DWORSHAK LAND CLASSIFICATION

SECTION 5 - RESOURCE PLAN

This section describes the management plans for each area of classification within the master plan. The management plans identified are in broad terms of how the project lands will be managed. These classifications were developed and approved in the PUP, however their descriptions are important enough to understanding the resource, they are placed here in full text rather than reference. A more descriptive plan for managing these lands can be found in the Dworshak Reservoir OMP.

5.1 Dworshak National Fish Hatchery, Land Classification Unit (LCU) 01

5.1.1 Land Classification. Project Operations

5.1.2 Managing Agency. U.S. Army Corps of Engineers

5.1.3 Location. See Plate 4A

5.1.4 Acres. 21

5.1.5 Land Classification Rationale. Dworshak National Fish Hatchery was built to mitigate for effects on migratory fish species caused by the construction of the dam. Land in this area is allocated to project operations, and are classified for this use.

5.1.6 Site Features and Development Potential. This site includes the fish hatchery and its supporting facilities. Public tours are available. No development needs or potential for this site were identified in this Plan.

5.2 North Fork Clearwater Shoreline, LCU 02

5.2.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.2.2 Managing Agency. U.S. Army Corps of Engineers

5.2.3 Location. See Plate 4A

5.2.4 Acres. 46

5.2.5 Land Classification Rationale. The area along the river is used extensively by the public for fishing and casual walking and is primarily managed for low density recreation.

5.2.6 Site Features and Development Potential. The area has an undeveloped parking area used by those fishing from the bridge at Ahsahka

and along the shore of the river. Visitors use the parking area to access a walking trail along the river that goes from the bridge to the base of the dam. A developed parking area could be constructed as public desire increases. The trail could be improved with amenities, such as benches, tables, and other trail features. It would also be an appropriate area to provide universally accessible fishing platforms.

5.3 Ahsahka Hillside, LCU 03

5.3.1 Land Classification. Environmentally Sensitive Areas

5.3.2 Managing Agency. U.S. Army Corps of Engineers

5.3.3 Location. See Plate 4A

5.3.4 Acres. 381

5.3.5 Land Classification Rationale. The Ahsahka Hillside environmentally sensitive area is located on the steep south-facing slope above State Highway 7. Its predominant habitat type is ponderosa pine (*Pinus ponderosa*)/bluebunch wheatgrass (*Pseudoroegneria spicata*), and the dominant overstory species on the site is ponderosa pine. Several state listed species associated with ponderosa pine ecosystems were documented within this area; broad-fruit mariposa (*Calochortus nitidus*), western starflower (*Trientalis latifolia*), and pygmy nuthatch (*Sitta pygmaea*) (Bowers and Nadeau, 2002). Mehl and Haufler (2003) stated, “Today, ponderosa pine ecosystems are considered endangered, with current estimates of loss between 85-98 percent of its historical amounts.” R.F. Noss, et al. (1995) listed old growth ponderosa pine forests as endangered (85-95 percent decline) in the northern Rocky Mountains, Intermountain West, and eastside Cascade Mountains.

Because of the current status of ponderosa pine ecosystems throughout the region, they were selected as a priority habitat for Dworshak Reservoir (See Appendix F, Priority Habitats). The Ahsahka Hillside was chosen as an environmentally sensitive area due to its ecological significance.

5.3.6 Site Features and Development Potential. This site has potential for ponderosa pine ecosystem enhancement. Future management includes thinning and prescribed burning to promote conditions characteristic of historic ponderosa pine ecosystems. Non-motorized recreation is high within this area, primarily due to a heavily used trail system and good whitetail deer hunting. Continued future management should encourage non-motorized use and engagement in educational opportunities, such as interpretive signs to increase public awareness of ponderosa pine ecosystems.

5.4 Wildlife Management Below Dam, LCU 04

5.4.1 Land Classification. Multiple Resource Management–Wildlife Management

5.4.2 Managing Agency. U.S. Army Corps of Engineers

5.4.3 Location. See Plate 4A

5.4.4 Acres. 486

5.4.5 Land Classification Rationale. The area provides significant wildlife habitat and limited recreational benefit or opportunity.

5.4.6 Site Features and Development Potential. Because of the area's proximity to the dam and other associated facilities, this area is set apart from other wildlife management land. In planning for possible future development care should be taken to avoid risks posed by utility lines and public restricted areas. Planning for wildlife management activities may also be impacted by the same safety factors.

5.5 Dworshak Dam, LCU 05

5.5.1 Land Classification. Project Operations

5.5.2 Managing Agency. U.S. Army Corps of Engineers

5.5.3 Location. See Plate 4A

5.5.4 Acres. 210

5.5.5 Land Classification Rationale. All land under this classification includes buildings, facilities, and utility lines directly associated with the operation and maintenance of the dam and reservoir.

5.5.6 Site Features and Development Potential. This site features Dworshak Dam, its associated facilities, the visitor center, maintenance buildings, and a rock quarry. No additional development for the site is identified in this Plan.

5.6 Bruce's Eddy Recreation Area, LCU 06

5.6.1 Land Classification. Multiple Resource Management–Future Recreation

5.6.2 Managing Agency. U.S. Army Corps of Engineers

5.6.3 Location. See Plate 4A

5.6.4 Acres. 63

5.6.5 Land Classification Rationale. This area has future recreation potential because of its proximity to the city of Orofino, its existing facilities, and low gradient slopes that support recreational developments.

5.6.6 Site Features and Development Potential. Existing boat launches and the parking area will continue to be managed under Multiple Resource Management–Low Density Recreation. Potential developments include, but are not limited to, marina development, resort development, a campground, and concession-type services.

5.7 Dworshak Dam Viewpoint, LCU 07

5.7.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.7.2 Managing Agency. U.S. Army Corps of Engineers

5.7.3 Location. See Plate 4A

5.7.4 Acres. 4

5.7.5 Land Classification Rationale. This is a day use area managed for public access. It is classified as low density recreation due to its low visitation. Visitors typically do not stay for long, and overnight camping is not allowed.

5.7.6 Site Features and Development Potential. The area has an overlook view of the dam and offers a covered shelter and restrooms. It will continue to be managed as low density recreation. However, improvements, such as landscaping and picnic facilities, could increase the aesthetics to be more inviting and usable by visitors.

5.8 Dam View Camping Area, LCU 08

5.8.1 Land Classification. Multiple Resource Management–Future Recreation

5.8.2 Managing Agency. U.S. Army Corps of Engineers

5.8.3 Location. See Plate 4A

5.8.4 Acres. 19

5.8.5 Land Classification Rationale. This site features a series of flats and has the potential for development as an additional camping area. Its proximity to the marina at Big Eddy Recreation Area supports recreation purposes. It will be managed as Multiple Resource Management–Low Density Recreation until demand justifies development for a higher density recreation site.

5.8.6 Site Features and Development Potential. This site features a series of flat benches, one of which is paved and currently used for overflow camping. A few benches, fire rings, and a portable toilet are the only amenities. Potential for this area includes, but is not limited to, developed campsites on the series of connected benches and increased amenities (i.e., running water and permanent bathrooms). One or several of these flat areas may be considered for addition to the recreation outgrant for the marina.

5.9 Marina at Big Eddy Recreation Area, LCU 09

5.9.1 Land Classification. High Density Recreation

5.9.2 Managing Agency. U.S. Army Corps of Engineers and Idaho State Parks and Recreation

5.9.3 Location. See Plate 4A

5.9.4 Acres. 8.5

5.9.5 Land Classification Rationale. This site features the marina, parking lot, lodge, and other recreational amenities.

5.9.6 Site Features and Development Potential. The existing marina features a two-lane boat launch, handling dock, tie-up dock, 101 boat slips, and a floating fuel station. There is typically a waiting list for rental slips and the marina has the potential for expansion. The existing lodge building, originally built to house a restaurant, is currently under-utilized and could support a variety of concessionaire-type activities. Although the marina and water-based facilities merit investigation of expansion, the land surrounding the existing facilities is steep and not conducive to future development or expansion. Any expansion of water-based facilities may necessitate expansion of current parking facilities, potentially at the expense of existing park and picnic sites.

5.10 Merry's Bay Recreation Area, LCU 10

5.10.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.10.2 Managing Agency. U.S. Army Corps of Engineers

5.10.3 Location. See Plate 4A

5.10.4 Acres. 4.5

5.10.5 Land Classification Rationale. This is a day use area that sees moderately low use. Site conditions limit expansion.

5.10.6 Site Features and Development Potential. The existing parking lot and picnicking areas could be evaluated for better aesthetics to be more inviting to the public and to provide additional picnic areas. The existing trail head could be improved through interpretive signage. Additional development would require investigation.

5.11 Low Density Shoreline Recreation, LCU 11

5.11.1 Land Classification. Multiple Resource Management-Low Density Recreation

5.11.2 Managing Agency. U.S. Army Corps of Engineers

5.11.3 Location. See Plates 4A through 4M

5.11.4 Acres. 1,829

5.11.5 Land Classification Rationale. The majority of the shoreline on Dworshak Reservoir was designated as low density recreation for a variety of shore-based visitor opportunities, including mini-camps. It contains mini-camps and allows for additional mini-camps to be located along the shoreline. Activities relating to wildlife management, such as forest thinning and burning, will not take place within this area. Further management actions should support development of an aesthetically pleasing shoreline for reservoir users.

5.11.6 Site Features and Development Potential. A variety of recreational activities may occur on this land, including campgrounds with less than 15 campsites, designated motorized access, primitive designated boat launch sites, and larger campgrounds. Activities and development will be evaluated as public demand requires.

5.12 Wildlife Management Land, LCU 12

5.12.1 Land Classification. Multiple Resource Management–Wildlife Management

5.12.2 Managing Agency. U.S. Army Corps of Engineers

5.12.3 Location. See Plates 4A through 4M

5.12.4 Acres. 15,009

5.12.5 Land Classification Rationale. A large portion of land surrounding the reservoir is designated Wildlife Management for stewardship of fish and wildlife resources and its important environmental and ecological benefits provided to the public. It does not restrict general public access or approved recreational activities.

5.12.6 Site Features and Development Potential. Land surrounding Dworshak contains many important wildlife habitats. Development and promotion of healthy habitats can be accomplished through forest management techniques, including thinning, slashing, burnings, and sensitive habitat protection. Additional management techniques and other activities are permitted as long as they do not conflict with the primary goal of wildlife management.

5.13 Freeman Creek Point Environmentally Sensitive Area, LCU 13

5.13.1 Land Classification. Environmentally Sensitive Area

5.13.2 Managing Agency. U.S. Army Corps of Engineers

5.13.3 Location. See Plate 4B

5.13.4 Acres. 175

5.13.5 Land Classification Rationale. The Freeman Creek Point Environmentally Sensitive Area encompasses 175 acres on a steep south-facing slope dominated by ponderosa pine. This site was recommended as a 474-acre sensitive area by IDFG. Two state listed species associated with ponderosa pine ecosystems were documented within this area: broad-fruit mariposa (*Calochortus nitidus*) and Jessica's aster (*Aster jessicae*) (Bowers and Nadeau, 2002). Jessica's aster is a USFWS Species of Concern endemic to the Palouse Prairie region of eastern Washington and Idaho. Its range is small and most populations occur on private land. Remnant populations tend to be small and fragmented. Many border agricultural fields and pastures where they are threatened by herbicide spraying and roadwork activities. Four

populations found around Dworshak Reservoir represent the only populations of Jessica's aster known to occur on public land within the state of Idaho. Bowers and Nadeau (2002) point out that, "Jessica's aster is probably the most vulnerable and globally rare species occurring in the Dworshak Study Area."

Because of the current status of Jessica's aster and the ponderosa pine ecosystem in which it is found, this area is classified as environmentally sensitive.

5.13.6 Site Features and Development Potential. The site is steep. Typically, environmentally sensitive areas are restricted to limited or no recreation development. An existing hiking trail goes through this land unit with no significant impacts. This site has potential for ponderosa pine ecosystem enhancement, but further study is necessary to determine how a restoration project may affect the existing sensitive species. If weed control programs are considered, their effect on native plants must be carefully considered. Herbicide spraying is a potential threat to rare species, especially to Jessica's aster and bank monkeyflower (*Mimulus clivicola*), species that occur in small, localized populations.

5.14 Canyon Creek Recreation Area, LCU 14

5.14.1 Land Classification. High Density Recreation

5.14.2 Managing Agency. U.S. Army Corps of Engineers

5.14.3 Location. See Plate 4B

5.14.4 Acres. 10

5.14.5 Land Classification Rationale. The Canyon Creek boat launch and camping area fits the criteria set forth for high density recreation use. Expansion beyond the existing site boundaries is allowed

5.14.6 Site Features and Development Potential. The area has more than 15 campsites and a boat launch. It has potential for expansion, and because it is heavily used for camping by local residents, demand is likely adequate to support development of additional facilities. However, surrounding land is relatively steep, effectively preventing large-scale facility development. Some smaller flat areas at the site would allow for additional campsites. An existing trailhead could be improved and expanded to provide a longer hiking experience. Extension of the existing boat ramp, combined with the addition of more parking, would facilitate boating from Canyon Creek when water levels drop more than 40 feet.

5.15 Freeman Creek, LCU 15

5.15.1 Land Classification. High Density Recreation

5.15.2 Managing Agency. Idaho State Parks and Recreation

5.15.3 Location. See Plate 4B

5.15.4 Acres. 591

5.15.5 Land Classification Rationale. Freeman Creek is outgranted to Idaho State Parks and Recreation as a high density, intensive-use recreation area, although much of the land within this designation is not developed. Its footprint was determined by the legal real estate documents associated with the outgrant.

5.15.6 Site Features and Development Potential. Freeman Creek is also known as Dworshak State Park. The area has a variety of camping facilities ranging from car-based tent camping to recreational vehicle (RV) areas and small rental cabins. It has many other amenities, including a boat launch, swim beach, moorage docks, playground, amphitheater, and archery range. The flat topography lends itself to future development as needs and demands justify.

5.16 Three Meadows Group Camp, LCU 16

5.16.1 Land Classification. High Density Recreation

5.16.2 Managing Agency. Idaho State Parks and Recreation

5.16.3 Location. See Plate 4C

5.16.4 Acres. 277

5.16.5 Land Classification Rationale. Three Meadows is part of the land outgranted to the state of Idaho and is part of Dworshak State Park. The area is an existing group camp designated as Recreation because of the intensity of use and existing amenities.

5.16.6 Site Features and Development Potential. Three Meadows group camp has a large central dining hall, commercial grade kitchen, small bunkhouse-style cabins, and a large shower building, as well as locations for tents and/or RVs. The area is similar to Freeman Creek and, with low gradient slopes, is well suited for future expansion and development.

5.17 Little Bay, LCU 17

5.17.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.17.2 Managing Agency. U.S. Army Corps of Engineers

5.17.3 Location. See Plate 4B

5.17.4 Acres. 6

5.17.5 Land Classification Rationale. The shoreline is classified as low density recreation for its opportunities provided to the public.

5.17.6 Site Features and Development Potential. This area has a relatively high concentration of mini-camps, some of the most intensively used on the reservoir. It has the potential for equestrian use or motorized access. A conflict arises, however, because many boaters want the mini-camps to continue to be accessible only by water.

5.18 Little Bay Environmentally Sensitive Area, LCU 18

5.18.1 Land Classification. Environmentally Sensitive Area

5.18.2 Managing Agency. U.S. Army Corps of Engineers

5.18.3 Location. See Plate 4B

5.18.4 Acres. 112

5.18.5 Land Classification Rationale. This area encompasses 112 acres on a moderate south-facing slope dominated by ponderosa pine (*Pinus ponderosa*) and Douglas fir (*Pseudotsuga menziesii*). The primary habitat type is grand fir (*Abies grandis*)/ninebark (*Physocarpus opulifolious*), which has been identified as a historical ponderosa pine ecosystem, given the fire regimen (Mehl and Haufler, 2003). Several state listed species associated with ponderosa pine ecosystems were documented within this area: Jessica's aster (*Aster jessicae*), Palouse thistle (*Cirsium brevifolium*), and western starflower (*Trientalis latifolia*) (Bowers and Nadeau, 2002). Long-eared myotis (*Myotis erotis*) was documented and is associated with the area rock outcropping. This site was recommended as a sensitive area by IDFG, and included 613 acres. Jessica's aster is an USFWS Species of Concern endemic to the Palouse Prairie region of eastern Washington and Idaho. Its range is small, and most populations occur on private land. Remnant populations tend to be small and fragmented and many border agricultural fields and pastures where they are threatened by herbicide spraying and

roadwork activities. The four populations found on Dworshak Reservoir represent the only populations of Jessica's aster known to occur on public land within the state of Idaho. Bowers and Nadeau (2002) states that, "Jessica's aster is probably the most vulnerable and globally rare species occurring in the Dworshak Study Area."

Because of the current status of Jessica's aster, the occurrence of several other sensitive species, and the ponderosa pine ecosystem, this area is classified environmentally sensitive.

5.18.6 Site Features and Development Potential. This site has previously been treated for ponderosa pine ecosystem enhancement through restoration, including thinning and prescribed burning. These actions were considered for having a positive effect on Jessica's aster; post-treatment monitoring of the Jessica's aster populations by IDFG demonstrated a positive effect on the populations.

If weed control programs are implemented within this sensitive area, it is important to consider their effect on native plants. Herbicide spraying is a potential threat to rare species, especially to Jessica's aster and bank monkeyflower (*Mimulus clivicola*), species that occur in small, localized populations.

Typically, environmentally sensitive areas are restricted to limited or no recreation development. Because of the low gradient slopes in this area, there is potential for future recreation facilities. However, care must be taken to preserve the area. If motorized access is designated or equestrian trails planned for the Little Bay area, new roads/trails should be built outside of the sensitive area to avoid dispersal of weed seed in and around the populations of Jessica's aster.

5.19 Elk Creek Meadows, LCU 19

5.19.1 Land Classification. Multiple Resource Management–Future Recreation

5.19.2 Managing Agency. U.S. Army Corps of Engineers

5.19.3 Location. See Plate 4C

5.19.4 Acres. 155

5.19.5 Land Classification Rationale. Using public input and Corps analysis, a trade-off between Future Recreation and Wildlife Management was used to determine the Future Recreation classification based on the importance of the open meadows for elk. Size and position of LCU 19 was selected to

accommodate future recreation in close proximity to the water while reserving the upland meadows for wildlife habitat. This area will be managed as Multiple Resource Management–Wildlife Management until development of this area is scheduled.

5.19.6 Site Features and Development Potential. There is a current demand for Elk Creek Meadows to be used for ATVs as evidenced by the numerous unauthorized, user developed ATV trails in the area. Surrounding forests have received treatments of thinning and under-burning and the resultant haul roads may provide an opportunity to develop an ATV loop trail system for access to the mini-camps. If this is determined to be an appropriate area for future ATV development, a designated trail system would keep ATVs on the trails and out of sensitive areas. If demand warrants, additional mini-camps could be located along the shoreline. The low slopes have potential for future high density recreation development. If and when future development does take place, it must avoid impacts to the ecologically important meadows and wetlands present on the site. It is possible the area could be developed for full size vehicles as well. However, Potlatch Corporation has a gate on adjacent property that is closed to full size vehicles that would prohibit this type of use. Should Potlatch Corporation open this gate to full size vehicles, the opportunity to provide access will be evaluated.

5.20 Cold Springs Environmentally Sensitive Area, LCU 20

5.20.1 Land Classification. Environmentally Sensitive Area

5.20.2 Managing Agency. U.S. Army Corps of Engineers

5.20.3 Location. See Plate 4C

5.20.4 Acres. 14

5.20.5 Land Classification Rationale. This area includes 14 acres in and around an isolated wetland. Along with the entire south side of the reservoir (Cold Springs group camp to Dent Bridge), this site was recommended as environmentally sensitive by IDFG that included 1,229 acres. Of the 1,229 acres, the final areas chosen for this classification were the Cold Springs Environmentally Sensitive Area (14 acres) and the Dent Acres Environmentally Sensitive Area (38 acres). Only one sensitive species, western toad (*Bufo boreas*), was detected by IDFG in the Cold Springs sensitive area.

Wetland communities are considered worthy of protection by various agencies and organizations across the state. These communities were selected as a priority habitat by the Corps (Section 2.3.6b). The IDFG website states, “It is estimated that since the 1780s, 56 percent of Idaho's wetlands

have been lost. Of the remaining wetlands, many have been degraded by hydrologic alteration and impacts to vegetation and soils" (http://fishandgame.idaho.gov/cms/tech/CDC/ecology/wetlands.cfm, accessed August 2009). Furthermore, the organization, International 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). Isolated non-riverine wetlands located near the Cold Springs group camp were classified as environmentally sensitive due to their ecological significance.

5.20.6 Site Features and Development Potential. The site primarily supports wetland communities surrounded by moist conifer forests. Typically, environmentally sensitive areas are restricted to limited or no recreation development. There is potential for recreation as the environmentally sensitive area is located adjacent to the Cold Springs group camp. To accommodate low density recreation, the shoreline boundary designation for low density recreation was extended to ensure adequate space for future uses of the group camp. A trail along the shore may cross through the sensitive area, providing access to the mini-camps. It was originally established by an equestrian group with permission from the Corps. Impacts to the sensitive area must be analyzed prior to expanding equestrian usage.

