



Lake Roosevelt National Recreation Area, Washington



**Lake Roosevelt National Recreation Area
Shoreline Management Plan
Environmental Assessment**



United States Department of the Interior

NATIONAL PARK SERVICE
Lake Roosevelt National Recreation Area
1008 Crest Drive
Coulee Dam, Washington 99116

IN REPLY REFER TO: L30

Dear Reviewer:

The National Park Service at Lake Roosevelt National Recreation Area has completed the Draft Shoreline Management Plan (SMP) and is seeking public comments on the plan.

You are invited to join us at one of four open house meetings to be held during the formal 45-day public review period from September 28, 2009 to November 11, 2009. The open houses will be held during the week of October 5 through 9, 2009, in the communities of Colville, Davenport, Coulee Dam & Spokane. Specific dates, times and locations will be announced at a later date. The SMP is also available to be viewed and/or downloaded from the Planning, Environment and Public Comment system (PEPC) website <http://www.nps.gov/laro/parkmgmt/planning.htm>.

Individuals or organizations wishing to provide written comments during the review period can submit them one of three ways: electronically on the PEPC website, in person at one of the open houses, or by mail no later than November 11, 2009. Mailed comments should be addressed to: Superintendent, Lake Roosevelt National Recreation Area, 1008 Crest Drive, Coulee Dam WA 99116.

The four preliminary draft alternatives provide a foundation for decision-making as the NPS moves forward with the Shoreline Management Plan. Alternative A, the "No Action" Alternative, is a continuation of current management strategies under existing funding levels. Alternative B focuses on enhancing visitor use management strategies such as permits, zoning and education. Alternative C focuses on improving existing partnerships and coordination with public groups and agencies. Alternative D emphasizes new infrastructure to provide additional recreational opportunities. Although the emphasis in each alternative is different, each alternative uses selections from the same suite of strategies (management changes, agency cooperation and recreational development) to accomplish its objectives. For example, although Alternative B would rely most heavily on management strategies, it would also call for the development of some new facilities.

Your role in this process continues to be extremely important. I encourage you to critically review the draft alternatives and determine if the issues that Lake Roosevelt faces, such as providing adequate public access to the lake as visitation increases, cleaning up our beaches and day use areas, and balancing the ecological health of the lake with the needs of the large boating community, are adequately addressed in the alternatives.

We look forward to continuing to work with you to improve and protect the recreational opportunities, accessibility and beauty of Lake Roosevelt National Recreation Area. Thank you for your help.

Sincerely,

Debbie Bird

September 2009

Shoreline Management Plan Environmental Assessment

Lake Roosevelt, Washington

Lake Roosevelt National Recreation Area

1008 Crest Drive

Coulee Dam, WA 99116-1259

Superintendent: Debbie Bird

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Pacific West Region—Seattle Office

Park Planning and Environmental Compliance

909 First Avenue

Seattle, Washington 98104-1060

United States Department of the Interior

Executive Summary

Lake Roosevelt National Recreation Area, a unit of the National Park System, has undertaken the development of a Shoreline Management Plan tiered off of its General Management Plan (GMP) (NPS 2000).

Implementation of the proposals in the Shoreline Management Plan would likely occur over a 15-year period, following approval of a proposed action. Currently, there are four alternatives from which to select an implementation plan. These alternatives are labeled **Alternative A: No Action** (Continue Current Management), **Alternative B (Preferred)** (Visitor Use Management and Education), **Alternative C** (Partnerships and Agency Coordination), and **Alternative D** (Built Recreation Facilities) and are summarized in the accompanying Plan/Environmental Assessment.

Each alternative includes strategies that address the major planning issues identified for the Shoreline Management Plan, including: improving public access to the shoreline, improving visitor use of the shoreline, increasing the recreational capacity of the lake, mitigating for proposed summer lake level changes, improving coordination among partners, managing shoreline natural and cultural resources, as well as enhancing public use and providing more information to visitors. Each alternative also addresses the GMP direction to provide a full-service marina and other facilities at Crescent Bay.

The alternatives are based on the purpose and need identified for the Shoreline Management Plan, including implementing GMP provisions, analyzing existing developments for potential expansion of existing or construction of new facilities, increasing consistency in shoreline management among the NPS, the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and other partner agencies and organizations; considering more active methods for managing visitor use; initiating a process to guide potential future development; and addressing proposed additional fluctuation in lake levels.

The Alternative Comparison Chart (Table III-2) provides a summary of the major features of each alternative. While all alternatives would have potential negligible to moderate (mostly localized) environmental impacts, the degree of these impacts varies. These impacts are summarized in Table VII-4 (Impact Comparison Chart). Between these sections, the Affected Environment chapter describes key Lake Roosevelt National Recreation Area natural, cultural, scenic, and recreational resources and values.

The Shoreline Management Plan / Environmental Assessment will be available for a 45 day public review period from September 28 to November 11, 2009. See page 56 and 249 for information on how to submit comments. Comments will be analyzed and if no significant impacts are identified, the recreation area superintendent will recommend a proposed action to the NPS Pacific West Regional Director and a Finding of No Significant Impact will be prepared. If this does not occur, additional planning would be undertaken.

How This Plan/Environmental Assessment (EA) Is Organized

TABLE OF CONTENTS

This lists the chapters and primary subsections of each and where they may be found within the document.

CHAPTER I—INTRODUCTION

This chapter introduces the park, the project area and the planning background for the project, including the purpose and significance of the park and the scope of the project.

CHAPTER II—PURPOSE AND NEED

This chapter identifies the purpose and need for the proposed actions and the planning background for the project, including related laws, policy, and park plans. It also summarizes public participation to date.

CHAPTER III—ALTERNATIVES

This chapter describes the proposed alternative courses of action; including the reasons for dismissing options that do not meet project objectives or other defined criteria. It also identifies and provides analysis related to the selection of the Environmentally Preferred Alternative. The Alternative Comparison Chart (Table III-1) highlights the major differences among the alternatives.

CHAPTER IV—CRESCENT BAY DEVELOPMENT CONCEPT PLAN:

This chapter describes proposed options for the Crescent Bay area that would be incorporated in Alternatives A-D.

CHAPTER V—ENVIRONMENTAL IMPACT ANALYSIS METHODOLOGY

Methodology identifies the means by which impacts to various resources are analyzed. It also includes Impact Topics, which describes the potentially affected resources and laws or policy relating to their inclusion in this EA. This section also identifies those resources that have been dismissed from further analysis due to their having no identified or negligible potential environmental consequences.

CHAPTER VI—AFFECTED ENVIRONMENT

Affected Environment describes the existing environment by resource category.

CHAPTER VII—ENVIRONMENTAL CONSEQUENCES:

Environmental Consequences provides analysis of effects associated with the alternatives including cumulative impacts. Similar to Chapter III: Alternatives, the Environmental Consequences section contains an Impact Comparison Chart (Table VII-I) to compare the differences in projected impacts among the alternatives.

CHAPTER VIII—CONSULTATION AND COORDINATION (LIST OF PERSONS AND AGENCIES CONSULTED/PREPARERS)

This chapter contains a review of consultation and coordination efforts undertaken for the Shoreline Management Plan Environmental Assessment.

CHAPTER IX—REFERENCES

This section provides bibliographic information for sources cited in this EA.

APPENDIX 1—MEASURES TO AVOID, MINIMIZE, OR MITIGATE IMPACTS

Summarizes ways potential impacts to resources will be avoided, minimized or mitigated as included in the Environmental Consequences section.

APPENDIX 2—SITE ANALYSIS SUMMARY OF LAKE ROOSEVELT FACILITIES

This table summarizes the analysis of recreation area facilities contained in the Site Analysis Report (2008).

APPENDIX 3—PLAN DISTRIBUTION LIST

A list of agencies and organizations that will receive this Shoreline Management Plan and Environmental Assessment.

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I. Introduction





Lake Roosevelt

The impoundment of the Columbia River by Grand Coulee Dam formed Lake Roosevelt. In 1946 the Secretary of the Interior, by his approval of an agreement between the Bureau of Reclamation (BOR), the Bureau of Indian Affairs (BIA), and the National Park Service (NPS), designated the National Park Service as the manager for the Coulee Dam National Recreation Area. The agreement allowing NPS management of the area noted that Lake Roosevelt and the adjacent lands “offered unusual opportunities through sound planning, development, and management for health, social, and economic gains for the people of the Nations.” The name of the area was changed in 1997 to Lake Roosevelt National Recreation Area (LARO) (www.nps.gov/laro 2-25-08).



Grand Coulee Dam

The Lake Roosevelt watershed encompasses about 44,969 square miles. Eighty-eight percent of this watershed is in Canada. The lake extends more than 154 miles along the Columbia River through the national recreation area and includes the lower reaches of many rivers and streams, with approximately 132 miles within the boundary of the recreation area. Most of the water in lake comes from glacial ice, lakes, and snow high in the Canadian Rockies (NPS 2000:59). As noted in the recreation area *General Management Plan (GMP)* (NPS 2000a:4): “the lake is popular because of its size, the quality of its water, the beauty of the surrounding scenery, and the fact that it is one of the few large lakes in the region that has an extensive amount of shoreline and adjacent lands that are publicly owned and available for public use.” Park visitation varies between 1.3 and 1.5 million visitors per year.

Park Location Map



A. Scope of the Environmental Assessment



Swim buoy at low lake levels

The Shoreline Management Plan is intended to evaluate the need to modify visitor access opportunities along the shoreline, whether it is accessed from the lake or from land. Alternatives in the plan make recommendations regarding future management of the shoreline to accommodate visitors and fluctuating lake levels, to better protect natural, cultural and scenic resources, and to more effectively distribute visitor use.

At full pool, the lake's surface elevation is 1,290 feet, with a surface area of approximately 81,389 acres and a shoreline of about 513 miles. The lake's width generally varies from 0.5 mile to 1.0 mile. The NPS manages 312 miles of the shoreline, 47,438 acres of water and 12,936 acres of land along the shore. NPS shoreline property varies from several feet adjacent to the high water line to approximately 0.5 mile. Seven miles of shoreline along the Kettle Falls arm and 29 miles of shoreline along the Spokane arm also make up part of the recreation area. Approximately 201 miles of shoreline is managed as part of the Colville Indian Reservation or the Spokane Indian Reservation with a much smaller portion managed by the Bureau of Reclamation.



Marcus Island

Along the shoreline, the NPS manages 22 boat launch ramps. The boat ramps include adjacent vehicle and boat trailer parking. There are also 26 designated campgrounds (17 drive-in and 9 boat-in) with over 600 individual sites, swim beaches, and three concessioner-operated marinas, providing moorage, boat rental, fuel, supplies, sanitary facilities and other miscellaneous services.

This Environmental Assessment includes analysis of the need for additional or improved visitor facilities and includes actions related to NPS management of the Lake Roosevelt shoreline called for by the Lake Roosevelt National Recreation Area *General Management Plan* (NPS 2000). While it calls for additional agency coordination, it does not include actions that would affect tribal management. The Cooperative Management Agreement or "five-party" agreement identifies the key responsibilities for the National Park Service, Bureau of Reclamation, Bureau of Indian Affairs and the Confederated Tribes of the Colville Reservation and Spokane Tribe of the Spokane Reservation.

B. Park Purpose and Significance



Historic photo of Kettle Falls

The reasons why Lake Roosevelt National Recreation Area was established and is managed as a unit of the national park system are found in its purpose and significance statements. The purposes of the recreation area are to:

- Provide opportunities for diverse, safe, quality, outdoor recreational experiences for the public.
- Preserve, conserve, and protect the integrity of natural, cultural, and scenic resources.
- Provide opportunities to enhance public appreciation and understanding about the area’s significant resources (NPS 2000a:8).



Seven Bays marina

Lake Roosevelt National Recreation Area is significant because:

- It offers a wide variety of recreation opportunities in a diverse natural setting on a 154-mile-long lake that is bordered by 312 miles of publicly owned shoreline that is available for public use.
- It contains a large section of the upper Columbia River and a record of continuous human occupation dating back more than 9,000 years.
- It is contained within three distinct geologic provinces—the Okanogan Highlands, the Columbia Plateau, and the Kootenay Arc—which have been sculpted by Ice Age floods (NPS 2000a:8).



Fort Spokane

C. Lake Roosevelt National Recreation Area Goals



Lake Roosevelt shoreline

The following goals for the park come from the *General Management Plan*.

Quality and Variety of the Recreational Experience: The national recreation area offers opportunities for a wide range of high-quality outdoor recreational experiences varying from active recreation centered at developed public facilities to passive recreation and secluded areas based on a relatively undeveloped and protected public shoreline. The national recreation area continues its reputation as a destination vacation area for visitors from all parts of the Pacific Northwest.

Education and Interpretation: Visitors are contacted in meaningful ways and come away from their national recreation area experience with a broad understanding and appreciation of the area and its resources, safety issues, and how each visitor can participate in protecting national recreation area resources for future generations.



Miss Coulee next to Whitestone, circa 1941

Resource Management: The natural, cultural, and scenic resources of the national recreation area are protected and preserved to ensure that the integrity of the environment is not compromised and the quality of the visitor experience is enhanced.

Operations: Sufficient human and fiscal resources are available so that all national recreation area programs can be staffed and supported at levels that allow them to complete their missions in a manner that satisfies visitors' expectations for a high-quality recreational experience as well as protecting and preserving natural and cultural resources. Relations with national recreation area neighbors and other managing partners are conducted in a professional and cordial manner (NPS 2000a: 9-10).

D. Project Background

Potential changes in management of the National Recreation Area shoreline are needed to accommodate visitors and fluctuating lake levels; to better protect natural and cultural resources; and to more effectively distribute visitor use.

The Lake Roosevelt *General Management Plan* (NPS 2000) identified the need for a shoreline management plan. Initial planning for the Shoreline Management Plan began in summer 2008 when NPS staff met to identify issues based on the GMP. Later the consultant team was introduced to the park and began to study the effects of the proposed additional draw down of the lake by the State of Washington and Bureau of Reclamation.

By July 2008, the superintendent had assembled an Interdisciplinary Planning Team comprised of NPS representatives from the recreation area and from the regional office, and invited representatives from three adjacent counties (Ferry, Lincoln and Stevens), the Bureau of Reclamation, the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and an independent consultant (Jones & Jones Architects and Landscape Architects, Ltd.).



*Interdisciplinary Planning Team
Workshop*

The park newspaper announced the planning process in June 2008. A newsletter and press release in August 2008 was mailed to park neighbors, partners and visitors to notify them of the upcoming public scoping meetings. In December 2008, another newsletter described the results of public scoping. And, in April 2009, a newsletter explained the preliminary draft alternatives developed by the Interdisciplinary Planning Team in December 2008. Later in April, the Interdisciplinary Planning Team met to determine the preferred alternative using the Choosing By Advantages workshop framework, which was initially developed for U.S. Forest Service projects and later modified by the National Park Service for design, construction, and planning projects.

II. Purpose and Need



A. Purpose and Need



Cayuse Cove

The National Park Service and its partners have identified six key purposes for the Shoreline Management Plan:

1. Implement the provisions of the Lake Roosevelt National Recreation Area *General Management Plan* (GMP) regarding shoreline management, including plans for day use visitor services at Crescent Bay (NPS 2000a:33).
2. Consistent with the GMP, analyze the adequacy of existing developments. Identify opportunities for expansion or construction of new facilities to/from the shoreline to accommodate current and future use, and to distribute recreational use more evenly throughout the park (NPS 2000a:33 and 85).
3. Identify opportunities for increased consistency in shoreline management among the NPS, the tribes and other partner agencies and organizations.
4. As directed by the GMP, consider "more active methods for managing visitor use" that would improve management of and reduce impacts from day and overnight use and enhance the protection of natural cultural, and scenic resources (NPS 2000a:33).
5. Evaluate the Lake Roosevelt shoreline to determine whether it provides opportunities for new facilities where none now exist and initiate a process to guide potential future development and other management actions responsive to changing conditions.
6. Address fluctuating lake levels in facility and operational requirements to determine the effects of and plan for the proposed additional draw down of Lake Roosevelt (by Washington State and the Bureau of Reclamation).

Need: Since publication of the GMP in 2000, additional housing development has occurred on private lands adjacent to the park. These private developments have resulted in increasing expectations/pressure on the park to provide shoreline (trail) access to the water and boat launch ramps, as well as additional community docks.

Existing public infrastructure, including shoreline access points and boat launch ramps, is becoming increasingly crowded and thus intermittently unavailable to visitors. At the same time, because of private development near the shoreline, visitors are confused about where they are welcome for boat-in day use and camping opportunities. The unregulated use of the Lake Roosevelt shoreline has also occasionally resulted in visitor conflicts due to crowding, including territoriality. Some visitors and area residents are concerned about what appears to be privatization of the Lake Roosevelt shoreline due to adjacent private development just outside the narrow strip of park shoreline, when in reality the lake shoreline is all in public or tribal ownership.



Boat-in facilities

Where boat-in camping and day-use occur along the shoreline in informal sites, there are increasing concerns about potential human health hazards and resource impacts from the unlawful disposition of human waste, litter, illegal fires, and expansion of impacts from these areas inland.



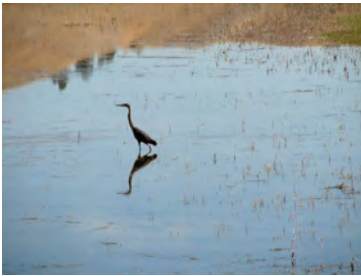
Keller Ferry Marina at low lake level

Potential impacts from the State of Washington's proposal, now being evaluated by the State and Bureau of Reclamation, to draw down as much as an additional 1.8 feet of water from the lake primarily during the peak summer season will impact existing public and private recreational facilities and expose cultural resources to an unknown extent.

The park's visitor services staffing has decreased over time and has resulted in a limited ability to address problems that occur during the peak visitor use season. Visitor use areas are spread out over the length and breadth of the Lake and this dispersion makes them not only difficult to access, but difficult to monitor.

Changing visitation, coupled with changing visitor use patterns and the growing number of types and sizes of boats has resulted in an increasingly difficult management framework that lends itself to unresolved visitor use conflicts, increased resource impacts (e.g., looting of cultural resources), and the need to increase consistency in managing park uses.

There are inconsistent regulations, fees and permitting among the National Park Service, the Confederated Tribes of the Colville Reservation and the Spokane Tribe of the Spokane Reservation managed areas of the park.



Great blue heron at water's edge near Sunset Point

There is uneven coordination among the five counties responsible for overseeing private land development along the Lake Roosevelt shoreline. Limited enforcement of accepted land use practices has resulted in some confusion on the part of residents and visitors. There are opportunities for increasing coordination between the park and the counties with respect to zoning; setbacks; right-of-ways for residents, access and utilities; public access; potential easements; water procurement; and wastewater treatment.

B. Project and Issues Framing Public Scoping



Public scoping meeting in Davenport

The Shoreline Management Plan was originated to determine whether to modify visitor access opportunities from the shoreline to the lake and from the lake to the shoreline. Initially components of the Shoreline Management Plan included elements called for in the Lake Roosevelt GMP, including the development of a marina and other facilities at Crescent Bay; possible changes in the management of visitor use, particularly day use and shoreline camping; and determining the effects of and planning for the proposed additional seasonal draw down of Lake Roosevelt. Over the course of the planning process, these issues changed slightly but continued to form the basis for the development of the alternatives.

The following issues were drafted and presented for comment at public scoping meetings held in Colville, Coulee Dam, Davenport, and Spokane in September 2008. These issues were added to by public scoping participants (see “Public Participation Summary” later in this chapter).



Public scoping meeting at Colville

Crescent Bay

- The GMP and Concession Management Plan call for marina development at Crescent Bay to take some visitor use pressure off Spring Canyon and to provide closer access for the nearby communities of Coulee Dam, Grand Coulee, and Electric City.

Public Access to Shoreline

- Residents adjacent to the park boundary want private access to the lake shore from their properties. Those residents with existing primitive boat launches would like to keep them.
- Increasing residential development has created a need for additional, developed, public access points.
- Boaters are confused about where they can stop along the lake shore for day use or to camp, because some shoreline appears private.
- Most Community Access Points are not adequately signed as public facilities or identified on park maps, so they appear to be private.
- The recreation area currently does not have a way to inform visitors of what areas are full, until visitors arrive at developed areas.
- Visitors must often drive miles out of their way to access the next park development when closer facilities are full.
- Visitors are currently dispersed throughout the national recreation area by the distance between and size of the park developments. Those areas closest to major population centers are the most congested.



Beach camping on Spokane Arm

- Multiple access points to park development and the lake make it difficult for staff to contact and educate the public.
- There are few existing trails along the lake shore for visitors and residents.

Beach Camping/Day Use Impacts

- Unmanaged shoreline camping and day use have resulted in trash, illegal fires, and resource damage along the shoreline.
- Inconsistent enforcement of the regulation that requires use of portable toilets for primitive camping could result in human waste impacts to water quality and the shoreline.
- Water quality in the vicinity of unregulated camping areas and throughout the park is unknown. The park does not have a water quality monitoring program.
- There are unknown impacts to wildlife from increases in dispersed recreation including an increasing number of visitors going to places little used in the past.
- Illegal off-road vehicle use on beaches has adversely affected cultural resources.
- The number and location of the floating toilet/dump stations, though effective where they exist, is inadequate to handle the waste from the increased number of vessels on the water.
- Visitors may not have convenient access to resources intended to expand their knowledge of ways to reduce boating and camping impacts.



Boat ramp at Porcupine Bay

Capacity of Facilities

- During the summer, boaters sometimes wait a long time to launch their boat at congested boat launches.
- Existing parking is at capacity in many areas, such as Spring Canyon, Porcupine Bay, Hunters, Seven Bays, and Kettle Falls, during the peak summer season. NPS land ownership limits the opportunity to expand these areas.
- Analysis of the carrying capacity of national recreation area facilities is needed to determine whether they are adequate or need to be modified. Some areas regularly experience crowding.
- The national recreation area currently does not have criteria to determine whether new or expanded facilities are needed.
- Increasingly longer boat trailers are obstructing traffic in parking areas.
- There may be a desire for primitive walk-in camping, which is occurring on a limited basis now from boat-in campgrounds accessible from area roads.



Lake Roosevelt shoreline

Exclusive Use of Shoreline

- Residential development along the shoreline has resulted in illegal vista clearing, trails, boat ramps, trespass construction of building and landscaping, herbicide use, swim platforms, and floating boat docks.
- It is unknown whether illegal water withdrawal and impacts from adjacent septic systems are occurring.
- Some visitors claim or “reserve” a beach camp by leaving tents, lawn chairs, or other gear out for days or weeks which dissuades other visitors from stopping at an apparently “private” beach.
- Special park uses, including area group camps, need to be evaluated to determine whether ongoing permit renewal should continue given other shoreline management and access needs.
- The vacation cabins at Rickey Point and Sherman Creek are up for permit renewal and will be evaluated in a separate management plan and environmental assessment (see description of in-process Environmental Assessment on page 27 and reason project is outside this plan’s scope on page 53).



Lake at Lincoln Mill

Lower Lake Levels in Summer

- Recreation facilities, such as boat launches, docks, and swimming areas, will be affected by the State and Bureau of Reclamation proposal to draw an additional 1.8 feet of water from the reservoir during peak summer months.
- The draw down may expose and therefore result in additional impacts to resources along the shoreline.
- Lowering lake levels in the summer may increase windblown sediment.

Agency Coordination

- Greater coordination is needed between the NPS and tribes for permitted special events.
- There are inconsistent regulations among the National Park Service, the Confederated Tribes of the Colville Reservation, and the Spokane Tribe of the Spokane Reservation.
- The NPS does not charge or require a permit for shoreline camping, while the tribes require both a permit and user fees.



Lake shore at French Rocks

- Limited coordination between the NPS and the counties could be improved to facilitate visitor understanding of regulations.
- Inconsistent enforcement of county land use regulations has led to impacts on NPS lands.

Natural Resources

- The increase in native aquatic vegetation at several recreation sites has affected the national recreation area's ability to maintain clear swimming waters and access to boat launches.
- Shoreline camping has impacted vegetation.
- Noxious weeds are colonizing riparian and upland areas along the lake shore.
- Although Lake Roosevelt is currently unaffected by the Zebra mussel and the Quagga mussel, there are no measures in place to prevent their invasion.
- Shoreline areas currently lack fish habitat/cover, especially in the draw down zone.



C. Relationship to Laws, NPS Policy, and Lake Roosevelt National Recreation Area Planning Documents

The following laws, policies, and park planning documents represent some of the overall guidance for Lake Roosevelt National Recreation Area that pertain to planning for potential changes in management to the Lake Roosevelt shoreline.

Laws

NATIONAL PARK SERVICE ORGANIC ACT

The key provision of the legislation establishing the NPS, referred to as the 1916 Organic Act, is:

The National Park Service shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations (16 USC 1).

1970 NATIONAL PARK SERVICE GENERAL AUTHORITIES ACT (AS AMENDED IN 1978—REDWOOD AMENDMENT)

This act prohibits the NPS from allowing any activities that would cause derogation of the values and purposes for which the parks have been established (except as directly and specifically provided by Congress in the enabling legislation for the parks). Therefore, all units are to be managed as national parks, based on their enabling legislation and without regard for their individual titles. Parks also adhere to other applicable federal laws and regulations, such as the Endangered Species Act, the National Historic Preservation Act, the Wilderness Act, and the Wild and Scenic Rivers Act. To articulate its responsibilities under these laws and regulations, the NPS has established *Management Policies* for all units under its stewardship (see “Management Policies” below).

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) (42 USC 4341 ET SEQ.)

NEPA requires the identification and documentation of the environmental consequences of federal actions. Regulations implementing NEPA are set forth by the President’s Council on Environmental Quality (CEQ) (40 CFR Parts 1500–1508). CEQ regulations establish the requirements and process for agencies to fulfill their obligations under the act.

CLEAN WATER ACT (CWA) (33 USC 1241 ET SEQ.)

Under the Clean Water Act (CWA), it is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, to enhance the quality of water resources, and to prevent, and control, and abate water pollution. Section 401 of the CWA as well as NPS policy requires analysis of impacts on water quality. NPS *Management Policies* (2006) provide direction for the preservation, use, and quality of water in national parks.

CLEAN AIR ACT (AS AMENDED) (42 USC 7401 ET SEQ.)

The Clean Air Act (CAA) states that park managers have an affirmative responsibility to protect park air quality related values (including visibility, plants, animals, soils, water quality, cultural resources and visitor health) from adverse air pollution impacts. Special visibility protection provisions of the Clean Air Act also apply to Class I areas, including new national rules to prevent and remedy regional haze affecting these areas. Under existing visibility protection regulations, the NPS identified "integral vistas" that are important to the visitor's visual experience in NPS Class I areas, and it is NPS policy to protect these scenic views. Class II areas, such as Lake Roosevelt, are also afforded protection under the CAA.

ENDANGERED SPECIES ACT (16 USC 1531 ET SEQ.)

The Endangered Species Act (ESA) requires federal agencies, in consultation with the Secretary of the Interior, to use their authorities in the furtherance of the purposes of the act and to carry out programs for the conservation of listed endangered and threatened species (16 USC 1535 Section 7(a)(1)). The ESA also directs federal agencies, in consultation with the Secretary of the Interior, to ensure that any action authorized, funded, or carried out by an agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat (16 USC 1535 Section 7(a)(2)). Consultation with the United States Fish and Wildlife Service (USFWS) is required if there is likely to be an effect.

NATIONAL HISTORIC PRESERVATION ACT (1966 AS AMENDED) (16 USC 470)

Section 106 of the National Historic Preservation Act (NHPA) directs federal agencies to take into account the effect of any undertaking [a federally funded or assisted project] on historic properties. "Historic property" is any district, building, structure, site, or object that is eligible for listing in the National Register of Historic Places because the property is significant at the national, state, or local level in American history, architecture, archeology, engineering, or culture.



Historic buildings at Fort Spokane

**NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA)
(1990)**

Section 3 has provisions regarding the custody of cultural items found on federal or tribal lands after November 16, 1990, while section 8 provides for repatriation of items found before that date. Section 3 also identifies procedures regarding the inadvertent discovery of Native American remains, funerary objects and objects of cultural patrimony during federal actions. NAGPRA regulations are found at 43 CFR Part 10.

Policies

NATIONAL PARK SERVICE MANAGEMENT POLICIES (2006)

Management Policies governs the way park managers make decisions on a wide range of issues that come before them. The following excerpts from *Management Policies* are among the most applicable to the proposals contained in the Shoreline Management Plan.

4.4.2 Management of Native Plants and Animals

... The Service may intervene to manage individuals or populations of native species only when such intervention will not cause unacceptable impacts to the population of the species or to other components and processes of the ecosystems that support them. The second is that at least one of the following conditions exists [only relevant information cited]:

- Management is necessary:
 - Because a population occurs in an unnaturally high or low concentration as a result of human influences (such as loss of seasonal habitat, the extirpation of predators, the creation of highly productive habitat through agriculture or urban landscapes) and it is not possible to mitigate the effects of the human influences; ...
 - To accommodate intensive development in portions of parks appropriate for and dedicated to such development; ...
 - To maintain human safety when it is not possible to change the pattern of human activities;

Or

- Removal of individuals or parts thereof...
 - Meets specific park management objectives.



Boating to shore at Spokane Arm

8.1.1 Appropriate Use

... The fact that a park use may have an impact does not necessarily mean it will be unacceptable or impair park resources or values for the enjoyment of future generations. Impacts may affect park resources or values and still be within the limits of the discretionary authority conferred by the Organic Act. In these situations, the Service will ensure that the impacts are unavoidable and cannot be further mitigated. Even when they fall far short of impairment, unacceptable impacts can rapidly lead to impairment and must be avoided. For this reason, the Service will not knowingly authorize a park use that would cause unacceptable impacts.

When a use is mandated by law but causes unacceptable impacts on park resources or values, the Service will take appropriate management actions to avoid or mitigate the adverse effects. When a use is authorized by law but not mandated, and when the use may cause unacceptable impacts on park resources or values, the Service will avoid or mitigate the impacts to the point where there will be no unacceptable impacts; or, if necessary, the Service will deny a proposed activity or eliminate an existing activity.



Sign at entrance to Evans Campground

8.2 Visitor Use

... To provide for enjoyment of the parks, the National Park Service will encourage visitor activities that

- are appropriate to the purpose for which the park was established; and
- are inspirational, educational, or healthful, and otherwise appropriate to the park environment; and
- will foster an understanding of and appreciation for park resources and values, or will promote enjoyment through a direct association with, interaction with, or relation to park resources; and
- can be sustained without causing unacceptable impacts to park resources or values.

... The Service may allow other visitor uses that do not meet all the above criteria if they are appropriate to the purpose for which the park was established and they can be sustained without causing unacceptable impacts to park resources or values. For the purposes of these policies, unacceptable impacts are impacts that, individually or cumulatively, would

- be inconsistent with a park's purposes or values, or
- impede the attainment of a park's desired conditions for natural and cultural resources as identified through the park's planning process, or
- create an unsafe or unhealthy environment for visitors or employees, or



Keller Ferry marina

- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with
 - park programs or activities, or
 - an appropriate use, or
 - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park, or
 - NPS concessionaire or contractor operations or services.

Management controls and conditions must be established for all park uses to ensure that park resources and values are preserved and protected for the future. If and when a superintendent has a reasonable basis for believing that an ongoing or proposed public use would cause unacceptable impacts to park resources or values, the superintendent must make adjustments to the way the activity is conducted to eliminate the unacceptable impacts. If the adjustments do not succeed in eliminating the unacceptable impacts, the superintendent may (1) temporarily or permanently close a specific area, or (2) place limitations on the use, or (3) prohibit the use.



Group campsite at Keller Ferry

Restrictions placed on recreational uses that have otherwise been found to be appropriate will be limited to the minimum necessary to protect park resources and values and promote visitor safety and enjoyment.

Any closures or restrictions—other than those imposed by law—must be consistent with applicable laws, regulations, and policies, and (except in emergency situations) require a written determination by the superintendent that such measures are needed to

- protect public health and safety;
- prevent unacceptable impacts to park resources or values;
- carry out scientific research;
- minimize visitor use conflicts; or
- otherwise implement management responsibilities.

When practicable, restrictions will be based on the results of study or research, including (when appropriate) research in the social sciences. Any restrictions imposed will be fully explained to visitors and the public. Visitors will be given appropriate information on how to keep adverse impacts to a minimum, and how to enjoy the safe and lawful use of the parks.

8.2.2.1 Management of Recreational Use

Superintendents will develop and implement visitor use management plans and take action, as appropriate, to ensure that recreational uses and activities in the park are consistent with its authorizing legislation or proclamation and do not cause unacceptable impacts on park resources or values. Depending on local park needs and circumstances, these plans may be prepared (1) as coordinated, activity-specific documents (such as a river use plan, a backcountry use plan, a wilderness management plan, an off-road vehicle use plan, a winter use plan); (2) as action-plan components of a resource management plan or general management plan; or (3) as a single integrated plan that addresses a broad spectrum of recreational activities. Regardless of their format or complexity, visitor use management plans will (1) contain specific, measurable management objectives related to the activity or activities being addressed; (2) be periodically reviewed and updated; and (3) be consistent with the carrying capacity decisions made in the general management plan.

The Service will seek consistency in recreation management policies and procedures on both a Service-wide and interagency basis to the extent practicable. However, because of differences in the enabling legislation and resources of individual parks, and differences in the missions of the Service and other federal agencies, an activity that is entirely appropriate when conducted in one location may be inappropriate when conducted in another. The Service will consider a park's purposes and the effects on park resources and visitors when determining the appropriateness of a specific recreational activity.



Picnic facilities at Cloverleaf

Superintendents will consider a wide range of techniques in managing recreational use to avoid adverse impacts on park resources and values or desired visitor experiences. Examples of appropriate techniques include visitor information and education programs, separation of conflicting uses by time or location, “hardening” sites, modifying maintenance practices, and permit and reservation systems. Superintendents may also use their discretionary authority to impose local restrictions, public use limits, and closures and designate areas for a specific use or activity (see 36 CFR 1.5). Any restriction of appropriate recreational uses will be limited to what is necessary to protect park resources and values, to promote visitor safety and enjoyment, or to meet park management needs. To the extent practicable, public use limits established by the Service will be based on the results of scientific research and other available support data. . . .



Trail near Ft Spokane

9.2.2 Trails and Walks

Trails and walks provide the only means of access into many areas within parks. These facilities will be planned and developed as integral parts of each park's transportation system and incorporate principles of universal design. Trails and walks will serve as management tools to help control the distribution and intensity of use. All trails and walks will be carefully situated, designed, and managed to

- reduce conflicts with automobiles and incompatible uses;
- allow for a satisfying park experience;
- allow accessibility by the greatest number of people; and
- protect park resources.

Heavily used trails and walks in developed areas may be surfaced as necessary for visitor safety, accessibility for persons with impaired mobility, resource protection, and/or erosion control.

Surface materials should be carefully selected, taking into account factors such as the purpose and location of a trail or walk and the potential for erosion and other environmental impacts. . .In addition, trail planning will take into account NPS interest in cooperating with federal, state, local, and tribal governments, as well as individuals and organizations, to advance the goal of a seamless network of parks. These partnership activities are intended to establish corridors that link together, both physically and with a common sense of purpose, open spaces such as those found in parks, other protected areas, and compatibly managed private lands.

9.2.2.1 Cooperative Trail Planning

The Park Service will cooperate with other land managers, nonprofit organizations, and user groups to facilitate local and regional trail access to parks. When parks abut other public lands, the Service will participate in interagency, multi-jurisdictional trail planning. . . .

9.2.4 Parking Areas

Parking areas and overlooks will be located to not unacceptably intrude, by sight, sound, or other impact, on park resources and values. When parking areas are deemed necessary, they will be limited to the smallest size appropriate, and they will be designed to harmoniously accommodate motor vehicles and other appropriate users. When large parking areas are needed, appropriate plantings and other design elements will be used to reduce negative visual and environmental impacts. When overflow parking is provided to meet peak visitation, it should be in areas that have been stabilized or are otherwise capable of withstanding the temporary impacts of parking without causing unacceptable impacts on park resources. Permanent parking areas will not normally be sized for the peak use day, but rather for the use anticipated on the average weekend day during the peak season of use.

9.3.2.1 Campgrounds

When campgrounds are determined to be necessary, their design will accommodate the differences between recreation-vehicle camping and tent camping, and cultural landscapes, terrain, soils, vegetation, wildlife, climate, special needs of users, visual and auditory privacy, and other relevant factors will be considered.

When desirable for purposes of management, tent camping may be accommodated in separate campgrounds or in separately designated areas within campgrounds.

Boating campgrounds may be provided in parks with waters used for recreational boating. The need for campgrounds—and their sizes, locations and numbers—will be determined by (1) the type of water body; (2) the availability and resiliency of potential campsites; (3) the feasibility of providing and maintaining docking, beaching, mooring, camping and sanitary facilities; and (4) the potential for unacceptable impacts on park resources or values.



Children at play at Porcupine Bay

9.3.4.1 Picnic and Other Day Use Facilities

Picnic areas and other day use areas to be used for specific purposes (such as play areas) may be provided on a limited basis as appropriate to meet existing visitor needs.

9.3.4.2 Facilities for Water Recreation

Boating facilities (such as access points, courtesy docks, boat ramps, floating sewage pump-out stations, navigational aids, and marinas), breakwaters, and fish cleaning stations may be provided as appropriate for the safe enjoyment by visitors of water recreation resources, when (1) they are consistent with the purposes for which the park was established, and (2) there is no possibility that adequate private facilities will be developed. Facilities must be carefully sited and designed to avoid unacceptable adverse effects on aquatic and riparian habitats and minimize conflicts between boaters and other visitors who enjoy use of the park. A decision to develop water-based facilities must take into account not only the primary impacts (such as noise, air, and water pollution) of the development, but also the secondary impacts (including cumulative effects over time) that recreational use associated with the development may have on park resources and visitor enjoyment.

10.2.6 Concession Facilities Design

Concession facilities will be of a size and at a location that the Service determines to be necessary and appropriate for their intended purposes. All concession facilities must comply with applicable federal, state, and local construction

codes and meet accessibility requirements. . .Proposed concession facilities must conform to NPS standards for sustainable design, universal design, and architectural design . . .

Plans

RELATIONSHIP TO THE GENERAL MANAGEMENT PLAN

The GMP gives direction to the NPS for the management of the recreation area, the provisions for visitor use and the types and locations of facilities to be provided. The plan encourages a full range of recreational activities, including: camping, picnicking, playgrounds, boating, fishing, swimming, water skiing, sightseeing and learning about the recreational area and its cultural and natural resources.

As called for by the GMP:

- Existing developments will be analyzed for opportunities to expand or make them function more efficiently.
- New developments will be constructed, where appropriate, to accommodate additional visitors and will be sited at locations that will help distribute use more evenly at facilities within the national recreation area.
- New types of public access points will be provided to alleviate crowding at existing facilities.
- More active methods for visitor use management will be employed (NPS 2000a: 21).

Specific actions called for by the GMP that will be developed more fully in this plan include:

- A full-service marina at Crescent Bay will be developed to encourage increased use at the south end of the lake (NPS 2000a:24 and 33).
- New community access points can be developed within the developed recreation management area (NPS 2000a: 24). See specific conditions language on pages 25-26 in NPS 2000a.
- Evaluate NPS access points for potential to extend launch ramps, expand parking areas, and increase efficiency. After analysis, construct new facilities to accommodate visitor demand (NPS 2000a:34).
- Continue to identify opportunities to lengthen NPS ramps or build new ramps (NPS 2000a:34).
- Design all new facilities to be accessible (NPS 2000a:34).
- Most types of boating will continue to be allowed, and provisions for alternate boating such as canoeing will be increased (NPS 2000a: 21).



Picnic shelter at Evans Campground

- . . .to accommodate the increase in visitor use and ensure that there will be little degradation of the resources or the visitor experiences, a more proactive visitor use management system will be employed (NPS 2000a: 21).
- All developed NPS access points will be maintained and evaluated for potential to extend launch ramps to lower elevations (although opportunities for this are very limited) and for potential to expand parking lots or increase efficiency (NPS 2000a: 24).

General provisions related to the Shoreline Management Plan as noted in the GMP state:

- New NPS facilities can be constructed in appropriate management areas as needed to accommodate increased visitor demand. Before constructing new facilities or expanding existing facilities, a careful analysis will be conducted to ensure that the facilities are needed and that their construction will not negatively impact sensitive natural and cultural resources or the quality of the visitor experience on that section of the lake (NPS 2000a: 24).
- Camping along the shoreline outside of undeveloped areas will continue to be allowed as long as it can be managed to keep resource impacts at acceptable levels. A process to assess damage and manage dispersed sites along the shoreline will be developed (NPS 2000a: 23).
- The NPS will continue to encourage local governments to implement controls on growth and development to ensure that they are managed in a fashion that would not adversely affect the natural beauty and rural character of the lands that surround the reservoir (NPS 2000a: 26).



Kettle Falls Marina

GMP Zoning

GMP zoning applicable to the Shoreline Management Plan is shown below (NPS 2000a: 30-31, 34).

ZONE	DEFINITION
<p><i>Concentrated Recreation</i></p> <p>APPLICABLE AREAS: Contains developments at Kettle Falls, Evans, Fort Spokane, Porcupine Bay, Seven Bays, Keller Ferry, and Spring Canyon. Develop Hunters and Crescent Bay as part of this management area</p>	<p>Development will be accessible from land and water and may include full-service campgrounds that accommodate RVs and provide water, flush toilets, campground hosts, picnic areas, formal swim beaches, play equipment and amphitheaters. Visitor contact stations may also be provided. The most extensive boat launch facilities, including multi-lane ramps, large boat trailer lots, ramps that extend to the lowest launch elevations, and extensive courtesy docks may also be provided. Some areas might have full-service marinas providing fuel, supplies, moorage, boat rentals, food service and other related services. Some may also provide concessioner-operated RV facilities with water, power and sewer hook-ups.</p> <p>Resources will be primarily managed to enhance visitor experience. . .Maintaining native plant species will continue to be an emphasis, but nonnative species can be considered to resolve landscape problems.</p>
<p><i>Developed Recreation</i></p> <p>APPLICABLE AREAS: Contains the largest amount of land area. After evaluation, expand existing facilities.</p>	<p>Small planned developments accessible from land and water designed to blend with the local environment. These will vary in density from as few as 12 to as many as 30 campsites. Widely spaced developments will accommodate cars and small RVs. Tent pads, picnic tables, grills, restrooms, water systems, small launch ramps, courtesy docks, and boat trailer parking will be provided. Most ramps will provide access only at high water levels. Some may have undeveloped swim beaches or small commercial facilities such as docks for lakeside access to restaurants, stores, or wineries.</p> <p>New campgrounds, boat launch ramps, comfort stations, and similar facilities could be added where needed to accommodate growth. . .</p> <p>Resources will be managed to maintain the natural character of the area and to enhance the visitor experience. Native plant species will be maintained in natural areas, but nonnative species can be used in developed area landscapes to resolve specific problems that cannot be addressed with native species.</p>
<p><i>Dispersed Recreation</i></p> <p>APPLICABLE AREAS: Contains the second largest land area, generally where there is no development. Similar to boat-in campgrounds.</p>	<p>Visitors experience a primarily natural landscape. Access is primarily from water. Opportunities for quiet and solitude are available in undeveloped areas. A few small-scale developments allow experiences to be shared with a few other people. Development will vary from no facilities to a minimal level of facilities (3-12 campsites), including tent pads, fire rings or grills, picnic tables and toilets. Most developments are where adjacent land is steep and inaccessible – not normally adjacent to developed private property.</p> <p>Resources will be managed to preserve or restore the area’s natural character. Nonnative plants will not be introduced into these areas.</p>

ZONE	DEFINITION
<p><i>Historic and Interpretive</i></p> <p>APPLICABLE AREAS: Contains Fort Spokane and designated sites in the Kettle Falls area.</p>	<p>This management area includes locations where significant historic or cultural resources will be preserved and interpreted for the public. Visitors may encounter visitor facilities such as interpretive displays, interpretive trails visitor contact stations, and other similar facilities.</p>
<p><i>Special Uses</i></p> <p>APPLICABLE AREAS: Contains Boy Scout Camp, Camp NaBorLee, and summer homes at Rickey Point and Sherman Creek.</p>	<p>This management area includes those areas designated for a specific use or group, such as vacation cabin owners and group camp operators. Access to the general public may be limited.</p>
<p><i>Open Waters</i></p> <p>APPLICABLE AREAS: Contains most of the surface of the reservoir.</p>	<p>This management area is open to all types of motorized and non-motorized boats. The open waters category contains most lake surfaces not under the management of the tribes. Due to the size and configuration of the lake, visitors continue to find a variety of conditions, from heavy use to quiet areas of solitude.</p>
<p><i>Passive Waters</i></p> <p>APPLICABLE AREAS: Will be developed to increase the number of passive water management areas to provide alternative boating experiences. Maintain Crescent Bay Lake and Kettle River above Napoleon Bridge and add four new areas (Colville River, Spokane River, Hawk Creek and extended area in the Kettle River from Napoleon Bridge downstream to the railroad bridge below Kettle Falls Campground).</p>	<p>Similar to the open waters management area, the passive waters category has further boating restrictions on type and size of craft, use of engines, and/or speed limits to protect sensitive resources or provide alternative visitor experiences.</p>



Two Rivers Marina

CONCESSIONS MANAGEMENT PLAN (1991)

This plan identified the following 10 development zones on Lake Roosevelt: 1) Lake View Marina, 2) Seven Bays Marina, 3) Spring Canyon Concession, 4) Kettle Falls Marina, 5) Two Rivers, 6) McCoy's Marina (no future development), 7) Daisy Marina (no future development), 8) Crescent Bay at Grand Coulee Dam (future development site), 9) Moonbeam Bay (future development site), and 10) Inchelium (future development site). This lakewide agreement among the managing partners of the Lake Roosevelt Reservoir was in effect for ten years. The purpose of the plan was to create a unified approach to developing the concession facilities needed to provide for visitor use and enjoyment of the lake and the surrounding federally owned public lands. The plan defined the process that would be used by the partners to implement and amend the plan as needed.

The primary types of development and activities that the plan sought to control were the location of marinas, stores, restaurants, lodging and RV sites; houseboat and powerboat rentals; tour boat operations; and the location and operation of sewage pump-out and solid waste disposal sites. The plan also identified areas where there would be no development to ensure that natural areas were maintained and protected (NPS 2000a:113).

CRESCENT BAY DEVELOPMENT CONCEPT PLAN (1978, FINDING OF NO SIGNIFICANT IMPACT (FONSI), 1980)

This plan calls for the development of the marina complex as identified in the GMP. It also identified a location for a visitor information center, hotel, and restaurant. Except for the proposed marina development, actions within this EA do not appear to have been carried as active plans through the GMP. The decision record for the Shoreline Management Plan would change the proposed action in this DCP to whichever alternative in the Shoreline Management Plan is selected for the proposed development at Crescent Bay.

WILLIAMS SKID ROAD ENVIRONMENTAL ASSESSMENT (2001)

This project allowed an adjacent private landowner one-time access (for duration of the operation) to skid logs across public lands to a county road. After an environmental analysis, the action was approved and completed.

NORTH DISTRICT ADMINISTRATIVE COMPOUND IMPROVEMENTS (2002)

The North District Administrative Compound project sought to improve the NPS Kettle Falls administration area by enlarging the maintenance compound and adding a small AST. The proposed improvements have since been implemented.



Picnic facilities at Porcupine Bay

GIFFORD CAMPGROUND AND BOAT LAUNCH IMPROVEMENTS (2002)

The proposed project called for additional development at Gifford to improve NPS facility maintenance and visitor experience. The improvements included a small maintenance shop, parking lot expansion, and a new comfort station. These project improvements have since been implemented.

CAMPGROUND REDEVELOPMENT AT PORCUPINE BAY ENVIRONMENTAL ASSESSMENT (2002)

Porcupine Bay campground's design does not fully meet visitor needs. A better layout of campsites, parking areas, and roads and trails, new facilities for people with disabilities, and more resource protection would enhance visitor enjoyment and add to the protection of park resources.

The Porcupine Bay project approved the addition of four campsites, a new comfort station, ADA modifications to existing comfort station, construction of a new maintenance shop, removal of a seasonal housing unit, an increase in parking capacity, and a vehicle turnaround. Most actions associated with this project have not yet been implemented.

KELLER FERRY CAMPGROUND CONCESSION IMPROVEMENTS ENVIRONMENTAL ASSESSMENT (2002)

The Development Concept Plan (DCP) for Keller Ferry described specific actions for implementing the broad management strategies defined in the Lake Roosevelt National Recreation Area GMP. The GMP called for expansion of existing concession facilities and services when economically feasible. The GMP encouraged the expansion of marina concessions at Keller Ferry to improve marina operations and to provide additional services, including parking, to the public.

The project proposed development of an office building, storage building, expansion of the maintenance building, provision of a houseboat launch, and adding a utility dock to the existing maintenance dock. The proposed plan for Keller Ferry was intended to ensure orderly expansion of recreational facilities to meet increasing public demand.

While approved, many of the campground improvements have yet to be implemented. Proposed campground improvements include three road loops with a total of 34 RV sites (four accessible), a new group site (with parking and a vault toilet), and a new accessible tent site. Other proposed changes include adding parking stalls for vehicles or boat trailers and a new comfort station with parking, as well as an addition to the existing parking lot.