5.21 Dent Acres Recreation Area, LCU 21

5.21.1 Land Classification. High Density Recreation

5.21.2 Managing Agency. U.S. Army Corps of Engineers

5.21.3 Location. See Plate 4C

5.21.4 Acres. 140.5

5.21.5 Land Classification Rationale. Dent Acres Recreation Area is currently used for high density recreation. Its footprint was expanded beyond the actual footprint of existing facilities to allow for future expansion.

5.21.6 Site Features and Development Potential. Dent Acres has a boat ramp that is used nearly year-round (unless closed by snow), campsites for RVs, and a sun shelter. Although used quite extensively during the summer, many of the campsites are not large enough to accommodate RVs. Upgrades to water hydrants (frost-free) have been made to accommodate early and late season use (primarily by hunters). Upgrades to power pedestals provide 20/30/50 amp capability. There may be opportunities to enlarge some of the sites or construct new facilities in previously undeveloped areas. Car-based tent camping, additional hiking trails, mountain bike trails, a fueling station, and other amenities could be appropriate for this area.

5.22 Dent Acres Environmentally Sensitive Area, LCU 22

5.22.1 Land Classification. Environmentally Sensitive Area

5.22.2 Managing Agency. U.S. Army Corps of Engineers

5.22.3 Location. See Plate 4C

5.22.4 Acres. 38

5.22.5 Land Classification Rationale. This sensitive area is on a moderate to steep southwest-facing slope characterized by a mosaic of dry forest cover and openings. The primary habitat type is grand fir (*Abies grandis*)/ninebark (*Physocarpus opulifolious*) that has been identified as a historical ponderosa pine ecosystem, given the fire regimen (Mehl and Haufler, 2003). Along with additional land to the west, this site was recommended as environmentally sensitive by IDFG that included 613 acres. Various sensitive species have been documented in the broader area recommended by IDFG. However, the Corps decided only a small isolated population of Jessica's aster (*Aster jessicae*) that occurs on the east end of the recommended sensitive area warranted active protection, as described previously.

Jessica's aster is an USFWS Species of Concern endemic to the Palouse Prairie region of eastern Washington and adjacent Idaho. Its range is small, and most populations occur on private land. Remnant populations tend to be small and fragmented and many border agricultural fields and pastures where they are threatened by herbicide spraying and roadwork activities. The four populations found on Dworshak Reservoir represent the only populations of Jessica's aster known to occur on public land within the state of Idaho. Bowers and Nadeau (2002) note that, "Jessica's aster is probably the most vulnerable and globally rare species occurring in the Dworshak Study Area."

Because of the current status of Jessica's aster and the ponderosa pine ecosystem, this area is classified environmentally sensitive. These issues represent significant ecological features.

5.22.6 Site Features and Development Potential. The site of this sensitive area is steep and has little potential for recreation development. Typically, environmentally sensitive areas are restricted to limited or no recreation development. Two roads transect the sensitive area, one is paved while the other is a service road only. Therefore, these roads have little potential to affect the Jessica's aster population. A short portion of an existing hiking trail goes through the area but is not a concern for impact to the sensitive species. Although the topography of the area would allow for future expansion from

Dent Acres Recreation Area, this area should be preserved as environmentally sensitive.

The Dent Acres Environmentally Sensitive Area has potential for ponderosa pine ecosystem enhancement. However, further study and analysis is needed to determine how a restoration project may affect sensitive species. If weed control programs are implemented, it is important to consider their effect on native plants. Herbicide spraying is a potential threat to rare species, especially to Jessica's aster and bank monkeyflower (*Mimulus clivicola*), species that occur in small, localized populations.

5.23 Dent Acres Recreation Area–Group Camp, LCU 23

5.23.1 Land Classification. High Density Recreation

5.23.2 Managing Agency. U.S. Army Corps of Engineers

5.23.3 Location. See Plate 4C

5.23.4 Acres. 31

5.23.5 Land Classification Rationale. The group camp at Dent Acres Recreation Area meets the criteria established for high density recreation. Its footprint is slightly larger than the existing facilities to allow for future growth and expansion.

5.23.6 Site Features and Development Potential. Dent Acres group camp has a large picnic shelter, vault toilets, parking, and designated tent pads. The site is presently available for reservations through the National Recreation Reservation System and is managed as part of the campground at Dent Acres. A potential for future development and expansion of group camping and other recreational activities exist. Additional facilities could include, but are not limited to, multiple group camping areas, additional campsites, upgraded restrooms, potable water, electrical upgrades, picnic shelters, tables, and improved access to the shoreline.

5.24 Ore Creek Environmentally Sensitive Area, LCU 24

5.24.1 Land Classification. Environmentally Sensitive Area

5.24.2 Managing Agency. U.S. Army Corps of Engineers

5.24.3 Location. See Plates 4C and 4E

5.24.4 Acres. 358

5.24.5 Land Classification Rationale. This sensitive area includes 358 acres. The predominant habitat type present is western red cedar (*Thuja plicata*)/queencup beadlily (*Clintonia uniflora*), and the area is dominated by mature moist conifer forest. This site, along with much of the southern shore near Ore Creek, was recommended as environmentally sensitive by IDFG, and included 1,229 acres. Several sensitive mosses, lichens, liverworts, and vascular plants associated with these moist conifer forests were detected (Bowers and Nadeau, 2002). The state listed vascular plants included Constance's bittercress (*Cardamine constancei*), Henderson's sedge (*Carex hendersonii*) and phantom orchid (*Cephalanthera austiniae*). There is also one large isolated wetland found in this area.

Although the forest stands have not been designated as old growth, they are mature forests having the potential to become old growth. Quigley and Arbelbide (1997) maintain that old growth forest habitats have declined consistently across the interior Columbia River Basin. Bowers and Nadeau (2002) identify mature and old growth forests as "special habitats," and state that "Idaho Department of Fish and Game recommends managing for old growth on Dworshak project land. The Corps' landscape-level management objectives should include protecting existing old growth stands and increasing the coverage of mature and old growth stands on Dworshak land as long as these stands remain underrepresented in the North Fork Clearwater drainage."

Due to the importance of mature and old growth forests in the Clearwater Region, the Corps also identifies these forests as "Priority Habitats" (Section 2.3.6b).

Because of the overall importance of the forest stands to the region and the sensitive species found in association with them, this area was deemed ecologically significant and classified as environmentally sensitive.

5.24.6 Site Features and Development Potential. The site primarily consists of mature moist conifer forests and the species they support. The area has potential to support low density recreation along the shoreline. Typically, environmentally sensitive areas are restricted to limited or no recreation development. An existing hiking trail goes through the sensitive area, but does not pose significant effects to the concerned species. The slopes do not lend support for high density recreation development.

5.25 Elk Creek Environmentally Sensitive Area, LCU 25

5.25.1 Land Classification. Environmentally Sensitive Area

5.25.2 Managing Agency. U.S. Army Corps of Engineers

5.25.3 Location. See Plate 4D

5.25.4 Acres. 743

5.25.5 Land Classification Rationale. This sensitive area encompasses steep forested land within the Elk Creek arm. The dominant habitat types are grand fir (*Abies grandis*)/ninebark (*Physocarpus opulifolious*) and western red cedar (*Thuja plicata*)/queencup beadlily (*Clintonia uniflora*). A variety of sensitive plants associated with dry and moist forests have been documented in this area. However, the primary reason for its classification as environmentally sensitive is the aesthetic value of the area that exhibits a riverine environment unique to Dworshak yet characteristic of many steep mountainous rivers found in the region.

5.25.6 Site Features and Development Potential. The steep slopes do not support recreation development. Typically, environmentally sensitive areas are restricted to limited or no recreation development. This portion of the Elk Creek arm has limitations to motorized use on the lake. Outside of reservoir locations in close proximity to recreation facilities, it is the only area with a “no wake zone” (motorboats may not produce a wake). This encourages more primitive use by visitors using canoes and kayaks. A more primitive use should be promoted at this sensitive area.

5.26 Mini-camp 26.0–Magnus Bay South, LCU 26

5.26.1 Land Classification. Multiple Resource Management–Future Recreation

5.26.2 Managing Agency. U.S. Army Corps of Engineers

5.26.3 Location. See Plate 4G

5.26.4 Acres. 36

5.26.5 Land Classification Rationale. Mini-camp 26.0 is classified as Future Recreation based on existing facilities, public demand, and access. The area is in close proximity to some very sensitive landscapes, but does not contain those same unique and sensitive features.

5.26.6 Site Features and Development Potential. Currently, the site has a few established campsites and a good toilet. The existing authorized access is boat-in only. A former road has been used by some to access the area and is in very poor condition. It could be improved and designated for ATV or full size vehicle use. Further study is needed to determine any expansion of current facilities, including additional campsites, picnic shelters, tables, and

improved access to the shoreline. This area will remain relatively primitive in nature even if motorized access is allowed.

5.27 Magnus Bay Environmentally Sensitive Area, LCU 27

5.27.1 Land Classification. Environmentally Sensitive Area

5.27.2 Managing Agency. U.S. Army Corps of Engineers

5.27.3 Location. See Plate 4G

5.27.4 Acres. 615

5.27.5 Land Classification Rationale. Magnus Bay area is probably the most desired area for use as recreation and wildlife habitat. It was categorized into several land use classifications to protect the ecologically-significant resources and provide for quality public recreation. The sensitive area encompasses 615 acres, and was primarily created to protect the vast and intricate array of wetlands (and associated wetland species). The entire Magnus Bay site was recommended as environmentally sensitive by IDFG that included 1,524 acres. A variety of sensitive species associated with wetlands and moist conifer forests were detected by IDFG.

Wetland communities are considered worthy of protection by various agencies and organizations across the state, and these communities were selected as a priority habitat by the Corps (Section 2.3.6b). On their website, IDFG states, “It is estimated that since the 1780s, 56 percent of Idaho's wetlands have been lost. Of the remaining wetlands, many have been degraded by hydrologic alteration and impacts to vegetation and soils” (http://fishandgame.idaho.gov/cms/tech/CDC/ecology/wetlands.cfm), Furthermore, IPIF has designated non-riverine wetlands as high priority habitat and established an objective of obtaining a net increase in the number of wetland acres in Idaho (IPIF, 2000). The isolated non-riverine wetlands located at Magnus Bay are classified as environmentally sensitive due to their ecological significance.

5.27.6 Site Features and Development Potential. The site primarily supports wetland communities and the surrounding conifer forests. Size and location of the designated sensitive area was selected to provide continuous habitat protection for important wildlife species associated with wetlands As a result, an existing trail currently being traversed by unauthorized vehicles will be closed. Typically, environmentally sensitive areas are restricted to limited or no recreation development. To accommodate potential recreation desires, primarily ATV travel between mini-camp 26.0 and north Magnus Bay, the low density recreation buffer adjacent to the high watermark was increased from 100 feet to 250 feet. These delineations are designed to allow protection of

the wetland occurring upslope while providing the potential for future motorized use. The Corps located the designated sensitive area so future high density recreation development might occur along the shoreline and northwestern end of the bay. New roads and/or trails would be built outside the sensitive area to access any future recreation facilities.

5.28 Magnus Bay North, LCU 28

5.28.1 Land Classification. Multiple Resource Management–Future Recreation

5.28.2 Managing Agency. U.S. Army Corps of Engineers

5.28.3 Location. See Plate 4G

5.28.4 Acres. 241

5.28.5 Land Classification Rationale. The north portion of Magnus Bay was originally identified in DM 10 (1970) as a potential site for recreation development due to its flat slopes; however, this area is also very significant ecologically. The area identified as Future Recreation still provides adequate space for high density recreation while minimizing impacts to the most environmentally sensitive areas. It is a tradeoff that provides environmental protection of the area behind the 250-foot shoreline buffer of recreation. The area will continue to be managed as Multiple Resource Management–Wildlife Management until development of this area occurs.

5.28.6 Site Features and Development Potential. The northern section of Magnus Bay has no existing recreation facilities. It has flat slopes and good access to the reservoir at all water levels. Potential development could include, but is not limited to, camping, boat launch facilities, cabins, and resort development. Any future development would address and incorporate the environmentally sensitive features of the site. Sensitive attributes would be considered an opportunity to provide interpretive trails and other learning experiences. Evans Creek, across the reservoir, has also been designated as Future Recreation. It is unlikely, however, that both areas would be intensively developed unless demand and visitation increased significantly.

5.29 Swamp Creek, LCU 29

5.29.1 Land Classification. Multiple Resource Management–Future Recreation

5.29.2 Managing Agency. U.S. Army Corps of Engineers

5.29.3 Location. See Plate 4G

5.29.4 Acres. 144

5.29.5 Land Classification Rationale. The Corps, working groups, and the public have all identified Swamp Creek as a possible mid-reservoir access location for visitors coming from the northern side of the reservoir. Although potential for recreation development exists, sufficient demand and adequate funding will be required. The area will continue to be managed as Multiple Resource Management–Wildlife Management until development of this area occurs.

5.29.6 Site Features and Development Potential. There are several mini-camps that are the only existing recreation facilities at Swamp Creek. An unauthorized motorized trail being used to access the area is severely degraded and provides a perfect example of the environmental damage caused by motorized access when not properly designated, prepared, and maintained. This trail will remain closed until it is authorized and improved. Access to the site is across property owned by Idaho Department of Lands and is presently closed to large vehicles. Development potential of this site includes, but is not limited to, camping, boat launch facilities, boat storage facilities, fuel station, and concessionaire services.

5.30 Evans Creek, LCU 30

5.30.1 Land Classification. Multiple Resource Management–Future Recreation

5.30.2 Managing Agency. U.S. Army Corps of Engineers

5.30.3 Location. See Plate 4G

5.30.4 Acres. 139

5.30.5 Land Classification Rationale. The Corps, working groups, and the public have all identified Evans Creek as a possible location for mid-reservoir access. Recreation potential exists, but sufficient demand and adequate funding would be required. The area will continue to be managed as Multiple Resource Management–Wildlife Management until development of this area occurs.

5.30.6 Site Features and Development Potential. Mini-camp 28.4 is the only existing recreation facility at Evans Creek. An unauthorized motorized trail has been used to access the site and will be closed until it is designated as authorized access by the Corps. Significant road improvements would be necessary for future development. Potential for this site includes, but is not limited to, camping, boat launch facilities, a fuel station, concessionaire

services, and resort development. Interim development of low density recreation for ATV access is possible and has been requested by some members of the public. Surrounding land is managed by Idaho Department of Lands as part of the John Lewis road closure. Seasonally, logging access roads on Idaho Department of Lands property are closed to full size vehicles, making the Evans Creek area attractive as an ATV-accessible camp facility. Magnus Bay North, across the reservoir, has also been classified as Future Recreation. It is unlikely, however, that both areas would be intensively developed unless demand and visitation increased significantly.

5.31 Elkberry Creek, LCU 31

5.31.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.31.2 Managing Agency. U.S. Army Corps of Engineers

5.31.3 Location. See Plate 4I

5.31.4 Acres. 39

5.31.5 Land Classification Rationale. Elkberry Creek has been identified for potential expansion of the existing mini-camp. The potential for motorized access also exists and will be evaluated for motorized use.

5.31.6 Site Features and Development Potential. Elkberry Creek is home to mini-camp 36.2. This multi-site mini-camp is being used by unauthorized motor vehicles along a former closed road. Access would need to be designated for motorized use and would require minor improvements prior to further development. If developed for full size vehicles, this site may help reduce camping pressure on the Grandad Recreation Area. Potential development at this site includes, but is not limited to, expanded camping opportunities (less than 15 sites), shelters, toilets, and vehicle parking areas.

5.32 Little Meadow Creek Campground, LCU 32

5.32.1 Land Classification. Multiple Resource Management–Low Density Recreation

5.32.2 Managing Agency. U.S. Army Corps of Engineers

5.32.3 Location. See Plate 4I

5.32.4 Acres. 1.5

5.32.5 Land Classification Rationale. This site is the location of an existing pilot study for ATV access to a mini-camp. It will be used for low density recreation pending evaluation and monitoring of the ATV effects.

5.32.6 Site Features and Development Potential. This site was historically used as a log dump. The access road and camping area are surfaced with hardened gravel. It hosts six fire rings, six picnic tables, and a vault toilet. Potential site development could include, but is not limited to, additional campsites, full size vehicle access and camping, and sun shelters.

5.33 Elk Mitigation Area, LCU 33

5.33.1 Land Classification. Mitigation

5.33.2 Managing Agency. U.S. Army Corps of Engineers

5.33.3 Location. See Plate 4J

5.33.4 Acres. 6,935

5.33.5 Land Classification Rationale. This land were purchased as mitigation for elk winter range that was flooded following reservoir impoundment. It fulfills a legal obligation for the Corps to mitigate for habitat loss.

5.33.6 Site Features and Development Potential. The land is managed for the primary purpose of elk habitat and specifically for creating elk browse. Future development or management actions must support these purposes. Allowable recreation developments would be primitive in nature. Motorized recreation is not permitted within the Elk Mitigation Area. Non-motorized trails and low density camping may be approved. However, further evaluation of any proposed development would determine individual and cumulative effects within the mitigation area.

5.34 Grandad Recreation Area, LCU 34

5.34.1 Land Classification. High Density Recreation

5.34.2 Managing Agency. U.S. Army Corps of Engineers

5.34.3 Location. See Plate 4J

5.34.4 Acres. 26

5.34.5 Land Classification Rationale. Grandad was designated for recreation based on current use and site features as well as its potential future use. Although the area is located within the elk mitigation boundaries, it was

originally approved as a recreation site. The boundary of the recreation land was modified from its original land classification to portray the land necessary for existing facilities with minimal expansion. This change reflects a large reduction in overall size of the recreation area.

5.34.6 Site Features and Development Potential. Facilities at Grandad include a boat ramp and parking area that is also used for camping. Its future development potential is limited by topography and usable space within the boundary designated for recreation. Development opportunities include, but are not limited to, more camping areas uphill from the existing developed area and other primitive walk-in campsites.

5.35 Homestead Creek Environmentally Sensitive Area, LCU 35

5.35.1 Land Classification. Environmentally Sensitive Area

5.35.2 Managing Agency. U.S. Army Corps of Engineers

5.35.3 Location. See Plate 4K

5.35.4 Acres. 187

5.35.5 Land Classification Rationale. This sensitive area is within the Homestead Creek drainage. It was recommended as environmentally sensitive by IDFG that included 507 acres. Predominant habitat types are grand fir (*Abies grandis*)/wild ginger (*Asarum canadense*) and western red cedar (*Thuja plicata*)/maidenhair fern (*Adiantum pedantum*). Several sensitive species detected by IDFG are primarily associated with these moist forests. Homestead Creek is comprised of some of the oldest forest stands on the reservoir. Protecting existing old growth stands, and increasing the coverage of mature and old growth stands, on the Dworshak project is a goal recommended by IDFG (Bowers and Nadeau, 2002). Further, the North Fork Clearwater River canyon contains a unique forest ecosystem with various plant species characteristic of Pacific-maritime forests (Steele, 1971, Johnson and Steele, 1978). This, along with other north Idaho canyons, is thought to have served as refugia for cold-intolerant species during Pleistocene climatic changes (Daubenmire, 1969). This unique ecosystem is found in localized areas of northern Idaho, including the land adjacent to Dworshak Reservoir. Homestead Creek drainage is characteristic of this phenomenon.

Due to the overall importance of the forest stands to the region, this area is deemed ecologically significant and classified as a sensitive area.

5.35.6 Site Features and Development Potential. The site primarily supports mature moist conifer forest stands and a unique coastal disjunct plant community. It should serve as an interpretive and educational site, promoting

the history and awareness of coastal disjunct plant communities. There is potential for low density recreation as the sensitive area is located to accommodate recreation along the shoreline boundary.

5.36 Boehls, LCU 36

5.36.1 Land Classification. Multiple Resource Management–Future Recreation

5.36.2 Managing Agency. U.S. Army Corps of Engineers

5.36.3 Location. See Plate 4K

5.36.4 Acres. 61

5.36.5 Land Classification Rationale. This site could be developed to provide additional recreational access at the upper portion of the reservoir. Because of size constraints at Grandad Recreation Area, public desire is for additional areas on the upper reservoir.

5.36.6 Site Features and Development Potential. Mini-camp L3.6 is located at Boehls. An access road and a dock used by fire-fighting crews are also located there. The topography of the site limits the amount of development that can take place; however, opportunities for additional camping sites, full size vehicle access, and a boat ramp exist.

5.37 Benton Butte Environmentally Sensitive Area, LCU 37

5.37.1 Land Classification. Environmentally Sensitive Area

5.37.2 Managing Agency. U.S. Army Corps of Engineers

5.37.3 Location. See Plate 4L

5.37.4 Acres. 478

5.37.5 Land Classification Rationale. This sensitive area encompasses mature moist conifer forests on steep north-facing slopes. The IDFG recommended a 1,194-acre sensitive area further east. Habitat type is western red cedar/wild ginger and several sensitive species were detected by IDFG. The Benton Butte area represents the largest block of mature forest remaining in the lower north fork drainage. During wildlife surveys of furbearers and carnivores at Dworshak, IDFG documented a pine marten (*Martes americana*) that was photographed by a remote camera (off Corps-managed land on Musselman Road). As a result, Bower and Nadeau (2002) contend that “pine marten are scarce in the Dworshak Study Area as this was

the only pine marten documented in the Dworshak area by IDFG over the last 10 years. Additionally, Asherin and Orme (1978) did not detect pine martens during 1976-77." However, in a cooperative study between the Corps and IDFG, numerous pine marten family groups were documented. These were seen using remote camera bait stations within the Benton Butte sensitive area. Pine marten prefer mature to old growth forests and this illustrates the importance of the Benton Butte sensitive area in providing mature forest habitat to the lower North Fork. Protecting existing old growth stands and increasing the coverage of mature and old growth stands on Dworshak land is a goal recommended by IDFG (Bowers and Nadeau, 2002).