BRADBURY BEACH FACILITY IMPROVEMENTS (2003)

Four areas of proposed improvements were included: 1) Boat Launch Area: improvement and expansion of the existing boat launch parking lot, including constructing an upper parking lot; 2) Swim Beach Area: replacing a pit toilet at the swim beach with an accessible vault toilet; providing improved trails to the beach; reorienting the existing parking lot and exit road and removing the water hand pump formerly used for the campground; 3) Picnic Area: expanding the picnic area parking lot; modifying the trail system; replacing another pit toilet with an accessible vault toilet; removing the courtesy dock; and conducting vegetation management near the swim beach and in the picnic area; and 4) Entrance Road Intersection: modifying the entrance road intersection. These improvements have been implemented.



Personal watercraft in use at Gifford

PERSONAL WATERCRAFT PLAN ENVIRONMENTAL ASSESSMENT (2004)

This EA evaluated a range of alternatives and strategies for managing personal watercraft (PWC) use at Lake Roosevelt, including the effects of authorizing a special regulation to allow PWC use within the recreation area. The FONSI authorized reinstating PWC use at Lake Roosevelt except at Crescent Bay Lake, on the Upper Kettle River (above Napoleon Bridge), and at Upper Hawk Creek from the waterfall near the campground through the “narrows.”

VACATION CABIN MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT (IN PREPARATION)

This EA is being prepared to analyze the effects of alternatives to the use of private vacation cabins on public land as a result of an April 2007 report from the U.S. Department of Interior Office of Inspector General (OIG) on Private Use of Public Lands submitted to the Directors of the National Park Service and the Bureau of Land Management. The report findings stated that the NPS should:

- a) Determine the extent SUPs limit long-term public access to public lands.
- b) Do not renew SUPs that limit long-term public access to public lands
- c) Determine appropriate legal instrument if use does not limit public use.
- d) Perform appropriate National Environmental Policy Act (NEPA) review prior to issuance of SUP or other legal means.

The NPS Director responded to the OIG Report and concurred with the recommendations. Special use permits are currently issued to 26 permittees for the use of vacation cabins on NPS land. An environmental analysis of this special use is currently being conducted.

Studies



Boating at Keller Ferry

LAKE ROOSEVELT SHORELINE MANAGEMENT WATERFRONT FACILITIES DRAW DOWN IMPACT STUDY (KPF CONSULTING ENGINEERS 2008)

The purpose of this report was to evaluate the likely impacts of the Lake Roosevelt Incremental Storage Releases Program on existing public-use facilities that are part of the recreation area, managed by the National Park Service. The facilities in the recreation area include 26 public campgrounds and boat-in-only campgrounds, 11 designated swimming beaches, and three concessionaire-operated marinas located at Kettle Falls, Keller Ferry, and Seven Bays (KPF 2008:1).

The draw down amount for a dry year is 1 foot less than the current operating elevation at the same time of year. There are several facilities that are not currently designed to function at this lower elevation. Courtesy boat docks and swim areas are impacted by the draw down. A portion of docks will remain above water level and swim areas will contain less water. Improvements are recommended, but it is recommended that improvements be made to handle the additional draw down expected for the drought year rather than for the dry year alone.

A drought year will see a decrease in elevation 1.8 feet lower than the current drought year operation elevation for that time of year. This water level drop impacts many facilities. The main effect is less usable dock area for the courtesy docks and less surface area and depth of water in the swim areas. It is recommended that facilities be retrofitted where possible to maintain the current level of service. The estimated total cost to retrofit the existing facilities is \$528,800 (KPF 2008:11).



Lake Roosevelt shoreline

WATER QUALITY STUDY (1999)

In 1999, the park commissioned a water quality analysis of six designated swim beaches within Lake Roosevelt NRA (six designated swimming beaches at the following locations: Spring Canyon, Keller Ferry, Fort Spokane, Porcupine Bay, Marcus Island and Evans). This study, a Health Risk Assessment of Swimming Beaches on Lake Roosevelt (Vasconcelos 1999), confirmed that the beaches were generally within water quality parameters for temperature, conductivity, turbidity, pH, and dissolved oxygen. The study also analyzed whether nearby potential sources of pollution, such as comfort station septic systems, shower drainages, and culvert runoff could potentially affect water quality at these beaches.

The study focused on the following key purposes: (1) Identify all physical and environmental factors which may have a current or future impact on water quality; (2) Identify specific conditions which impact the health and safety of primary contact recreational activities such as swimming, wading, and snorkeling in designated areas of each beach site; (3) Identify and locate potential sources of human or animal fecal contamination which could lead to contamination and distribution of microbial pathogens within the designated swimming areas; (4) Locate and identify at least three bacterial monitoring stations at each beach which are considered representative of the bathing area and; (5) Make real-time physiochemical measurements of water temperature, conductivity, turbidity, pH and dissolved oxygen at each swimming site.



Buoy at Spring Canyon

The study did not include measurements of biological contamination, such as for *E. coli* or other enterococcus bacteria. It did, however, identify whether “swimmer’s itch;” ear, nose and throat irritations; or other reports of contamination had been reported from the study sites.

As noted in the study, the NPS requires that water suitable for body contact recreation uses must meet four specific requirements. These requirements are: (1) Conducting on-site surveys; (2) Formalizing a acceptable beach monitoring plan; (3) Monitoring for *E. coli* or enterococcus indicator bacteria employing U. S. Environmental Protection Agency (EPA) methodologies and; (4) Issuing beach advisories or closures when bacterial contamination criteria are exceeded.

The study therefore recommended that the recreation area begin monitoring for indicator bacteria.

NATIVE AND NON-NATIVE AQUATIC VEGETATION STUDY (SYTSMA AND MILLER 2008)

In 2007, Lake Roosevelt established test plots at five sites to monitoring different methods of addressing aquatic plant concentrations arising during draw downs. Three of the sites were in the Spokane Arm (Porcupine Bay, Moccasin Bay, and Riverview) and two sites in the mainstem Columbia River (East and West Hanson Harbor). These sites were selected based on the high number of aquatic plants, the potential for these aquatic plants to impede visitor use and safety, comments from visitors and ease of access for treatment and monitoring (Sytsma and Miller 2008). Treatments included: cultivation, application of forced heat, solarization from black plastic, solarization from clear plastic, placement of a benthic barrier



Shoreline vegetation at Moccasin Bay

within the bathing zone at Porcupine Bay and no treatment (control). According to Sytsma and Miller (2008), cultivation involved pulling a rototiller behind a tractor to uproot plants to a depth of approximately four inches. The forced-heat treatment involved pumping steam beneath tarps on the soil surface for two to three hours to heat the soil to a depth of two to four inches. The gas permeable AquaScreen-brand benthic barrier was applied in the swimming area of Porcupine Bay. It is commonly used to remove or prevent submersed plant growth in small areas around docks and swimming beaches. Solarization involved placing heavy black or clear plastic on the soil surface for approximately one month. The purpose of the plastic was to kill any vegetation underneath through trapping heat. Black plastic and control treatment plots were placed at all sites while other treatments were placed at a subset of the sites. Eleven native aquatic plants, one macroalgae, and one non-native aquatic plant were found. Eurasian watermilfoil was classified as uncommon because it was found only at three percent of the study sites. From this study, an aquatic vegetation growth zone was identified between reservoir heights of 1,260 and 1,280 feet. The test methods did not have a consistent effect on reducing the populations or changes in community composition during the study period. The study recommended testing the effectiveness of an aquatic herbicide, Fluridone, in summer 2008. Fluridone has been used successfully in aquatic irrigation canals (Sytsma and Parker 1999 in Sytsma and Miller 2008).

Agreements

LAKE ROOSEVELT COOPERATIVE MANAGEMENT AGREEMENT "FIVE PARTY AGREEMENT" (1990)

This agreement specifies management areas for the Department of the Interior, National Park Service, the Bureau of Reclamation, and the Bureau of Indian Affairs, as well as for the Confederated Tribes of the Colville Reservation, and the Spokane Tribe of the Spokane Reservation. It identified a "Reclamation Zone, a Recreation Zone and a Reservation Zone, wherein certain management responsibilities for each agency are identified.

Under the terms of this agreement:

NPS shall manage, plan and regulate all activities, development, and uses that take place in the Recreation Zone in accordance with applicable provisions of federal law and subject to the statutory authorities of Reclamation, and consistent with the provisions of the agreement subject to Reclamation's right to make use of the Recreation Zone as required to carry out the purposes of the Columbia Basin Project."

This agreement established the Lake Roosevelt Coordinating Committee, comprised of the National Park Service, Bureau of Reclamation, Bureau of Indian Affairs, Confederated Tribes of the Colville Reservation and Spokane Tribe of the Spokane Reservation.

TRI-PARTY AGREEMENT

This agreement, which was superseded by the Five Party Agreement, was signed by the Secretary of the Interior on December 18, 1946. It identified management responsibilities among the National Park Service, Bureau of Indian Affairs and Bureau of Reclamation and confirmed Lake Roosevelt National Recreation Area (although it was then-called Coulee Dam National Recreation Area) as a unit of the National Park System, subject to all the NPS laws, regulations, policies and guidelines (Riedel 1997:10).

LAKE ROOSEVELT FORUM

The Lake Roosevelt Forum was created in 1990 as a public involvement group to provide a neutral arena for all interested parties throughout the region to meet, learn about proposed activities early in the planning process and to seek common ground on which to promote a coordinated vision of Lake Roosevelt and its watershed (Riedel 1997:15)

D. Public Participation

Public involvement is a key component of the NEPA process. In this part of the process, the general public, federal, state, local agencies and organizations are provided an opportunity to identify concerns and issues regarding the potential effects of proposed federal actions. The opportunity to provide input is called “scoping.”



Interdisciplinary Planning Team Workshop

Internal scoping is the effort to engage professional staff of Lake Roosevelt National Recreation Area and other NPS offices (Pacific West Region and Denver Service Center) to provide information regarding proposed actions that may affect park resources. Internal scoping, which began in February 2008, was also formally conducted. A variety of concerns were identified from park staff in vegetation, wildlife, maintenance, water resources, and planning through participation in an internal scoping meeting held on February 26–29, 2008 and another meeting with Jones & Jones staff in March. Comments were also solicited formally and informally from Interdisciplinary Planning Team members and from other agency staff. The initial Interdisciplinary Planning Team meeting occurred on August 12, 2008. Later Interdisciplinary Planning Team meetings occurred in December 2008 and April 2009. Internal scoping continued throughout the development of this EA.



Public scoping meeting in Colville

As a key step in the overall conservation planning and environmental impact analysis process necessary for achieving the goal managing the Lake Roosevelt shoreline, the NPS sought public comments and relevant information to guide the preparation of the EA. Among the objectives of this public scoping were to:

- Invite participation from federal, tribal, state, local governments and other interested parties;
- Inform all interested parties about the scope of the problem and the need to find solutions;
- Identify a preliminary range of management alternatives (in addition to a no-action alternative that will be used as a baseline of existing conditions from which to evaluate proposed changes in management);
- Identify substantive environmental (including natural, cultural, recreational and socioeconomic) issues which warrant detailed environmental impact analysis, and eliminate issues or topics which do not require analysis;
- Identify potential environmental consequences and suitable mitigation strategies.

Public scoping was publicized through the following means: 1) a press release describing the intent to begin the public involvement process through comments on the proposed project was mailed to news media on August 14, 2008; 2) a newsletter was distributed to approximately 350 people on the park’s mailing list and was available at Lake Roosevelt NRA headquarters in Coulee Dam; 3) it was announced via PEPC on August 19, 2008.



Public scoping meeting in Coulee Dam

The public outreach called for by Section 106 of the National Historic Preservation Act NHPA was integrated into the NEPA process in accordance with the *NPS Programmatic Agreement and Management Policies* (2006).

The formal public scoping period for the Lake Roosevelt Shoreline Management Plan began on August 14, 2008 and ended on September 30, 2008. During this time, Lake Roosevelt National Recreation Area held four open house public meetings in Colville (September 8, 2008), Coulee Dam (September 9, 2008), Davenport (September 10, 2008) and Spokane (September 11, 2008). All parties wishing to express concerns or provide information about management issues which should be addressed in the forthcoming conservation planning and environmental impact analysis process were strongly encouraged to submit written comments.

Professional staff was available to introduce the project, give presentations, answer questions, and to accept comments. The public was encouraged to provide comments during the meetings and/or to submit written comments. The meetings were attended by approximately 137 people. There were 55 people who signed in at the Colville public meeting, 15 people who signed in at the Coulee Dam Public Meeting, 34 people who signed in at the Davenport Public Meeting, and 33 people who signed in at the Spokane Public Meeting. Overall, more than 200 comments were recorded by NPS and Jones & Jones staff at these meetings.

Summary of Concern Statements

The public comments from both the meetings and the letters (295) were sorted into nine different categories. These ultimately resulted (from additional sorting and combining) in the 241 concern statements listed below plus the ones listed in the lower section that were considered but dismissed (10), or outside the scope of the proposed plan (41). The comments have become part of the public record. Another 28 comments were submitted on the proposed alternatives as a result of the Alternative Development newsletter.

PUBLIC ACCESS TO SHORELINE (76 COMMENTS)

Residents adjacent to the park boundary want private access to the lake shore from their nearby properties. Those residents with existing, noncompliant primitive boat launches would like to keep them.

PATHS FROM PRIVATE DEVELOPMENTS TO THE BEACH

- Stairs, paths or walkways should be available from neighboring properties to area beaches.
- Design guidelines for community access walkways could be developed to ensure consistency for walkways.
- Designated paths should be designated for each community.



Docking facilities at Porcupine Bay

BOAT LAUNCHES

- More boat launches should be provided, including at Moccasin Bay and Cayuse Cove.
- Permits to local landowners for access to primitive boat launches could be issued twice a year.
- Primitive boat launches, such as the one at Moccasin Bay, allow the public one at Porcupine Bay to be less congested.
- The Shoreline Management Plan should not allow for private primitive boat launches that are unavailable to surrounding landowners or the public.
- Private docks in the park, including those at Moccasin Bay, should be removed.
- Moccasin Bay boat docks are used by local residents and are accessible to the elderly or handicapped.
- Residents above boat-in only campsites should be able to drive or walk-in to those sites to set up camp.
- Many existing primitive boat launches, such as Cayuse Cove do not have public access roads.
- A variety of Community Access Points should be retained to minimize public boat launch traffic.
- Criteria for boat launch permits for residents adjacent to the shoreline should be established to free parking spaces at public boat launches.

OTHER ACCESS ISSUES

- Shoreline access road closures, such as Orchard Tank Road, are often not enforced.
- Fencing to exclude cattle is also preventing public access.

Increasing residential development has created a need for additional, developed, public access points.

SUGGESTIONS REGARDING NEW FACILITIES

- More public boat launches would decrease crowding at existing launches.
- Consider a boat launch and day use area at Moccasin Bay.
- Consider locating facilities at Colville Flats, Barstow, Ft. Spokane, and the Camp Na-Bor-Lee/Corkscrew area.
- Reopen the Laughbon Bay boat launch near Porcupine Bay, if it can be done without disturbing sensitive Indian artifacts.
- A public, primitive boat launch at Moccasin Bay would have the following adverse impacts: the County gravel access road would damage boat trailers, the east end of Moccasin Bay is a wetland, the adjacent lake area is too crowded with jet skis and boats, Indian artifacts could be disturbed; and there is adequate boat launch capacity at Porcupine Bay.



NPS boat at Porcupine Bay

PROBLEMS WITH CROWDING/PRIVATE ACCESS ISSUES IN EXISTING FACILITIES

- Area residents often kept their boats in the water all summer because boat launches, including at Porcupine Bay Campground, are overcrowded.
- Land sales in areas surrounding the shoreline, including in Enterprise, often describe “water-front access” despite the publicly owned shoreline of Lake Roosevelt.
- The NPS should charge a moorage fee (\$10/day) for day use boating at Spring Canyon during peak periods.

CROWDING/MAINTENANCE OF EXISTING FACILITIES

- If the National Park Service is having difficulty maintaining existing facilities, why are new facilities being considered?
- Existing facilities are only crowded during certain times, such as weekends and holidays.
- There are existing, uncrowded facilities available during peak periods; however, these are not well advertised.
- Instead of establishing new access points and facilities, the National Park Service should manage existing facilities more efficiently.



Lake shore at China Bend

Visitors are confused about where they can stop along the lake shore for day use or to camp, because some shoreline appears private.

- The National Park Service should limit or prevent activities by private parties that interfere with public access to natural/built features of the Lake Roosevelt shoreline.
- Boaters are familiar with the publicly owned Lake Roosevelt shoreline and know they can stop anywhere.
- It is unlikely that visitors are confused about public vs. private areas along the Lake Roosevelt shoreline.
- Private development along the shoreline interferes with public access to it by fostering “no trespassing” signs.
- Because of changes in the Mill Canyon area, such as the realignment of the county access road and interference from private residents, area neighbors no longer use the beach there.
- Public swimming areas, paths and parking areas should be clearly marked along the shoreline, including in the Mill Canyon area.
- Some National Park Service management actions, such as bollards, do not prevent access because they are removed/vandalized.
- The National Park Service should do a better job of informing visitors and residents of the regulation which does not allow leaving private property to reserve sites along the shoreline unless the site is occupied.
- The National Park Service should enforce the “abandoned property regulation.”



Private dock on the Spokane Arm

Most Community Access Points are not adequately signed as public facilities or identified on park maps, so they appear to be private.

- Clearly identify Community Access Points as public.
- Define “Community Access Point.”
- Community Access Points allow moorage and access to nearby services and businesses, such as at Eden Harbor, where the new docks have greatly improved public access.
- Additional paved parking areas should be added along the shoreline.
- Community Access Points should have additional facilities, such as roped-off swimming areas for kids.
- Community Access Points, including those at Eden Harbor, should allow for both day and overnight use.
- No additional Community Access Points should be added.

Facilities should be located closer together so area residents and visitors do not have to drive miles out of their way to access the next park development when closer facilities are full.

BOAT LAUNCHES

- Boat launches near Porcupine Bay and on north side of Lake Roosevelt are too far apart.
- More facilities should be added on the east side of Lake Roosevelt.
- Boat launches should be located closer together. Suggestions including eight miles apart or no more than an hour's drive apart.
- Although overland drives to area facilities are long (including up to 60 miles between Moccasin Bay and the nearest NPS boat launch), boat distances are much shorter and more closely spaced boat launches could reduce the long drives to access public facilities.

TOILETS

- Portable toilets should be located at each facility.
- Portable toilets should both be put out earlier in the season and left out longer.
- The number of outhouses, floating toilets and garbage cans should be increased at Lake Roosevelt.

Visitors are currently dispersed throughout the national recreation area by the distance between and size of the park developments. Those closest to major population centers are the most congested.

- The Spokane Arm is crowded due to the increasing number of visitors from the growing Spokane area.
- Facilities located near Spokane, such as at Enterprise or Lincoln could alleviate crowding.
- A marina or other facilities should be added at Lincoln.

There are few existing trails along the lake shore for visitors and residents.

- Consider developing a trail from Crescent Bay to Spring Canyon.
- Consider developing a trail system that circumnavigates the lake, crossing at Grand Coulee Dam and the Kettle Falls Bridge.
- Proposed new trails could be constructed in phases, by volunteers, and could use easements.
- Consider collocating more campgrounds and/or toilets with new trails.



Trail at Crescent Bay

There are some places in the recreation area that are not accessible to people with disabilities.

- Respondents were not familiar with accessible facilities in the recreation area.
- Accessible routes to beaches should be increased.
- Accessibility improvements should include disseminating information about their availability, including on the new NPS accessible facilities web site.
- ADA access to draw down areas for fishing and recreating should be provided.
- Establish an ADA-accessible fishing pier.

BEACH CAMPING/DAY USE IMPACTS (101 COMMENTS)

Unmanaged shoreline camping and day use have resulted in trash, illegal fires, and resource damage along the shoreline.

MANAGEMENT

- Improve management of shoreline camping.
- Consider improving existing facilities before new facilities are added.
- Provide additional enforcement/monitoring of existing rules and regulations.
- Overcrowding at some sites, such as Hunters and the Spokane Arm, contributes to the accumulation of trash along the shoreline.
- Consider signing that helps beach campers to avoid areas of private land beyond the shoreline.
- In some places, the closure of informal beach access roads has led to more trash and waste problems because area homeowners can no longer access the beach to clean it.
- Establish a Leave No Trace program to ensure campers take trash and supplies out.
- Consider monitoring enforcement of rules (trash/toilets) as campers leave the lake.
- Consider using volunteers to check permits.

PERMIT/FEE SYSTEMS

- Consider establishing a permit system for shoreline camping.
- Permits for shoreline camping could be free or have a nominal charge to allow for increased monitoring and enforcement of rules.



Debris on the shore of the Spokane Arm



Boating to shore at Spokane Arm

- Fees could be charged for shoreline camping or dump station use.
- Fees could be used to generate revenue for better management of shoreline camping.
- Charging fees could allow for additional staffing.
- Continue to allow informal boat-in beach camping, but consider an added fee for launching a boat (\$6 for 6 days of primitive camping).
- Consider adding a local add-on boat license fee that allows for additional boater education on resource impacts.
- Charging for shoreline camping may be difficult to enforce.

DESIGNATED SITES

- Consider designating additional boat-in camp sites.
- Consider limiting boat-in camping to designated sites.
- Allow reservations for designated campsites.

PARTNERING

- Improve communications with houseboat rental concessions to increase compliance with rules, particularly regarding beach fires and litter.
- Establish better communication with realtors and developers regarding Lake Roosevelt shoreline management issues, such as encroachment, public access to the shoreline and camping regulations.
- Consider using neighborhood volunteers for beach cleanup programs
- Establish a neighborhood watch volunteer program to reduce adverse impacts/ to report violations.
- Acknowledge local residents/neighborhoods that reduce resource impacts, including littering.
- Educate visitors and residents regarding how to reduce shoreline impacts.

MANAGEMENT MODELS

- The Colville Tribe camping permit system could be used as a model.
- Park management at other Pacific Northwest parks could be used as a model.
- The check-in/check-out policy at Glacier Bay National Park for canoes works well.

FIRES

- There should be additional enforcement of the ban on beach fires.
- Signs at boat launches regarding beach fires are inadequate.
- Allow beach fires in early spring to eliminate floating driftwood.

Inconsistent enforcement of the regulation that requires use of portable toilets for primitive camping has resulted in human waste impacts to water quality and the shoreline.



Vault toilet at Keller Ferry

- Among the issues that contribute to the human waste problem include overcrowding, boaters without toilets, and not enough enforcement.
- Solutions that would address human waste include: more enforcement, additional education regarding human waste rules, fees for beach camping that would go toward providing additional toilet facilities, and required use of portable toilets.
- Boaters should be required to carry portable toilets.
- “Bio-waste” containment bags could be at each boat launch area either available for free or at a minimal ‘at cost’ price.
- Boats without toilet facilities on board should be targeted to minimize human waste problems.
- Consider partnering with the tribes to manage human waste.
- There should be additional enforcement of waste disposal rules.
- Consider a check system to ensure boaters have porta-potties.
- Target high-use areas with problems/without toilets for monitoring and enforcement.
- Water quality can be beneficially affected by changing the parking surface paving to be more permeable, but the striping needs to remain visible.
- “Selector values” on boats should be prohibited.
- The launch fee for boats (most have toilets) is \$45 per year whereas day use (in some areas) is \$7 per day and there are no requirements for toilets.
- Consider changing Bradbury Beach back into a campground to help with the small boats that do have sanitation devices and to allow better access to the river for non-boaters.

Water quality in the vicinity of unregulated camping areas and throughout the park is unknown. The park does not have a water quality monitoring program.

- Establish a program to monitor water quality to protect natural resources.
- Eliminate the capability for boats to dump waste into the lake.

Illegal off-road vehicle use on beaches has adversely affected cultural resources.

- Regulate unauthorized beach driving access.

The number and location of the floating toilet/dump stations, though effective where they exist, is inadequate to handle the waste from the increased number of vessels on the water.

- Increase the number of floating toilets.
- Locate floating toilets closer together (up to one every five miles).
- Change the locations of floating toilets to move them away from nearby facilities (such as Kettle Falls) to areas with no facilities, such as Daisy or south of Bradbury Beach.
- Establish directional/distance signage to the floating toilets to encourage their use.
- Keep floating toilets open for a longer period each year; fishing and boating occur year-round.
- Establish additional mooring at day use public facilities (such as Spring Canyon) so boaters can use toilets.
- Locate toilets where boat mooring is possible.
- Rocky areas or high use areas such as Plum Point or Jones Bay make it difficult for boaters to access existing toilets.
- Consider increasing the capability to pump-out floating toilets.
- Increase the treatment of wasps and frequency of cleaning at floating toilets.
- Consider additional toilets at Fort Spokane and floating toilets on the Spokane Arm.
- Increase the number of dump stations on Lake Roosevelt, such as at Daisy.
- Investigate Dworshak Reservoir as a model for dealing with human waste. They have adequate floating toilets and even floating docks that people can moor to overnight.



Fishing at Porcupine Bay

Participants had a range of opinions about the kind and amount of enforcement the NPS should provide.

- Increase and make enforcement of rules more comprehensive.
- Establish a neighborhood watch program to increase compliance with existing regulations.