Due to the overall importance of the forest stands to the region, this area was deemed ecologically significant and classified as environmentally sensitive.

5.37.6 Site Features and Development Potential. The site primarily supports mature and old growth moist conifer forest stands. Typically, environmentally sensitive areas are restricted to limited or no recreation development. There is potential for low density recreation along the shoreline.

5.38 Butte Creek Easement, LCU 38

5.38.1 Land Classification. Project Easement Land–Operations Easement

5.38.2 Managing Agency. U.S. Forest Service

5.38.3 Location. See Plate 4M

5.38.4 Acres. 1,760

5.38.5 Land Classification Rationale. The Corps of Engineers holds an easement interest, but not fee title. This flowage easement from the USFS is for project operations. The Corps has authorization to conduct forest management with USFS coordination.

5.38.6 Site Features and Development Potential. Planned use and management is in strict accordance with the terms and conditions of the easement estate acquired for Dworshak. Easements are for specific purposes and do not convey the same rights or ownership to the Corps as other land. No development potential for this land classification exists other than what is designated by the USFS.

5.39 RESOURCE PLAN RECOMMENDATIONS

The *Dworshak Reservoir Master Plan* provides conceptual guidelines for the effective management of Dworshak Reservoir. Guidelines were developed in

accordance with the Corps' master planning process. Preparation of this Plan required (1) an appraisal of the natural and human-related resource conditions of the project and the surrounding region, and (2) an examination of environmental and administrative constraints and influences. Sound stewardship of public land requires development and management of project resources for the public's benefit that are consistent with resource capabilities. The Corps considered the following focuses in developing conceptual guidelines for future development and management. Guidelines also incorporate revisions to federal regulations, changes to socioeconomic conditions in the project area, and improvements made at Dworshak Reservoir since the original DM 10 was issued in 1970.

- Development and improvement needs at new and existing recreation areas;
- Needs for resource protection;
- Visitation trends; and
- Public requests for new development, as well as improvements to current development.

Recommendations seek to improve operation and maintenance for increased efficiency. Many site features, such as steep slopes and fluctuating water levels, make the operation and maintenance of recreational facilities expensive and time consuming. Efficient recreation opportunities help to ensure the continued success of public access.

Conceptual guidelines presented in this master plan authorize the natural resources staff to propose projects that address current problems and demands. Each proposed project is evaluated for environmental compliance before it is implemented, then based on proper approval, public desires, and available funding. An explanation of the implementation processes for proposed recommendations and projects can be found in Appendix L.

5.40 CONCEPTUAL DEVELOPMENT GUIDELINES

Guidelines are recommendations for management of Dworshak Reservoir that meet current public demand, address the possibility of future change, and minimize environmental impacts.

5.40.1 Motorized Access. There are numerous opportunities to increase visitation to Dworshak Reservoir by allowing motorized recreation in designated areas. The original DM 10 (1970) addressed motorized access as a way to access large developed campgrounds. Other forms of motorized recreation, such as the recreational use of motorcycles and ATVs, were not popular or did not exist when the original plan was written. It is likely that new forms of motorized recreation may be developed in the next 20 years.

Dworshak management will evaluate the opportunities and impacts of potential future developments.

Proposed motorized trails will be evaluated for environmental compliance, implementation feasibility, and public acceptability. If deemed feasible, trails can be constructed to a class 3 or 4 type as classified by the USFS. Appendices M and N provide guidance for general trail construction and motorized trail construction. For detailed information on the USFS trail planning, construction, and maintenance guidelines, refer to FSH 2309.18.

The Corps understands the importance of adjacent private, agency, and organization land and the impacts this master plan may have on land adjacent to Corps property. Adjacent landowners and management agencies will be consulted early in Corps planning and evaluation processes for motorized access projects that may impact adjacent property owners.

a. Motorized Vehicles–ATVs. Where appropriate, It is recommended that potential ATV trails be evaluated and designated as authorized trail sites within Dworshak project boundaries. Each proposed trail will be individually evaluated under NEPA prior to approval and construction. Trails will be considered in locations where land use classifications permit and provide safe access to mini-camps or other recreation features. Some desired trails may be part of a larger regional trail system. 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 High Density 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 this Plan. Trails will not be allowed in areas classified Environmentally Sensitive or Mitigation unless on main public access roads already in use. 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. Depending on location, specific trail criteria may be prescribed by the Corps for each trail.

The purpose of ATV trails will be primarily to access mini-camp locations or other recreation features. No large loop trails are envisioned 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 watermark, 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.

The Corps will continue to coordinate future trail planning with adjacent landowners, including Potlatch Corporation, Idaho Department of Lands, USFS, and other owners in the area. Where creation of an ATV trail on Dworshak property is accessible only by traveling through properties of other landowners, the Corps may coordinate with the applicable owner to resolve concerns and seek support for ATV users to access the Corps' ATV trail. The Corps will not pursue or hold easements on other property for access to Corps land for recreational ATV use. The Corps expects all ATV users to comply with the regulations and policies of adjacent landowners, including required fees, when crossing their land to access Corps land.

Trails will be designed, constructed, and maintained by the Corps in cooperation with a user group. A sponsor, user group, or other entity willing to sponsor a trail must comply with Corps design guidelines for ATV trails (refer to Appendix O). They must be willing to sign an agreement to assist with trail maintenance and monitoring on an annual basis. The sponsor will be expected to seek partnerships with adjacent landowners to create trailheads on adjacent property when the trail begins on non-Corps property. Sponsors will be encouraged to adopt trails on adjacent land that connect to Corps trails.

All ATV trails will be opened on a seasonal basis as determined by Corps staff. Trails will be monitored and evaluated annually and may be closed at any time based on trail conditions, use, or other environmental requirements. Possible reasons for closure could include, but are not limited to, environmental degradation, the presence of threatened or endangered species, failure of the user group to properly maintain the trail, and abuse by ATV riders on land adjacent to the trail. Use of ATVs on Corps land is regulated by ER 1130-2-550, Chapter 10; EP 1130-2-550, Chapter 10 and Appendix S; and EO 11644. These regulations address appropriate uses of ATVs and required monitoring on designated trails. Trails will primarily be self-policed by the sponsor user group. Corps park rangers and local law enforcement will monitor the area for compliance; written warnings and/or citations may be issued.

Areas 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. Additional study will be needed before any of these areas may become a designated ATV route. Other areas may be appropriate, but are not identified at this time.

b. Motorized Vehicles–Dirt Bikes. A dirt bike is defined as a two-wheeled, single-rider motorcycle configured for off-road use. Dirt bikes are allowed on designated ATV trails. They must remain on the trail and no cross-country travel is permitted. Specific trails for dirt bikes only will be evaluated under similar requirements as ATV trails when public input and desire justifies such evaluation. There are currently no public demands known for single track motorcycle trails.

c. Full Size Vehicles. Full size vehicles are currently permitted only on designated roads within Corps boundaries. Future access points will be evaluated on a case by case basis. Design guidelines and environmental conditions will be evaluated in a similar manner to that of an ATV trail with the understanding that impacts from a full size vehicle will be more significant due to size and weight. Refer to Appendix P on specifications for motorized vehicles greater than 50 inches wide.

d. Effects of Motorized Access. Effects of allowing motorized recreation include possible effects to soil, vegetation, wildlife, wildlife habitat, water quality, and air quality (Table 5-1 below). Public safety is also a risk associated with allowing motorized access.

Effects on soils	-Soil compaction -Diminished water infiltration -Accelerated erosion rates
Effects on vegetation	-Destruction of vegetation cover and reduced growth rates -Introduction of non-native species -Dissemination of noxious weeds/seeds -Soil erosion and impacts to seed beds -Increased potential of fire starts
Effects on wildlife, habitat, and threatened and endangered species	-Movement barriers -Disconnected and fragmented habitat -Altered animal behavior due to noise -Altered breeding habits -Distribution of feed or see sources
Effects on water quality	-Increased runoff volume and velocity -Increased sedimentation and turbidity -Contaminants
Effects on air quality	-Fugitive dust -Emissions -Potential for fire starts

Table 5-1. Affects of motorized access.

Fish and wildlife enhancement is one of the five authorized purposes for Dworshak Dam and Reservoir. The Corps understands and evaluates what the impacts are of changing recreational plans for fish and wildlife. A general understanding of the effects of motorized access on wildlife is presented here. A detailed evaluation of the potential impacts to wildlife from each proposed project slated to increase motorized access will be addressed separately in individual project NEPA documents.

In general, the effects of motorized vehicles and roads on wildlife are well documented. Roads contribute to habitat fragmentation, decreased habitat effectiveness, interrupted migration and travel patterns, increased human-wildlife encounters, and increased direct mortality (Havlick, 2002). Impacts from roads designed for full size vehicles are different from impacts of ATV trails. Roads contribute to habitat fragmentation whereas ATV trails decrease habitat effectiveness and greatly increase opportunities for direct collision and negative human-animal encounters (Havlick, 2002). Summaries of the effects of roads on wildlife habitats, and biological systems in general, have been compiled by Forman and Alexander (1998), Trombulak and Frissell (2000), Gucinski, et al. (2001), Forman, et al. (2003) and Gains, et al. (2003).

Elk is a focal species for Dworshak Reservoir and the surrounding Clearwater River Basin and the Corps is legally obligated to provide mitigation for loss of elk habitat caused by construction of Dworshak Dam. Effects of roads on habitat and population responses of elk are well documented. The primary effect is likely habitat fragmentation. A rough estimate of elk habitat lost from road construction is five acres of lost habitat per lineal mile of road constructed (Forman, et al., 2003). M. Rowland, et al. (2005) summarizes the direct impacts of roads and associated traffic on elk as “elk avoid areas near open roads. Elk vulnerability to mortality from hunter harvest, both legal and illegal, increases as open road density increases” and “in areas of higher road density, elk exhibit higher levels of stress and increased movement rates.” Road densities appear to have a profound impact to elk behavior and energetic expenditures. However, when modeling elk utilization they found that elk locations were more associated with distance from open roads rather than the density of open roads. Load densities and habitat effectiveness models are currently being used as targets in forest planning. In specific management areas within the Wallowa-Whitman National Forest, open road densities are targeted not to exceed 2.5 miles per square mile in general and 1.5 miles per square mile in selected summer and winter ranges (U.S. Department of Agriculture, Forest Service, and 1990b). Effects of roads on wildlife are considered in decisions as increased motorized access is proposed.

Additional information is available on the effects of off-road recreation on elk. Wisdom et al. 2004, presented findings on a in-depth study at the Starkey Project analyzing and comparing the impacts of four different types of off-road recreation on elk; ATV use, hiking, biking, and horseback. “Movement rates and probabilities of flight response were substantially higher during all four off-road activities, compared to the control periods of no human activity. Consequently, off-road recreational activities like those evaluated in our study appear to have a substantial effect on elk behavior.” These additional energetic costs are likely to have a measured effect of elk survivability. Elk reactions were more pronounced during ATV use and mountain bike riding. As of 2003, there were approximately 36 million registered all terrain vehicles (ATVs) nationwide (Brininstool, 2006).All land managers, including the Corps, must understand and evaluate the effects of recreational use on wildlife when developing recreational use plans.

Designated motorized trails have the potential to be positive at Dworshak. There are multiple locations around the reservoir that are being used as unauthorized motorized access. Environmental degradation is occurring in many areas because trails are not being

maintained and users are not staying on the trail. Designating trails may help in decreasing the creation of unauthorized trails that are causing detrimental effects to sensitive habitats and species. Each proposed motorized trail will be evaluated to determine the effects of its use on all the above identified resources, cultural resources, and other resources as determined during NEPA compliance. Efforts will be taken to reduce the aforementioned effects when considering motorized trails.

5.40.2 Water-based Recreation**.**

a. Boating. Boating on Dworshak reservoir provides a unique recreation niche. While many of the other lakes in the region feature developed shorelines or more developed settings, Dworshak provides a more remote, forested setting and experience. The remote experience has been cited by visitors as one of the reasons they enjoy visiting Dworshak. Boaters have been recorded in visitation logs as having travelled hundreds of miles to enjoy the quiet and un-crowded conditions.

Boating is the primary method of transportation on and around the reservoir for visitors and Corps staff. The majority of current boat use occurs in the lower one-third of the reservoir. There is, however, strong demand for a fuel station located mid-reservoir or above that would allow more extensive use of the upper reservoir. The entire stretch of the reservoir is accessible to boats with the exception of the restricted zone in front of the dam. Boats may pull up to and use any shore along the reservoir, but Corps personnel may restrict certain areas. No wake zones exist around posted recreation and marina areas and in the upper reaches of Elk Creek (beginning at RM E4.0). Additional rules and regulations regarding boating on Corps property are found in Title 36 Code of Federal Regulations, Part 327.

b. Fishing. Fishing will continue to be managed by IDFG. The nutrient supplement pilot program will continue to be monitored and evaluated for its effects and successes. The Corps will work with IDFG on ways to improve the fishery and fishing access.

c. Floating Facilities and Docks. All floating facilities (i.e., destination and safe harbor docks) are a challenge to maintain due to the extreme fluctuations of water levels. Marinas are more complicated to maintain and operate because of their size and the need to provide access to and from the shore. Several methods of counterweight anchors and self-adjusting boat ramp docks have been developed locally. Depending on public demand, funding, and engineering solutions, temporary moorage will continue to be evaluated.

Floating facilities are popular with recreationists. Anchored to the reservoir bottom, these docks provide a floating platform for group gatherings, swimming, and picnicking. Destination docks have a center swimming area protected from boat traffic. Safe harbor docks provide tie-up points for boats long distances from moorages. These facilities may be used for overnight moorage, but camping on the dock is not allowed and occupancy may not exceed 48 out of 72 hours. Further rules and guidance are posted at each dock. Additional facilities should be developed as demand warrants and funding is available. Floating facilities help mitigate the loss of access to shoreline camps. Floating toilets are an important amenity to boaters on the reservoir, although they present a degree of possible risk to public safety. The current floating toilets are adequate, but will eventually need to be updated and replaced.

Other floating facilities, such as mobile floating gas docks, floating marina repair service shops, and concession sales could be evaluated for possible benefits and risk. Amenities will be addressed as demand justifies.

d. Marinas. The existing marina at Big Eddy does not have enough boat slips to accommodate the demand. Potential development of additional slips and other marina-based amenities has been and will continue to be evaluated and pursued, but available funding of the lessee or a future concessionaire may limit expansion of the current marina. A potential to create universal access to the marina is an important concern for the public and the Corps and will continue to be evaluated. A houseboat concessionaire providing rental service and a marina would create additional recreational opportunities and increase the visitation. Potential sites were identified in the Large Boat Marina Site Analysis report (Corps, 2004).

Because of difficulty in the construction and maintenance of boat harboring and storage on the reservoir, other types of boat storage services could be investigated as viable alternatives to marinas. One possible option is a concierge service that stores boats off-site and launches them in preparation for the customer’s arrival. This option could present economic opportunities for an entrepreneur or concessionaire. A fueling station mid- to upper reservoir could provide many benefits to the public. It will be evaluated and considered as funding is available. Additional fuel stations at other developed recreation areas or future marina developments will be evaluated on a case by case basis.

e. Ramps. Boat launching ramps provide vital public access to the reservoir at all water levels. Fluctuating water levels prevent use at some launching areas when very low. Ramps will continue to be extended as sufficient public demand exists and funding is available. Low water parking will be evaluated and developed where practical and when funding exists. Longer ramps and additional parking make areas more usable and aids in increasing visitation during the low water recreation season.

With sufficient demand and funding, additional boat launch sites could be evaluated and implemented on land classified as Project Operations; High Density Recreation; Multiple Resource Management–Low Density Recreation; and Multiple Resource Management–Future/Inactive Recreation. Due to their popularity, Canyon Creek and Grandad recreation areas should be priority sites for boat ramp extensions and possible parking expansion. Evans Creek has been identified by Corps staff and the working groups as a possible location for a mid-reservoir boat launch site. Other possible locations for future boat ramps would be Swamp Creek, Boehls, Elk Creek Meadows, and Magnus Bay. All proposed boat ramp construction or extensions must meet all current NEPA requirements and address potential effects to archeological and cultural sites.

5.40.3 Land and Shore-Based Recreation.

a. Fishing. Fishing is allowed in all areas of the reservoir except from boat launch and marina docks. Visitors have expressed a desire for more shore-based fishing opportunities, but steep and unstable shorelines limit options. New shore-based fishing opportunities (e.g., fishing platforms) could be constructed to meet this need, but the challenge of fluctuating pool levels could potentially make design and construction very expensive. The Corps will continue to evaluate options and locations for shore-based fishing opportunities. Each will be evaluated on a case by case basis.

b. Camping. Camping is a very important recreational activity. A large portion of public comments revolved around camping. Developed and primitive campsites provide unique experiences demanded by the public. Current demands, uses, and funding constraints require the Corps to evaluate the current management of existing campsites. Future management may include expansion of some and closure of other campsites, depending on demand. The goal is to create more efficient camping opportunities that will help the Corps manage and maintain its resources while also providing a variety of camping opportunities. Rules and regulations regarding

camping on Corps land are found in Title 36 Code of Federal Regulations, Part 327.

1) Existing Developed Campsite Areas. Developed campground facilities will be maintained in existing condition until sufficient public demand and visitation numbers require upgrades. Facility upgrades will be dependent upon funding availability. A reduction in demand could lead to reduced services and/or closure of facilities. Dent Acres Recreation Area, which is normally full during the summer season, is constrained by campsites that are undersized to some modern RVs. The existing area could remain as presently configured for cars and smaller campers while a newly developed area could satisfy the needs of larger equipment. Potential exists to annex shoreline mini-camps 13.4 and 13.5 into Dent Acres. Several non-road accessible campgrounds in the Dent Acres area could be added to the campground and included in the reservation program. Expansion of the group camp at Dent Acres should also be evaluated. Additional campsites, restrooms, shelters, and other amenities will allow the area to be used by large groups.

There is strong public desire for an increase in the number of campsites at the Grandad Recreation Area campground and within the mitigation classified land. Possible expansion of camping at Grandad has been evaluated and locations have been identified that could provide additional camping opportunities. Primitive camping can be allowed within mitigation land and sites along the road (at turnout locations) could be considered. Other areas outside the mitigation area should be evaluated to determine if additional camping locations could reduce the current demand and pressures on the Grandad campground.

Other campgrounds, such as Canyon Creek and Dworshak State Park, need to be evaluated to see if the current layout and design is sufficient for existing public use. In some cases, design improvements could lead to more efficient land use and a more pleasant camping experience. Future demands on all existing developed camping areas still must be evaluated. Adaptive management measures will attempt to meet those demands.

2) Future Campground Development. Elk Creek Meadows, Magnus Bay, Swamp Creek, Bruce’s Eddy, Evans Creek, and Boehls have been identified as areas of potential development for future recreation facilities. For development to take place, these sites would be evaluated to determine if additional camping opportunities are necessary and if public demand supports the

expansion. There is no guarantee these sites would be developed. They are given the classification of Multiple Resource Management–Future Recreation based on their potential to be developed as public demand justifies and funding is available. Future proposed designs will be evaluated under the Corps' environmental compliance process and must meet all current NEPA requirements.

3) Mini-camps and Primitive Campsites. Mini-camps around the reservoir were originally designed for boat access only. Current mid-summer lake drawdowns make many of these camps difficult to access. Fluctuating water levels have contributed to maintenance inefficiencies that make operating costs very high. Mini-camps around the reservoir have been evaluated based on use, low and high water accessibility, and current facility condition. These evaluations were used to determine how to best manage the camps with limited resources and labor. Mini-camps will be maintained as currently configured with the majority of effort expended on camps with the highest use and easiest access at all water levels. A detailed analysis of all camp facilities, conditions repair status has been conducted and is updated regularly through the use season.

To consider future options, in some instances mini-camps will be closed because of poor access and low visitation. In other areas, new mini-camps that are more accessible from the lake and/or from ATV access trails may be developed. In areas identified as possible ATV access areas, new mini-camps may be developed as the visitation to these areas increase and public demand justifies such development (see Section 5.40.1a). Some mini-camps may become ATV accessible; not all mini-camps that could provide ATV access will be designated as such. Some will remain accessible by boat only to preserve that unique experience. Mini-camps will be identified on a map. Multiple method access campsites will be identified separately from boat access only campsites.

Removal and disposal of human waste is the largest operation and maintenance cost at remote mini-camps. Options will be considered that require users to pack out human waste. Camping at these sites would require the user to bring a commercial portable toilet and dispose of the waste properly after their visit. Portable camping toilets are available commercially and range in price from $25.00 to $300.00. These sites would be identified on maps and designated with signage. Old toilet facilities would be removed. If this policy is implemented, park

rangers will work with the public to educate them about this policy and provide enforcements. Discussion and coordination with the public will take place prior to implementation of this policy.

The Corps is considering appropriate locations for walk-in campsites. Walk-in campsites provide an additional recreation opportunity for the user who would like a primitive camping experience, but do not have access to a boat or ATV. When considering locations for walk-in campsites, planners would consider (1) areas that are easily accessible from existing recreation and public access areas, and that do not require a long hike (such as Dent Acres where visitors could park), and (2) mini-camps or other campsites that can be accessed from larger hiking trail systems. Walk-in campsites could be evaluated and implemented adjacent to other developed recreation areas and public access points.