- Increase (quadruple) the number of law enforcement rangers.
- Law enforcement at Lake Roosevelt is a 24-hour job.
- Establish jurisdictional boundaries so residents know who to call for observed violations at all times.
- Enforce the rule that prohibits shoreline residents, campers and day use visitors from leaving out property to “reserve” a site.
- Increase the number of tickets given for violations of park regulations.
- Focus enforcement on areas where it is most needed.



Family use of personal watercraft at Gifford

Respondents noted an increase in the number of power boats and jet skis.

- Consider limiting the use of or banning jet skis.
- Jet skis contribute to noise and safety problems on Lake Roosevelt.
- Large power boats should be regulated on the Spokane Arm.
- Consider limiting the size and speed of boats on Lake Roosevelt.
- Consider identifying zones, speed zones and/or noise corridors to address increasing noisy and long cigar boats.
- Minimize conflicts between water skiers and jet skiers by regulating use.

CAPACITY OF FACILITIES

(52 COMMENTS)



Launch ramp at Kettle Falls

During the summer, boaters sometimes wait a long time to launch their boat at congested boat launches.

- Consider informing boaters regarding boat launch protocol to minimize launch area crowding.
- Boating safety checks at boat launches increases crowding.
- The docks at Kettle Falls shift out of parallel, making it difficult for boat launching.
- The number of dock slips at Spring Canyon is inadequate for the number of people desiring to moor their boats.
- Overnight moorage should not be restricted to those people who have a campsite.
- Mooring fees could be collected from all boaters at busy sites, increasing park revenue.

- Consider extending boat launches so that during draw down in winter and spring more access to the lake will be available.
- Consider adding more parking places on land adjacent to existing ramps, instead of increasing the number of launch ramps.
- Increase the size of some facilities, such as boat ramps at Porcupine Bay and Seven Bays.

Existing parking is at capacity in many areas, such as Spring Canyon, Porcupine Bay, Hunters, Seven Bays and Kettle Falls, during the peak summer season. NPS land ownership limits the opportunity to expand these areas.



Field near Fort Spokane

- Available land would allow expansion of parking at Porcupine Bay and Fort Spokane.
- Overnight campers should park their trailers at remote parking areas to open up more boat trailer parking spots for day use boaters.
- There are conflicts between day use and overnight parking at launch areas.
- Overflow parking at Porcupine Bay is encroaching on adjacent private property.
- Consider expanding at Lincoln Mills to alleviate crowding at Seven Bays.
- Consider using parallel parking rather than pull-through parking for boat trailers.
- Consider limiting parking at Kettle Falls near the fish station to cars rather than boat trailers.
- Expand boat trailer parking at Spring Canyon, and Hunters (where it is unsafe to park along the road).
- Expand public access in existing areas, such as at Porcupine Bay.
- Consider excluding boat traffic upstream of where the Spokane Arm narrows.
- Change the configuration of parking at Fort Spokane between the highway and parking lot.
- Consider locating “parking lot full” signs at intersections, such as at Miles - Creston Road and Seven Bays Drive.

Analysis of the carrying capacity of national recreation area facilities is needed to determine whether they are adequate or need to be modified. Some areas regularly experience crowding.

- Weekend use is crowded, especially at Porcupine Bay, Keller Ferry, Lincoln, and Fort Spokane.
- Consider addressing area carrying capacity, especially for parking.
- Off-peak periods, such as before June or after September, rarely have crowding.
- Consider conducting a carrying capacity analysis (via the University of Idaho) to develop criteria for carrying capacity of park facilities.
- Consider increase the number of marina slips.

The national recreation area currently does not have criteria to determine whether new or expanded facilities are needed.

- Respondents that commented on the need for new or improved facilities did not identify criteria for the use or expansion of those facilities.

Increasingly longer boat trailers are obstructing traffic in parking areas.



Parking at Keller Ferry

- Consider establishing regulations for the management of increasingly bigger/ longer boats.
- Boat trailer spaces should be 30 feet long for cars and RVs and 70 feet long for vehicles with trailers.
- Parking areas should have increased turning radii.
- Designate passenger vehicle and vehicle/boat trailer parking.

There may be a desire for primitive walk-in camping, which is occurring on a limited basis now from boat-in campgrounds accessible from area roads.

- Consider providing walk-in camping for a fee.
- Consider additional boat-in camping before walk-in camping.

Many facilities along the Lake Roosevelt shoreline have opportunities and/or constraints regarding expansion.



Family activities ashore at Porcupine Bay

- The Kettle Falls boat launch parking lot could be reconfigured to change the angle of parking to make it more efficient and better signage could be installed.
- Consider adding facilities to the Old Kettle Campground.
- Sediment has adversely affected the usability of the Kettle Falls and Marcus Island swim beaches. Changes are needed to allow them to be used again.
- Although new facilities are being proposed, some old facilities are not being maintained.
- There should be additional mooring at Crescent Bay and Spring Canyon.
- There is inadequate space at Porcupine Bay. As a result, the campground and beaches are being used.
- Consider adding a flush toilet/wash basin to Lincoln.

EXCLUSIVE USE OF SHORELINE (11 COMMENTS)



Cayuse Cove

Residential development along the shoreline has resulted in illegal vista clearing, trails, boat ramps, trespass construction of building and landscaping, herbicide use, swim platforms, and floating boat docks.

- Resource impacts such as a bulldozed road down to the water's edge at Cayuse Cove have occurred to allow for "beach access."

Some visitors claim or "reserve" a beach camp by leaving tents, lawn chairs, or other gear out for days or weeks which dissuades other visitors from stopping at an apparently "private" beach.

- Unattended boats are left along the shoreline to reserve sites, similar to the use of leaving a chair or tent to reserve a campsite.
- The National Park Service should enforce the rule that prohibits shoreline residents, campers and day use visitors from leaving out property to "reserve" a site.



Lake edge at Laughbon Landing

TOPIC 5: LOWER LAKE LEVELS IN SUMMER (17 COMMENTS)

Recreation facilities, such as boat launches, docks and swimming areas, will be affected by the State and Bureau of Reclamation proposal to draw an additional 18 inches of water from the reservoir during peak summer months.

- The NPS should extend or move launch ramps where affected to provide access to the lake when the water is drawn down.
- Consider extending one or two launches in the north part of the lake.
- Decreasing water levels during the visitor use season increases beach access.
- Lower lake levels have an effect on toilet use because some launch facilities, such as Hog Creek, are too short to be used by passing boaters at lower levels.
- At full pool, although there may be the same number of boaters, there is less available shoreline and more problems with crowding.
- Lower lake levels may create problems for the shallow Moccasin Bay area.
- Allow for dock accessibility at Seven Bays during draw downs.
- Increase maintenance of NPS docks to ensure they are fully extended when possible.

TOPIC 6: AGENCY COORDINATION (12 COMMENTS)

There are inconsistent regulations among the National Park Service, the Confederated Tribes of the Colville Reservation, and the Spokane Tribe of the Spokane Reservation. The NPS does not charge or require a permit for shoreline camping, while the tribes require both a permit and user fees.

- There should be consistency between the Spokane Indian Reservation and the NPS. Uniformity of fees, regulations and permits could result in better protection of the visitor experience and the park's resources as visitors become accustomed to a consistent restrictions.
- The NPS could charge for beach camping, since the tribes charge for it.
- The NPS, Colville and Spokane tribes' regulations regarding fire are confusing.
- It is difficult for Lake Roosevelt business managers to explain the differences in regulations among the NPS and the tribes in response to visitor questions.
- There is confusion about which agency to call when enforcement is needed.
- Park rangers currently cannot take action on tribal lands.

- Although there is a table of different regulations on the park map, these areas are difficult to identify when on the water.
- Different rules between the NPS and the Tribes are not confusing to some.
- Consider having the same rules regarding dock usage.
- Establish consistent regulations, so everyone knows the limits and rules.
- Consistent regulations would result in fees for camping and year-round beach fires.
- Consider not allowing fires and fireworks throughout Lake Roosevelt.

Limited coordination between the NPS and the counties could be improved to facilitate visitor understanding of regulations.

- Issues and alternatives should be coordinated with local residents and the county.
- Notification should precede all meetings.

Inconsistent enforcement of county land use regulations has led to impacts on NPS lands.

- The NPS should establish mutual aid agreements with other enforcement agencies so each can enforce the other’s rules.
- A centralized dispatch system for the three counties, the tribes and the NPS could streamline operations.
- Consider increasing law enforcement staffing/patrols.



Shoreline vegetation at Camp Na-Bor-Lee

TOPIC 7: NATURAL RESOURCES (26 COMMENTS)

The increase in native aquatic vegetation at several recreation sites has affected the national recreation area’s ability to maintain clear swimming waters and access to boat launches.

- Park visitors are concerned about aquatic vegetation at Hanson Harbor, Porcupine Bay, Fireman’s Cove, below the Uranium mine, and at Moccasin Bay.
- Aquatic vegetation prevents people from swimming and clogs boat propellers.
- The sources of Eurasian milfoil may be Long Lake and the Pend Oreille River.



Houseboat docked at Kettle Falls

- Various solutions were offered for weed management: having local residents control weeds nearest their residences, using benthic liners, controlling the source (off NPS property), or having volunteers remove the vegetation mechanically.
- Public funds should not be used to clear aquatic vegetation from areas in front of private, non-compliant docks.

Shoreline camping has impacted vegetation.

- Vegetation is disturbed when extra-long boat trailer parking exceeds curb stops.

Noxious weeds are colonizing riparian and upland areas along the lake shore.



Aquatic vegetation control plots at Porcupine Bay

- Knapweed, mullein, St. Johnswort, and Dalmatian toadflax are present at Colville Flats. Dalmatian toadflax is also at Sunset Hills.
- The weed control board has released a biocontrol for Dalmatian toadflax.
- Area residents would be willing to volunteer for invasive plant removal effort.

Although Lake Roosevelt is currently unaffected by the Zebra mussel and the Quagga mussel, there are no measures in place to prevent their invasion.

- The NPS should establish boat cleaning requirements to avoid the introduction of mussels.

TOPIC 8: CRESCENT BAY (13 COMMENTS)

- Expand the Crescent Bay launch facility.
- Consider offering fuel and water.
- Add limited moorage.
- Cooperate with local businesses and citizens in planning for Crescent Bay.



Vacation cabin at Rickey Point

TOPIC 9: VISITOR USE INFORMATION (10 FROM PUBLIC ACCESS TO SHORELINE, 4 FROM BEACH CAMPING/DAY USE, 4 FROM CAPACITY OF FACILITIES)

Visitor use information currently does not adequately inform visitors of park rules and regulations, encourage them to protect park resources, and/or facilitate satisfying visitor experiences. Multiple access points to park development and the lake make it difficult for staff to contact and educate the public. Visitors may not have convenient access to resources intended to expand their knowledge of ways to reduce boating and camping impacts.



Spokane Arm

SIGNS

- Consider locating “Parking Lot Full” signs at boat launch facility entrances, such as at Seven Bays and Miles Creston Road, and Colville Flats, that reads “parking lot full” when there is no more space for boat trailers.
- Install more signage about packing it in and packing it out.
- Signs telling visitors not to drive on the beach are too small for visitors to read.
- Consider signing the boat-in campsites along the Spokane Arm shoreline.
- Boat launch signage is ineffective.
- Emergency phone numbers should be posted at launch areas.
- Launch signage should encourage boaters from blocking the ramps for more than 10-15 minutes.



Dock at Jones Bay

STAFFING

- Because parking lot capacity fluctuates, instead of Parking Lot Full Signs, station a person at the entrance to inform visitors of other options and to indicate when space has been made available.

ELECTRONIC INFORMATION

- Consider using solar-powered Traveler Information Stations placed at gateway towns. Visitors could tune in to a specific radio station and hear updates about campground closures and boat launch activity.
- Consider posting and updating parking status, such as at Porcupine Bay, on a web site.



Marine activity at Spring Canyon

EDUCATION

- Consider education strategies that inform visitors of rules, such as when it is possible to reserve day use or camp sites.
- Consider updating or producing pamphlets such as the former boater's guide and providing these at launch sites to improve visitor understanding of the varied cultural and natural resource values within the park area.
- Consider requiring visitors to watch a boat training and safety video before getting a boating permit.

ENFORCEMENT

- Better enforcement would ensure rules were followed.
- Education should be used in combination with more ticketing of offenders.

OTHER

- The green and red buoy markers may be confusing because people do not understand them.

1. ISSUES AND CONCERNS ADDRESSED IN THIS DOCUMENT

All of the above issues and concerns were considered in the planning process or are addressed in this document except for those identified under the next heading.

2. ISSUES AND CONCERNS NOT ADDRESSED IN THIS DOCUMENT

CONSIDERED BUT REJECTED CONCERNS

The following issues were initially considered by the planning team, but were eventually rejected for various reasons.

The following public comments were dismissed from further analysis:

- Allowing private docks (with no public access) to remain.
- Making all primitive launches and boat docks public.
- Removing all Community Access Points.
- Not making any changes to Community Access Points.
- Accepting primitive camping impacts such as dispersion of human waste via “cat-hole.”
- Adding solar-powered showers to floating toilet/dump stations.
- Adding floating campgrounds, similar to those in the Everglades and Caribbean, to Lake Roosevelt.
- Constructing a golf course south of Kettle Falls.
- Opening a portion of the shoreline, such as at Marcus Island, for off-road vehicle (ORV) use in the spring to encourage tourism during the off-season.

The following issues generated through public scoping are not within the scope of this project and are therefore not analyzed in detail in the document.

NEW CONCESSIONS

- Establish a new concession in Ferry County.
- Establish destination resorts on Lake Roosevelt.
- Incorporate features of the concessions management plan as part of the Shoreline Management Plan.
- Add a food concession to the Kettle Falls area.
- Develop concessions at the Old Kettle Campground
- Add a commercial focus, such as a store for supplies and/or food, to Lincoln.
- Authorize “incidental business permits” to companies to provide off-site boat/trailer storage to facilitate launch and retrieve operations for a fee.

HOUSEBOAT ISSUES

- Houseboats should be required to post rules on every boat along with offering a supply of litter bags.
- Regulate house boat advertisements that show people having bonfires on the beach even though that's not allowed.
- Identify a carrying capacity for houseboats.
- Minimize houseboat monopolization of pump house stations and gas.
- Reconsider the priority given to houseboats at concession facilities.

MARINA MANAGEMENT ISSUES

- Reconsider whether appointments are needed for pump stations at concession marinas.
- Expand marinas.
- Regulate the number of commercial slips so more are available for public use.
- Reorganize the Kettle Falls Marina winter parking area.
- Dredge the Kettle Falls Marina to improve the quality and depth of moorage.
- Move the Kettle Falls Marina to a deeper bay or cove, perhaps near Colville Bay to allow it room to expand.

These actions are outside the scope of the proposed plan because they are part of concessions management, and include actions within the purview of the park's concessions management plan. They are therefore not considered in the accompanying analysis.

LAND USE OUTSIDE RECREATION AREA BOUNDARY

- With the dramatic increase in homes in the Mill Canyon area since the 1970s, there has been resistance by the homeowners for public access in the Moccasin Bay area.

Although the park is desirous of working with developers to address boundary management issues, particularly where development abuts recreational facilities, modifying the ability of counties to regulate land use development along the shoreline is not within the scope of the Shoreline Management Plan.

LAND PURCHASE OR EXCHANGE FOR RECREATIONAL FACILITIES

- The NPS could purchase land from willing sellers to expand facilities at places such as Lincoln Mill or to establish another large campground like Fort Spokane.

Although the park could consider pursuing this in a future version of the GMP, acquiring new lands is not part of the purpose of the Shoreline Management Plan.

VACATION CABINS

- Vacation cabins have a place a Lake Roosevelt because of the length of time they have been allowed.
- Vacation cabins should be removed because they are an exclusive (private) use of public land.

The vacation cabin environmental analysis process is separate from the Shoreline Management Plan. Interested parties are encouraged to participate directly in that ongoing process. The Shoreline Management Plan is focused on broader park visitor use management issues; while the vacation cabins plan is focused specifically on the need for currently permitted areas (see the summary of the EA under “Park Plans” earlier in this chapter).

LAKE LEVEL MODIFICATIONS

- Postpone full pool levels until after Labor Day, so the crowding and human waste problems could be relieved.
- Consider maintaining full pool longer in the summer, including higher levels in April.
- The issues of water quality and healthy fish should play more of a role in determining lake levels.
- The lake draw down has economic impacts.
- Public hearings should be held so all affected parties can plan for lower levels.
- Consider a study to determine optimal lake levels to protect sensitive cultural sites that could be exposed by lake level draw downs, while balancing the needs of downstream users, including salmon.
- The rate of draw down has to be slower than the rate of increase to diminish erosive effects.
- When the lake levels go above full pool, banks erode and trees fall in.
- Lake level rise kills fish eggs along the shore of Lake Roosevelt.

The National Park Service, although it manages recreational facilities on Lake Roosevelt, does not control water levels in the Lake. The NPS was asked to quantify changes that would affect lake recreation from changes in lake levels due to the State of Washington and Bureau of Reclamation proposal to increase the draw down of the lake during the summer.

RIPARIAN WATER RIGHTS

- Maintain access to the lake by cattle. This is a riparian water right that cannot be taken or destroyed.

This issue is addressed under the grazing management plan. Contact the Chief of Compliance and Natural Resource Management.

WATERSHED ISSUES

- The land-use problems in the larger watershed (mining, etc.) need to be addressed.
- There is contamination of water by Canadian mining company (Tech).

This issue is currently being addressed by DOI case management team representatives as well as the tribes and the Washington Department of Ecology.

FIRE

- Homeowners need to be able to clear a defensible space around the perimeter of their homes. Does the NPS have a program for clearing or thinning forests?

Although there are occasionally exceptions, clearing for defensible space must occur on the property of the homeowner, not the NPS. The Fire Management Plan identifies 2000 acres of park land for defensible space treatment. A Fire Management Plan Update was approved on January 14, 2009. For more information contact the Lake Roosevelt Fire Management Officer.

HUNTING

- The high concentration of waterfowl at Lake Roosevelt should be actively managed.
- Hunting of waterfowl and deer should be encouraged. Hunters use boats to access the more remote sections of the recreation area.

Although the waterfowl and other hunted species may occur within the boundary of Lake Roosevelt, the State of Washington has primary responsibility for population management. Changes to hunting seasons or regulations are not within the purview of the Shoreline Management Plan.



LAKE DEBRIS MANAGEMENT

- The NPS should remove drift from the lake.

There are now collection basins at China Bend and Kamloops, whereas before debris was hand-collected.

VISITOR CENTER FACILITIES

- Respondents identified the need for gateway community visitor centers in Davenport, Grand Coulee, and Kettle Falls.
- The GMP calls for more visitor information to be provided. Given the long, linear nature of Lake Roosevelt, additional visitor use facilities are needed; however, this is outside the scope of the Shoreline Management Plan.

PUBLICATIONS

- During the '60s or early '70s, a very informative boater's guide to Lake Roosevelt was published. This could be rewritten and updated for boaters and provided at each launch site to help understanding of the varied cultural and natural resource values within the park area.

CAMPING RESERVATIONS

- There have been some issues and miscommunications with the national reservation system.

Problems with the reservation system should be reported to the NPS headquarters at Coulee Dam or www.recreation.gov.

3. ALTERNATIVE DEVELOPMENT COMMENTS

Twenty-eight comment letters were received on the preliminary alternatives described in a newsletter published in November 2008. Most of these comments were received through PEPC (the NPS Planning, Environment and Public Comment web site). Five letters generally discussed all the alternatives and either agreed or disagreed with various features of the alternatives. Many (12) of the comment letters were related to the use of Moccasin Bay area on the Spokane Arm for a primitive public boat launch / dock. Most of these commenters were opposed to it because of its proximity to a neighborhood, because of potential impacts, and/or because the road is difficult to traverse during poor weather conditions. Another four letters specifically concentrated on proposed changes at Crescent Bay, with two of these opposing the campground and two suggesting an expanded number of boat slips, and two supporting a dog-walking trail. Two letters focused specifically on docks and two others on the proposed deepwater launch at Rickey Point. Three letters were received from organizations: the National Parks Conservation Association, Coulee Corridor National Scenic Byway Consortium, and from the town of Marcus (about Marcus Island issues). Two letters questioned the potential for archeological resources (at Moccasin Bay and Rickey Point).

PUBLIC REVIEW OF ENVIRONMENTAL ASSESSMENT

This Environmental Assessment is being made available to the public, federal, state, and local agencies and organizations via direct mailing of the printed document, placement on the park's web site, and in local public libraries (Colville, Grand Coulee, Davenport, Republic, Kettle Falls). The opportunity for public review is publicized through press releases distributed to a wide variety of news media, in the park newspaper, and on the park's web site. Copies of the document may also be obtained from:

Superintendent, Lake Roosevelt National Recreation Area
1008 Crest Drive
Coulee Dam, WA 99116-1259

Phone: 509-633-9441 Fax: 509-633-9332
Email: laro_planning@nps.gov
Internet: <http://parkplanning.nps.gov/laro>

Responses to comments on the Environmental Assessment will be addressed in a proposed Finding of No Significant Impact (FONSI) or will be used to prepare an Environmental Impact Statement (if appropriate). (For more information about specific agency and staff consultation, see the section in this document entitled "List of Persons and Agencies Consulted/Preparers," page 250).

III. Alternatives



The National Environmental Policy Act of 1969 (NEPA) requires agencies to develop alternative strategies to fully explore a range of ideas, methods, and concepts as part of an Environmental Assessment (EA). All alternatives should be feasible for implementation. National Park Service policy requires that when the NPS can identify its preferred alternative that it be done so before the EA is released for review. The preferred alternative is that alternative the National Park Service believes would best accomplish its goals, based on the analyses completed to date.

The Interdisciplinary Planning Team, which includes representatives from Federal, Tribal, and local governments in the Lake Roosevelt Region, crafted the alternatives to recognize the importance of public access to the shoreline and the need to provide for a diverse range of recreational opportunities and a quality visitor experience. The alternatives also provide various measures that will ensure the preservation and conservation of natural, cultural, and scenic resources, and seek out ways to enhance communications with the general public and the various NPS governmental and private sector partners in the Lake Roosevelt area. Each proposed alternative is required to be consistent with Lake Roosevelt NRA's *General Management Plan* of 2000 including the purpose and significance of the NRA, current NPS laws and regulations, and standard implementation and maintenance practices.

Four alternatives were developed to provide a foundation for decision-making as the NPS moves forward with the Shoreline Management Plan:

- **Alternative A:** The “No Action” or Continue Current Management Alternative would continue current management strategies under existing funding levels.
- **Alternative B:** The Visitor Use Management and Education Alternative would create new permits, zoning, and ways to disseminate information.
- **Alternative C:** The Partnerships and Agency Coordination Alternative would enhance existing partnerships and coordination with public groups and agencies.
- **Alternative D:** The Built Recreation Facilities Alternative would provide new recreational opportunities through park infrastructure.

Although the emphasis in each alternative is different, each would use the same suite of strategies (management changes, agency cooperation, and recreational development) to accomplish its objectives. For example, although Alternative B would rely most heavily on management strategies, it also calls for the development of some new facilities.

The implementation of the alternatives would be dependent on adequate funding, staffing, and environmental analysis. Approval of a preferred alternative would not guarantee that funding would be forthcoming. Rather, the plan establishes a vision and framework to guide Lake Roosevelt National Recreation Area in future management decisions.

Identification of the Preferred Alternative



Interdisciplinary Planning Team workshop

The development of a preferred alternative involved evaluating the four alternatives with the use of an objective analysis process called “choosing by advantages.” Through this process, the Interdisciplinary Planning Team identified and compared the relative advantages of each alternative according to a set of factors. The advantages of each alternative were ranked and the costs of implementing the alternatives were compared. The Interdisciplinary Planning Team used this information to select the preferred alternative. Under this process, the preferred alternative is the one that would give the greatest overall benefits for the most reasonable cost.

Alternative B was selected as the Preferred Alternative of the National Park Service. Implementation of Alternative B is also recommended by the assigned representatives from the other governmental agencies on the Interdisciplinary Planning Team.

A. Actions Common to All Alternatives



Each alternative includes strategies that address the major planning issues: improving public access to the shoreline, improving visitor use of the shoreline, increasing the recreational capacity of the lake, mitigating for proposed summer lake level changes, improving coordination among partners, managing shoreline natural and cultural resources, as well as enhancing public use and providing more educational information to visitors. Each alternative also addresses the GMP direction to provide a full-service marina at Crescent Bay.

The following “Common to All” actions include existing/ongoing management and maintenance actions, and actions identified for implementation in the 2000 *General Management Plan*. Actions that are common to all alternatives include continuation of the community access point approval process; proposed construction of the Crescent Bay Marina; retention of the Tread Lightly® program and other strategies for managing human waste; retrofitting facilities to accommodate proposed lower lake levels in summer; existing agency and partnership coordination programs; existing native and non-native noxious weed management programs; and existing visitor interpretive and education programs.