Primitive campsites accessible by full size vehicles are another option for camping. Car-based camping is an activity that matches the desire of the public who do not have access to a boat or ATV. Primitive campgrounds will be less than 15 campsites and less developed. Areas identified for potential car-based camping include Merry's Bay, Big Eddy, Dent Acres, Magnus Bay, Boehls, Elkberry Creek, and Evans Creek. Each of these areas must be evaluated further and must meet current Corps regulations and comply with the environmental compliance process outlined in Section 2.10.1.

4) Camping on Exposed Banks. Camping on exposed banks at low water levels may be permitted in areas designated by the Corps. These areas would be located below the high watermark. Locations would vary depending on water levels and site conditions and may change year to year. Steep topography around the reservoir may limit the amount of area available for this type of activity. Camping in these zones would require campers disposing of human waste in personal portable toilets or use of a nearby mini-camp toilet. No digging, leveling, or other land manipulation would be allowed. Fires may be permitted, but will require use of a fire ring located at least 50 feet from the high water shoreline and any wood debris piles located along the shore. Campfires on Corps land is subject to restrictions and may be prohibited during periods of extreme fire hazard, as determined by the local fire warden, or as directed by the Corps.

Park rangers could warn or cite those found camping at low water areas without the required equipment (personal portable

toilets, fire rings, etc.). Before the area below the high watermark may be designated for camping, the Corps will engage in the environmental compliance process and carefully evaluate for potential impacts to cultural resources. Areas cleared for camping on exposed banks would be designated on recreation maps and bulletin boards.

c. Swimming. The demand for swimming areas is very high. Swimming is allowed around the reservoir, but is prohibited at boat ramps and the marina. There are two designated swim areas at Big Eddy and Freeman Creek. Swimming is encouraged at the destination docks accessible by boat that the Corps has located in the reservoir. The swim area at Big Eddy does not meet current design criteria and imposes some serious safety risks caused by steep cliffs and low rock outcrops in the swim area. The swim beach is operable only two months when the reservoir is full. Other locations have been evaluated for more appropriate areas for a swim beach. Due to the extreme topography along the banks of the reservoir and the fluctuating water levels, providing a designated swim beach at Dworshak Reservoir is not likely. Swimming opportunities other than a swim beach will continue to be explored. Any future designated swim areas or other swimming opportunities must meet current Corps regulations and comply with NEPA.

d. Hiking. Current hiking trails will be maintained as presently configured. New hiking trails will be constructed based on sufficient public demand. The potential to create a system of trails connecting existing trails and creating a loop around portions of the reservoir would increase participation in hiking. A larger system of hiking trails could connect mini-camps and other recreation locations to allow hikers a place to camp. Hiking trails are an acceptable recreation feature on all land except those specifically restricted to public access. Newly proposed trails will be evaluated under the Corps' environmental compliance process and must meet all current NEPA requirements.

The working groups identified the area between Canyon Creek and Cold Springs as a possible location to create a trail that would connect two existing trails. Interpretive trails at Elk Creek Meadows, Grandad area, and Magnus Bay could be explored. During the public scoping process, members of the public expressed interest in the development of interpretive trails. As funding and manpower is available, efforts could be made to create interpretive features on existing or new trails to provide educational opportunities regarding the uniqueness of the reservoir, vegetation, wildlife, and other natural features.

e. Biking. Bicycling is allowed on all trails at Dworshak except those restricted to public access. An increase in the number of trails may facilitate increased bicycling, thus providing additional land-based recreation opportunities, diversity, and increased visitation. The Corps encourages partnerships with user groups, as suggested with ATVs, for development and maintenance of trails. Proposed trails will be evaluated for environmental impacts and compliance.

f. Equestrian Use. Trails remain open to equestrian use. Opportunities exist for increased trail riding and local horse groups have expressed an interest in using facilities at Dworshak to increase their opportunities for group rides. To accommodate more regular equestrian use, some facilities (i.e., corrals and water tanks) need to be constructed. As with other uses, the Corps will look for opportunities to partner with user group sponsors for development and maintenance of these facilities. Equestrian trails may be located on all Corps land except where restricted to public access. Local groups have expressed a desire to utilize the Little Bay area for such a trail system. Other trail locations may be identified and constructed as demand warrants. Proposed future trails will be evaluated for environmental impacts and compliance.

g. Trail Etiquette. Existing trails at Dworshak are currently shared by those on horseback, foot, or bicycle. Trails remain open for shared use as long as users do not have serious conflict. In the event of ongoing user conflicts, Dworshak staff may be forced to assign users to specific areas. Commonly accepted trail etiquette maintains that bicyclist's yield to hikers and those on horses. Hikers yield to horses. The rationale behind this is that bicyclists and hikers may respond more quickly and rationally to movement or surprises than a horse or person on horseback.

5.40.4 Private Outfitters. Private outfitters and guides are allowed to use Dworshak land and water, but are prohibited from engaging in or soliciting business on Corps property without the district Commander's written permission. Outfitters and guides are subject to Title 36 Code of Federal Regulations, Part 327, rules and regulations as is the general public.

5.40.5 Visitation. Design recommendations for future development should accommodate projected visitation. Visitation is influenced by factors such as the density and distribution of populations, convenient travel distances, recreation habits and desires, ease of access to the area, attractiveness of recreational opportunities compared to other sites, and the available income and leisure time of the target population.

5.40.6 Future Demands. Recommendations in this Plan reflect current inventory data, recreation trends, and forecasts. As technology and public demand change and new recreational opportunities arise, Corps staff will investigate the feasibility of new activities and evaluate proposed changes and additions to this Plan for potential conflicts, opportunities, and environmental impacts.

5.40.7 Coordination. Many additions and alterations to Dworshak recreation area facilities have been completed in the years since the project's initial construction. Some of these facility improvements have been initiated and implemented by Dworshak personnel as part of the operation and maintenance program. Resource managers continue to involve the public and call upon an interdisciplinary team of landscape architects, biologists, architects, recreation specialists, civil engineers, and other design professionals available within the Corps to make an onsite review of conditions, discuss alternatives, review plans, and make recommendations that relate to major improvements in operation and maintenance.

5.41 DESIGN CRITERIA

Design principles and criteria particularly appropriate to Dworshak are discussed throughout this subsection. The following design principles and criteria are extracted from EM 1110-1-400, *Recreation Planning and Design Criteria*. The EM states, "All project features are designed so that the visual and human-cultural values associated with the project will be protected, preserved, or maintained to the maximum extent possible. Specific ecological considerations include actions to preserve critical habitats of fish and wildlife; accomplish sedimentation and erosion control; maintain water quality; regulate streamflow, runoff, and ground water supplies; and avoidance or mitigation of actions whose effect would be to reduce scarce biota, ecosystems, or basic resources. In the development of individual project features, consideration is given to the needs for architectural design, land treatment, or other resource conservation measures. Emphasis is given to developing measures for realizing the full scenic potential of the project feature as it affects the overall project. This is accomplished by providing for cover reforestation, erosion control, landscape planting, management of vegetation, healing of construction scars, prevention of despoilment, and other related activities for all project lands."

5.41.1 Policies and Procedures Publications. General policies and procedures for the planning, design, operation, and maintenance of recreation facilities at Corps of Engineers civil works projects are provided in engineer manuals, regulations, and pamphlets listed below. These publications guide the development of recreational facilities to ensure they are of the highest quality and serve the health, safety, and enjoyment of the visiting public.

EM 1110-1-400, *Engineering and Design Recreation Facility and Customer Services Standards,* 1 November 2004

EM 385-1-1, *Safety and Health Requirements Manual*, 15 September 2008

EM 1110-2-410, *Design of Recreation Areas and Facilities - Access and Circulation*, 31 December 1982

EP 310-1-6, *Graphic Standards Manual*, 1 September 1994

EP 310-1-6a and b, *Sign Standard Manual*, 1 June 2006

ER 1110-2-400, *Design of Recreation Sites, Areas and Facilities*, 31 May 1988

ER 1130-2-401, *Visitor Center Program*, 15 February 1991

ER 1130-22-400, *Management of Natural Resources and Outdoor Recreation at Civil Works Water Resource Projects*, Chapter 1, 1 June 1986

ER 1165-2-400, *Recreation Planning, Development, and Management Policies*, 9 August 1985.

5.41.2 Design Approach.

a. Interdisciplinary Approach. The design of all facilities will be a fully coordinated team effort among planning, design, construction, operation, and non-federal elements. This interaction will begin with initial planning concepts and continue throughout the construction and operational phases of the project. Items such as roads, trails, parking areas, launching ramps, campsites, beach developments, and similar facilities should be field-staked, evaluated, and field-adjusted by the design team during the developmental phase. The design team will periodically visit the sites or areas during construction to determine whether field conditions are as anticipated, as well as consult with construction personnel in interpreting the plans and specifications. Site visits will be used to observe and correct any problems not apparent or fully evaluated in the design. A team approach should be used for all aspects of federal projects and for the review and approval of plans scheduled for development by non-federal entities. The evaluation process is not finished when construction is completed. The team should observe facilities during project operations to correct inconsistencies between the design and usage, thus gaining experience for future designs.

b. Future Development in Existing Areas. In cases where the modification or renovation of existing facilities is required, special design attention must be given to the following listed below.

- Improving health, safety, and security features for the visitor.
- Resource carrying capacity.
- Reducing operation and maintenance costs.
- Attracting potential non-federal sponsors.

In existing areas, capital costs already invested should not be considered as the primary governing factor for determining types of usage that may be contemplated for an area in the future. Changes may be made when necessary and justified.

c. Barrier-Free Facility Design. All facility designs will provide universal access for visitors where required by federal law or regulation. Standards are to be applied during the design, construction, and alteration of buildings and facilities.

d. Environmental Protection and Enhancement. Designs minimize the impact of development on the natural and aesthetic qualities of the site. This helps to avoid delays in obtaining certain permits prior to the construction phase. The design team will closely monitor construction and operational activities to ensure compliance with prescribed environmental protection requirements.

e. Carrying Capacity. A quality recreation area is dependent on design and construction that is fully compatible with the physical attributes, resources, and social carrying capacity of the site. Site design will not exceed the carrying capacity of the resource.

f. Access and Circulation. Access and circulation roads into recreation areas play a major role in influencing the total recreation experience. Design and location of roads, parking areas, boat ramps, walks, stairways, and trails will be accomplished in accordance with the philosophy envisioned for public use and participation in recreation activities. Criteria, data, and basic design considerations for access and circulation in recreation areas is subject to EM 1110-2-410, *Design of Recreation Areas and Facilities - Access and Circulation*.

g. Health, Safety, and Security. The health, safety, and security of the visiting public at recreation areas are designed into facilities in the planning stages and are continued throughout the design, construction, and operation stages. The ERs and EMs in the 385 series establish safety program requirements for all Corps activities. Pertinent provisions of these publications will be applied. All facilities and equipment will comply with applicable Occupational Safety and Health Administration standards, National Fire Protection Association standards, and Consumer Product Safety Commission standards and

guides. Corps standards established in EM 1110-1-400, *Recreation Planning and Design Criteria*, applies to facility design in out granted areas.

5.41.3 Structures. The basic objective in the planning, design, construction, and maintenance of comfort stations, shelters, and other buildings in recreation areas are to provide adequate facilities for the use and support of visitors. Structures will be identifiable, convenient, and economical to construct and maintain. Structures will be attractive, but should not distract from the natural character of the area.

5.41.4 Utilities. Utilities must be provided, as necessary, to support recreation facilities and the needs of users. Appropriate alignment and location is very important for aesthetics, costs, and management. Accurate visitation data is extremely important in the design of all utility systems. Designs for new projects will be based on anticipated or projected visitation. Area renovation will be based on actual historical visitation figures. In the design of utility systems, emphasis will be placed on the cost of installing, operating, and maintaining these systems. Systems must meet all federal, state, and local criteria and standards for health and safety. Generally, all utility lines should be placed underground unless cost or other special conditions make such installation prohibitive.

5.41.5 Landscaping. Areas selected for recreation development may possess outstanding natural features (i.e., earth, rock, water, or plant materials). It is essential for the design team to ensure these attractions are used to optimum advantage during site development. Physical properties of the site will be inventoried and features most conducive to the proposed development determined. Design should utilize these features to the maximum extent possible. Whenever possible, existing plant materials will be incorporated into the proposed design. In some cases, thinning of existing vegetation may be desirable (0-50-percent shade; very dense shade is undesirable for recreation sites). If additional plants are required, they will be native species indigenous to the site or ornamental species that are growth zone compatible. Species should be low maintenance varieties and hardy for the area. Water courses or natural springs will be staked or fenced to prevent damage from construction activities.

5.41.6 Support Items. The quality of camping, picnicking, or other recreational experiences is often contingent on the quality, type, and design of available support facilities. A challenge for the designer and manager is to provide aesthetically harmonious, functional facilities that are durable, resistant to vandals, and economical to install and maintain. Specific design criteria for campsites, picnic areas, launch ramps, swimming areas, fishing areas, and hunting areas are found in EM 1110-1-400, *Recreation Planning and Design Criteria.*

SECTION 6 - SPECIALTOPICS, ISSUES, AND CONSIDERATIONS

This section focuses on topics unique to Dworshak Reservoir that are not discussed elsewhere in this Plan. It is presented as additional information**.**

6.1 RESERVOIR DRAWDOWN MANAGEMENT ISSUES

6.1.1 General Description of Reservoir Drawdowns. In 1992, the Corps began lowering water levels in response to Section 7 consultation under the Endangered Species Act. Historically, the reservoir remained full during the peak recreation season, Memorial Day through Labor Day. Currently, in a year with normal snowpack the reservoir fills for the July 4th weekend and the drawdown begins after the holiday. The lower water elevations have created challenges for public access to recreation areas and challenges to management practices. The Corps has extended boat ramps and installed destination docks to reduce impacts.

6.1.2 Definition of Issues. A low pool elevation limits public access to ramps, docks, and mini-camps resulting in users finding or creating unauthorized ATV roads and trails.

Big Eddy Marina provides boat launching at the lowest pool elevations (-155 feet). Other ramps accessible at lower elevations are Dent Acres (-115 feet) and Bruce's Eddy (-110 feet). Recreation areas on the upper end of the reservoir, above Dent Bridge, do not have boat launch capability when water levels drop below 75 feet. The Grandad Recreation Area boat ramp typically is unusable in September. Not until fall precipitation does it regain enough water elevation to be usable until mid-October, sometimes not until spring. Plans are developing to extend the Grandad and Canyon Creek boat ramps, pending available funding. Photo 6-1 illustrates boating and parking issues during drawdowns.

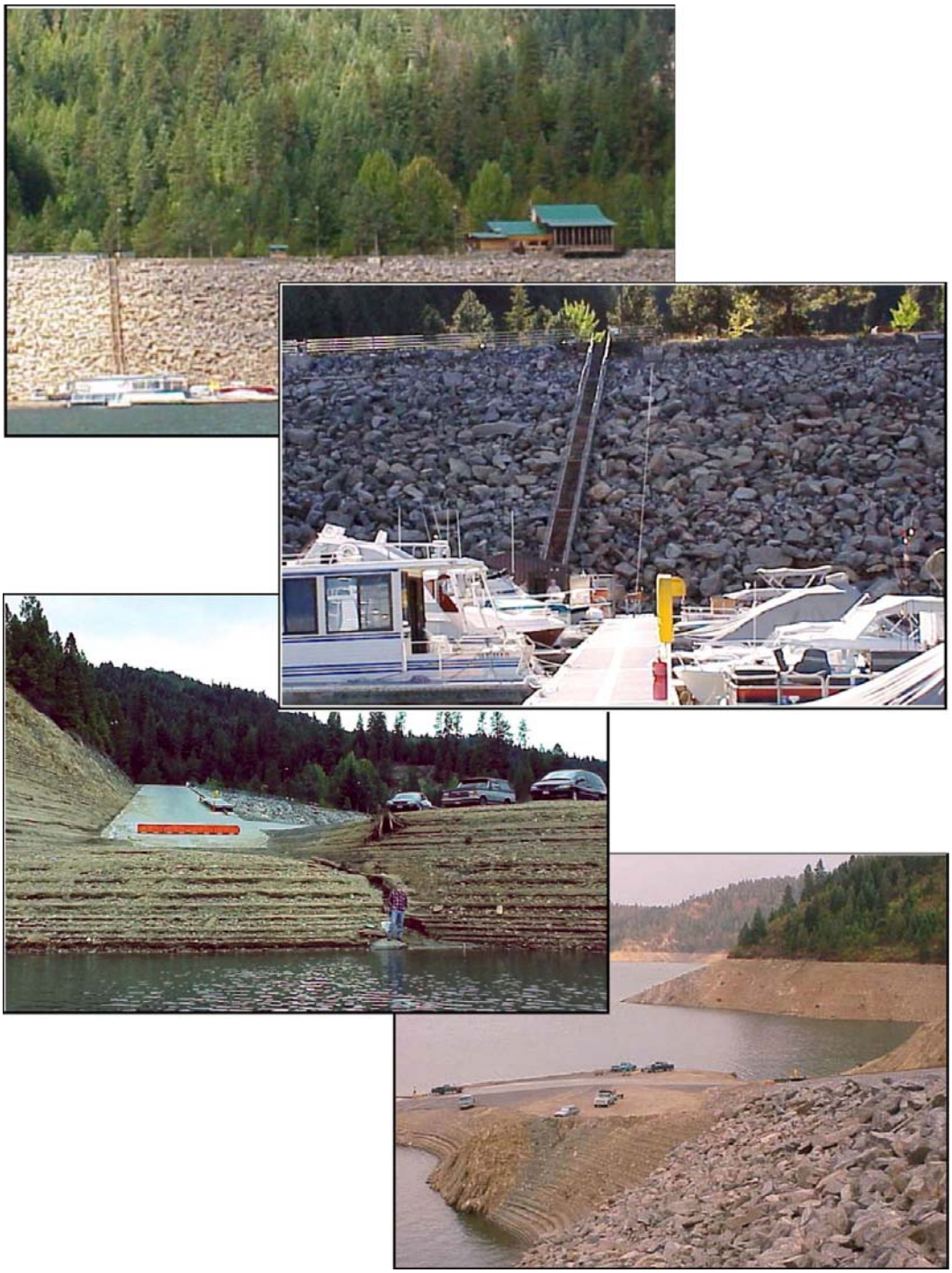


Photo 6-1: Water drawdowns create boat access and parking dilemmas. Big Eddy Marina (upper left), stair access to the marina at Big Eddy (upper right), boat launch ramp at Big Eddy (lower left), and parking at Big Eddy (lower right).

Low water elevations inhibit access to the mini-camps along the reservoir. When lake levels are within 30 feet of full pool, mini-camps receive use; beyond 30 feet down, access is very difficult (Photo 6-2). Exposed banks are unstable and hard to negotiate by foot. Access is only by hiking trail when available, or by hiking up exposed banks. In violation of Corps regulations,

unauthorized access on undesignated roads and trails by ATV users has been observed.

Photo 6-2: Mini-camps are accessible for visitors when the reservoir is within 30 feet of full pool. With drawdowns, access is only by means of hiking in.

Visitation at Dworshak has declined over the last decade. Costs of facility maintenance is very high when measured against the low numbers of visitors. Recently, the Corps has adopted a performance-based budgeting system that measures the cost per visitor across the nation. Recreation areas with a high cost per visitor or low efficiency may face further declining budgets. The challenge with this method for Dworshak is the complexity and cost of managing a resource with such dramatic water fluctuations. Creating more efficient recreational amenities is an important approach to ensure continued recreation opportunities.

6.1.3 Management Strategies. Past management strategy for responding to low water access on the reservoir has been to implement plans or upgrade facilities permitted under the original DM 10 as funding allowed. The current driving strategy makes the best use of the resources and recreation

opportunities at any given water level. Improvements made in the last decade to accommodate fluctuating water levels have included extension of boat launch ramps, addition of floating docks at various points on the reservoir, installation of self-adjusting boat ramp docks, and upgrades to existing facilities that already provide access to the water at low water levels. There is local interest in a large-boat marina to accommodate houseboats. Numerous improvements in efficiencies have been implemented, including a fast-response sewage boat and replacing flush toilets with vault or composting toilets in remote campsites.

6.2 RESERVOIR DRAWDOWN MANAGEMENT ISSUES - ADJACENT AND REGIONAL LANDOWNERS

6.2.1 Idaho Department of Lands. This agency manages land granted to the state of Idaho by the federal government. These lands were granted on the condition they produce maximum long-term financial returns for public schools and other beneficiaries. Idaho Department of Lands 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 Corps understands the importance of the Department's grant land and the impacts this master plan may have on their land adjacent to Corps property if or when recreation amenities are improved. Idaho Department of Lands will be consulted early in the planning and evaluation process on activities that may have an impact. There may be opportunity to share road maintenance expenses through an agreement.

6.2.2 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. Other issues caused by private residences adjacent to Dworshak land is discussed in paragraph 7.1.5.

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.

The Corps understands the importance of Potlatch trust land and the impacts this master plan may have on their land adjacent to Corps property if or when recreation amenities are improved. Potlatch Corporation will be consulted early in the planning and evaluation process on activities that may have an impact. For roads used to access Corps property, there may be an opportunity to share road maintenance expenses through an agreement.

6.2.3 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. Historically, Forest Service policy allowed cross-country travel by motorized vehicles in all areas unless posted as closed. New policy restricts motorized access to be only on designated trails. 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. At public meetings and in the working groups, ATV user groups expressed their desire to recreate on Dworshak land, and in letters to the Idaho congressional delegation.

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 will continue to coordinate with the Forest Service and other land management agencies in the area to determine the best way to manage motorized access.

6.2.4 Nez Perce Tribe. The Nez Perce Tribe owns land in the local region, including adjacent to the Dworshak National Fish Hatchery. In addition, the southern portion of the Project is within the boundaries of the Nez Perce Tribe Indian Reservation. Consultation was requested by the Corps with the tribe when updating the PUP; however, no response was provided. Consultation was also requested during this master plan update with no response.

6.2.5 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 (refer to Plate 6). 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 the trails, boat launches, and docks. 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. Designated trails on Dworshak land will not be reserved for exclusive use and must remain open to the public. No private boat launches or boat docks are permitted on Dworshak land or water.

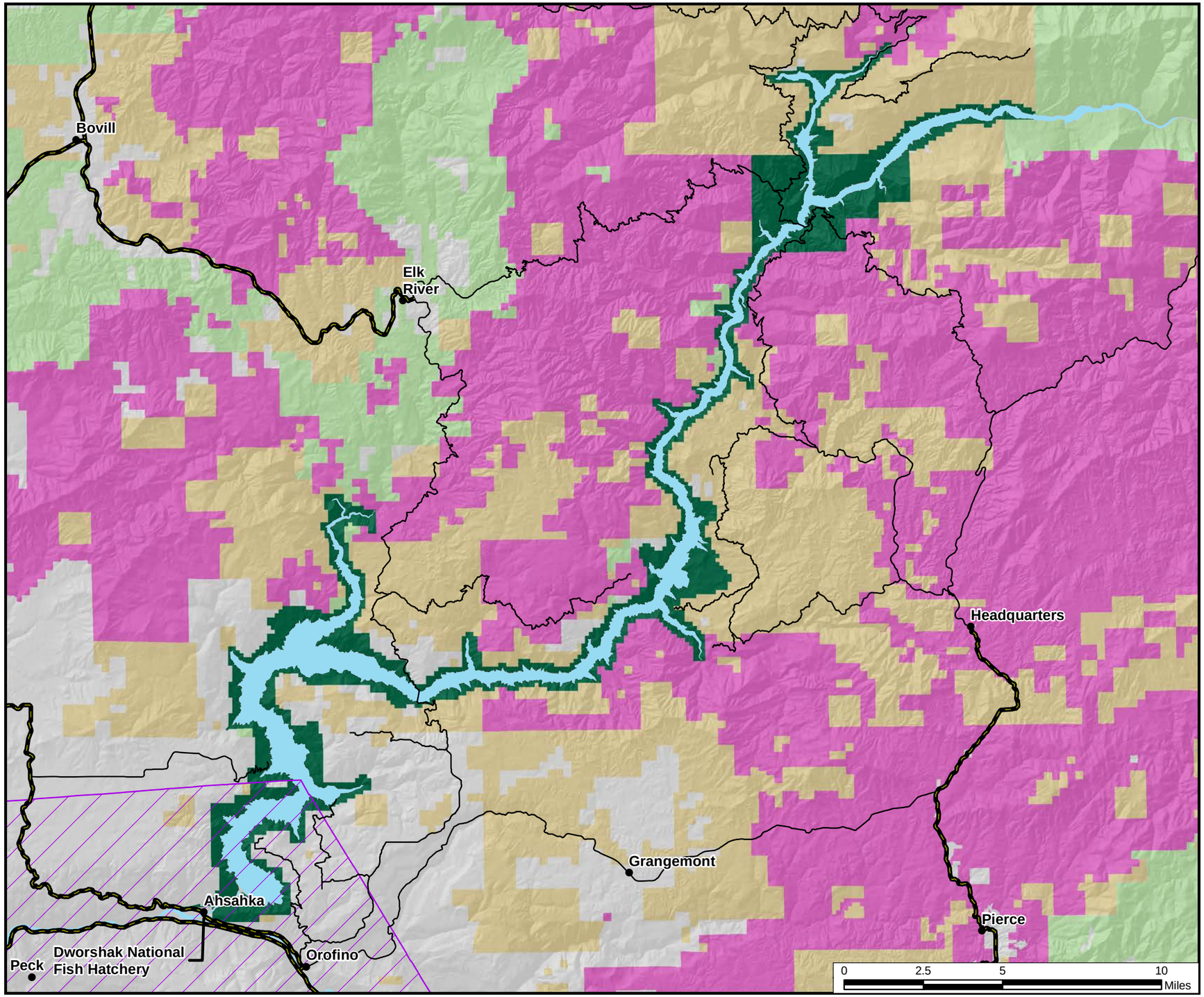
6.3 DWORSHAK NUTRIENT ENHANCEMENT PILOT PROGRAM

In 2007, the Corps, in conjunction with IDFG initiated a pilot study that would add nitrogen to the reservoir on a regular basis. This project was started because Dworshak Reservoir was becoming nutrient deficient, and it was believed that the reservoir would eventually become a sterile environment. In the years immediately following the completion of Dworshak Dam however, nutrients were plentiful within the reservoir because of the decomposition of organic matter on the thousands of acres that were flooded. The result was a high biological productivity that produced a very successful fishery. This was a temporary situation and over time, Dworshak Reservoir has gone through and aging process.

In 1972, kokanee salmon were introduced into the reservoir. This species primarily feeds on plankton but also eats insects, bottom organisms, and larval fish. Since its introduction, kokanee has become the primary fishery at Dworshak Reservoir. Because plankton is the main food source for kokanee, the amount of nutrients available in the reservoir becomes a critical factor in sustaining and growing this fishery. The decline in reservoir nutrients/productivity produced a corresponding decline in both the number and size of Kokanee. In addition to impacts to the fishery, current reservoir nutrient conditions have also impacted phytoplankton species. The lack of sufficient nitrogen levels in the reservoir, especially towards late summer and fall, create conditions which promote the growth of inedible blue-green algae. The blooms from two species of blue-green algae known to be present in the reservoir can present a public health risk (e.g. rash, illness).

The program was paused mid-season in 2010 and all of 2011 to acquire a newly required NPDES permit from the EPA. The permit was acquired and the program restarted in 2012. The pilot project will continue through 2016. Evaluation of effects, impacts and benefits of the will be analyzed and a determination made as to continue as a permanent program or not. Application for a new NPDES permit is due in April of 2016.

It appears that the addition of ammonium nitrate to the reservoir has helped to create a balanced reservoir system. The effects of this program on water quality



Map Legend

- City or Town
- Federal / State Highway
- Secondary Road
- Dworshak Reservoir
- Nez Perce Reservation 1863 Treaty

Surface Land Owner

- U.S. Forest Service
- U.S. Army Corps of Engineers
- State of Idaho Dept. of Lands
- Potlatch Forest Holdings
- Other

US Army Corps of Engineers ®
Walla Walla District

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Dworshak Master Plan

PLATE 6

DWORSHAK VICINITY SURFACE LAND STATUS

appear to have been positive, and no measureable harmful effects have been observed.

Results during the first four years of the study (2007-2010) of the project show improvements in creating a balanced reservoir system. Monitoring results have revealed several benefits from the program including increases in beneficial algae and abundance of higher-quality food for aquatic life. IDFG is also reporting modest increases in fish size, primarily in weight.

6.4 CURRENT MANAGEMENT AND OPERATION ISSUES

Declining recreation budgets and low visitation rates have impacted the amount of money available for Corps staff to manage and develop recreational amenities on the reservoir. The future of any additional recreation areas, and the sustainment of current recreational amenities, will depend in large part to the amount of money available to the Corps.

The Corps has used various means to meet public demand and leverage limited resources. In the past decade, the Corps has used cooperative agreements, contracted services, and volunteer assistance to meet public demand and operational goals. The Corps also uses real estate outgrants (leases) to sustain the availability of Corps-owned recreation assets. These leases are an important means of addressing public demand and leveraging limited resources.

Natural resources staff at Dworshak utilizes several forms of agreements with other entities or agencies to accomplish their mission, as listed below.

- Use of BLM forestry crew stationed at Cottonwood, Idaho, to assist with timber sale set up, administration, vegetation sampling and analysis
- Use of USFS prescribed fire crews to conduct prescribed fire in habitat improvement areas
- A memorandum of understanding with the state of Idaho to utilize the same boundary survey format along common boundary lines and share results
- A cooperative agreement with the Lewiston Juvenile Correction Center to provide a location for their outdoor education Trail Crew Maintenance Training Program
- An agreement with the Nez Perce Tribe to perform annual bio-control of noxious weeds

Dworshak previously relied heavily on commercial recurring contracts to complete routine recreation, forestry, and wildlife work:

- Grounds maintenance, including lawn mowing, restroom cleaning, and remote campsite maintenance. Contract cancelled, work performed by volunteers and in-house seasonal and temporary maintenance
- Janitorial services
- Garbage removal contract reduced in service
- Sewage disposal and portable toilet rental contract reduced in service
- Gate attendant contracts for the Dent Acres campground (mid-May through Labor Day). Contract cancelled, performed by volunteers
- Law enforcement through the county sheriff, (additional patrols and safety education over and above what is required by the county). Contract significantly reduced to bare minimum level of service for public safety
- Noxious weed spraying
- Fire protection (structures)
- Fire protection, wildland (pre-suppression and suppression activities). Some activities reduced and performed by in-house seasonal and temporary staff
- Boundary surveying
- Numerous other contracts to obtain good and services:
    - Minor electrical repairs in recreation areas
    - Vegetation modification for wildlife (browse slashing)
    - Gate construction and installation
    - Boat repairs
    - Roadway and parking lot painting

To continue to provide vital service to the public in an environment of declining recreation budgets, natural resources staff discontinued the summer ranger program. Instead, the services of numerous volunteers are used to accomplish the mission at the same or reduced levels of service. Many of the services would not be provided if not for these volunteers. Services include those listed below.

- Staffing the front desk at the visitor center
- Leading tours of the dam
- Performing minor maintenance
- Assisting with bird and wildlife inventories
- Performing hiking trail inventories
- Assisting with mini-camp inventories

- Collecting gate fees at Dent Acres Recreation Area
- Restroom and facility cleaning at Dent Acres and the recreation areas near the dam
- Roadway litter pickup and lawn mowing in several areas

Table 6-1 below contains a summary of the number of hours and associated value to the government of volunteer time over the last 10 years.

Year	Number of Hours	Value to Government Volunteer "Wages"
2004	2738	$47,066.22
2005	3725	$65,373.75
2006	3417	61642.68
2007	5706	$107,111.01
2008	3967	$77,405.93
2009	3779	$76,524.75
2010	6206.5	$129,405.50
2011	5775.75	$123,370.02
2012	6892	$150,176.69
2013	7988.5	$176,865.30
	Total	**$1,014,941.85**

Table 6-1: Volunteer summary.

Dworshak has increased the number of volunteers over the last several years. Volunteer Village near Dworshak Visitor Center provides four campsites that include water, sewer, and electricity. An additional Volunteer Village near Dent Acres Recreation Area provides seven additional sites. These sites are provided to the volunteers at no cost.

6.5 TOURISM AND RECREATION TRENDS

6.5.1 National Tourism Trends. Tourism is an important part of the economy of the United States. Nationally, tourists from other countries account for nearly one billion visitors each year. The American population accounts for over one billion trips per year, as well. Attractions, natural features, landmarks, and recreation are major tourist attractions. The amount of tourism, typically, is directly related to the nation's economic conditions. A volatile economy and rising fuel costs are factors relative to the health of the tourism industry.

6.5.2 Regional Tourism Trends. The University of Idaho and the U.S Travel Association show that tourism contributes in excess of $3.4 billion annually to

the state's economy (Wilgus, 2006). It is the third largest industry, exceeded only by manufacturing and agriculture. Tourism provides jobs for around 26,000 Idaho citizens. As a result of tourism, nearly $500 million (in the form of state and local tax revenues) are generated from over 22 million visitors who travel to, or through, the state each year.

In Idaho, much like the rest of the nation, 47 percent of visitors to the state list their primary reason for travel as "seeing friends and family". Visiting attractions and natural areas were rated by 32 percent of Idaho visitors as the primary reason for traveling to Idaho, while 16 percent said recreation was their primary reason for coming here. When evaluating outdoor recreation and tourism trends, it is important to understand the distance visitors are willing to travel to take advantage of the facility.

Much of Idaho's recreational activities take place on federally-owned public lands. Decisions regarding access and usage on these lands will have a dramatic impact on the future of Idaho's tourism industry.

6.5.3 National Recreation Trends and Methods. Nationally, studies have shown that outdoor recreation participation increased by over four percent between 2000 and 2007. Table 6-2 shows the number of people participating nationally in recreation activities, and the percent of change from 2000-2008.

Activity	Total Participants (1,000s)	Percent change in participants, 2000-2008
Kayaking	12,480.5	63.1
Orienteering	5,952.7	58.6
View/photograph flowers, etc.	118,370.7	25.8
View/photograph other wildlife	114,792.0	21.3
Visited farm or agric. setting	71,327.7	20.2
View or photograph birds	81,119.9	19.3
Drive off-road	44,231.3	18.6
View or photograph fish	61,135.5	16.8
Gather mushrooms, berries, etc.	71,023.3	16.1
View/photograph natural scenery	145,489.2	14.1
Big game hunting	20,209.8	12.8
Boat tours or excursions	45,525.7	10.7
Visit a beach	95,882.7	10.4
Walk for pleasure	193,411.7	9.6
Bicycling	91,222.5	7.7
Snowboarding	11,273.9	7.3
Warm water fishing	51,924.6	7.3
Day hiking	74,032.5	6.8
Waterskiing	18,048.9	5.5
Visit nature centers, etc	127,406.5	5.0
Horseback riding	21,678.5	4.9
Family gatherings outdoors	164,841.4	4.2
Sightseeing	113,166.0	4.1
Swimming in lakes, ponds, etc.	92,140.1	4.0
Motor boating	54,124.4	3.9

Driving for pleasure	111,069.0	3.1
Visit a wilderness	70,591.9	3.0
Developed camping	58,021.3	2.7
Visit prehistoric sites	44,938.0	2.4
Canoeing	21,043.8	2.3
Visit waterside besides beach	55,514.8	1.6
Small game hunting	15,006.7	-0.3
Anadromous fishing	9,161.8	-0.4
Backpacking	22,077.0	-0.6
Picnicking	115,836.2	-1.4
Primitive camping	33,330.2	-2.0
Coldwater fishing	28,218.7	-2.1
Use personal watercraft	19,483.5	-4.1
Visit historic sites	92,920.8	-4.5
Rock climbing	8,662.0	-5.5
Rowing	8,517.9	-6.3
Sailing	10,241.9	-6.5
Mountain biking	41,910.1	-8.0
Horseback riding on trails	15,262.6	-8.2
Snowshoeing	3,908.9	-11.8
Mountain climbing	11,811.2	-12.5
Ice fishing	4,854.0	-14.5
Migratory bird hunting	4,148.9	-16.2
Rafting	17,166.3	-16.8
Windsurfing	1,343.3	-19.1
Snowmobiling	8,328.2	-29.7
Cross-country skiing	4,970.7	-39.2

Table 6-2: National recreation numbers.

6.5.4 Regional Recreation Trends and Methods. 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 6-3 through 6-7 depict recreation trends from the National Survey on Recreation and the Environment (1999) for the Rocky Mountain Region.

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 6-3: Projection of participation in activities on developed land.

Activity	2010	2020
Cross-Country Skiing	31%	41%
Downhill Skiing	14%	15%
Snowmobiling	6%	10%

Table 6-4: Projection of participation in winter activities.

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%

Table 6-5: Projection of participation in activities on dispersed land.

Activity	2010	2020
Fishing	16%	26%
Hunting	5%	12%
Non-Consumptive	20%	30%

Table 6-6: Projection of participation in wildlife-related activities.

Activity	2010	2020
Canoeing	11%	20%
Motor Boating	17%	26%
Non-Pool Swimming	14%	24%
Rafting	10%	19%

Table 6-7: Projection of participation in water-based activities.

In 2002, the Idaho Outdoor Recreation Data Center (ORDC) conducted a survey to rank issues of recreation importance from the public perspective (Table 6-8). The results from this statewide survey are significantly different from the public input received by the Corps as part of this planning process. Section 4 discusses the primary issues and concerns that the Corps heard in their public participation process during the PUP update. For example, ATV trails ranked very high as an issue for local participants, but ranked very low on a state-wide basis.

Issue	Rank
Protect water quality	1
Protect existing access to public lands	2
Protect natural resources on public lands	3
Educate youth about natural resources and the environment	4
Controlling invasive species	5
Educate adults about natural resources and the environment	6
Provide recreation safety instruction for youth	7
Provide outdoor recreation education for youth	8
Provide access for the disabled	9
Rehabilitate outdoor recreation facilities	10
Provide additional access to public lands for outdoor recreation	11
Provide recreation safety instruction for adults	12
Provide recreation facilities to encourage exercise for health	13
Acquire land for recreational use	14
Manage dispersed recreation use on public lands	15
Provide recreation trails to connect communities with each other and with other	16

recreation areas	
Provide designated ATV trail systems	17
Provide designated cross-country skiing trail systems	18
Provide designated snowmobiling trail systems	19

Table 6-8: Idaho recreation issues.

Tables 6-9 below shows how far the average Idaho recreationalist is willing to travel to get to a recreation area, based on how long they want to stay at the site—less than 1 day, overnight stay, or 2-night stay. (Achana, Francis T., 2006).

Stays of Less than 1 Day								
Distance Traveled			<1 hrs		1-2 hrs	2-3 hrs		>3 hrs
Percentage willing to travel			9.9		51.8	29.2		9
Overnight Stays								
Distance Traveled	<1 hrs	1-2 hrs	2-3 hrs	3-4 hrs	4-5 hrs	5-6 hrs	6-7 hrs	>7 hrs
Percentage willing to travel	1.6	20.4	36.8	21.8	8.2	5.6	2.1	3.6
Two-Night Stays								
Distance Traveled	<1 hrs	1-2 hrs	2-3 hrs	3-4 hrs	4-5 hrs	5-6 hrs	6-7 hrs	>7 hrs
Percentage willing to travel	0.5	3.2	16.7	22.7	14.6	15.8	10.8	15.7

Table 6-9: Willingness to travel based on length of stay.

The data in these tables would lead planners to believe that Dworshak will be used primarily by people coming from 3 to 4 hours away or less. This information is consistent with previously-stated information that the majority of visitation to Dworshak comes from the adjacent counties. This information also shows that, to attract people from further distances, the recreation area needs to provide facilities and amenities that will attract multiple–night visits.

6.5.5 All Terrain Vehicle Trends. In 1970, when the original Public Use Plan (DM 10) was written, ATV use was not considered as a recreation method. If fact, very few ATVs were available in the marketplace. 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 1990s. For this report, an ATV is considered one type of Off-Highway Vehicle (OHV), while other OHV types include jeeps, sport utility vehicles, and other vehicles capable of off-highway travel.

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. 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.

In the United States, the state of Idaho is second only to Wyoming in the percentage of total population using ATVs. Figure 6-1 below depicts how ATV registration increased between 2001-2011. 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.

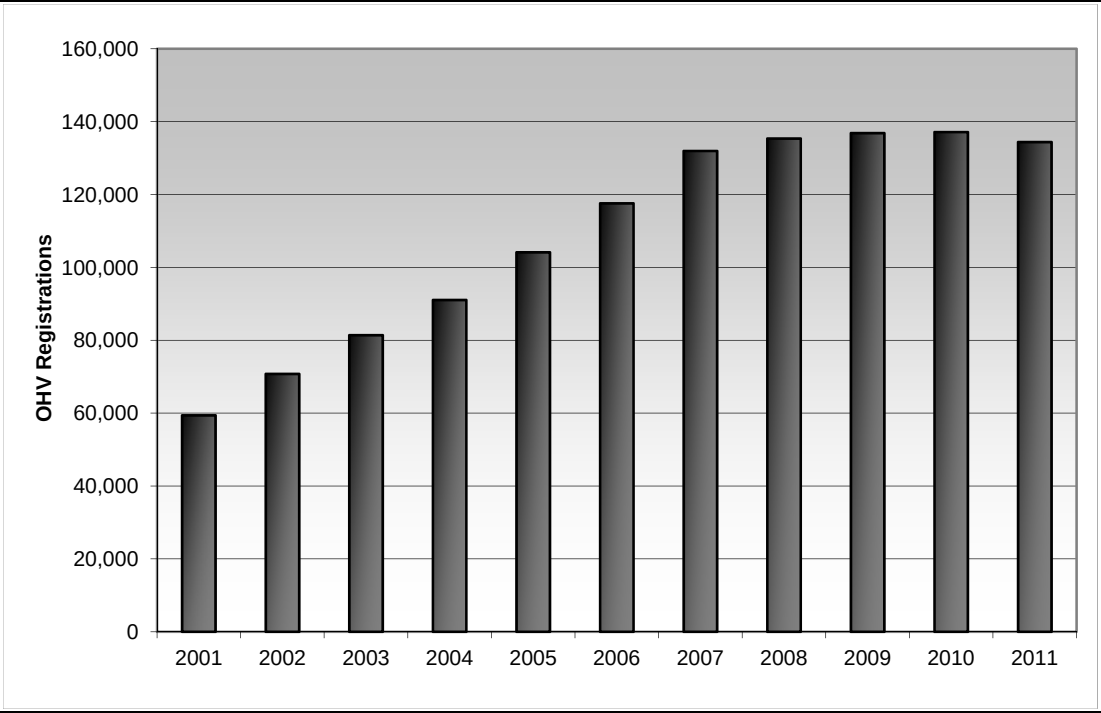

Figure 6-1: Idaho ATV registration over the span of 11 years peaked in 2009-2010. It is unknown if another peak emerged as more current data has not been compiled.