Adaptive Management



Traffic monitoring at China Bend

The *General Management Plan* (NPS 2000) states that changing patterns of visitor use may result in the need to expand existing recreational facilities, such as parking lots and launch ramps. To address this issue, the Shoreline Management Plan (SMP) provides recommendations for potential locations where facility expansion or new development could occur, as informed by the 2008 Lake Roosevelt Site Analysis Report.

The 2008 Site Analysis Report, prepared as part of the SMP, identified opportunities for future development or expansion of recreational facilities, as informed by an evaluation of the physical attributes of the lake’s shoreline. Types of shoreline information evaluated as part of the 2008 Site Analysis Report included: vegetation, topography, bathymetry, seasonal fluctuation of water levels, location of current recreation facilities, proximity to public roads, presence of cultural resources, and surface hydrology. Appendix 2 identifies, by individual site, the results from the 2008 Site Analysis and summarizes development potential associated with each recreational facility along the lake shore. The Shoreline Management Plan alternatives present a range of recreational facility development and expansion recommendations, as informed by the 2008 Site Analysis Report.



Eden Harbor community access point

Areas within Special Use Zones that have been dedicated for a specific use or group and where access to the general public is limited will be reviewed periodically to determine whether the continued use of those areas by private individuals or groups is inconsistent with the needs of the general public. This public need assessment would summarize the status and trends associated with visitor use and demand for recreational opportunities that occur over time at Lake Roosevelt, in the general vicinity of each *General Management Plan* defined Special Use Zone. This public need assessment will be informed by a set of qualitative social, cultural, and natural resource information and will be summarized in a report format to inform future NPS management decisions. For example, the public need assessment may suggest the need for additional day use visitor facilities in a general location. The NPS will first consult the SMP and the associated 2008 Site Analysis Report to identify site specific facility expansion or new development opportunities in that general location. The public need assessment, in conjunction with the recommendations contained within the SMP, will guide development of an appropriate management response, ranging from implementing more intensive resource or visitor use management strategies, expanding existing facilities or developing new facilities.

The status and trends associated with the visitor use and recreational demand portion of the public need assessment will be evaluated using indicators of public need. A preliminary set of indicators that may guide the five year public need assessment includes:

- Wait time for visitors and recreational users, by specific facility type. Primarily boat launches and parking lots
- # of recreational users, by specific facility type
- # days per summer season when specific types of facilities have exceeded their designed capacity
- Impacts to physical and biological resources, proximate to a facility, by facility type
- Impacts to visitor experience, by visitor use category and facility type
- Population growth projections for nearby cities and metropolitan areas
- Recreation use trends for the region and state

The National Park Service would finalize a set of public need indicators and assessment methodology, in cooperation with academia and other expert input, as part of SMP implementation.

Public Access to the Shoreline

All alternatives include a commitment by the NPS to provide public access to the shoreline through various public recreation facilities around the lake.

COMMUNITY ACCESS POINTS

Private facilities, such as unimproved boat launches, unattended buoys, docks and roads, can be converted to public facilities according to a draft set of criteria that communities must meet in order to provide public facilities. These criteria have been revised into a proposed set of Community Access Point criteria and requirements:

The Community Access Point process is designed to accommodate access from private land where there is a willingness and ability to also accommodate public use. As a result, proposals are accepted from established community organizations and local governments, but not from private individuals, developers, or corporations. Sponsoring communities must be willing to have public use of the proposed facility. Community Access Points must be:

1. Sponsored by a community of sufficient size. A community is defined as a developed area bordering the recreation area, led by a homeowners association or similar organization capable of maintaining the CAP over the long-term. The community must have a minimum of 10 households.
2. A minimum distance of 2.5 water miles OR 7 land miles from other access points that provide similar facilities.
3. A minimum distance from concession-operated marinas with overnight moorage of 10 water miles.



Kettle Falls marina



Fire ring at Camp Na-Bor-Lee



Swim area at Marcus Island

4. Accessible by the public on public roads or via public easements on private roads.
5. Free of interference with routes of public access or use of public lands or waters.
6. Located in areas of gentle topography without natural hazards (i.e., sloughing of slopes) or sensitive natural and cultural resources.

Community Access Points are required to provide the following:

1. Liability insurance assumed by the sponsoring community for public use of community-provided and maintained facilities. All liability insurance policies must specify that the insurance company will have no right of subrogation against the United States of America or must provide that the United States of America is named an additional insured.
2. Evidence of compliance with standards specified by the National Park Service, including compliance with applicable federal, state, and local laws and regulations. These standards would include maintaining all facilities in a safe and useable condition and providing access to the disabled.
3. Minimum slips or buoys based on the size of the community and two extra slips or buoys maintained for general public use. Number of slips or buoys = Size of the community/2 plus 2.
4. Adequate parking based on the facility type.
 - a. Boat launches: Number of spaces = Size of the community/2 plus 2. Parking spaces should be sized to accommodate boat trailers (10' x 45').
 - b. Boat docks: Number of spaces = Size of the community/2 plus 2. Where boat launches do not accompany the boat dock, parking spaces should be sized to accommodate vehicles (10' x 20').
 - c. Buoy fields and moorage: Same as boat docks.
5. Signage consistent with the NPS Signs Standards Handbook (reference director's order). Facility name signs shall be placed facing the water and facing the road access. An area will be provided for the display of NPS policies and regulations.

Based on these criteria the NPS would determine if existing facilities can be brought into compliance or new facilities are needed.

TRAIL ACCESS

All alternatives also include the continued maintenance of the trails at Fort Spokane and Kettle Falls. The recreation area allows informal, pedestrian access to the shoreline, without construction and if the informal trails do not degrade resources. Constructed trails, stairs, railings, and structures on NPS property will be removed.

Visitor Use of the Shoreline

The existing Tread Lightly© program would continue to provide visitors with information on the responsible care of the recreation area. Visitors to the lake would continue to learn to leave nothing behind, minimize impacts, and take nothing away from each place they visit. Ongoing programs to responsibly dispose of human waste would continue, including the requirements for overnight boaters to carry portable toilets, and for concessionaires to provide pump-out facilities and encourage the use of disposable waste bags.

Existing NPS regulations determine visitor's length of stay. Campers cannot stay in one campsite/area longer than 14 days or in the recreation area longer than 30 days per year. Campers also cannot reserve an informal beach campsite by leaving their belongings unattended on the beach for more than 24 hours. Park regulations require that campfires be in campfire rings/pits year round, unless there is a state ban on fires due to drought conditions or high fire danger.

Capacity of Facilities

Based on the *General Management Plan*, the existing public access point at Crescent Bay Marina would be developed with a full-service marina through a public-private partnership with a concessionaire. The full-service marina would potentially include enhancements to the boat launch and existing parking lot, which would be completed by the NPS. However, the marina office, small store, berthing and courtesy docks that make up the marina proper would be designed, constructed, and maintained by a private concessionaire. See the following chapter, *Crescent Bay Development Concept Plan*, for more details.

As part of annual maintenance and planning, all alternatives would include an evaluation of existing ramps to determine their potential for lengthening (see next section).

For all alternatives, new or expanded facilities may need further analysis of water quality or other environmental factors. The Lake Roosevelt/Upper Columbia River area is currently undergoing a remedial investigation and feasibility study to evaluate the risks to human health and the environment from a century of contaminants released into the Upper Columbia River from mining activities in the area. Although health advisories regarding fish consumption have been issued, analysis and studies published to date do not suggest an increased risk to human health from recreating on Lake Roosevelt. Research on this issue is ongoing and site development proposals for the northern end of the lake will take future studies and recommendations fully into account prior to making a determination to proceed with a site development at a specific location.



Aquatic vegetation on propeller

Lower Lake Levels in Summer

Because of the proposed summer lake level draw down by the Washington State Department of Ecology and the Bureau of Reclamation, affected recreational facilities, including docks, ramps, and log booms would be retrofitted to accommodate the lower lake levels based on recommendations from an engineering study.

Upgrade of the facilities would be prioritized based on the number of visitors, lake levels, seasonal concerns, and funding. The NPS plans to upgrade all listed facilities at some time.

Agency Coordination

To maintain and improve interagency communication ongoing meetings and communications with its partners would continue under all alternatives. These include meeting with tribal representatives and the Bureau of Reclamation under the “Five-party Agreement,” coordination with other partners and the public through the Lake Roosevelt Forum, and ongoing partnerships with the counties and local governments (including updates to memoranda of understanding, working together to establish regional trail connections, and establishing a joint visitor information center at Kettle Falls). To communicate the differences between tribal and park regulations to the public, a comparison of regulations and policies would continue to be published in the park newsletter.

Natural Resources

Aquatic vegetation and upland noxious weed management programs would continue. To control aquatic vegetation, pilot projects to experiment with removal methods and measure their effectiveness would continue. In general, noxious weed populations are managed with a target of maintaining weed levels at three percent or below a representative sampling of native and non-native aquatic vegetation. The aquatic vegetation control includes mechanical, biological, and chemical control methods: These methods, depending on effectiveness, would continue to be used throughout the recreation area.

For upland noxious weed control the NPS would continue to coordinate with state and county weed boards as well as cooperate with adjacent landowners to control weeds, sometimes using volunteer work parties.

Visitor Education and Information

The existing array of visitor education and interpretive programs designed to keep visitors informed of recreation area conditions, and the ecology and cultural significance of the park, would continue as part of all alternatives.

TABLE III - 1: SUMMARY OF ACTIONS COMMON TO ALL ALTERNATIVES

PREAMBLE	
Adaptive Management	<ul style="list-style-type: none"> • Monitor and evaluate visitor use and experience of recreation facilities to provide a foundation for responding to changing resource conditions over time. Assess public need periodically.
PUBLIC ACCESS TO THE SHORELINE	
Primitive boat launches and docks	<ul style="list-style-type: none"> • Refine criteria for existing Community Access Point (CAP) program to evaluate primitive launches and docks and for other proposed new facilities • Based on the evaluation, remove existing non-compliant docks and launches and retain and approve conforming ones
Buoys and moorage	<ul style="list-style-type: none"> • Continue to allow boats to be moored on the water for up to 30 days a year. (Marinas, CAPs and proposed buoy fields allow for longer use) • Continue to require unattended private buoys to be removed • Evaluate proposed community buoy fields (away from NPS facilities) using refined CAP criteria • Establish full-service marina at Crescent Bay through concessionaire (see “Chapter 4, Crescent Bay Development Concept Plan”)
Long-distance shoreline and interpretive trails	<ul style="list-style-type: none"> • Maintain current interpretive trails at Fort Spokane and Kettle Falls
Primitive constructed beach access trails/roads	<ul style="list-style-type: none"> • Continue to allow informal, pedestrian beach access to the shoreline that does not degrade soil or vegetation resources and does not have built features such as stairs or rails • Continue to map existing informal and formal pathways • Continue to remove non-public constructed trails
VISITOR USE OF THE SHORELINE: INFORMAL BEACH CAMPING AND DAY USE	
Trash and human waste management	<ul style="list-style-type: none"> • Continue Tread Lightly© education program • Continue to encourage concessionaires to provide human waste disposal bags • Continue to require concessions to provide pump out opportunities for boaters • Continue to require overnight visitors to carry an adequate number of portable toilets
Length of stay/crowding at beach campsites	<ul style="list-style-type: none"> • Limit camping to 14 days per campground/area per year, or a maximum of 30 days per calendar year within the recreation area • Do not allow campsites to be left unattended for more than 24 hours • Prohibit holding or otherwise reserving individual beach campsites
Beach fires	<ul style="list-style-type: none"> • Continue to allow fires year-round in designated fire rings • Continue to coordinate with DNR and counties for fire bans

CAPACITY OF FACILITIES	
	There are no actions related to the capacity of facilities that are common to all alternatives
LOWER LAKE LEVELS IN SUMMER	
Lower lake levels	<ul style="list-style-type: none"> • Maintain existing facilities • Implement lake draw down engineering study recommendations and retrofit facilities for summer lake levels during drought years. This includes adding dock sections or log boom extensions, as appropriate, to the following areas: Spring Canyon, Penix Canyon, Sterling Point, Keller Ferry, Goldsmith, Jones Bay, Plum Point, Fort Spokane, Detillion, Porcupine Bay, Hunters, Gifford, French Rocks, Kettle Falls, Evans and Snag Cove.
AGENCY COORDINATION	
Coordination with tribal partners	<ul style="list-style-type: none"> • Continue to meet with tribal representatives as part of lake-wide management process, under 5-Party Agreement • Continue to publish differences in rules and regulations between tribal and park managed areas in park newspaper
Coordination with local, state, and federal agency partners	<ul style="list-style-type: none"> • Continue to participate as an active member of the Lake Roosevelt Forum • Continue to participate in and provide information about park issues at council of governments and county government meetings • Update MOUs with counties • Partner with City of Kettle Falls to staff visitor information site on Highway 395 • Encourage joint staffing of other information centers
NATURAL RESOURCES	
Native and non-native aquatic vegetation	<ul style="list-style-type: none"> • Continue pilot projects to experiment with removal methods and evaluation of their effectiveness • Try to maintain populations of noxious weeds to below 3%
Noxious upland vegetation	<ul style="list-style-type: none"> • Continue to coordinate with state and county weed boards for weed control • Continue to cooperate with adjacent landowners to control weeds; use volunteer work parties

VISITOR EDUCATION AND INFORMATION	
Communicating the public nature of the shoreline to visitors	<ul style="list-style-type: none"> • Establish regular formal opportunities for the NPS to meet with communities • Provide for ranger attendance at Lake Roosevelt Homeowner Association meetings as requested
Resource education	<ul style="list-style-type: none"> • Continue to focus on a resource protection message in visitor contacts • Continue to implement the Tread Lightly© program, including its availability on web site • Continue to participate in “The River Mile” school program • Adapt Tread Lightly© brochure to be used for mail-outs and in campgrounds • Continue to educate school groups on ecology of the lake • Continue to coordinate/encourage neighborhood cleanup programs and stewardship groups that could help with shoreline monitoring for noise, littering or illegal activity



Camping at Hawk Creek

B. Alternative A—No Action



Alternative A would continue current management actions, including current maintenance, staffing, programs and regulations which guide the management of Lake Roosevelt's shoreline. Under this alternative, management actions would continue to implement the general guidelines of the *General Management Plan* under existing funding levels. Actions at different facilities would conform to the management zones designated in the *General Management Plan*. Ongoing maintenance, patrol levels, coordination with other agencies, and facilities development (including proposals for new development) would remain the same. The following discussion highlights the unique qualities of Alternative A:

Adaptive Management

Visitor use and experience of recreation facilities would continue to be monitored and evaluated to provide a foundation for responding to changing resource conditions over time. A public need assessment would be completed periodically (see "Actions Common to All").

Public Access to the Shoreline

Public access to the shoreline would continue to be provided by the existing recreation area facilities (see "Actions Common to All").

Visitor Use of Shoreline

Visitors would continue to be allowed to informally camp on beaches throughout the park without a permit. Beach fires would not be allowed except on the exposed lakebed from November 1 to May 1 when the fire danger rating for the park is at or below Level 2. Trash and human waste management issues would be addressed with the Tread Lightly© education program. Visitors would be required to carry an adequate number of portable toilets for overnight stays and concessionaires would be encouraged to provide human waste disposal bags. Meanwhile, the NPS would continue to monitor trash and human waste at designated informal beach camp areas. Crowding of facilities would continue to be managed through existing regulations and by redirecting staff to areas with problems. Campsites would not be allowed to be left unattended for more than 24 hours and the holding or reserving of campsites not on the reservation system would continue to be prohibited. The park's recreational uses would be left unchanged, such as informal beach camping on the shoreline and boating. Land-based and floating toilets would continue to provide facilities to boaters.



Stairs at Marcus Island



*Camping at Kettle River
Campground*

Capacity of Facilities

The number and size of existing facilities would remain unchanged with the exception of proposed changes at Crescent Bay. Existing facilities would continue to be maintained at levels that serve existing levels of recreational visitors. Proposals for community managed boat launches would be evaluated based on revised CAP criteria (see “Actions Common to All”). In designated recreation facilities, traffic counts and number of visitors would be monitored to inform future management and staffing decisions.



Swim area at Kettle Falls

Lower Lake Levels

Lower lake levels would be addressed by maintaining existing facilities. Facilities would be retrofitted on a priority identified basis. Retrofitting would include adding dock sections or log boom extensions (see “Actions Common to All”).

Agency Coordination

NPS would continue to coordinate with tribal partners and local, state and federal agency partners to better manage the recreation area (see “Actions Common to All”).

Natural Resources

NPS would continue to manage both aquatic vegetation and upland noxious weeds according to existing policies and programs (see “Actions Common to All”). In the Kettle Falls and Marcus Island swim areas NPS would continue to conduct native aquatic vegetation management.



Interpretive sign at St Paul's Mission

Visitor Education and Information

To ensure the public is aware of which facilities are available, the recreation area would continue to allow for some campsites to be reserved through the reservation system (currently “Reserve America®”). Use of group campsites would continue to require a reservation through the same system. Most campsites, however, would continue to be available on a first-come first-serve basis.

Existing signage along the shoreline would continue to be maintained and additional small signed facilities would be added according to the refined CAP criteria. The park would continue its focus on resource protection messages in visitor contacts and would continue to implement and expand the Tread Lightly® and the “River Mile” educational programs.

Crescent Bay

The NPS would enter into an agreement with a qualified concessionaire to build and operate a full-service marina (see “Actions Common to All”). No other facilities, except those necessary to support the marina (i.e., utilities), would be built at Crescent Bay.



Spring Canyon

Relationship to General Management Plan

Every alternative stems from the overall guidance of the *Lake Roosevelt National Recreation Area General Management Plan* (NPS, 2000). See the “Purpose and Need” chapter for a full discussion. Alternative A does not make any proposals to change any aspect of the GMP. It is, by definition, the carrying out of current practices of the recreation area according to the guidelines of the GMP.

Cost Implications

A preliminary estimate of current costs associated with the Shoreline Management Plan for implementing the *General Management Plan* under existing policies and funding levels came to \$277,000 in new construction costs. Currently, the recreation area has an annual operating budget of over \$5,000,000.



Manila Pass overlook on the Colville Reservation

C. Alternative B—Preferred Alternative



Fort Spokane from Two Rivers Marina

Alternative B strategies for enhanced visitor use and experience would build upon existing management approaches and would be structured to respond to changing conditions on the lake. This alternative emphasizes changes to recreation area management strategies to solve problems related to visitor use and resource impacts and would not emphasize capital investments or partnerships, but rather new policies to influence user behavior and enhance the protection of park resources. Changes to current visitor management would include establishing a permit system to better manage beach camping. Alternative B would also enhance protection of cultural, natural and scenic resources through coordination of public access to the shoreline, zoned approaches to aquatic vegetation management, and improved visitor access to information and resource education by increasing distribution of information and by diversifying the means by which that information can be accessed (via mail, signs, or web).

Note: Alternative B also includes the strategies and actions common to all alternatives.

Adaptive Management

Visitor use and experience of recreation facilities would continue to be monitored and evaluated to provide a foundation for responding to changing resource conditions over time. A public need assessment would be completed periodically (see “Actions Common to All”).

Public Access to the Shoreline

As described in “Actions Common to All Alternatives”, Alternative B would continue the current management strategy of evaluating primitive boat launches and docks using refined CAP criteria and their subsequent removal in the case of non-compliance. In addition, Alternative B would grandfather-in primitive, community public access points that existed before the reservoir (1942). These points are typically old roads with some parking available that would require no new construction to allow access and are connected to existing public roads. They include Laughbon Landing on the Spokane Arm and an old road off the east side of Kamloops Island. Because many of these access points are already in use, formalizing them would reduce patrol efforts and ease congestion on other launches. Under this current plan, no new facilities are planned for these locations, although they may also have the potential for primitive boat launching.

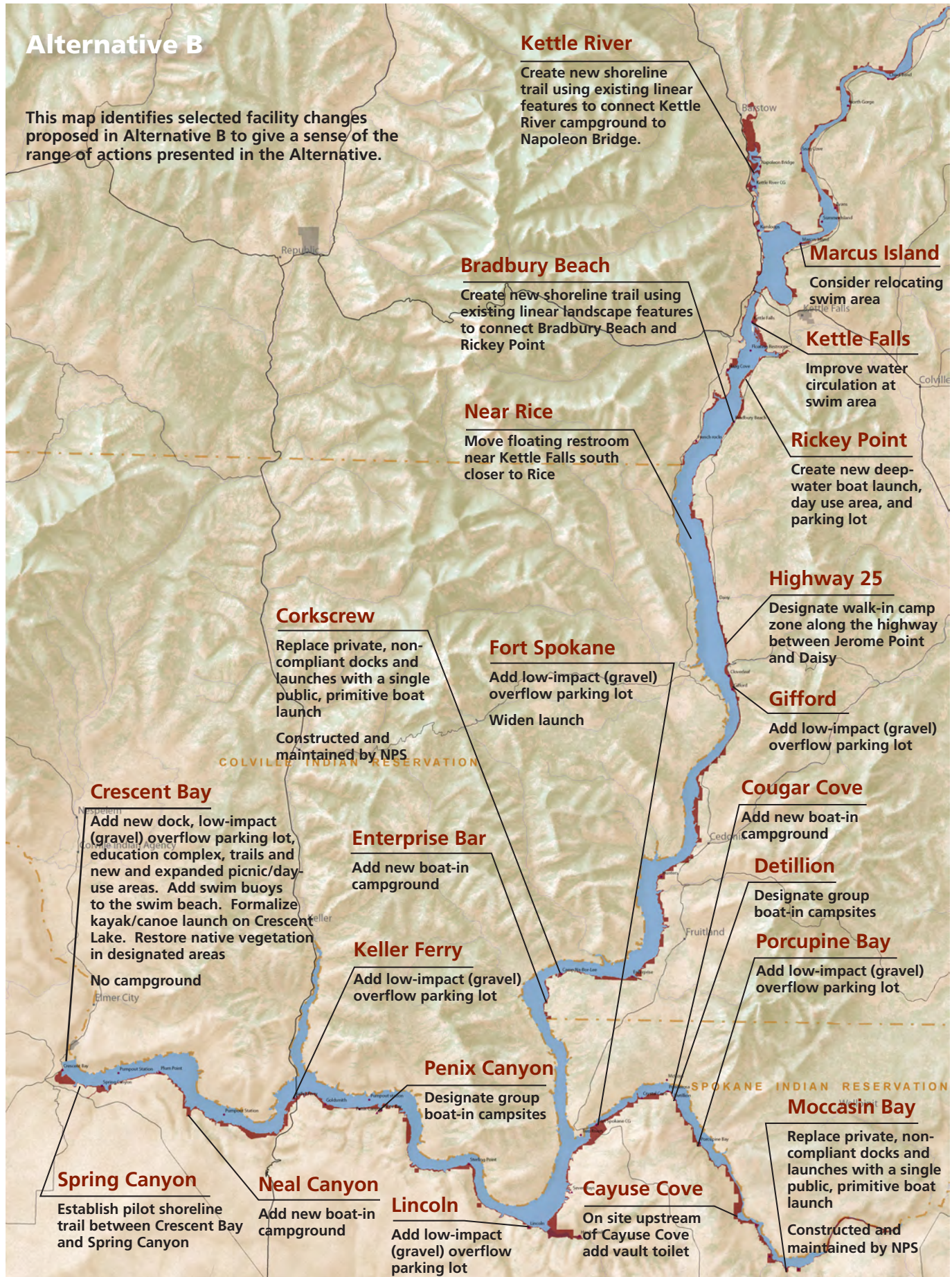


Laughbon Landing road bed

Alternative B also includes development of public, primitive boat launches at Moccasin Bay and Corkscrew. The launch at Moccasin Bay would replace the existing private non-compliant launches at Moccasin Bay and Sunset Point. (Private, non-compliant docks were recently damaged during a mass-wasting event on the Spokane Arm). The boat launches would be constructed by the NPS according to their current facilities standards to enhance ease of maintenance. Because the site is so remote by land and the county road accessing the launch is

Alternative B

This map identifies selected facility changes proposed in Alternative B to give a sense of the range of actions presented in the Alternative.



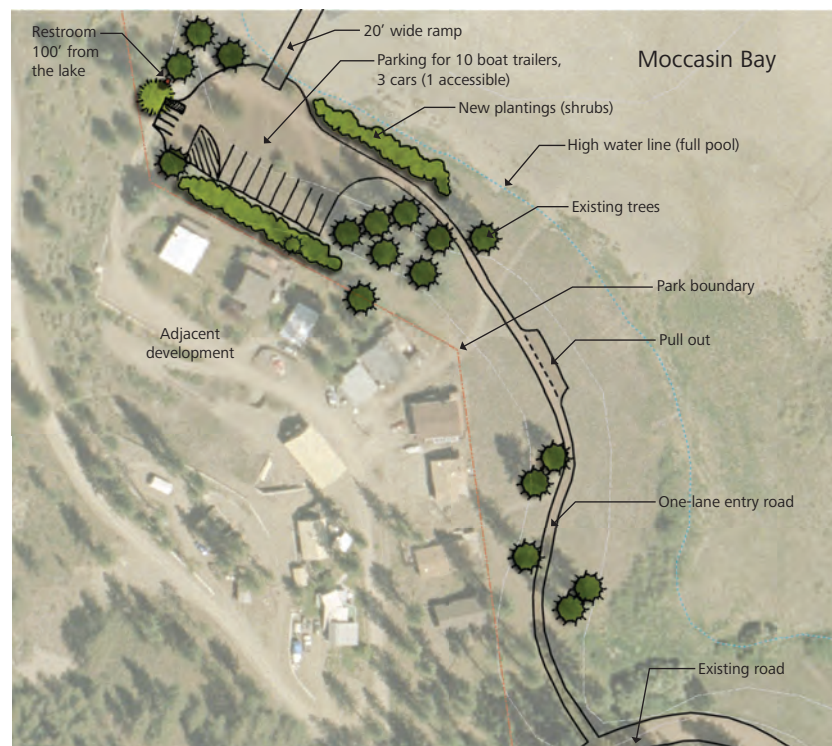


Moccasin Bay

not paved, no signs would indicate the public launch. The site would not be shown on the Lake Roosevelt NRA's brochure and map. The boat launch would consist of a single lane, asphalt entry road across NPS property to a circular turn-around. Ten parking spaces for boat trailers would be available, as well as three parking spaces for cars with at least one accessible space. Vault toilets and signage would be placed adjacent to the ramp.

While current management allows boats to be moored on the water for up to 30 days a year, Alternative B would provide new public buoy fields where boats would not be subject to the 30 day limit. The new public buoy fields could be authorized by the NPS for greater flexibility in implementation. Concentrating boats in specific buoy fields subject to NPS guidelines and refined CAP criteria, the NPS would reduce the number of currently unlawful unoccupied, private buoys currently sprinkled along segments of shoreline.

Alternative B would both maintain existing long-distance trails and create new shoreline trails on existing linear landscape features, such as old irrigation ditches, roadbeds or levees. Similar in concept to grandfathering-in primitive pre-reservoir launches, these trails would occur in locations that would have minimal impact and do not require major capital investment. Two such projects could be a trail between Bradbury Beach and Rickey Point along the historic irrigation ditch and a levee trail from Kettle River campground to Napoleon Bridge. New shoreline trails of shorter length would also be constructed where practical and the distances between facilities are short. The proposed trail from Crescent Bay to Spring Canyon is one example.



Proposed Moccasin Bay public, primitive boat launch



Levee at Kettle River looking north



Accessible path at Bradbury Beach

On a smaller scale the primitive constructed access trails and roads to the beach would be more intensely managed. Informal, pedestrian access to the shoreline would continue where it does not degrade soil or vegetation resources and does not have built features such as stairs or rails. In addition, Alternative B would emphasize working with communities to formalize, consolidate, or remove neighborhood paths, using an expanded CAP criteria-driven process. The NPS would also work with counties, developers, and communities to establish designated public legal access points for new developments adjacent to the park boundary. Linking these public connections to non-adjacent communities would also be encouraged. The goal of this management would be to reduce the number of total trails necessary to protect shoreline resources as well as to make existing pathways more easily used by the public to enhance their experience.

Visitor Use of the Shoreline

Alternative B would emphasize user education with regard to informal beach camping. User education would be enhanced through signage, pamphlets, and visitor contacts. Lists of beach camping rules and regulations would be printed on permits. Central locations would be established where visitors could secure permits and information, such as kiosks, NPS visitor centers and in high traffic locations (including joint visitor centers) outside the recreation area.

Alternative B includes a proposed permit system for informal beach camping during the peak summer season. The permit system would limit camping in sensitive areas. Establishing a beach camping permit system would assist park rangers in monitoring visitors' length of stay at informal beach camps while improving consistency in visitor access to park rules, regulations and resource management information. The lake-wide camping permit system would be flexible, allowing for changes to the system over time based on its effectiveness. Visitors wishing to camp informally on the beach could obtain a permit at a recreation area boat launch. The permit would include the policies and regulations boaters must adhere to when camping on the beach. Park rangers patrolling the lake could verify that boat campers had obtained a permit and during visitor contacts could emphasize low-impact camping methods.

The beach camping permit system would have an additional benefit of recording when someone begins their camp stay, allowing park rangers to enforce the maximum overnight camping limits. Rangers would monitor illegal camping by tagging personal property that appears abandoned or which has apparently been left to reserve a beach campsite. While reserving informal beach campsites would continue to be prohibited, Alternative B would designate beach camping group campsites that would be able to be reserved and provide signage to delineate their use. Potential sites include Detillion Campground, because of its larger size and area that could accommodate groups, and Penix Canyon, because it also has room for group camping.

In addition to the permit system, Alternative B would alleviate crowding of beaches by adding boat-in campgrounds. Three potential sites are Neal Canyon between Plum Point and Keller Ferry, Cougar Cove, west of Ponderosa, and Enterprise Bar, north of the Spokane Indian Reservation on the east side of the lake. All three potential sites have existing beaches, adequate flat space for designated campsites and are located in areas that would further distribute boat-in camping.

Whereas walk-in camping is not permitted under Alternative A, Alternative B would establish walk-in camping management zones and a permit system, similar to the informal beach camping permit system, with camping regulations printed on the permit. A walk-in camp area would be designated along Highway 25 between Jerome Point and Daisy, where the highway is directly adjacent to the recreation area and the shoreline is accessible on foot and day use is very common. To ensure safe parking along the highway, NPS would coordinate with counties and WSDOT.

Trash and human waste management would be addressed using several different methods in Alternative B. Day-use boaters would be required to carry portable toilets. This is an expansion of the current management policy requiring overnight visitors to carry portable toilets. Alternative B would also include installation of dispensers for human waste and trash bags at boat launches. For additional boating access, a vault toilet would be added upstream of Cayuse Cove on the Spokane Arm. This would give boaters the option to having to use facilities on the Spokane Indian Reservation.



Informal walk-in camping area

Alternative B would also move the floating toilet near Kettle Falls south to be closer to Rice to minimize the distance between facilities and the season for keeping floating toilets open and maintained would be lengthened. Finally, NPS would expand its evaluation of water quality in concert with the tribes and others to determine whether the lake is being impacted.

Current noise limits to reduce excessive boat noise would continue; however, in Alternative B training and equipment for decibel monitoring and enforcement would be increased and the NPS would coordinate with tribes to adopt and enforce consistent noise pollution regulations.

In Alternative B, the NPS would continue to coordinate with the DNR and counties for fire bans; however, the current compendium would be amended to allow beach fires year-round on exposed beaches (when the fire danger rating is at or below Level 2). NPS staff would enhance fire safety education for visitors by providing summer programs, brochures and spot patrols, in association with partners and neighbors.



Floating toilet

Capacity of Facilities

To specifically address capacity issues at boat launches, Alternative B would expand visitor communication efforts that relate to facility availability. This would be accomplished by expanding hours of the park visitor centers and displaying more information in visitor centers outside the park to communicate the different facility options for campers. The recreation area map would show public boat launches on the tribal lands to advertise all lake facilities.

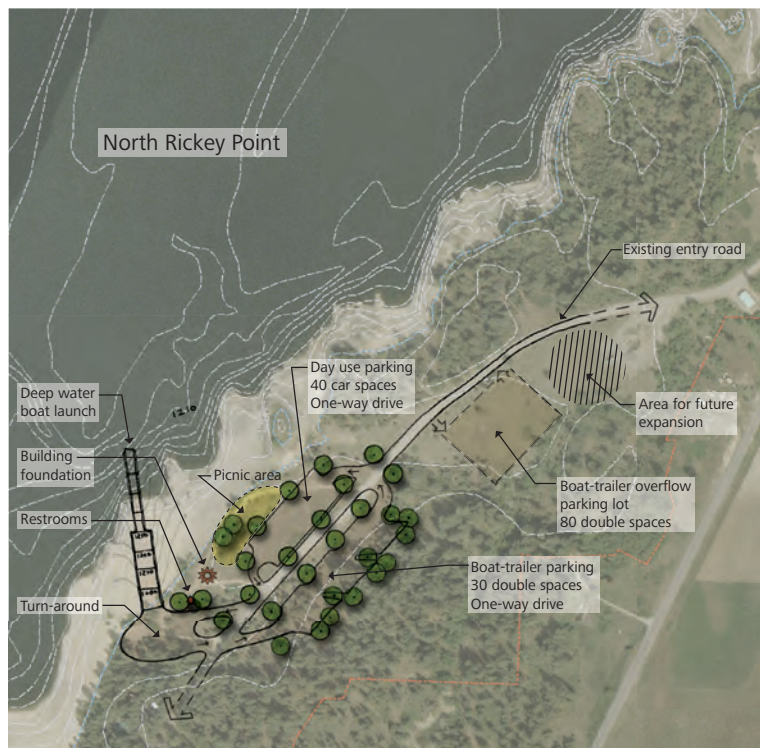


Potential location of Rickey Point boat launch and day use area



Porcupine Bay

To address the ongoing need for a deepwater boat launch in the northern part of the lake when the Kettle Falls boat launch becomes unusable (below 1234' elevation), a deepwater boat launch, day use area and parking would be added somewhere near the Kettle Falls area. A deepwater boat launch in the north would eliminate the need for Colville and Kettle Fall residents to travel to Spring Canyon, Seven Bays, or Keller Ferry to launch their boats in the spring when the lake level is low. North Rickey Point is close to Colville and the surrounding communities. According to the 2008 Site Analysis report and subsequent preliminary investigations, the north Rickey Point area could support a deepwater launch, parking, and other facilities without affecting the area used for the vacations cabins at Rickey Point. The existing entry road could continue to be used for vehicle access. A 40-foot wide boat launch with a courtesy dock, parking for 110 boat trailers and 40 cars, a small picnic area and restrooms would be provided. No overnight camping would occur.



Proposed Rickey Point deepwater boat launch



Swim area at Marcus Island

Alternative B would increase parking at Crescent Bay, Fort Spokane, Keller Ferry, Gifford, Lincoln and Porcupine Bay by adding low-impact (gravel) overflow parking lots intended to distribute visitors on summer weekends. These facilities have the capacity to accommodate more visitors if additional designated parking is available. Parking lot capacity would also be addressed by constructing electronic message boards alongside incoming highways and/or by using radio-based or web-based messages to convey parking lot status information.

Existing campgrounds would be maintained and a small campground (20 sites) would be created as part of the new Crescent Bay development.

Alternative B would install consistent signage on public docks for length of stay allowed at the park. A large dock would be installed by private concessionaire at Crescent Bay as part of the marina complex. This would also help distribute users and ease crowding at nearby facilities that are over-capacity.

Lower Lake Levels in Summer

Public communication about lake levels would increase, including informing the public of the annual Bureau lake-level forecast. This would help enhance visitor experience by allowing users to plan their activities in response to how lake levels may affect various lake uses. Facilities would be retrofitted on a priority-identified basis (see “Actions Common to All”).



Spring Canyon: beached dock at low lake levels



Ferry south of Gifford

As in Alternative A, NPS would conduct aquatic vegetation management. Water circulation at the Kettle Falls swim area could be increased to improve water quality. The NPS would also investigate options for relocating non-functioning swim areas, such as Marcus Island, which could potentially be moved.

Agency Coordination

Alternative B would improve coordination with the tribes by making boating and camping regulations and other lake-wide regulations more consistent and differences more transparent. Efforts would also be made to educate partners, including concessionaires, on regulatory and fee differences and the reasons for them. Fee agreements between the NPS and tribes would make it easier for visitors to pay and managing agencies to collect fees.

Alternative B would also improve coordination with local, state, and federal agency partners by evaluating opportunities for additional collaboration/coordination. Information about the park would be disseminated at council of governments meetings. To address visitor confusion as to whom they should call when they have issues or questions related to Lake Roosevelt, a toll-free phone-line would be created to give general information about Lake Roosevelt and to direct inquiries to the appropriate agency. Finally, a reciprocal system of notification between the NPS and local governments would notify partners of changes to policies and regulations.



Vegetation at Hawk Creek

Natural Resources

More effective aquatic vegetation management and noxious weed control would be achieved through a zoned approach to vegetation management, coordination with volunteer work parties, education to discourage practices which contribute to aquatic vegetation spread, and a continuation of existing programs of integrated vegetation management. The park will develop criteria with other agencies for effective control of aquatic vegetation. More extensive control could be allowed in high use zones, such as boat launches and swim areas, while other zones could have less control. Aquatic vegetation control would follow the concentrated and developed “management areas,” as defined in the GMP. Based on this pre-determined zoning, integrated control methods of vegetation removal would be applied (based on pilot studies). Because the NPS has strict policies governing the control of native and non-native species, including for the use of pesticides, neighboring residents would be actively discouraged from controlling aquatic vegetation on the lake.

Increased educational strategies focused on making the distinction between native aquatic and non-native invasive weeds would target park neighbors and apply to both aquatic and noxious upland species. Targeted outreach to park neighbors would broaden community understanding regarding the National Park Service mission, the rules which govern the recreation area, and most importantly could

nurture long term relationships through cooperative work parties, shoreline monitoring, and other collaborative resource management programs.

Visitor Education and Information

Visitor education and information distribution would be enhanced through dissemination of information using multiple communication mediums, such as signs, the internet, radio, and real-time sign boards located at strategic roadside locations. Installation of sign boards would require coordination with Washington State Department of Transportation. The intent would be to provide public access to park information, such as the current visitor use numbers and associated facility capacity, at each major park facility. Improved public access to real time information prior to entering the park would allow visitors to make informed recreational access choices. The current reservation system would be expanded to include more campgrounds. The NPS would also coordinate with counties and tribes to identify underutilized areas along the lake where more visitors could be accommodated.

Alternative B would include an additional public information and education management strategy targeting private property owners in the vicinity of the recreation area. The existing Tread Lightly© program provides an ideal starting point for this expanded suite of public information and education management strategies directed to park visitors and local community members. A “Welcome Neighbor” brochure would be published in cooperation with the real estate industry to provide new residents with information about living adjacent to the national recreation area. This would also tie into a “Living on Lake Roosevelt” program that would be created to continually educate adjacent landowners. A combination of increased education and increased enforcement could greatly reduce encroachments on NPS land.

Any changes to signs would be coordinated with map changes to ensure consistency in locations and facilities. Landowners adjacent to the park would also be encouraged to be involved in private ecological habitat programs, neighborhood cleanup programs and stewardship groups that could help with shoreline monitoring for noise, littering or illegal activity. Neighbors could start a program of ecological habitat enrichment sponsored by private/non-profit organizations, similar to other backyard wildlife programs. This alternative would also initiate incentive programs for habitat enrichment within properties adjacent to the park boundary including ranches. The incentive could be a sign or certification that says “fish-friendly” or “Lake Roosevelt Partner.”



Lake Roosevelt map at Davenport



Existing signboard at Davenport



Crescent Bay

Crescent Bay

Alternative B would include expanded facilities at Crescent Bay (see Preferred Concept Plan in “Chapter Four”), including new educational/interpretive facilities, in addition to the planned full-service marina. The education complex would include an interpretive exhibit as well as a classroom/multi-use space and possibly a small seasonal visitor contact station. An expanded day use area would be constructed and the existing informal swim beach would be renovated and expanded. At the south eastern portion of the site, a small campground with 16 drive-in camping spaces and 4 walk-in spaces would sit between the low hills. New roads would be installed to connect these facilities, as well as corresponding parking. Areas of non-native vegetation and disturbed soils would be restored with native scrub-shrub vegetation adapted to the local climatic conditions. Finally, a network of paths would connect the facilities and a series of interpretive components and overlooks, ultimately connecting to a long-distance trail to Spring Canyon.

Cost Implications

Additional funds would be needed to expand existing patrols, develop more comprehensive information distribution systems, and increased levels of staffing in support of developing and implementing a permit system, lake-wide zoning and associated monitoring programs.

A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$6,847,000 for implementation of Alternative B, and \$468,000 in annual operating costs in addition to the current \$5,000,000 annual operating expenses.

Relationship to General Management Plan

The addition of the Spokane Arm facilities would require an amendment to the *General Management Plan*. This Environmental Assessment comprises that amendment. Alternative B proposes a primitive, public boat launch at Moccasin Bay and Corkscrew, a toilet east of Cayuse Cove, and an additional boat-in campground at Cougar Cove on the Spokane Arm.



Landscape near Crescent Bay

D. Alternative C

Under Alternative C, the National Park Service would continue to work closely with its current shoreline management partners while expanding coordination efforts with government agencies, non-profit groups and neighboring communities to achieve a more cooperatively managed lake shoreline that is connected to larger scale initiatives associated with resource management, regional trail networks, tourism, local economic revitalization, and public information. While all alternatives include partnerships and coordination elements, this alternative puts greater emphasis on the multi-jurisdictional management of the Lake Roosevelt watershed, and the comprehensive nature of the problems facing the watershed that lend themselves to innovative multi-jurisdictional solutions.



*Tribal lands overlooking
Lake Roosevelt*

The NPS shares management responsibilities of Lake Roosevelt with the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and the Bureau of Reclamation. Ongoing meetings and communications with these agencies would be expanded in frequency and depth to ensure a coordinated management effort. Other important partners to explore the potential for expanded cooperative opportunities with include: the five surrounding county governments (Lincoln, Stevens, Spokane, Ferry, and Grant) and various private and non-profit groups, such as environmental organizations, hunting and fishing clubs, homeowners associations, and local Chambers of Commerce.

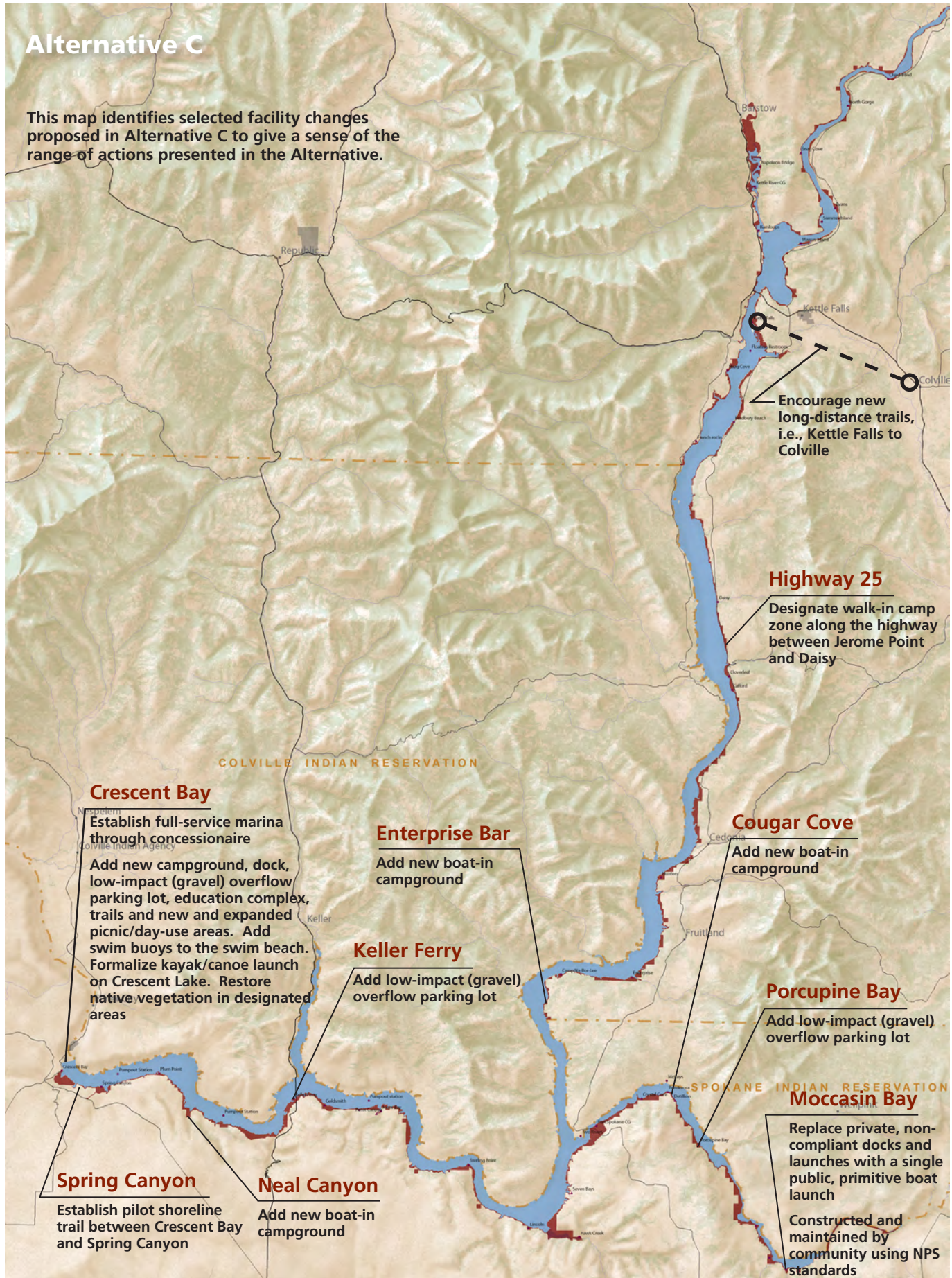
Expanded relationships and connections with outside agencies and organizations may take different forms, including proactive outreach to new community members and counties to describe the NPS mission and park regulations; meeting with the tribes to develop consistent regulations, permit systems and fee structures that govern the lake's shoreline; expanded outreach and cooperation with county building departments to formalize publicly accessible right-of-ways as part of private property development in the vicinity of the national recreation area; and partnerships with other law enforcement around the lake (counties and tribes) to save money on patrols and emergency response. A cornerstone of these expanded local and regional cooperative strategies would be the sustained commitment to manage the park's shoreline according to the NPS mission while also honoring the goals of the partner entities, agencies, organizations, and community groups.

Adaptive Management

Visitor use and experience of recreation facilities would continue to be monitored and evaluated to provide a foundation for responding to changing resource conditions over time. A public need assessment would be completed periodically (see "Actions Common to All").

Alternative C

This map identifies selected facility changes proposed in Alternative C to give a sense of the range of actions presented in the Alternative.



Public Access to Shoreline



Sunset Point

As with Alternative B, Alternative C would build upon current management strategies to address issues relating to public access to the shoreline. Private non-compliant docks and launches at Moccasin Bay and Sunset Point would be replaced with a single public, primitive boat launch at Moccasin Bay, however, in this alternative, the public primitive boat launch would be constructed and maintained by the surrounding communities, according to the standards set by the NPS.

Alternative C would maintain current shoreline trails but would permit and encourage new multiple use, non-motorized, long distance trails connected into the regional trail network (i.e., Kettle Falls campground to Colville). This would increase the number of recreational hiking and biking opportunities in the region, and expand recreational opportunities for a different segment of outdoor enthusiasts, such as mountain bicyclists. As in Alternative B, there would be a shoreline trail established between Crescent Bay and Spring Canyon (see “Crescent Bay Development Concept Plan” chapter). These actions would rely on cooperation and coordination with nearby communities and other land management agencies.



North Gorge

Alternative C also calls for working with counties, developers, and communities to establish designated public legal access points for new developments adjacent to the park boundary. An effort to link these public connections to non-adjacent communities would also be encouraged. Formal shoreline access trails would establish public access through private developments and consolidate otherwise duplicative trails into one access point for each community or area.

Visitor Use of Shoreline

Alternative C builds upon both the current visitor use management strategies but also contains many of those proposed in Alternative B. For example, Alternative C also includes a boat-in camping permit system and enhances information and educational strategies. Under Alternative C the tribal camping fee systems would be used as a model to make the different fee structures more consistent. Fee agreements between the NPS and tribes would make it easier for visitors to pay and managing agencies to collect fees. Enhancing interagency coordination would improve visitor experience by reducing confusion about different rules and regulations among management agencies.

As in Alternative B, Alternative C would include an increase in the number of formal boat-in only beach campsites. Additional designated boat in campsites could reduce crowding. As in Alternative B, proposed new boat-in campsites would include Neal Canyon (between Plum Point and Keller Ferry), Cougar Cove (west of Ponderosa), and Enterprise Bar (north of the Spokane Indian Reservation on the east side of the Lake). Designated boat-in campgrounds would improve visitor experience by adding a toilet, picnic tables, and fire pits.



Cougar Cove on the Spokane Arm, east of Porcupine Bay

As in Alternative B, Alternative C would improve visitor experience and reduce resource impacts from walk-in camping by designating an area for this activity between Jerome Point and Daisy. In addition, the NPS would work with counties and tribes to determine other locations where walk-in camping could occur.

Management strategies that reduce the impacts of trash and human waste would continue to be implemented. This alternative would also expand the Tread Lightly© program but instead of expanding it to include permit information as in Alternative B, Alternative C would expand it to include use of more volunteer groups and incorporate the experience and learning of the Colville and Spokane tribes. This alternative would include the development of a volunteer boat monitoring network to supplement ranger patrols and to improve boater education, compliance with portable toilet requirements and the permit system. As in Alternative B, the NPS would coordinate water quality sampling/monitoring with agencies, tribes and other entities to increase effectiveness by sharing data gathering responsibilities.