At Dworshak, there has been a demand to use old logging roads and trails for ATV use. In many places, ATV users have used these roads and created unauthorized trails. These trails now show signs of erosion and other negative effects on the natural resources (Photo 6-3). Although gates have been installed and trails closed, ATV users find other routes to access the trails they have been using.

Photos 6-3: Environmental effects of ATV use on non-designated, trails and roads.

In response to public demand, the Corps performed an analysis of ATV demand in 2004 at the Little Meadow Creek Log Dump. A hardened logging road was selected for use in a pilot study that would allow ATV use at Dworshak and help to determine suitability and impacts of ATV use on a given site. Factors evaluated were slope, aspect, impacts to cultural resources, aesthetic resources, and ease of access. This site has been

monitored for both visitor use and effects on environmental resources, and that information will be used to determine if additional areas could be designated for ATV use. To date results of monitoring have shown that there have been very few problems with vandalism, off-road travel, or any other abuses at this site. Visitation and use of this ATV trail has been relatively low which may be due to required permit needed to recreate on Potlatch Timber properties.

SECTION 7 – AGENCY AND PUBLIC COORDINATION

7.1 PUBLIC INVOLVEMENT

Public involvement is an important part of the planning process. Comments compiled from attendees at the scoping meetings and from other sources were used to update the land classifications and conceptual implementation guidelines. Refer to Appendix B for attendee responses.

Working groups were an important source of ideas and information. They spent several years learning about challenges and management requirements at Dworshak, and contributed ideas they felt would be appropriate for implementation. Results from this effort were reported in the *Dworshak Reservoir, Consolidated Master Plan Revision Consensus Recommendations* (Corps, 2007). Those recommendations were evaluated and contributed to the formation of this master plan.

The public will continue to play an active role in the planning process as conceptual development plans are implemented. In addition to receiving comments as part of the NEPA process, Dworshak staff anticipates forming partnerships with other recreational entities, such as with the Idaho State Parks and Recreation and with the non-profit organization Public Lands Access Year-round, to enhance recreational opportunities.

7.1.1 Working Groups. As part of the 1999 Dworshak master plan update effort, three citizens' working groups were established by the staff in the Dworshak Natural Resources Management office. Each group selected a management challenge at the lake (land management; land access; water access). During this process, some members felt the shoreline recreation facilities and development potential was not being fully addressed. This resulted in a fourth group being established.

Each of the above working groups were comprised of citizens and agency personnel interested in providing input and seeking solutions to the challenges facing Dworshak. They were facilitated by the natural resources staff and met weekly for four to six weeks. Envisioned to be a short-term commitment, the groups evolved into small planning committees that dedicated several years and met monthly or quarterly to address planning and management issues. They continued their focus, despite a lack of federal funding, to continue the master plan update effort.

Recommendations presented by the four groups included areas of overlap and conflict. In an effort to find consensus, a professional facilitator was hired to bring members together with the goal of understanding conflicts and finding compromise. The groups met in six sessions to finalize consensus

recommendations towards either a public use plan or the master plan update; a report published documented their recommendations (Corps, 1997). Their recommendations related primarily to land use classifications, recreation areas and facilities, recreation activities and use, and areas managed for fish and wildlife. The effort led to the completion of the 2011 Public Use Plan.

7.1.2 Elected Officials. Corps staff and leaders meet regularly with congressional leaders from the Idaho First District and senatorial staff. From the beginning, congressional interest on issues and developments at Dworshak and in Orofino, Idaho, has been high. Staff from the offices of Congressman Otter, Senator Craig, and Senator Crapo attended working group and consensus meetings. Besides congressional briefing, Corps staff continues to visit with chambers of commerce and city councils in Orofino and Lewiston, Idaho.

7.1.3 Nez Perce Tribe. The Corps places priority on building good relationships with tribal partners. As part of the master planning process, the Corps contacted the Nez Perce Tribe and offered government-to-government consultation, but did not receive a reply in regards to updating the master plan. The Nez Perce Tribe is a sovereign nation and the Corps is required to offer consultation on actions or policies that may impact tribal property or interests.

7.1.4 Other Agency Involvement and Coordination. All development will be continuously coordinated with appropriate federal, state, and local agencies throughout the planning process. This is particularly critical as the Dworshak area of influence includes two states, five counties, several cities, county, state, tribal, and federal agencies, and many special interest groups.

Dworshak provides varied recreational opportunities and important wildlife habitat to the region. Land surrounding the reservoir is owned and managed by other public and private agencies, each with their own regulations and policies. Coordination with adjacent landowners is important to ensure that future recreation activities and facilities are compatible with adjacent land use and to minimize resource degradation and conflicts. Development will be planned, within resource capacities, for each individual site.

7.2 PUBLIC MEETINGS

7.2.1 Scoping Meetings. The Corps of Engineers conducted public scoping meetings in Orofino and Lewiston, Idaho, in September 1999 to support an update to the master plan. Meetings were well attended and the Corps received suggestions and comments related to management issues and recreation at Dworshak Reservoir. Most comments focused on the change in water level on the lake and negative impacts to recreational opportunities.

Many felt that the changes and limitation in recreation opportunities had negatively impacted the economy of Orofino. From these scoping meetings and the interest they generated, Dworshak staff established the previously described working groups.

As part of the process to support the 2011 Public Use Plan, the Corps conducted public scoping meetings in September 2008. Again, meetings were held in Lewiston and Orofino, Idaho, and focused on finding solutions and meeting challenges associated with recreating at Dworshak under a fluctuating water regimen. The Orofino meeting was attended by approximately 80 people; Lewiston by 20-25 people. Issues identified included:

- A need for motorized access,
- Boat access at all water elevations,
- Access for persons with disabilities,
- Updates to the Elk Mitigation Plan, and
- Reservoir debris.

The public scoping meetings held in 2008 were deemed sufficient for the master plan development. Comments from the public are summarized in Appendix B. Land use classifications, recreation areas and facilities, recreation activities, and areas managed for fish and wildlife have not changed since the PUP. Determinations made then have been incorporated into this master plan.

In 2014, the public was again invited to provide input on the draft master plan and encouraged to submit ideas and comments regarding management of natural and recreational resources that should be included in the plan. 89 scoping letters were sent to individuals, businesses, organizations, and agencies. Additional coordination was held with Nez Perce Tribal representatives. Scoping notifications were published in the Clearwater Tribune and the Lewiston Tribune newspapers.

Responses were similar to those received during the PUP development process.

7.2.2 The Corps' Internet Site**.** In 1999, the Corps developed a website to disseminate information and collect comments for the master plan update. It has been used as a home page by the working groups for posting reference materials and recommendations, and was used to collect comments for the PUP update during the scoping and draft phases. The final PUP is posted to this website, nestled within the home page of the Walla Walla District U.S. Army Corps of Engineers—www.nww.usace.army.mil/planning/er/dworshak/dwamain.htm.

SECTION 8 - SUMMARY OF RECOMMENDATIONS

8.1 GENERAL

Development of the *Dworshak Reservoir Master Plan* allows for enhancement of public recreational opportunities and improvement in the environmental quality for the present and future longevity of the project. It required continued involvement of the general public and recreational user groups, as well as federal, state, and local agencies. This input will aid in the efficient, effective, and timely implementation of resource use objectives as funding becomes available. It required the appraisal of natural and cultural resources around the reservoir and the examination of environmental considerations. This Plan will guide the use, development, and management of Dworshak Reservoir in a manner that optimizes public benefits within resource potentials and the authorized function of the project while remaining consistent with Corps of Engineers' policies, regulations, and environmental operating principals.

8.2 RECOMMENDATIONS

Below are recommendations to manage Dworshak Reservoir's current and future issues.

8.2.1 Shoreline Access. Due to water drawdowns, the reservoir has become more difficult to access. Facilities designed for full pool for a majority of the recreation season no longer provide for the needs and desires of visitors at lower water levels. Existing recreation areas offer great variety in location, type, and level of development for land-based and water-based activities, but due to fluctuating water levels, visitation peaks two week before and after the July 4th when the reservoir has reached full pool. Future development and/or rehabilitation of recreational facilities will focus on improving opportunities that would allow the reservoir to be more accessible year-round and at any water level.

Recommendations for greater accessibility to visitors included the possibility of designating trails for ATV use, and designating the shoreline within the drawdown zone as an approved location for camping. The majority of the shoreline along the reservoir is now classified as low density recreation. The majority of the land above the shoreline will be managed for the primary purpose of wildlife, but this does will not limit the ability of visitors to access and use these lands for approved activities.

8.2.2 Future Development. Based on initial evaluations, developed recreation areas have been identified with the potential for future development. These areas can be improved and maintained to meet visitor demand and still reduce operation and maintenance costs while maintaining the integrity of the natural resources setting and quality of the environment.

It is recommended that changes to facilities and their current operation be implemented when the Corps has received sufficient visitor demand, available funding, and completion of the environmental compliance process. Development can only occur if it meets the criteria of the decision matrix located in Appendix Q, is appropriate in scale to the level of demand, and does not significantly affect natural or cultural resources as described in, and evaluated by, the NEPA process.

8.2.3 Wildlife Habitat. Much of Dworshak's forested land provides wildlife habitat for many species including threatened, endangered, special status, and other regionally important species. It is recommended that "Priority Habitats," described in Section 2.3.6.2, be continually assessed, and a Vegetation Management Plan be developed to manage the forest land along the reservoir to meet objectives, including ecosystem integrity, forest health, wildlife habitat, and recreation opportunities.

8.2.4 Boundary Surveys. Boundary surveys and marking of federal property need to be completed. This, and in conjunction with a Vegetation Management Plan, is ongoing as funding becomes available. It will aid managers and inform visitors where specific activities are acceptable.

8.2.5 Signage, Fencing, Vehicle Use. Signage and/or fencing are recommended, especially for wildlife management areas. Vehicle use in prohibited areas needs to continue to be monitored. Non-motorized areas need to be protected by means of signage, fencing, gates, or other appropriate barriers. Citations are authorized for visitors operating motorized vehicles in prohibited areas, requiring an appearance before a federal magistrate.

It is recommended that Corps of Engineers management, both at Dworshak and the district headquarters; continue coordination with stakeholders after the finalization of this master plan. Meetings offer information exchange and present challenges and needs. Corps staff and attendees work together to identify issues, prioritize them, and seek ways to resolve.

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APPENDIX A

PERTINENT DATA SHEET

GENERAL

Location of Dam	RM 1.9 on the North Fork Clearwater River, Idaho
Operating and Managing Agency	U.S. Army Corps of Engineers
Purposes	Flood Control, Water Supply, Navigation, Fish and Wildlife, and Recreation
Authorization	Section 201, Flood Control Act of 1962
Year Constructed Started	1966
Year Dam Placed Into Operation	1972 – Operational for flood control 1973 – Powerhouse went into operation
Construction Cost	$302 Million

DAM

Type	Concrete Gravity
Crest Elevation	1,613 ft.
Crest Length	3,287 ft.
Structural Height	717 ft.
Concrete Volume	6,500,000 cubic yards
Permanent Outlet Works	Right bank
Number and Size of Conduits	Three – 12x17 ft.
Gates, Type and Number	Tainter – 3 Tractor (emergency) – 1 Intake centerline elevation – 1,352 ft.

POWER FACILITIES

Number of Units	3
Nameplate Rating, Kilowatts	Two, each 90,000 One – 220,000 Total – 400,000
Design Capacity	400 MW
Powerhouse Length	482 ft.
Turbine Type	Francis
Turbine Ratings, Horsepower	Small Unit – 142,000 Large Unit – 346,000
Penstock Intake Elevations	Small Unit – 1,420 ft. Large Unit – 1,412 ft.
Penstock Diameter	Small Unit – 12 ft. Large Unit – 19 ft.
Head	Gross Head – 632 ft. Rated Head – 560 ft. Minimum Head – 477 ft.
Average Energy Output 2000	1,874,830 MWh

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SPILLWAY

Type	Gate controlled, with stilling basin
Type, Number and Size of Service Gates	Tainter, 2, 50 ft. x 56.4 ft.
Crest Elevation	1,545 ft.
Crane Capacity	150 tons

RESERVOIR

Total Drainage Area	2,440 square miles
Length at Elevation 1600	53.6 miles
Shoreline Length	175 miles
Surface Area	At Elevation 1,600 ft. –17,090 acres At Elevation 1,445ft. – 9,050 acres
Maximum Operating Pool	1,600 ft.
Normal Operating Range	1,600 ft. to 1,445 ft.
Storage Capacity	Gross – 3,468,000 acre-ft. Usable, flood control and power 2,016,000 acre-ft.

APPENDIX B

PUBLIC SCOPING MEETINGS COMMENT MATRIX

1. Regarding recreation use around Dworshak Reservoir, what are your concerns or issues?	
MOTORIZED ACCESS	
Motorized Access	* * * * * *
Re-open gates/trails	* * * *
Gate Design	* *
Motorized access to Magnus Bay	* *
Motorized trails	* *
Pave old Dent Road	* *
Motorized access to handicap toilet	*
Mid-lake motorized access	*
Motorized access to campgrounds	*
North-South ATV trail	*
Motorized Noise	*
BOAT ACCESS/LAUNCH	
Floating Docks	* * * * * * * *
Fuel Stations	* * * *
Debris	* * * *
L/W access to marina	* * * *
Boat moorage at Dent	* * *
Boat Access at L/W	* * *
Canyon Creek boat launch	* *
Boat tie-ups at all water levels	* *
Extend boat ramps	*
Launch at motorized accessible sites	*
More launching area at Big Eddy	*
Magnus Bay boat ramp	*
Fill Reservoir sooner in year	*
Wider boat ramp at Dent	
Boat access to mini-camps at L/W	
Low water ramp parking	
CAMPING	
Camping in Grandad	* *
Camping at Merry's Bay	* *
Larger pullouts on Freeman Creek Road	*
More campsites	*
Finish Magnus Bay as DM10 says	*
Camping in Grandad	
Campsite maintenance	
Close mini-camps not being used	
Chemical toilets at group camps	
Composting toilets	
Upgrade campgrounds used most	
Inconsistent enforcement of 14 day limit	

Continued on next page

OTHER ACCESS	
Kids swim area	* * *
Multiple use access	* * *
Gut Piles	* *
Multi-unit housing	
Resorts	
Hiking trails	
Easements to private property	
Non-motorized campsites	
ELK MITIGATION	
Elk Mitigation	* * * *
Wildlife/recreation conflicts	* *
Eliminate DM15	*
OTHER	
Quit wasting time and money	* *
Accurate visitation data	*
Increase staff for increase use	*
COE accountability	*
Development conflict with fishing	
Vegetation manipulation on Reservoir	
Harvest of dead trees	
Reservoir fluctuation effects on fish	
2. What contributes to a quality recreation experience at Dworshak?	
MOTORIZED ACCESS	
Motorized access	* * *
BOAT ACCESS/LAUNCH	
Destination docks	* * * * * * * * * * * * *
Useable boat launches	* * * *
Water access to mini-camps	* * *
Full pool Memorial Day - Labor Day	* * *
No Debris	* * *
Mid-reservoir launch	* *
Full pool	*
Good docks at marina	*
No wake zones	*
Floating restrooms	
CAMPING	
Available campsites	* * *
Mini-camps	*
Clean campsite	*
OTHER ACCESS	
Land access to mini-camps	* * * * * * *
Interpretive trails	* * * * *
Hunting access	* *
Hiking trails	* *
Designated trails and loops	* *
Access	

Continued on next page

ELK MITIGATION	
OTHER	
Fishing	* * * * *
Increased fish populations	* * * *
Peace and quite	* * *
Not crowded	* * *
Loaner life jacket	* *
Friendly people	* *
Aesthetics/beauty	* *
Clean water	*
Corps staff	*
Law enforcement presence	*
Pack it in/out bags	*
Multiple use aspects/management	*
Pristine nature	*
Hunting	
Good public relations	
Fish cleaning stations	
Respect	
Safety	
Wildlife habitat	
3. To allow use of Dworshak Reservoir at all water levels, what management actions do you recommend?	
MOTORIZED ACCESS	
Expand motorized access, trails/camps	* * * * * * * *
Motorized access in Elk area	* *
ATV access trail around lake	* *
ATV winter access to Dent Bridge	*
Remove gates on upper reservoir	*
BOAT ACCESS/LAUNCH	
Disabled access to marina docks	* * * * * * * *
Extend boat ramps	* * * *
Additional moorage at marina	* * *
Extend Grandad ramp	* *
Build floating docks	* *
Jet ski moorage at marina	*
Expand temp moorage at recreation sites	*
Fuel at Dent	*
Boating safety classes	*
Canyon Creek boat launch	*
Debris	
CAMPING	
Enlarge Canyon Creek	* * *
Floating rental cabins	* *
Camp at Big Eddy	* *
Rental cabins	*
More campsites	*
Self contained camping in non-design	*

Continued on next page

OTHER ACCESS					
Increase water and land access	*	*	*	*	*
Roads and trails for land access	*	*	*	*	
Commercial development	*	*			
Increase land use due to decrease water use	*	*			
Community loaner boat/bike	*	*			
Non-motorized trail from Dam to Elk Creek	*				
More restrooms land and water	*				
Interpretive geologic tour	*				
More hiking trails					
ELK MITIGATION					
Revisit Elk Mitigation plan	*	*	*	*	
OTHER					
Coordinate management plan with all agencies	*	*			
Get Money	*				
Inform public on rules and regulations	*				
Water levels controlled by Corps only	*				
More law enforcement	*				
NOAA weather system					
Cooperation with adjacent land own					
Planning docs updated more frequently					
Swim lessons					
Pursue money from other agencies					
More power to local Corps management					
Family Use					

APPENDIX C

PREVIOUS NEPA ACTIONS

CAT-EX = Categorical Exclusion; EA = Environmental Assessment; EIS = Environmental Impact Statement

Document Title	Document Type	Month	Year
DWA Freeman Creek Well & Pipeline	CAT-EX	Jan	2014
DWO Fish Hatchery Degassing Towers	CAT-EX	Jan	2013
DWO Fish Hatchery USFWS Chinook License	CAT-EX	Jul	2013
DWA Grave Road Maintenance	CAT-EX	Sep	2013
Ahsahka Stewardship Project	EA		2013
Reservoir Nutrient Supplementation Project	EA	Jan	2012
Programmatic Environmental Assessment of Forest Management Actions, Environmental Assessment	EA	Jan	2012
DWO Wetlands Enhancement	CAT-EX	Feb	2012
DWA Freeman Creek Well Drilling	CAT-EX	Apr	2012
DWO Little Bay Salvage Project Dworshak Dam and Reservoir	CAT-EX	June	2012
DWO Dworshak Dam and Reservoir Canyon Creek Road and Parking Development	CAT-EX	June	2012
DWO Unit 3 Head Cover Repair	CAT-EX	Aug	2012
DWO Clearwater County	CAT-EX	Aug	2012
Dworshak Dam and Reservoir Public Use Plan and Land Classification Changes	EA	Feb	2011
DWO Main Unit Vacuum Breaker Replacement	CAT-EX	Jul	2011
Canyon Creek Recreation Enhancement	CAT-EX		2011
Dworshak Elevator Repairs - Powerhouse and South Tower	CAT-EX	Mar	2010
Potlatch Tail-Holds	CAT-EX	Aug	2010
Dworshak Fish Hatchery, Tribal Fisherman Access Improvements	CAT-EX	Aug	2010
Freeman Creek Bridge	CAT-EX	Dec	2010
Potlatch Tailhold Trees	CAT-EX	Sep	2010
Dworshak National Fish Hatchery Domestic Water Line Repair	CAT-EX	Jan	2009
Idaho Department of Lands Right-of-Way Easement	CAT-EX	Mar	2009
Boat Dock Replacement, Freeman Creek Campground	CAT-EX	May	2009
Dworshak Dam Skeleton Bay Drainage Pump Replacement	CAT-EX	July	2009
Installation of a Wave Attenuation System, Big Eddy Marina	CAT-EX	Aug	2009
ARRA Multiple Project Road Repair/Paving	CAT-EX	Sep	2009
Big Eddy Wave Attenuator	CAT-EX	Aug	2009
Idaho Department of Lands ROW Easement Request at Dworshak	CAT-EX	Mar	2009
Three Meadows Campground Clearwater Power Easement	CAT-EX		2009
Dworshak National Fish Hatchery Nursery Building Roof Replacement and Modifications	CAT-EX	May	2008
Freeman Creek Campground CXT Restroom	CAT-EX	Mar	2008
Dworshak Elevator Repairs	CAT-EX	Jun	2008
Dworshak Viewpoint Recreation Area Timber Sale	CAT-EX	Feb	2008
Dworshak Draft Tube Scaffolding	CAT-EX	Jun	2008