As in Alternative B, Alternative C would improve boater access to floating toilets and restroom facilities, by maintaining existing facilities and increasing the length of season for floating toilets. Also as in Alternative B, Alternative C would include coordinating with tribes to adopt and enforce consistent noise pollution regulations. Unlike Alternatives A and B, Alternative C would adopt a lake-wide fire permit system in coordination with the tribes to track and monitor the number and location of beach campfires.

Capacity of Facilities

Alternative C would use many of the same strategies as Alternative B, except that there would be fewer overflow parking areas in Alternative C. Instead of the six sites proposed in Alternative B, Alternative C would include four sites, Crescent Bay, Keller Ferry, Gifford and Porcupine Bay (see description in Alternative B). Alternative C also does not include the planned public buoy fields and expanded docks or moorage permit system described in Alternative B. Alternative C would include the same actions for drive-in campgrounds and boat docks described in Alternative B.

Lower Lake Levels in Summer

In addition to retrofitting docks and log-booms in anticipation of lower lake levels in the summer, Alternative C would focus on interagency coordination to track and analyze the effects of the draw downs. Interagency communication would be increased, and short and long-term effects of changing lake levels could be identified, including changes during the summer and changes that would be anticipated as a result of ongoing policy changes and climate change.



Restroom facility at Evans



Aquatic vegetation test control plots at Porcupine Bay

As in Alternative A, the need for better management of swim areas would be addressed by routinely conducting aquatic vegetation management.

Agency Coordination

Under Alternative C, many new efforts and strategies would be proposed to increase coordination and cooperation among NPS and local, state, tribal, and federal agency partners. As described in “Visitor Use of Shoreline,” the NPS would improve coordination with tribal partners by adopting the tribal camping fee system as a model to make fee processes consistent; improve systems for the payment and management of fees; adopt a lake-wide fire permit system in coordination with tribes; and work with tribes to adopt and enforce consistent noise pollution regulations.

In addition to the actions common to all alternatives, Alternative C would include participation in seasonal meetings between the NPS, chambers of commerce and the local tourism industry to discuss opportunities for collaboration. As a result, partners would be better informed of changes in management and the public would be more informed. The recreation area would be better protected not only by the NPS but by adjacent landowners and partner agencies.



Aquatic vegetation at Laughbon Landing

Natural Resources

Alternative C would include Alternative B actions, including continuing current management, establishing management zones, using integrated control methods of removal, and increasing educational strategies targeting park neighbors.

Visitor Education and Information

Under Alternative C, resource education, the advance communication of facility availability, and how to communicate the public nature of the shoreline to visitors would be addressed by many of the same strategies described in Alternative B. More sources would be used, such as web and radio announcements. New partnerships with WSDOT and other agencies would use electronic messaging boards or reader boards located on main highways and at gas stations. Changing messages would redirect visitors to the nearest campground or parking lot with capacity. Differences in Alternative C would be limiting the current campground reservation system to the same campgrounds, instead of expanding it to additional campgrounds.

Under Alternative C a more comprehensive approach would be taken to communicate the public nature of the shoreline to visitors. In addition to the Alternative B strategies (such as outreach to neighbors and a welcome neighbor brochure), Alternative C would include joint NPS and tribal monitoring to manage campsites.



NPS Facilities at Kettle Falls



Cabin overlooking Lake Roosevelt

As in Alternative B, resource education strategies would include a “Living on Lake Roosevelt” program to educate adjacent landowners, and neighborhood cleanup programs and stewardship groups could help in monitoring the lake shoreline for noise, littering or illegal activity. Changes in Alternative C would include improved coordination of resource education information, including gathering disparate NPS, agency, tribe, and county information about Lake Roosevelt into a single publication.

Crescent Bay

Alternative C actions would be the same as Alternative B, and would include expanded facilities at Crescent Bay (see Preferred Concept Plan in “Chapter Four”), including new educational/interpretive facilities, in addition to the planned full-service marina.

Cost Implications

Alternative C would require increased staff time for meetings, technical assistance, additional coordination with other agencies, and expanded distribution of information in a variety of formats. Cost savings may occur if patrols, monitoring and information distribution responsibilities are shared with other agencies.

A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,397,000 for implementation and construction of Alternative C, and \$437,000 in annual operating costs in addition to the current \$5,000,000 in operating costs.



Day use area at Evans

Relationship to General Management Plan

The addition of the Spokane Arm facilities would require an amendment to the *General Management Plan*. This Environmental Assessment comprises that amendment. Alternative C proposes a primitive, public boat launch at Moccasin Bay and an additional boat-in campground at Cougar Cove on the Spokane Arm.

E. Alternative D



Development above Moccasin Bay

Alternative D would enhance public access and enjoyment of Lake Roosevelt by constructing new facilities, upgrading or expanding of existing facilities, and adding other targeted improvements to the recreation area. Alternative D would increase recreational facility capacity, including boat launches, trails, car and boat-in campgrounds, public buoys and docks. This could address problems associated with crowding on busy summer weekends as well as future lake level draw-downs. For example, the proliferation of human waste on the beach during high visitation summer months is addressed by the provision of additional restroom facilities along the lake shore, constructing additional boat-in campgrounds and associated facilities, and expanding the number of NPS signs which explain the Tread Lightly© program and the NPS regulations.

Adaptive Management

Visitor use and experience of recreation facilities would continue to be monitored and evaluated to provide a foundation for responding to changing resource conditions over time. A public need assessment would be completed periodically (see “Actions Common to All”).

Public Access to the Shoreline

Alternative D would continue current management strategies and add to them capital improvements and increased facility capacities. As in Alternative B, Alternative D would go beyond evaluating existing CAPs to replace private, non-compliant docks and launches at Moccasin Bay and Sunset Point with a single public, primitive boat launch at Moccasin Bay. The non-compliant dock at Corkscrew would also be replaced. Also as in Alternative B, Alternative D would increase mooring by providing public and CAP buoy fields for mooring.

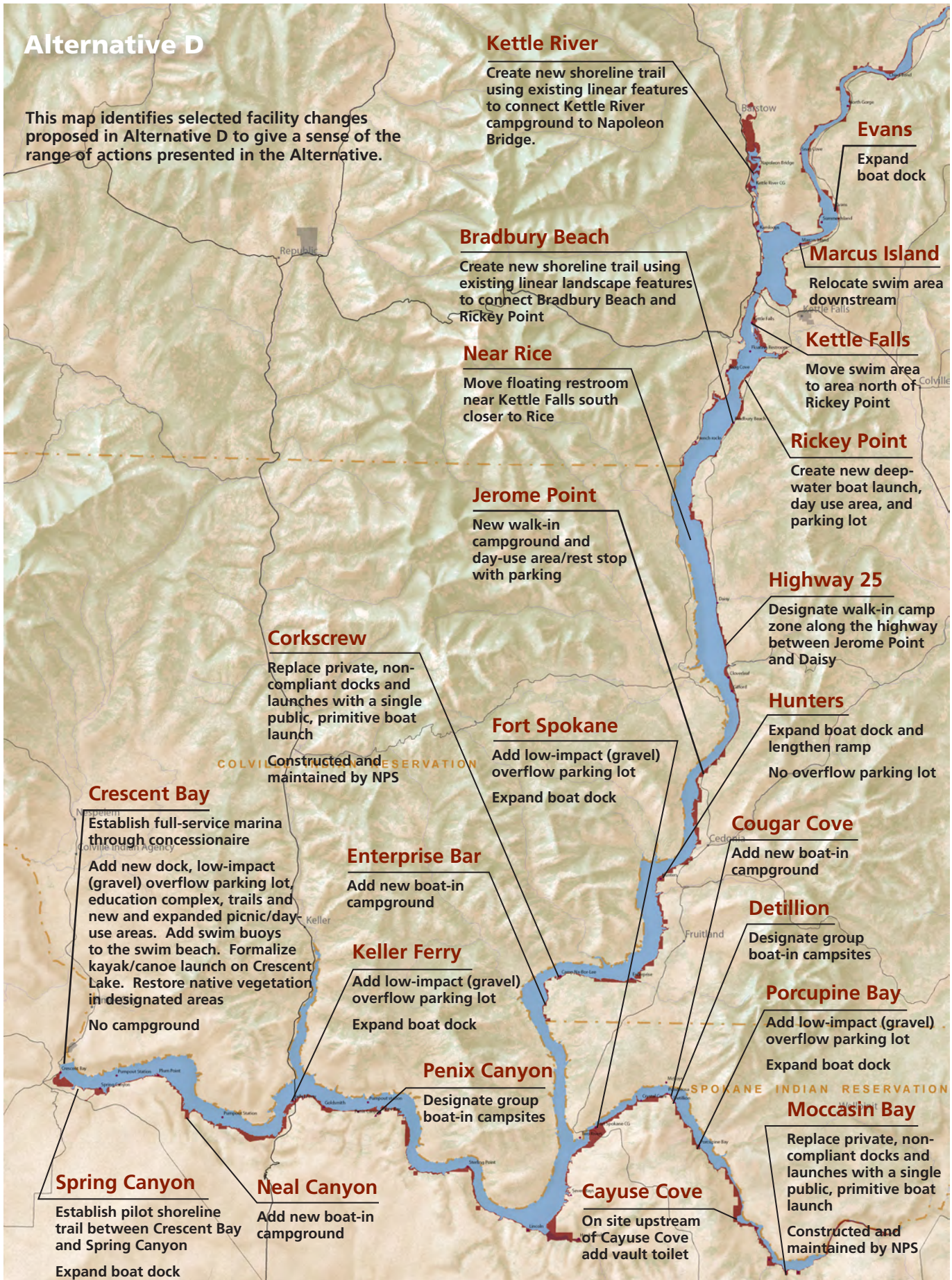
As in Alternative B, Alternative D would include new shoreline trails that run parallel to the shoreline where it is possible to connect two recreational facilities. The first of these would be established between the Crescent Bay and Spring Canyon facilities. Also as in other alternatives, informal, pedestrian access to the shoreline would continue to be allowed, however, unlike other alternatives, formal public access trails would be established along the lake shore at appropriate intervals to link neighboring residential properties to the shoreline with one consolidated trail per community or area.



Boat launch at Snag Cove

Alternative D

This map identifies selected facility changes proposed in Alternative D to give a sense of the range of actions presented in the Alternative.





Lake Roosevelt shoreline

Visitor Use of the Shoreline

To address the issues associated with informal beach camping like overcrowding, trash and human waste management, and ease of access to facilities, Alternative D emphasizes increasing the number of facilities available to accommodate increased visitor demand. As in Alternatives B and C, Alternative D would continue to allow informal beach camping but would also increase the number of boat-in only campgrounds at Neal Canyon, Cougar Cove, and Enterprise Bar. These new campgrounds would include restroom facilities and designated fire pits. Similarly, some boat-in campgrounds could be re-designated for group use only. These group boat-in campgrounds would require reservations that would maximize the use of these smaller campgrounds. Potential sites include Detillion and Penix Canyon. As in Alternative A, however, there would be no boat-in camping permit system in Alternative D.

Similar to Alternatives B and C, Alternative D would designate informal walk-in camping areas along Highway 25 between Jerome Point and Daisy, as well as coordinate with counties and WSDOT to ensure safe overnight parking is available for walk-in camping areas. In addition, Alternative D would include walk-in campground facilities and day-use area and/or rest stop facility at Jerome



Aerial photo of the Jerome Point area



Courtesy dock at Spring Canyon

Point. This location would allow for easy access from the road as well as be an appropriate location for a rest stop since it is about midway between Fort Spokane/Two Rivers and Colville.

As in other action alternatives, in addition to an increase in camping opportunities, more frequent restroom opportunities would be provided for boaters by adding floating toilets or more formal facilities throughout the park where needed. Unlike Alternatives B and C, however, Alternative D would include additional toilets along the lake shore and at boat-in campsites that are visible from the water. This visibility would help boaters identify opportunities to use formal facilities as they boat along the lake. Directional signage would be placed along the lake shore to indicate distance and direction to the nearest restroom and would be linked to the recreation area map.

Length of stay and crowding at beach campsites would be addressed using the same suite of strategies included in Alternatives B and C. Actions in Alternative B regarding floating toilets, excessive boat noise and beach fires would also be the same in Alternative D.

Capacity of Facilities

To address issues of over-capacity at boat launches, docks, campgrounds and parking lots, Alternative D again takes an approach which emphasizes the construction of new facilities and expansions at existing facilities to accommodate a greater demand in the park.



Restroom facilities at Colville Flats

As in Alternatives B and C, boat launch overflow parking would be expanded and similar to Alternative C would include four sites, however these would include Fort Spokane rather than Gifford. Other public launch facilities could also be added at underutilized portions of the lake at appropriate intervals. As in Alternative B, Rickey Point would include a deepwater launch and other facilities and Moccasin Bay and Corkscrew would have a new boat launch. Recreational facilities to be expanded under Alternative D also would include boat-in campgrounds, signs and reader boards to communicate current facility capacity, park policies, and other visitor use information, similar to Alternatives B and C.

Unlike Alternatives B and C, no new drive-in campgrounds are proposed as part of Alternative D. The Crescent Bay concept for Alternative D does not include a campground. Unlike Alternatives B and C, however, boat docks would be expanded at existing facilities that attract high visitor numbers, including at Spring Canyon, Keller Ferry, Fort Spokane, Porcupine Bay, Hunters, and Evans. By expanding the courtesy docks, more boaters could use the existing facilities at these locations.



North of Rickey Point

Lower Lake Levels in Summer

As in Alternatives A, B and C, Alternative D would implement the recommendations produced by the lake draw down engineering study and retrofit facilities for the lowest draw down levels (see “Actions Common to All”). To address issues anticipated for the Kettle Falls and Marcus Island swim areas, Alternative D would continue to conduct aquatic vegetation management as in Alternatives A, B and C, but both swim areas would be relocated. The Kettle Falls northern lake swim area would be relocated to an area north of Rickey Point and moving the Marcus Island swim area downstream would be considered.

Agency Coordination



Visitor center at Dry Falls State Park

Under Alternative D, strategies focused on agency coordination would rely on current management strategies. NPS would continue to meet with tribal partners under the Five-party Agreement, and differences in tribal and park regulations would continue to be published in the park newspaper. To coordinate with local, state, and federal agency partners NPS would continue to participate as an active member of the Lake Roosevelt Forum. The only additional strategy that Alternative D would propose would be to develop a joint information or visitor center in partnership with one or both of the tribes and to staff that center with both NPS and tribal staff. This would allow dissemination of NPS and tribal information in the same place, create a more unified vision of the entire lake in the minds of the visitors, clarify differences in regulations between the agencies, and save staff time.

Natural Resources

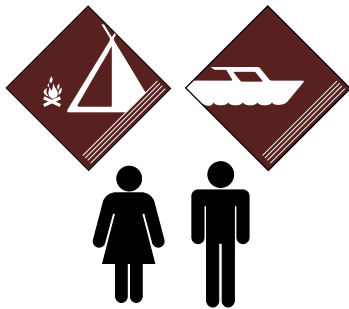
Actions associated with managing native and non-native aquatic vegetation would be the same as described in “Actions Common to All,” however, noxious upland weed management would be more targeted by NPS staff with management zones as described in Alternative B.



NPS directional signage

Visitor Education and Information

To communicate facility availability to the public, Alternative D would use the same strategies described in Alternative B, such as using more media sources to communicate facility availability and add electronic message boards, with the exception of the expansion of the campground reservation system. To communicate the public nature of the shoreline to visitors, Alternative D would adopt the same management strategies as Alternative B, such as expanding neighborhood education in the form of increased dissemination of information about the recreation area and a “Welcome Neighbor” brochure.



New strategies in Alternative D would focus on distance and location between facilities. Signs would identify the river mile and the location of the nearest restroom and other facilities, such as a launch, dump station, or gas (e.g., “restroom 4 miles ahead” or “gas 3 miles ahead”). These signs would serve to both orient visitors to their exact location on the lake as well as help them plan ahead for their own resource use. In conjunction with these new signs, existing signs posted at facilities would be modified to include more information. Diagrams depicting the suite of amenities available at each facility would be added to the signs, and could be seen by boaters on the lake, with universal symbols for restrooms, gas, and other facility availability.

Crescent Bay

Alternative D would also include expanded facilities at Crescent Bay, including a concession-run marina, new hiking trails, additional parking, a day use area, and educational/interpretive facilities. A description of the Crescent Bay development concept (Concept B) proposed for Alternative D can be found in the “Crescent Bay Development Concept Plan” chapter of this document.



*Interdisciplinary Planning Team
Workshop*

Cost Implications

Alternative D implementation would be capital intensive given the design, permitting, construction, and ongoing management/maintenance costs associated with recreational facilities.

A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,572,000 for implementation and construction of Alternative D, and \$133,000 in annual operating costs in addition to the current \$5,000,000 annual operating costs.

Relationship to General Management Plan

The addition of the Spokane Arm facilities would require an amendment to the *General Management Plan*. This Environmental Assessment comprises that amendment. Alternative D proposes a primitive, public boat launch at Moccasin Bay and Corkscrew, a toilet east of Cayuse Cove, and an additional boat-in campground at Cougar Cove on the Spokane Arm.



Boats moored at Corkscrew

F. Alternatives Considered but Dismissed



Boat moored on Spokane Arm

Under NEPA, an alternative may be eliminated from detailed study for the following reasons [40 CFR 1504.14 (a)]:

- Technical or economic infeasibility;
- Inability to meet project objectives or resolve need for the project;
- Duplication of other less environmentally damaging alternatives;
- Conflicts with an up-to-date valid plan, statement of purpose and significance, or other policy; and therefore, would require a major change in that plan or policy to implement; and
- Environmental impacts too great.

The following alternatives or variations were considered during the design phase of the project, but because they met one or more of the above criteria, they were rejected.

ALLOW BOATS MOORING ANYWHERE ON THE LAKE FOR LONGER THAN 30 DAYS

Boats may currently moor on Lake Roosevelt for a maximum of 30 days under certain conditions. Expansion of this mooring limit is proposed in Alts B and D and is currently occurring under CAPs; however, unlimited locations for boat mooring would lead to safety problems from increased hazards to navigation, and is therefore not considered in this plan.

ESTABLISH A PERMIT SYSTEM FOR MOORING BOATS

A lake-wide permit system was proposed to allow boaters greater flexibility in mooring their boats for longer periods. Permits could be issued for different time periods (i.e. 30 days, 60 days and 90 days) depending on need. This action was dismissed because enforcing multiple permit types throughout Lake Roosevelt was not feasible even with an increase in staffing. It would also encourage more boats to moor up and down the shoreline, causing navigation hazards and limiting the public use of that shoreline. This action was dismissed because alternatives with fewer adverse impacts were incorporated into the plan.



Information sign at China Bend

TEEL FLATS DRIVE-IN AND BOAT-IN CAMPGROUND

To provide additional opportunities to boaters and reduce impacts to beaches from informal beach camping, a new boat-in campground was proposed at Teel Flats on the southern shore of the Spokane Arm. Increased boat traffic in this area of the Spokane Arm runs counter to the land use goals of the Spokane Tribe. This action was dismissed because it would have increased adverse effects and require more changes to the GMP.



LAND-BASED DUMP STATION

A dump station was proposed between Hunters and Daisy to increase the capacity of the shoreline to accommodate wastewater from boats exiting the water. This action was rejected because it would be expensive to install and maintain in an area and because there was not a demonstrated need for wastewater dumping at this location.

JURISDICTIONAL SIGNS ON THE LAKE

Because the lake is governed by the NPS and the tribes, some visitors are confused about different policies and regulations and where they apply. Floating signs were proposed to identify jurisdictional boundaries. This action, however, was dismissed because floating signs would visually detract from the natural lake environs, increase maintenance costs and minimize the on-going efforts to manage the lake under agency partnerships.

CRESCENT BAY FACILITY ENHANCEMENTS

The boat launch at Crescent Bay currently ends at the 1265 foot elevation level. A lower (extended) launch would increase the boat launching season at Crescent Bay. At the end of the existing ramp, the slope steepens, requiring a large amount of stable fill before a launch ramp extension could be constructed. This action was dismissed because of the expense and the difficult topographic conditions. A new playground and Crescent Lake boat launch were also rejected due to a lack of need for these facilities and the quiet nature of the lake-side environs.



G. Environmentally Preferred Alternative



Lake Roosevelt shoreline

In accordance with NPS Director’s Order 12, Conservation Planning, Environmental Impact Analysis and Decision-making, the NPS is required to identify the environmentally preferred alternative in environmental documents. The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act (NEPA) of 1969, which is guided by the Council on Environmental Quality (CEQ). The CEQ (46 FR 18026 – 46 FR 18038) provides direction that “the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA’s Section 101 (b)”, which considers:

1. Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieving balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities, and
6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depleted resources.

The environmentally preferred alternative is “the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038). According to NPS NEPA Handbook (DO-12), through identification of the environmentally preferred alternative, the NPS decision-makers and the public are faced with the relative merits of choices and must clearly state through the decision-making process the values and policies used in reaching final decisions.

Under Alternative A (No Action / Continue Current Management), natural and cultural resources would continue to be protected and preserved according to current policies and regulations. Alternative A satisfies the CEQ criteria 1, 4 and 6. Current park strategies promote caring for the environment for future generations, preserving historic, cultural and natural aspects of the environment and enhancing and recycling renewable resources. Although Alternative A may satisfy certain

aspects of CEQ criteria 2 and 3, it does not adequately address the health, aesthetic and safety concerns of crowded informal beach camping, such as human waste on the beach and trash. Because boating and camping can lead to degradation of beaches during the busy summer months, Criterion 5, balancing standards of living with resource use, would not be satisfied because there are currently uncontrolled beach impacts and high facility use levels.

Implementation of Alternative B or C would directly address the CEQ criteria by enhancing communication with partnering agencies, implementing a lake-wide permit system, and installing new facilities that enhance visitor experience (quality of life) at the lake. Both alternatives also have similar negligible to moderate adverse impacts to land use, air quality, water quality and special status species.

The two alternatives differ in several substantive ways. Alternative B proposes public buoy fields, boat-in campgrounds and a toilet east of Cayuse Cove not included in Alternative C. These facilities would add to the range of visitor amenities offered on Lake Roosevelt and solve current management problems. The buoy fields would consolidate moorage on the lake, increasing the scenic quality of the shoreline and enhancing navigation. In a similar way, additional boat-in campgrounds would focus visitor impacts to a few areas. A toilet east of Cayuse Cove would have modest impacts to soils and vegetation, but improved access to restroom facilities by boaters will likely improve beach cleanliness and water quality. Alternative C proposed additional cooperation with partnering agencies, organizations and local governments. While this could likely have a strong influence on improving lake-wide management strategies and implementation, its effects on the natural, cultural and scenic environment cannot currently be predicted with certainty because additional specific actions related to it would be developed over time with partners.

Implementation of Alternative D would include many of the same action found in B and C without the lake-wide permit system. Without the permit system, the NPS would not have adequate control over visitor use of certain highly impacted areas. A permit system would encourage the distribution of visitors to less sensitive parts of the lake, while making it more feasible for park rangers to ensure visitor and resource protection. Alternative D has a few more proposed facilities, such as a walk-in campground and day use area at Jerome Point, additional toilets along the shoreline, and expanded docks. These facilities, while designed to improve the visitor experience and health of the visitor, would have additional adverse effects over Alternatives B or C.

The Crescent Bay Development was also considered in determining the environmentally preferred alternative. All four alternatives would have similar adverse and beneficial effects. All four would include a concessionaire-constructed and operated full-service marina at Crescent Bay. Alternative A would have the fewest adverse impacts related to development, but because it would not

include restoration would also continue to allow the area to remain disturbed with few visitor amenities. Alternatives B and C would include a small campground, a different trail configuration and an education center. Alternative D includes slightly less development at Crescent Bay, but similar amounts of landscape restoration. Both would include an enhanced swimming area and interpretation. Overall the combination of facilities in Alternatives B and C would better enhance visitor facilities and resource education leading to a better balance of resource uses that would contribute to a better visitor experience and additional enhancement of park resources.

Therefore, Alternative B is the environmentally preferred alternative. This alternative best addresses the six CEQ criteria. Alternative B strategies would improve the recreation area, making it a better place for future generations of visitors. It encourages the clean up of Lake Roosevelt beaches and campgrounds through management actions, resulting in improvements to the health, safety and scenery of the lake. It would allow for greater, but more controlled, recreational use, without degradation of environmental resources. It would preserve important historic, cultural and natural aspects of the shoreline. It would balance human activities and opportunities for recreation with the sensitive resources of the recreation area. And it would enhance the quality of park resources by preserving and restoring the shoreline landscape.