Document Title	Document Type	Month	Year
Dworshak Viewpoint Road Timber Sale	CAT-EX	Feb	2008
Freeman Creek Campground Standpipes Replacement	CAT-EX	Dec	2008
Freeman Creek Campground Swing Set	CAT-EX	Dec	2008
Clearwater County License Renewal	CAT-EX	Aug	2008
Freeman Creek Campground CXT Restroom	CAT-EX	Mar	2008
Dworshak DSP1 4160V Feeder Replacement	CAT-EX	Mar	2007
Dworshak Reservoir Nutrient Supplementation	CAT-EX	May	2007
Canyon Creek Road Easement	CAT-EX	Apr	2007
Ron Beeman Road Easement	CAT-EX	Sep	2007
Beatrice Kunkler Road Easement Renewal	CAT-EX	Sept	2007
BOR Permit No. DACW68-4-02-36 Extension Request	CAT-EX	Jun	2007
Freeman Creek Campground Playground Equipment	CAT-EX	Oct	2007
Freeman Creek Campground Playground Equipment	CAT-EX	Oct	2007
Kunkler Road Easement Renewal	CAT-EX	Sep	2007
Ron Beeman road Easement	CAT-EX	Sep	2007
BOR Permit No. DACW68-4-02-36 Renewal	CAT-EX	Jun	2007
Canyon Creek Road Association Easement Renewal	CAT-EX	Apr	2007
Big Eddy Marina Anchor Repair	CAT-EX		2007
Dworshak Critical Infrastructure Security Program	CAT-EX	Mar	2006
Idaho State Parks and Recreation, Request to Place House at Freeman Creek	CAT-EX	Feb	2006
Idaho State Parks and Recreation, Request to Replace Underground Power line at Freeman Creek in Dworshak State Park	CAT-EX	Feb	2006
Right-of-Way Easement to section of Corps land to provide access to privately-owned land	CAT-EX	Apr	2006
Dworshak Dam & Reservoir, Landslide Stabilization and Road Repair	CAT-EX	Aug	2006
Request for Extension of Clearwater Power Company's Easement	CAT-EX	Jul	2006
Dworshak Fishing Access Platform	CAT-EX	Mar	2006
Dworshak Dam and Reservoir, Elk Creek Meadows Stewardship Project	EA	Jul	2006
Dworshak Landslide Stabilization and Road Repair; Three Meadows Access Road	CAT-EX	Sept	2006
Dworshak Mooring Buoys	CAT-EX	Feb	2005
Dworshak Fishing Access	CAT-EX	Oct	2005
Dworshak Mooring Buoys	CAT-EX	Feb	2005
Idaho Department of Lands, Request for Easement, Grandad Bridge	CAT-EX	Sep	2005
Bruce's Eddy, Install Temporary Large-Vessel Mooring Buoys	CAT-EX	Feb	2005
Dworshak Fish Hatchery Water System Upgrade	CAT-EX	Oct	2005
Wastewater Treatment Plant Upgrade Project, Burley, Idaho	EA	Jun	2004
Idaho State Parks and Recreation Request for Development at Dworshak, Big Eddy Marina and Freeman Creek	CAT-EX	Nov	2004
Indian Creek Ecosystem Restoration Project	EA	Sep	2004
Mill Creek, Ice Harbor, and Dworshak Fishing Platforms	CAT-EX	Sep	2003

Document Title	Document Type	Month	Year
Hudson and Robinson Creek Prescribed Burns	CAT-EX		2003
Grandad Boat Ramp Extension	CAT-EX	Sep	2002
Dworshak Dam and Reservoir	EA	Apr	2002
Little Bay Stewardship Project	EA		2002
Dworshak Dam & Reservoir, EA	EA	Jul	1998
Dworshak Dam & Reservoir, EA	EA	Mar	1997
Dworshak Dam and Reservoir, EA	EA	Mar	1997
Dworshak Project - Timber Salvage Sales	EA	Aug	1996
Dworshak Monolith Grouting	CAT-EX	May	1995
Dworshak Project - Installation of Water Line from Wellhead to Cistern	CAT-EX	Apr	1995
Freeman Creek Campground and Boat Ramp Extension	EA	Jan	1995
Dent Acres Boat Ramp Extension	EA	Sep	1994
Indian Creek Timber Sale	EA	Dec	1994
Weitas Creek Timber Sale	EA	May	1994
Big Eddy Rock Outcropping Excavation	EA	Sep	1990
Dworshak Project - Transfer of Resources Stewardship Land Withdrawal	EA		1986
Timber Salvage and Bark Beetle Control	EA	Mar	1984
Water Budget Concept	EA	Jun	1983
Dworshak Fish Hatchery Expansion	EA	Jun	1981
Dworshak Project - Herbicide Use on Elk Habitat Development Areas	EA	Feb	1981
Dworshak Project - Permit to Develop Rock Pits	CAT-EX	Feb	1980
Seaplane Use Dworshak Dam and Reservoir	EA	Oct	1980
Dworshak Project - License to Oscar Denney for Access Across Gov. Tract 424	EA	Mar	1979
Dworshak Project - Road Easements	CAT-EX	Jul	1979
Falls Creek Cedar Salvage Sale	EA	Oct	1979
Three Meadows Development and Lease	EA	Jan	1979
Dworshak Withdrawal	EA		1978
Cold Spring Recreation Site, Development and Lease	EA	Apr	1978
Dworshak Project - Development of Rocky Mountain Elk Habitat at Dworshak Dam and Reservoir	EA		1978
Dworshak Project - Road Easements Tract 130	EA	Aug	1978
Dworshak Withdrawal	EA		1978
Freeman Creek Site - Development and Lease	EA	Jan	1978
Dent Lease to Idaho State Parks and Recreation	EA	Dec	1977
Dworshak Project - Lease Amendment to the Nez Perce Tribe	EA	Dec	1977
Dworshak Project - Log Transport Operations	EA		1977
Impact Assessment of Drawdown at Dworshak Project	EA	Sep	1975
Dworshak Dam and Reservoir	Draft EIS	Apr	1974
Dworshak Dam and Reservoir	Final EIS	Sep	1975

APPENDIX D

PREVIOUSLY ISSUED DESIGN MEMORANDUMS

Below is a list of previously submitted Design Memorandums (DM).

Memo #	Title	Cover Date
1	Hydrology	15-Dec-60
	Type and Height of Dam, Volume 1	20-Jul-60
2	Type and Height of Dam, Volume 2	1-Jul-59
3	General Design Memorandum (Volume 3)	15-Sep-62
	Supplement 1, Site Selection and type of Concrete Dam	24-Oct-62
	Supplement 2, Power Plant Studies	13-Nov-64
	Supplement 3, Hydrologic Reporting Network	21-May-71
	Letter Supplement 4, Boundary Surveys and Markings	18-Nov-75
	Letter Supplement 5, Deletion of Left Abutment Access Road	26-May-71
	Letter Supplement 6, Main Dam Debris Room	6-Jul-72
	Supplement 7, Dam and Powerhouse Completion	10-Dec-76
4	Deleted	
5	Power plant, Preliminary Design Report	Dec-66
	Supplement 1, Transmission Facilities and Station Service Power Supply	Nov-68
5.1	Powerhouse Architectural Design	Jul-67
5.2	Powerhouse Structural Design	Jan-68
5.3	Powerhouse Mechanical	Oct-68
6	Main Dam, Grouting and Drainage, and Instrumentation	3-Nov-64
6.1	Main Dam Ancillary Features	16-Apr-65
	Supplement 1, Penstocks, Penstock Emergency Gates, and Cathodic Protection	19-Jan-66
	Supplement 2, Multi-Level Power Intake Structure	3-Oct-69
6.2	Main Dam Gantry Crane	17-Feb-71
6.3	Main Dam Post cooling Facilities	13-Apr-66
7	Initial Relocations, Access, and Detour Road	8-Jan-63
	Supplement 1, Relocations, Access, and Detour Road, Lower Reservoir Area	18-Aug-64
	Letter Supplement 1, Freeman Creek Access Road	Feb-84
	Supplement 2, Right Bank Access and Detour Roads	5-Feb-65
7.1	Deleted	
7.2	Deleted	
7.3	Powerhouse Access Road	2-Jul-69
7.4	Left Abutment Access Road (canceled))	
7.5	See Letter Supplement 5 to DM 4	

Continued on next page

Memo #	Title	Cover Date
7.6	Dent Bridge - Relocation of Clearwater Highway District Road Relocation of Clearwater Highway District Road (Continued)	22-Nov-66
	Letter Supplement 1, Paving Highway District Road	7-Sep-76
7.7	Relocation of Clearwater County Road	20-Feb-67
	Letter Supplement, 1 Boat Ramp, Dent Bridge Area Letter Supplement 2, Paving County Road Letter Supplement 3, Slide Repair	2-Feb-68 (Unapproved)
7.8	Deleted	
7.9	Deleted	
8	Real Estate, Part 1 Dam site Construction Area Access Roads, Related Borrow and Spoil Areas, Partial Flowage, and Public Use Areas	31-Dec-63
	Letter Supplement 1, Fish Hatchery Letter Supplement 2, Ahsahka Railroad Siding	8-Aug-66 9-Sep-67
8	Real Estate, Part 2 Remainder of the Project, Remaining Public-Use Areas, Flowage Requirements, and Relocations	10-Dec-63
	Letter Supplement 1, Big Game Replacement Range Letter Supplement 2, Clearwater Highway	1-Aug-66
	District and Clearwater County Road Relocations	17-Mar-67
9	Diversion Tunnel, Temporary Fish Facilities, Cofferdams	22-Apr-64
	Supplement 1, Design and Cost Revisions, Temporary Fish Facilities	14-Oct-64
10A	Reservoir Preliminary Master Plan	20-Jun-66
10	Reservoir Public Use Plan	17-Apr-70
10.1	Recreation Facilities and Public Use Areas	1-Dec-71
	Letter Supplement No. 1, Mini Recreation Sites Letter Supplement No. 2, Dent Orchards Day-Use Area	29-Aug-72 29-Mar-77
10.2	Freeman Creek Recreation Development	16-Nov-78
10.3	Group Camps 1 and 3	29-Oct-76
	Letter Supplement 1, Value Engineering Study Letter Supplement 2, Three Meadows Group Camp	Jul-79 Nov-83
11	Resident Office Facilities	8-Jan-65
12	Spillway and Outlets	2-Jun-65
	Letter Supplement 1, Stilling Basin Repair Letter Supplement 2, Stilling Basin and Outlet Repairs Letter Supplement 3, Stilling Basin Wall Extension	13-May-74 12-Nov-74 27-Jul-79
13	Log Handling Facilities	5-Mar-66
	Letter Supplement 1, Interim Log Facilities Letter Supplement 2, Project Log Handling Elements	20-Feb-74 24-Aug-77
14	Permanent Fish Facilities at Dam	3-Jun-66
14.1	Steelhead Fish Hatchery Supplement 1, Conversion of Rearing	Jul-66
	Facilities and Provision of Resident Fishery Mitigation	25-Nov-70

Continued on next page

Memo #	Title	Cover Date
	Letter Supplement 2, State Highway Drainage Repair	24-Nov-71
	Letter Supplement 3, Laboratory Facilities	30-Apr-71
	Letter Supplement 4, Water Treatment Facility Aerators	17-Jun-74
	Letter Supplement 5, Additional Construction Requirements	18-Dec-74
	Supplement 6, Building for Nursery Tanks	27-Oct-77
	Letter Supplement 7, Energy Conservation Program	Jan-82
	Supplement 8, Reuse System I Modification for Support of Ponds and Nursery Tanks	Aug-80
	Letter Supplement 1, Mineral Addition to System 1	
	Supplement 9, Modification of Filter bed Reuse System	16-Jul-73
15	Plan for the Development of Rocky Mountain	(Revised)
	Elk Habitat	6-Apr-73
	Letter Supplement, Plan for Development of Rocky Mountain Elk Habitat	
16	Concrete Aggregate and Concrete Properties Investigation	17-Nov-66
17	Concrete Temperature Investigations	22-Nov-66
18	Upper Reservoir Roads	4-Dec-63
18.1	Grandad Creek Bridge	Dec-68
19	Reservoir Clearing	Dec-63
	Supplement 1, Clearing Below Minimum Pool	10-Dec-69
	Letter Supplement 2, Debris Gathering and Disposal	13-Jun-74
20	Visitor Facilities and Site Restoration	Jan-72
	Supplement 1, Access Features for Visitors and Operations	15-Nov-78
20.1	Architectural Treatment	18-Feb-66
	Letter Supplement 1, Elevator on Downstream Face of Dam	13-Sep-71
20.2	Dam site Visitor Viewpoint Development	29-Mar-66
20.3	Left Abutment Accessory Features	
21	Relocation Washington Water Power Company Electrical Facilities	30-Oct-70
22	Cost Allocation Studies	Jun-75
23	Engineering Control During Construction	5-Dec-69
24	Reservoir Filling Plan	12-Nov-70
	Proposed Reservoir Sedimentation Ranges	Apr-78
25	Master Plan (Draft)	Jul-85

APPENDIX E

Habitat Types and Associated Fire Regimes

Habitat Types	Acres	Fire Group Acres	Fire Type	Mean Fire Interval (years)	General Description of Historic Vegetation	Management Implications
ponderosa pine/Idaho fescue	1465	1	Non-Lethal (Surface Fires)	15	Open forest structure dominated by large diameter ponderosa pine	Restore open ponderosa pine ecosystem utilizing forest thinning and prescribed fire
ponderosa pine/common snowberry	208					
Douglas fir/snowberry	13	1682				
Douglas fir/mallow ninebark	3245	2	Non-Lethal Mixed (Surface and Crown Fires)	15	Open forest structure dominated by large diameter ponderosa pine and Douglas fir	Restore open ponderosa pine ecosystem utilizing forest thinning and prescribed fire
grand fir/mallow ninebark	6296	9541		50		
grand fir/queencup beadlily	590	7	Mixed (Surface and Crown Fires) Lethal (Crown Fires)	50	Closed canopy forest dominated by grand fir	Maintain forest composition, form, and structure. Utilize thinning and prescribed fire designed to reduce fuel loading only.
grand fir/twinflower	81					
grand fir/wild ginger	604	1275		200		
western hemlock/queencup beadlily	1009	8	Non-Lethal (Surface Fires) Lethal (Crown Fires)	132 225	Closed canopy forest dominated by western red cedar or western hemlock	Protect and conserve forest composition, form, and structure
western hemlock/wild ginger	62					
western red cedar/oak fern	133					
western red cedar/queencup beadlily	10384					
western red cedar/wild ginger	2374	13962				
western hemlock/maidenhair fern	935	Not included in any Fire Group			Closed canopy forest dominated by western hemlock	Protect and conserve forest composition, form, and structure

Dworshak Reservoir habitat types and associated fire regimens (Smith and Fisher, 1997).

APPENDIX F

PRIORITY HABITATS

From Section 2.3.6.b., Land Cover and Vegetation Resources, Priority Habitats, five priority habitats were identified based on vegetation types present around Dworshak Reservoir, wildlife habitat needs, and an understanding of native ecological processes. These are the Ponderosa Pine Ecosystems, Old Growth Forest Communities, Western White Pine Communities, Wetland Communities, and Coastal Disjunct Plant Communities. Each is described below and is critical for protection and enhancement.

Ponderosa Pine Ecosystems. Historically, throughout Idaho, ponderosa pine dominated transition zones between sagebrush/grasslands and cooler forests. Under the historical fire regime of frequent, cool under burns, ponderosa pine was maintained as the dominant overstory species. Historical fires produced stands with densities of only 10-50 trees per acre, dominated by large to very large trees (Smith and Fischer, 1997). However, fire suppression and timber harvesting practices have altered the characteristics of these stands. Fire suppression has allowed less fire-tolerant and more shade-tolerant species to establish and flourish, thus inhibiting ponderosa pine regeneration and altering the structure and composition in existing stands. Historical timber harvesting practices favored the removal of high value, large, shade-intolerant trees (e.g., ponderosa pine).

Several reports have identified the loss of ponderosa pine habitats as a management concern (i.e., the Interior Columbia Basin Ecosystem Management Project (U.S. Forest Service, 2000), and the Clearwater Subbasin Management Plan (Ecovista, 2003)). Additionally, the Ecosystem Management Research Institute, under contract with Idaho Partners in Flight (IPIF), considers Idaho ponderosa pine ecosystems endangered. They estimate that 9 percent of historic ponderosa pine ecosystems in Idaho have been lost to logging, agriculture, and fire suppression. Most experts agree that restoration of ponderosa pine forests must begin immediately if the remaining large, old ponderosa pine is to be saved from stand-replacing fire and mortality due to competition.

Within Dworshak and the surrounding area, wildfire and its effects have been suppressed for over 100 years. Past and present management action of fire suppression has drastically altered the vegetative composition, form, and structure of many forest stands around Dworshak Reservoir. Cover types dominated by ponderosa pine were historically present in the lower half of the reservoir, from Ahsahka to Magnus Bay. Remnant, mature ponderosa pine, trees still exists on south-facing slopes. However, many stands are quickly being overtaken by Douglas and grand fir. Management goals within ponderosa pine forest communities need to include forest thinning and prescribed burning to restore forest composition, form, and structure to a desired condition, based on the historic disturbance regime. The desired condition should consist of 10-50 trees per acre, primarily comprised of

large- to very large-diameter ponderosa pine and Douglas fir. Understory should consist of grasses with sparse shrubs. Any public use planning should identify and have provisions to protect these endangered ecosystems.

Old Growth Forest Communities. Old growth forest habitats have declined consistently across the interior Columbia River Basin. Wildlife species utilizing mature and old growth forests are associated with characteristic components of these stands, including canopy cover, mistletoe brooms, dead parts of live trees, exfoliating bark, snags, downed wood, litter and duff, fire processes, and insect outbreaks. Studies indicate that a large percentage of species within the use mature and old growth forests for feeding and/or reproduction. Mature and old growth stands are present along Dworshak Reservoir only because surrounding lands have been heavily harvested. These stands are limited and under-represented in the landscape relative to historical conditions.

Several of the state listed species, either documented as occurring or having the potential to occur on the reservoir, require or utilize these old growth forest communities. Old growth forest stands on Dworshak land should be actively protected and/or enhanced, and a portion of mature forest stands should be left to increase the coverage of old growth. Characteristics of some existing old growth stands may be enhanced through management techniques, such as understory thinning, prescribed fire (as in the case of some old growth ponderosa pine stands), or snag creation. Other stands may be best managed by leaving them intact and undisturbed, as in the case of many western red cedar stands. Planning of recreation facilities should avoid negative impacts to old growth forest communities.

Western White Pine Communities. Prior to the 1900s, western white pine was a prominent component of western forests. In 1910, white pine blister rust was introduced to the west coast in contaminated nursery stock from Europe. White pine blister affects all five-needle pines, including western white pine. The first infection in Idaho was discovered in 1923 in the Coeur d'Alene National Forest. Western white pine stands were extremely susceptible to the blister rust and many trees died. Through mortality, fire suppression, and timber salvage operations, western white pine was nearly eliminated from the landscape.

Western white pine is an early seral species within several habitat types found on Dworshak land, and occurred frequently prior to the introduction of blister rust. Mature western white pines are still present in some areas along the reservoir, but are well short of their historical extent. Since the mid-1900s, various agencies have worked together to develop rust-resistant strains of white pine, focusing both on developing rust resistance and maintaining genetic diversity. Through their efforts, resistant white pine seedlings are now available for planting. Natural resource management plans should include the reintroduction of western white pine in priority areas. This may require pre-planting silvicultural treatment. Pubic use planning should allow for locations where western white pine is allowed to flourish.

Wetland Communities. Prior to the creation of Dworshak Reservoir, wetland habitats were undoubtedly present below the high watermark at various sites along the North Fork Clearwater River. With the creation of the reservoir and subsequent water level fluctuations, many of these habitats were eliminated or are no longer capable of supporting wetland species. Beaver, waterfowl, anurans (frogs and toads), and many land bird species are dependent on wetland communities. These communities also support diverse plant assemblages. Furthermore, 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. Natural resource management plans include the identification and protection of all existing wetlands. New recreation facilities should be located to avoid negative impacts to the existing wetlands, and planning should allow for locations to create new wetlands.

Coastal Disjunct Plant Communities. The North Fork Clearwater River canyon, along with several other low elevation canyons in northern Idaho, contains a unique forest ecosystem with numerous plant species characteristic of Pacific maritime forests (Steele, 1971; Johnson and Steele, 1978). Low elevations, mountainous terrain, and Pacific air masses combine to moderate temperatures and increase humidity, emulating a maritime environment. The canyons are thought to have served as refugia for cold-intolerant species during Pleistocene climatic changes (Daubenmire, 1969). These “coastal refugia” contain almost 40 disjunct coastal vascular species alone, some of which occur nowhere else in the Rocky Mountains (Lorain, 1988). As a unique ecosystem, it is found in localized areas of northern Idaho. These plant communities occur within the wetter habitat types at Dworshak. Every effort must be made to protect these species and their habitats.

APPENDIX G

SENSITIVE PLANTS/SPECIES AT DWORSHAK DAM AND RESERVOIR

Dworshak State Listed Plants

Scientific Name	Common Name	Plant Type	Primary Habitat
Tripterocladium leucocladulum	naked rhizomnium moss	Moss	Moist Forest, Riparian
Hypogymnia inactiva	inactive tube lichen	Lichen	Moist Forest
Platismatia herrei	Herre's ragged lichen	Lichen	Moist Forest
Blechnum spicant	deerfern	Fern	Riparian
Carex hendersonii	Henderson's sedge	Graminoid	Moist Forest, Riparian
Aster jessicae	Jessica's aster	Forb	Dry Forest, Forest Openings
Calochortus nitidus	broad-fruit mariposa	Forb	Dry Forest, Grassland
Caradmine constancei	Constance's bettercress	Forb	Moist Forest, Riparian
Cirsium brevifolium	Palouse thistle	Forb	Dry Forest
Corydalis caseana ssp. hastata	Case's corydalis	Forb	Riparian
Cypripedium fasciculatum	clustered lady's-slipper	Forb	Moist Forest
Dodecatheon dentatum	white shooting star	Forb	Riparian
Mimulus clivicola	bank monkeyflower	Forb	Rock Outcrop
Orobanche pinorum	pine broomrape	Forb	Dry Forest, Moist Forest
Trientalis latifolia	western starflower	Forb	Dry Forest, Moist Forest

As listed in the Idaho Department of Fish and Game *Special Status Plans*.

Dworshak Fish Species of Concern

Common Name	Scientific Name
chiselmouth	*Acrocheilus alutaceus*
bridgelip sucker	*Catostomus columbianus*
large scale sucker	*Catostomus macrocheilus*
sculpin	*Cottus spp.*
northern pike	*Esox lucius*
Pacific lamprey	*Entosphenus tridentatus*
brown bullhead	*Ictalurus nebulosus*
pumpkinseed	*Lepomis gibbosus*
smallmouth bass	*Micropterus dolomieui*
largemouth bass	*Micropterus salmoides*
kokanee	*Oncorhynchus nerka*
black crappie	*Pomoxis nigromaculatus*
mountain whitefish	*Prosopium williamsoni*
northern pike minnow	*Ptychocheilus oregonensis*
longnose dace	*Rhinichthys cataractae*
speckled dace	*Rhinichthys osculus*
redside shiner	*Richardsonius balteatus*
cutthroat trout	*Oncorhynchus clarki*

rainbow trout	*Oncorhynchus mykiss*
bull trout	*Salvelinus confluentus*
brook trout	*Salvelinus fontinalis*

Documented as occurring in Dworshak Reservoir in 1980 (Horton, W.D. 1980) and suspected to still be present.

State Listed Birds Occurring on Dworshak Lands

Common Name	Scientific Name
trumpeter swan	*Cygnus buccinators*
northern pintail	*Anas acuta*
lesser scaup	*Aythya affins*
harlequin duck	*Histrionicus histrionicus*
hooded merganser	*Lophodytes cucullatus*
mountain quail	*Oreortyx pictus*
common loon	*Gavia immer*
red-necked grebe	*Podiceps grisegena*
western grebe	*Aechmophorus occidentalis*
Clark's grebe	*Aechmophorus clarkii*
American white pelican	*Pelecanus erythrorhynchos*
bald eagle	*Haliaeetus leucocephalus*
Swainson's hawk	*Buteo swainsoni*
Merlin	*Falco columbarius*
American avocet	*Recurvirostra americana*
Franklin's gull	*Larus pipixcan*
California gull	*Larus californicus*
caspian tern	*Sterna caspia*
flammulated owl	*Otus flammeolus*
Lewis's woodpecker	*Melenerpes lewis*
pygmy nuthatch	*Sitta pygmaea*
lesser goldfinch	*Carduelis psaltria*

Birds listed by the Idaho Department of Fish and Game in 2002 (Bowers and Nadeau).

Invasive Species

Common Name	Scientific Name
Canada thistle	*Cirsium arvense*
dalmatian toadflax	*Linaria dalmatica ssp. dalmatica*
hounds tongue	*Cynoglossum officinale*
knapweed spp.	*Centaurea ssp.*
rush skeletonweed	*Butomus umbelltus*
scotch broom	*Cytisus scoparius*
scotch thistle	*Onopordum acanthium*
yellow starthistle	*Centaurea solstitialis*
yellow toadflax	*Linaria vulgaris*

whitetop	*Cardaria draba*

The *Noxious Weed Management Plan* for Dworshak lists these vegetative species as a special concern, classified as noxious by the State of Idaho.

APPENDIX H

PERTINENT PUBLIC LAWS, REGULATIONS, AND POLICIES

Laws applicable to recreation and public access.

PL 78-534	Flood Control Act of 1944, 22 December 1944
PL 79-526	Flood Control Act of 1946, 24 July 1946
PL 88-578	Land and Water conservation Fund Act of 1965, 3 September 1964
PL 89-72	Federal Water Project Recreation Act of 1965, 9 July 1965
EO 11644	Use of Off-Road Vehicles on the Public Lands, 8 February 1972 (amended by EO 11989)
EO 11989	Off-Road Vehicles in Public Lands, 24 May 1977 (amends EO 11644)
EM 1110-1-103	Design for the Physically Handicapped, 15 October 1976
EM 1110-2-410	Design of Recreation Areas and Facilities Access and Circulation, 31 December 1982
EP 310-1-6	Graphic Standards Manual, December 1980 (Change 1)
ER 1105-2-100	Planning Guidance Notebook, 22 April 2000
ER 1110-1-102	Design for the Physically Handicapped, 15 October 1976
ER 1110-2-400	Design of Recreation Sites, Areas, and Management Policies, 7 July 1972 (Change 1)
ER 1120-2-400	Recreation Resources Planning, 1 November 1971 (Changes 1 through 3)
ER 1130-2-400	Recreation - Resource Management of Civil Works Water Resource Projects, 1 October 1983
ER 1130-2-540	Project Operations - Environmental Stewardship Operations and Maintenance Guidance and Procedures, 15 November 1996
ER 1130-2-550	Recreation Operations and Maintenance Policies, 15 November 1996 revised 15 August 2002
ER 1165-2-400	Recreation Planning, Development, and Management Policies, 3 August 1970

APPENDIX I

ENVIRONMENTAL LAWS AND REGULATIONS

This list of federal laws and Executive Orders may be applicable prior to implementing a project.

National Environmental Policy Act

NEPA 1969 requires federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

To meet NEPA requirements when undertaking a major federal action, federal agencies, including the Corps, must prepare one of three evaluations depending if the proposed action could significantly affect the environment. The three analyses are Categorical Exclusion (CAT-EX), Environmental Assessment (EA), and Environmental Impact Statement (EIS). The list of previous NEPA actions is in Appendix C.

A CAT-EX is an action that, either individually or cumulatively, does not have significant environmental impacts. Although exempt from NEPA documentation (EA or EIS), the Corps does document CAT-EX analyses and compliance with other applicable laws. A number of federal agencies, including the Corps, have developed a list of actions normally excluded from environmental evaluation. [Refer to C.F.R. § 230.9: E.R. 200-2-2].

If an action is not categorically excluded from NEPA compliance, an EA is prepared to determine if the proposed action would significantly affect the environment. If the answer is negative, the Corps issues a Finding of No Significant Impact (FONSI). The FONSI may address measures the Corps will take to reduce or mitigate potentially significant impacts. In certain circumstances, federal agencies may choose to prepare an EIS without first preparing an EA.

If the EA determines that environmental consequences may be significant, a draft EIS is prepared. An EIS is a more detailed evaluation of the proposed action and alternatives. The public, federal agencies, and outside parties may provide input into the preparation of an EIS. The Corps is required to make diligent efforts to involve the public in the NEPA process, including holding public meetings and allowing for a designated comment period.

A final EIS is prepared that incorporates public comments and the Corps' response to those comments. After a 30-day waiting period, the Corps issues a public Record of Decision addressing how the findings of the EIS, including consideration of alternatives, were incorporated into the decision-making process.

Endangered Species Act

The ESA establishes a national program for the conservation of endangered and threatened species and their habitat. In accordance with Section 7(a)(2) of the ESA of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or endangered species.

Clean Water Act

The Clean Water Act (CWA) sets national goals and policies to eliminate the discharge of water pollutants into navigable waters, regulate the discharge of toxic pollutants, and prohibit the discharge of pollutants from point sources without permits.

Clean Air Act

The Clean Air Act (CAA) of 1970, as amended, established a comprehensive program for improving and maintaining air quality throughout the United States. Its goals are achieved through permitting of stationary sources, restricting the emission of toxic substances from stationary and mobile sources, and establishing National Ambient Air Quality Standards. Title IV of the CAA includes provisions for complying with noise pollution standards.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires that federally assisted or federally permitted projects account for potential effects to sites, districts, buildings, structures, or objects included in or eligible for inclusion in the National Register of Historic Places.

Native American Graves Protection and Repatriation Act

The protection of Native American and Native Hawaiian human remains and funerary objects is covered by this Act. In addition, the Act governs rights of ownership and control of Native American cultural items, human remains, and associated funerary objects to Native Americans. It also provides for the protection and repatriation of Native American human remains and funerary objects that have been culturally affiliated with a federally recognized Indian tribe.

Magnuson-Stevens Fishery Conservation and Management Act

As amended, this management Act (PL 94-265), established procedures designed to identify, conserve, and enhance essential fish habitat for fisheries regulated under a federal fisheries management plan. Federal agencies must consult with the National Marine Fisheries Service (NMFS) on all proposed actions authorized, funded, or carried out by the agency that may adversely affect this Act.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act of 1934 states that federal agencies involved in water resource development will consult with the USFWS and the state agency administering wildlife resources concerning proposed actions or plans.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act provides the USFWS with regulatory authority to protect species of birds migrating within and outside the United States. This Act prohibits the harming, harassment, and taking of protected species except as permitted by the USFWS.

Bald and Golden Eagle Protection Act

This law provides for the protection of bald eagles and golden eagles by prohibiting, except under certain specified conditions, the taking, possession, and commerce of these birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto, and strengthened other enforcement measures. Rewards are provided for information leading to the arrest and conviction for any violation of the Act.

Executive Order 11990–Protection of Wetlands

This EO requires federal agencies to protect wetland habitats.

Executive Order 12898–Environmental Justice

This EO requires federal agencies to consider and minimize potential impacts to subsistence, low income, or minority communities. The goal is to ensure that no person or group of people shoulder a disproportionate share of negative environmental impacts resulting from the execution of the country's domestic and foreign policy programs.

Executive Order 13175–Consultation and Coordination with Indian Tribal Governments

This EO sets forth guidelines for all federal agencies to (1) establish regular and meaningful consultation and collaboration with Indian tribal officials in the development of federal policies that have tribal implications, (2) strengthen the United States government-to-government relationships with Indian tribes, and (3) reduce the imposition of unfunded mandates on Indian tribes.

State/Local Regulations

On a case-by-case basis, state or local laws and ordinances may be applicable to any potential project implementation based on aspects of the individual task. A state water quality certification is an example of a potential instance where a state permit or authorization may be a requirement for project implementation.

APPENDIX J

ENVIRONMENTAL OPERATING PRINCIPLES

In 2003, the Corps adopted seven environmental operating principles (EOPs). The purpose of the operating principles is to guide "the ways in which the U.S. Army Corps of Engineers missions must be integrated with natural resource laws, values, and sound environmental practices" (Corps, 2003). The Corps is integrating the EOPs into all business activities.

The following paragraphs explain how the Dworshak Reservoir MP fulfills each EOP.

EOP 1. Strive to achieve environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.

Collaborative efforts with federal and state agencies, and state and local governments, are implemented wherever possible for development, management, and monitoring of resources at Corps reservoir projects. Sustainable development is ensured into the future through environmental stewardship, epitomized by resource objectives identified for Dworshak Reservoir, and development needs that are consistent with those resource objectives.

Monitoring, including inspections, allows feedback to determine whether adaptive management efforts are needed to ensure the balanced human environment envisioned in the MP. The Corps' multidisciplinary staff conducts periodic inspections of each area, structure, and facility used to operate and maintain the project to ensure management and development activities are in accordance with Corps-approved plans and current regulations.

The MP identifies sustainable conceptual guidelines for future development. These are based on contribution to the objectives of society (regional plans/needs and expressed public desires) now and in the future (forecasted for the next 15 to 20 years) that maintains their ecological, environmental, and hydrological integrity (consistent with project purposes, NEPA, and other laws and regulations).

The MP includes historic, current, and forecasted future environmental and economic considerations. The plan discusses various resource objectives and development needs that must improve the quality of life by meeting regional recreational needs, while protecting biological, geological, cultural, and historical resources. Planning, design and construction, and operation and maintenance function in an integrated manner to ensure maximum quality of life for present and future generations.

EOP 2. Recognize the interdependence of life and the physical environment, and consider environmental consequences of Corps programs and activities in all appropriate circumstances.

In the MP, the Corps considers the interrelationships among all factors, including activities of humans, habits and habitats of fish and wildlife, in determining the most suitable land classification and types and levels of development for Dworshak Reservoir.

The MP strives to secure adequate information on the environmental consequences of all reasonable alternatives, in order to objectively assess them in the decision process by identifying the most appropriate land classifications and most suitable types and levels of development. The subsequent environmental compliance requirements will further assess the impacts of individual development projects on the resource.

EOP 3. Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.

The conceptual guidelines developed during preparation of the MP seek a balance and synergy among human development activities and natural systems. Considering Dworshak Reservoir from a holistic perspective created solutions that provide public access opportunities that minimize harmful impacts and support the natural systems of the area.

EOP 4. Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.

The MP recommendations considered existing environmental conditions and the impacts future development will have on the resource. Because the Plan recommends conceptual guidelines for development and not specific areas for specific activities, each future development will have to fulfill the requirements of NEPA. The MP will aid in the NEPA process by describing existing environmental conditions, including air quality, water quality, vegetation, fish and wildlife, and threatened and endangered species. Future developments will have to be evaluated regarding the effects of the project or activity on the environment.

The conceptual recommendations set forth in the MP must also be in compliance with other applicable environmental and cultural resource laws and executive orders, including the CAA, CWA, ESA, Archaeological Resources Protection Act, Fish and Wildlife Coordination Act, along with others as they apply.

EOP 5. Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.

The cumulative impacts to the environment resulting from visitation to Corps recreation areas will continue to be monitored and negative impacts mitigated where necessary. Recreation areas will be designed and located to provide wildlife habitat in appropriate areas. In addition, project staff will evaluate the construction of any new recreation facilities under NEPA to see if they are categorically excluded from further analysis or require an environmental assessment to determine their impact to the environment. The Corps will offer consultation to Tribal governments for site-specific development proposals. The Corps and non-federal lessees will manage recreation areas in accordance with all pertinent environmental laws.

EOP 6. Build and share an integrated scientific, economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.

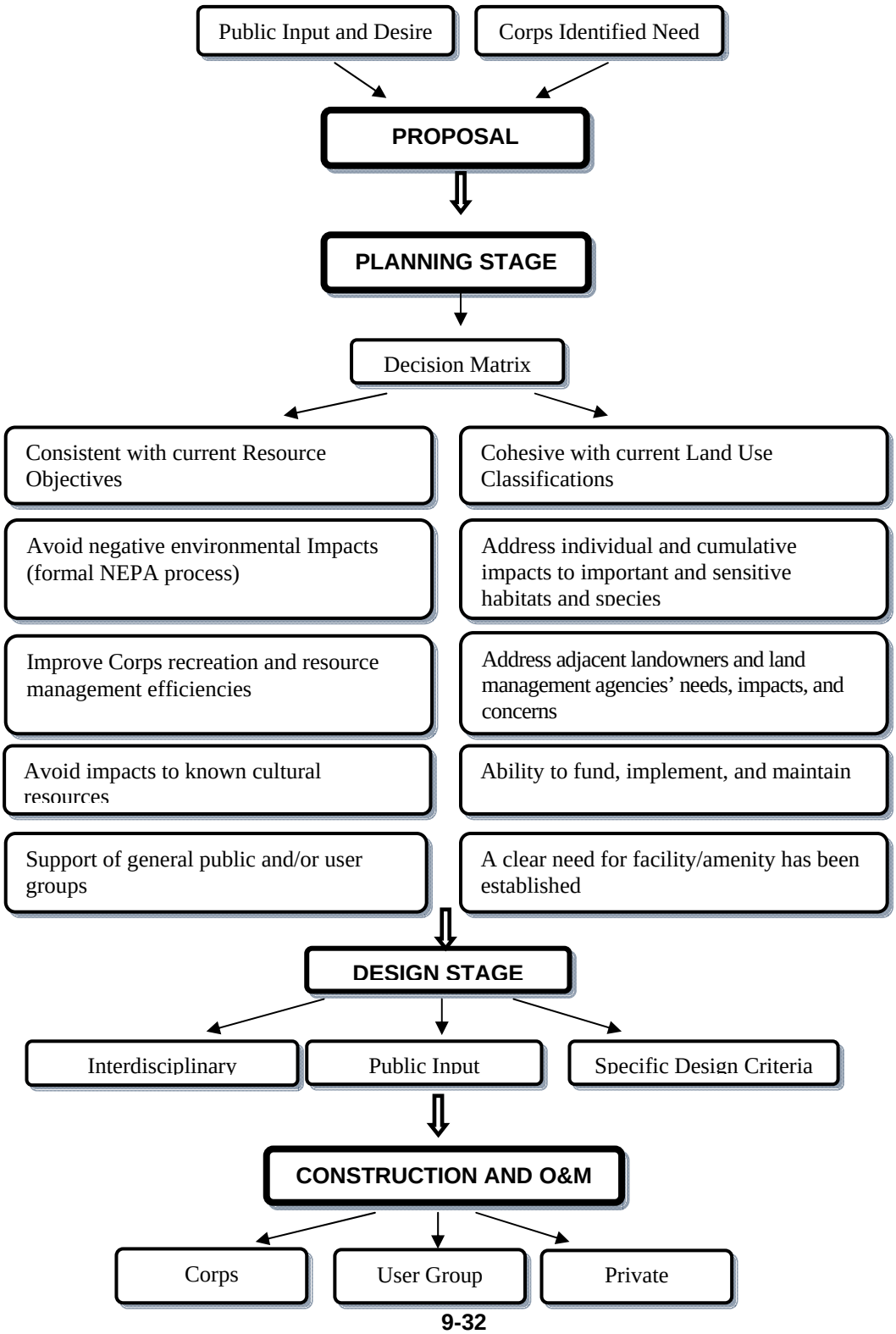
The Dworshak project staff coordinates extensively with other agencies and organizations to develop integrated scientific, economic, and social knowledge bases that support a greater understanding of environmental impacts. The Corps is also active in educating the public about environment impacts. One of the project-wide resource objectives at Dworshak is to provide public education about the history of the area, Dworshak project resources, and the Corps' role in developing and managing these resources.

EOP 7. Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment.

The Corps has been proactive in respecting the views of individuals and groups interested in the MP. During Summer 2008, the MP team held two public scoping meetings designed to gain local insights concerning use of the land base surrounding Dworshak Reservoir. Additionally, public comment cards were available at several public locations around the lake, providing an opportunity to ask questions or make comments concerning the use of the land base. The effort of the working groups were also considered and used during the creation of this plan.

APPENDIX K

IMPLEMENTATION PROCESS FOR NEW FACILITIES AT DWORSHAK RESERVOIR



APPENDIX L

DECISION MATRIX FOR IMPLEMENTATION OF FACILITIES AND PROJECTS

Decision Criteria	Alternatives		
	Alt. A	Alt. B	Alt. C
Consistent with current Resource Objectives			
Cohesive with current Land Use Classifications			
Avoidance of negative environmental impacts			
Avoidance of impacts to known cultural resource sites			
Address individual and cumulative impacts to important and sensitive habitats and species, social values, and cultural resources			
Addresses adjacent landowners and land management agencies' needs, impacts, and concerns			
Ability to improve Corps recreation and resource management efficiencies			
Ability to fund and implement			
Ability to maintain for future use is demonstrated			
Support of general public and/or user groups			
A clear need for facility/amenity has been established			

This decision matrix aids Corps staff in making informed decisions that respond to and comply with the approved Resource Objectives, Land Use Classifications, and federal laws described in this master plan. It ensures that proposed facilities address all other environmental, social, and regional impacts. It provides for an open and transparent process in planning for future recreational amenities at Dworshak Reservoir. Resulting scores for each decision criteria are supported with accompanying text stating specific opportunities, concerns, and limitations.

APPENDIX M

GUIDANCE FOR MOTORIZED AND NON-MOTORIZED TRAIL CONSTRUCTION

GENERAL TRAIL CONSTRUCTION

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 and 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 and 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

MOTORIZED TRAIL CONSTRUCTION

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)

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

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

APPENDIX N

ABBREVIATIONS AND ACRONYMS

°C	Degrees Celsius
°F	Degrees Fahrenheit
ATV	All Terrain Vehicle
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
BPA	Bonneville Power Administration
CAA	Clean Air Act
CAT-EX	Categorical Exclusion
CFR	Code of Federal Regulations
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
DM	Design Memorandum
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EM	Engineer Manual
EO	Executive Order
EOP	Environmental Operating Principle
EP	Engineer Pamphlet
ER	Engineer Regulation
ESA	Endangered Species Act
FCRPS	Federal Columbia River Power System
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
IDFG	Idaho Department of Fish and Game
IPIF	Idaho Partners in Flight
ISOP	Interpretive Services and Outreach Program
LCU	Land Classification Unit
msl	Mean Sea Level
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
OHV	Off-Highway Vehicle

List of Abbreviations and Acronyms (continued)

OMP	Operational Management Plan
PL	Public Law
RM	River Mile
RV	Recreational Vehicle
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service