Floating swim platform at Hunter

TABLE III - 2: SHORELINE MANAGEMENT PLAN COMPARISON OF ALTERNATIVES

	ALTERNATIVE A—NO ACTION CONTINUE CURRENT MANAGEMENT	ALTERNATIVE B—PREFERRED VISITOR USE MANAGEMENT AND EDUCATION
ADAPTIVE MANAGEMENT		
Adaptive management	<ul style="list-style-type: none"> Monitor traffic counts and number of visitors at designated recreation facilities 	<ul style="list-style-type: none"> Expand monitoring and evaluation of visitor use and experience of recreation facilities to provide a foundation for responding to changing resource conditions over time
PUBLIC ACCESS TO THE SHORELINE		
Primitive boat launches and docks	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Grandfather-in primitive, community public access points that existed before the reservoir, continuing public access to these areas Replace private, non-compliant docks and launches at Moccasin Bay with a single NPS constructed public, primitive boat launch at Moccasin Bay (Partner with County to ensure road remains accessible) Replace private, non-compliant dock at Corkscrew Canyon with a single NPS-constructed public, primitive boat launch and parking
Buoys and moorage	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Create new public buoy fields provided by NPS or concessionaire (with permits required)
Long-distance shoreline and interpretive trails	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Establish pilot shoreline trail between Crescent Bay and Spring Canyon Construct interpretive trail at Crescent Bay Construct new shoreline trails to connect two recreational facilities, where possible Create new shoreline trails on existing linear landscape features, such as irrigation ditches, roadbeds or levees (i.e. Bradbury Beach to Rickey Point or Kettle River Campground to Napoleon Bridge)
Primitive constructed beach access trails/roads	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<ul style="list-style-type: none"> Work with communities to formalize, consolidate, or remove neighborhood paths, using an expanded CAP criteria-driven process Work with counties, developers and communities to establish designated public legal access points for new developments adjacent to the park boundary
VISITOR USE OF THE SHORELINE: INFORMAL BEACH CAMPING AND DAY USE		
Informal boat-in beach camping	<ul style="list-style-type: none"> Continue to allow informal boat-in beach camping in designated and undesignated sites without a permit 	<ul style="list-style-type: none"> Create day use area and swim beach at Crescent Bay Enhance user education through signs, pamphlets, and visitor contact Establish a (free or fee-based) permit system to 1) manage informal camping, and 2) close beach camping in sensitive areas. List beach camping rules and regulations on the permits Establish central locations to secure beach camping permits, such as kiosks, visitor centers and high traffic locations outside the recreation area Make a reciprocal agreement for the payment and management of fees (interagency fees directed to tribes or NPS) Designate group boat-in camping areas that require a reservation. Potential sites include Detillion and Penix Canyon Increase the number of boat-in only campgrounds, potentially including Neal Canyon, Cougar Cove, and Enterprise Bar

<p style="text-align: center;">ALTERNATIVE C</p> <p style="text-align: center;">PARTNERSHIPS AND INTER-AGENCY COORDINATION</p>	<p style="text-align: center;">ALTERNATIVE D</p> <p style="text-align: center;">BUILT RECREATION FACILITIES</p>
Same as Alternative B	Same as Alternative B
Same as Alternative A plus: <ul style="list-style-type: none"> • Replace private, non-compliant docks and launches at Moccasin Bay and Sunset Point with a single community constructed public, primitive boat launch at Moccasin Bay 	Same as Alternative B
Same as Alternative A	Same as Alternative B
Same as Alternative A plus: <ul style="list-style-type: none"> • Establish pilot shoreline trail between Crescent Bay and Spring Canyon • Construct interpretive trail at Crescent Bay • Permit and encourage new multiple use, non-motorized, long distance trails tied to the regional trail network (i.e. Kettle Falls campground to Colville) 	Same as Alternative A plus: <ul style="list-style-type: none"> • Establish pilot shoreline trail between Crescent Bay and Spring Canyon • Construct interpretive trail at Crescent Bay • Construct new shoreline trails to connect two recreational facilities, where possible.
Same as Alternative B plus: <ul style="list-style-type: none"> • Work with counties, developers and communities to establish designated public legal beach access points for new developments adjacent to the park boundary • Encourage linked public connections to non-adjacent communities 	Same as Alternative C plus: <ul style="list-style-type: none"> • Provide public beach access trails along the lake shore at appropriate intervals
Same as Alternative B plus: <ul style="list-style-type: none"> • Use the tribal fee systems as a model to make fee processes consistent, where possible • Increase the number of boat-in only campgrounds, potentially including Cougar Cove 	Same as Alternative A plus: <ul style="list-style-type: none"> • Designate group boat-in camping areas that require a reservation, potentially including Detillion and Penix Canyon • Increase the number of boat-in only campgrounds, potentially including Neal Canyon, Cougar Cove, and Enterprise Bar

	ALTERNATIVE A—NO ACTION CONTINUE CURRENT MANAGEMENT	ALTERNATIVE B—PREFERRED VISITOR USE MANAGEMENT AND EDUCATION
VISITOR USE OF THE SHORELINE: INFORMAL BEACH CAMPING AND DAY USE (CONTINUED)		
Walk-in camping/day use	<ul style="list-style-type: none"> Continue to prohibit walk-in camping at boat-in campgrounds 	<ul style="list-style-type: none"> Permit informal walk-in camping along Highway 25 between Jerome Point and Daisy Establish walk-in camping management zones and permit system Coordinate with counties and WSDOT to ensure safe overnight parking is available for walk-in camping area In cooperation with the tribes and counties, identify other locations where walk-in camping could occur Create picnic/day-use area and formalize swim beach with buoys at Crescent Bay
Trash and human waste management	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Require day-use boaters to carry portable toilets Establish a beach camping permit system with designated zones Install dispensers for human waste and trash bags at boat launches Expand “Tread Lightly” education program to include permit information Coordinate water quality sampling/monitoring with agencies, tribes, and other entities Add a toilet on the point upstream of Cayuse Cove accessible from the water
Length of stay/crowding at beach campsites	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Establish a permit system for beach camping with designated zones Use beach camping permit system/ zoning to monitor length of stay Monitor illegal camping by tagging personal property that appears abandoned or which has apparently been left to reserve a beach campsite
Boater access to floating toilets, restrooms, and dump stations	<ul style="list-style-type: none"> Maintain three combination floating toilet/dump stations, one floating toilet, and concession managed dump stations 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Add floating toilets where needed Move the floating toilet near Kettle Falls south to be closer to Rice Increase the length of season for floating toilets
Excessive boat noise	<ul style="list-style-type: none"> Continue to limit noise based on regulation that establishes a maximum decibel level 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> Increase training and equipment for decibel monitoring and enforcement Work with tribes to adopt and enforce consistent noise pollution regulations
Beach fires	<ul style="list-style-type: none"> Continue to prohibit beach fires except on the exposed lakebed from November 1 to May 1 when the fire danger rating for the park is at or below Level 2 	<ul style="list-style-type: none"> Amend compendium to allow beach fires year-round dependent on the fire danger rating (allows for campfires in designated fire rings until extreme rating is reached) Enhance fire safety education in association with partners and neighbors

<p style="text-align: center;">ALTERNATIVE C</p> <p style="text-align: center;">PARTNERSHIPS AND INTER-AGENCY COORDINATION</p>	<p style="text-align: center;">ALTERNATIVE D</p> <p style="text-align: center;">BUILT RECREATION FACILITIES</p>
<p>Same as Alternative B</p>	<p>Same as Alternative B plus:</p> <ul style="list-style-type: none"> • Develop walk-in campground facilities and day-use/rest stop facilities at Jerome Point
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Establish a beach camping permit system with designated zones • Coordinate with partners to require day-use and overnight boaters to carry portable toilets • Work with tribes and other partners to expand “Tread Lightly” education program. • Develop volunteer boat monitoring network to supplement ranger patrols • Coordinate water quality sampling/monitoring with agencies, tribes, and other entities 	<p>Same as Alternative B plus:</p> <ul style="list-style-type: none"> • Establish additional toilets along the shore and at boat-in campsites. Provide toilets at new boat-in campsites visible from the water • Add directional floating signage along lake shore to indicate distance and direction to nearest restroom for boaters; coordinate with park map.
<p>Same as Alternative B</p>	<p>Same as Alternative B</p>
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Increase the length of season for floating toilets 	<p>Same as Alternative B</p>
<p>Same as Alternative B</p>	<p>Same as Alternative B</p>
<p>Same as Alternative B plus:</p> <ul style="list-style-type: none"> • Adopt a lake-wide fire permit system in coordination with tribes 	<p>Same as Alternative B</p>

	ALTERNATIVE A—NO ACTION CONTINUE CURRENT MANAGEMENT	ALTERNATIVE B—PREFERRED VISITOR USE MANAGEMENT AND EDUCATION
CAPACITY OF FACILITIES		
Boat launches/Day Use	<ul style="list-style-type: none"> Maintain existing boat launches Continue to approve appropriate CAPs based on revised criteria 	<ul style="list-style-type: none"> Expand visitor communication efforts; expand hours of the park visitor centers; display more information in visitor centers outside the park to communicate the different facility options for campers, and their availability Include designated tribal boat launches on map to disperse visitors Add new deep water launch, day use area and parking lot to north section of lake (i.e., north of Rickey Point) to accommodate boaters at low lake levels Increase designated parking capacity at existing boat launches by adding designated overflow parking lots. Potential sites to designate or expand include: Crescent Bay, Fort Spokane, Keller Ferry, Gifford, Lincoln and Porcupine Bay Install kayak/canoe launch at Crescent Lake
Drive-in campgrounds	<ul style="list-style-type: none"> Maintain existing campgrounds 	Same as Alternative A plus: <ul style="list-style-type: none"> Construct a small campground at Crescent Bay
Boat docks	<ul style="list-style-type: none"> Maintain existing public boat docks Continue to work with individuals and communities to remove unauthorized private docks. 	Same as Alternative A plus: <ul style="list-style-type: none"> Install consistent signage on public docks for length of stay allowed at the park Install new dock at Crescent Bay
LOWER LAKE LEVELS IN THE SUMMER		
Lower lake levels	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> Increase public communication about lake levels, including informing the public of the annual Bureau lake-level forecast Monitor facilities to document and determine effects of draw down
Swim Areas	<ul style="list-style-type: none"> Adopt most effective strategies from pilot aquatic plant management program to control aquatic vegetation in selected swim areas 	Same as Alternative A plus: <ul style="list-style-type: none"> Increase water circulation to improve water quality or relocate swim area at Kettle Falls. Investigate options for improving or relocating non-functioning swim areas (i.e. Marcus Island)
AGENCY COORDINATION		
Coordination with tribal partners	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> Coordinate boating and camping regulations with tribes to make lake-wide regulations more consistent and differences more transparent Educate partners, including concessionaires on regulatory and fee differences and the reasons for them Make a reciprocal agreement for the payment and management of fees (interagency fees directed to tribes or NPS) (see “Informal beach camping”)
Coordination with local, state, and federal agency partners	<ul style="list-style-type: none"> Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> Build upon existing coordination by evaluating opportunities to collaborate/ coordinate on issues pertaining to shoreline management Disseminate updates to NPS and Lake Roosevelt policies at council of governments meetings Create an informational toll-free phone-line to give general information about Lake Roosevelt and to direct inquiries to the appropriate agency Develop a reciprocal system for notifying partners of rule changes

<p style="text-align: center;">ALTERNATIVE C</p> <p style="text-align: center;">PARTNERSHIPS AND INTER-AGENCY COORDINATION</p>	<p style="text-align: center;">ALTERNATIVE D</p> <p style="text-align: center;">BUILT RECREATION FACILITIES</p>
<p>Same as Alternative B, except::</p> <ul style="list-style-type: none"> • Increase designated parking capacity at Crescent Bay, Keller Ferry, Gifford, and Porcupine Bay only 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Add new deep water launch, day use area and parking lot to north section of lake (i.e. north of Rickey Point) to accommodate boaters at low lake levels • Add new public launching facilities at under-utilized portions of lake at appropriate intervals/frequency • Increase designated parking capacity at existing boat launches by considering the addition of designated overflow parking lots at Crescent Bay, Fort Spokane, Keller Ferry, and Porcupine Bay • Install kayak/canoe launch at Crescent Lake
<p>Same as Alternative B</p>	<p>Same as Alternative A</p>
<p>Same as Alternative B</p>	<p>Same as Alternative B plus:</p> <ul style="list-style-type: none"> • Expand docks where appropriate based on visitor use, such as at Spring Canyon, Keller Ferry, Jones Bay, Ft. Spokane, Porcupine Bay, Hunters and Evans
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Increase interagency (BOR), county and tribal communication to determine effect of forecasted changes in lake levels 	<p>Same as Alternative A</p>
<p>Same as Alternative A</p>	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Relocate northern lake (Kettle Falls) designated swim area to north Rickey Point • Relocate non-functioning swim areas (i.e. Marcus Island slightly downstream) where possible
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Adopt the tribal camping fee system as a model to make fee processes consistent (see Informal beach camping) • Make a reciprocal agreement for the payment and management of fees (interagency fees directed to tribes or NPS) (see “Informal beach camping”) • Adopt a lake-wide fire permit system in coordination with tribes (see “Beach fires”) • Work with tribes to adopt and enforce consistent noise pollution regulations (see “Cigar boat noise”) 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Develop joint information center or visitor center and staff center with NPS staff and tribal staff
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Develop a reciprocal system for notifying partners of rule changes • Orchestrate or participate in seasonal meetings between the NPS, chamber of commerce and local tourism industry to discuss opportunities for collaboration 	<p>Same as Alternative A</p>

	ALTERNATIVE A—NO ACTION CONTINUE CURRENT MANAGEMENT	ALTERNATIVE B—PREFERRED VISITOR USE MANAGEMENT AND EDUCATION
NATURAL RESOURCES		
Native and Non-native Aquatic vegetation	<ul style="list-style-type: none"> • Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> • Establish zones for control in appropriate areas • Apply integrated control methods of vegetation removal (based on pilot studies) within pre-determined zoning • Increase educational strategies about native aquatic and non-native invasive weeds to target park neighbors • Partner with neighboring residents to identify high-use areas where aquatic vegetation is a problem
Noxious upland Vegetation	<ul style="list-style-type: none"> • Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> • Increase educational strategies about native aquatic and non-native invasive weeds to target park neighbors
VISITOR EDUCATION AND INFORMATION		
Advance Communication of Facility Availability	<ul style="list-style-type: none"> • Continue to make some designated campsites available by a reservation system - “Reserve America ®” • Continue to require group campsite reservations • Use staff to track facility use levels 	<ul style="list-style-type: none"> • Use more sources (including web and radio) to communicate availability of facilities, including popular parking lots and boat launches • Expand the current reservation system to include more campgrounds • In addition to web and radio announcements on high use days, partner with WSDOT and other applicable agencies to post facility use levels on electronic messaging boards or reader boards on the main highways and at gas stations • Work with counties and tribes to identify underutilized areas to direct visitors to
Communicating the Public Nature of the Shoreline to Visitors	<ul style="list-style-type: none"> • Maintain existing signage along the shoreline and continue to add small signed CAP facilities according to the CAP criteria 	Same as Alternative A plus: <ul style="list-style-type: none"> • Educate neighboring residents on public nature of shoreline by publishing materials on the web site, mailing/distributing handouts, holding community meetings • Publish a “Welcome Neighbor” brochure in cooperation with the real estate industry to provide new residents with information about living adjacent to the national recreation area • Coordinate sign changes or additions with existing maps to help people identify where they are on the lake • Increase enforcement against encroachments
Resource Education	<ul style="list-style-type: none"> • Same as “Actions Common to All Alternative” 	Same as Alternative A plus: <ul style="list-style-type: none"> • Create “Living on Lake Roosevelt” program to educate adjacent landowners • Encourage private/non-profit organization ecological habitat programs (such as Backyard Bird Habitat) • Initiate incentive programs for habitat enrichment within properties adjacent to park boundary including ranches Incentive could just be a sign that says “fish-friendly” or “Lake Roosevelt Partner” • Construct Education/Interpretive Center and outdoor interpretive panels at Crescent Bay

<p style="text-align: center;">ALTERNATIVE C</p> <p style="text-align: center;">PARTNERSHIPS AND INTER-AGENCY COORDINATION</p>	<p style="text-align: center;">ALTERNATIVE D</p> <p style="text-align: center;">BUILT RECREATION FACILITIES</p>
<p>Same as Alternative B except:</p> <ul style="list-style-type: none"> • Establish a means to allow private, approved control in specific areas in cooperation with neighbors and partners. 	<p>Same as Alternative A</p>
<p>Same as Alternative B</p>	<p>Same as Alternative B</p>
<p>Same as B except:</p> <ul style="list-style-type: none"> • Do not expand the current reservation system to include more campgrounds. 	<p>Same as Alternative C</p>
<p>Same as Alternative B plus:</p> <ul style="list-style-type: none"> • Coordinate permitted length of stay with tribes to aid in regulation of illegally reserved campsites 	<p>Same as Alternative B</p>
<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Create “Living on Lake Roosevelt” program to educate adjacent landowners • Improve coordination of information by consolidating different sources and distributing a combined NPS, agency, county brochure about Lake Roosevelt • Construct Education/Interpretive Center and outdoor interpretive panels at Crescent Bay 	<p>Same as Alternative A plus:</p> <ul style="list-style-type: none"> • Add information to existing facility signs (that can be read by boaters on the lake) about the suite of existing facilities at key docks/launches • Add new signs to identify the river mile and location of nearest restroom and other facilities, such as gas (i.e. “restroom 4 miles ahead” or “gas 3 miles ahead”) • Construct outdoor interpretive panels at Crescent Bay

IV. Crescent Bay Development Concept Plan



Crescent Bay is a large inlet immediately upstream of Grand Coulee Dam on Lake Roosevelt. NPS lands at Crescent Bay include the bay, the hills to the east, Crescent Lake and its shoreline. Because it comprises a relatively large land area, unlike other parts of the narrow public shoreline of Lake Roosevelt, the Lake Roosevelt National Recreation Area *General Management Plan* (GMP) calls for development of a full service marina and other facilities in this location.

This chapter of the Lake Roosevelt Shoreline Management Plan comprises the Crescent Bay Development Concept Plan, an implementation plan of the GMP, which includes a site analysis, development program, alternatives, and an implementation discussion. Proposed development of the Crescent Bay area, such as building a marina and larger launch could reduce crowding in other facilities in the southern lake area, while increasing the variety of recreational experiences available.

Purpose

This Development Concept Plan proposes a full-service marina and supporting recreational facilities. The plan drawings for the marina and other concession facilities are conceptual to allow flexibility for partnering with private concession operators. Future studies or plans for Crescent Bay may include a concessions plan and prospectus, detailed NPS-facility design plans for the interpretive facilities, and detailed design plans submitted by the concessionaire for the full-service marina.

Background

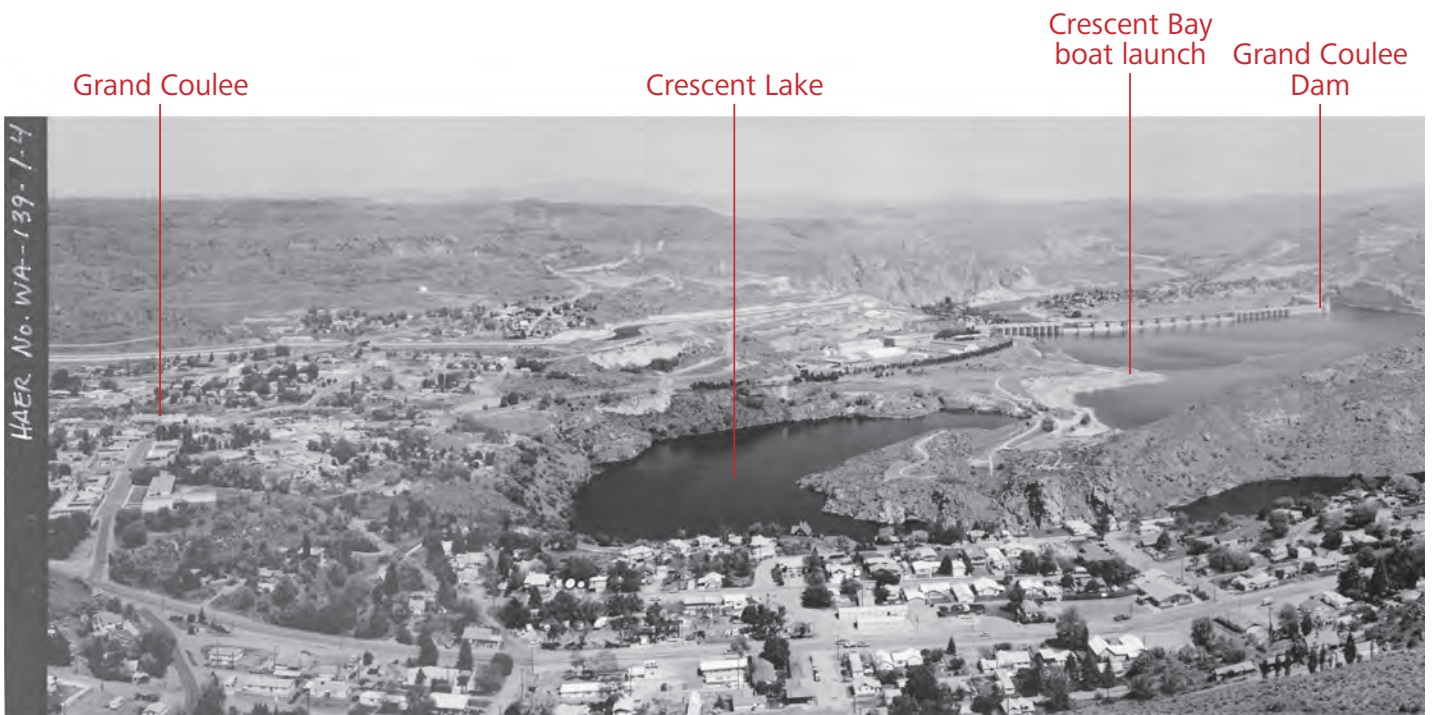
Planning for Crescent Bay facilities actually began in 1942. Initial development plans included a marina development site on the bay but these plans stalled when the Bureau of Reclamation and NPS could not agree on the future development of the site. Following a land ownership transfer to the NPS in 1968 and the closing of the sawmill in the mid-1970s, the NPS released the 1978 *Crescent Bay Development Concept Plan* (NPS 1978), which included a visitor information center, day use area, launch ramps, courtesy docks and encouragement of a full-service marina to be built and run by a concessionaire. Due to lack of federal or private funding and environmental issues raised by the Confederated Tribes of the Colville Reservation, the development of a full-service marina (and by this time a hotel and restaurant complex) did not occur in the 1980s, when it was likely most feasible. A more complete discussion of the history of Crescent Bay development can be found in Chapter 7 of the *Lake Roosevelt National Recreation Area Administrative History* (NPS 2003).

In 2000, the *General Management Plan* (NPS 2000) also addressed the Crescent Bay site. Visitors to the recreation area indicated a strong, continued interest in the eventual development of a marina at Crescent Bay (pg. 12). In response to growing concern about crowding on the lake, especially along the Spokane Arm,



View of pre-dam Rattlesnake Canyon, 1935

the GMP recommended expanding the existing facilities at Hunters, Keller Ferry and Crescent Bay to attract visitors to areas with larger expanses of open water (pg. 22). The GMP also states that “a full-service marina at Crescent Bay will be developed to encourage increased use at the south end of the lake (pg. 24).” While the GMP did not discuss the 1978 Crescent Bay Development Concept Plan, this Shoreline Management Plan includes many of the same facilities recommended in the 1978 plan to complement the full-service marina. This chapter provides guidance for future development of Crescent Bay, replacing the 1978 plan.



Panoramic view south of Grand Coulee Dam looking north showing Crescent Lake and surroundings

A. Site Analysis

History of Land Use

In the 1930s the natural area called Rattlesnake Canyon next to the town of Grand Coulee was transformed into Crescent Lake due to overburden from the dam construction. Crescent Bay was used as a quarry and waste dump site for the dam project. Sewage from the town of Grand Coulee was also dumped into the lake, leading to unsanitary conditions, extensive algal bloom and the moniker “poop lagoon.” In 1942 a dike was built across the canyon using excess excavated material to prevent this sewage from reaching Lake Roosevelt. After completion of the dam, the area was used for a saw mill from 1948 to 1976.

Although there was early interest by the national recreation area to develop recreation in the bay, the saw mill and its impacts precluded other uses. Springs that once drained into Lake Roosevelt now flowed into Crescent Lake. In 1979, Crescent Lake was drained and refilled, and a wastewater treatment plant was planned. The wastewater treatment plant was not constructed and the lake became unusable for fishing, swimming or boating because of sludge and eutrophication. The sewage plant was finally completed in 1987, trout were planted and conditions in the lake finally began to improve. Beginning with the development of the first Crescent Bay DCP, Lake Roosevelt National Recreation Area solicited concession and development plans from private parties for the development of the marina over the next 20 years, but did not reach an agreement that allowed the development to proceed.



(documentation compiled after 1968, Historic American Engineering Record, Library of Congress).



Native sagebrush community found throughout Crescent Bay site

Existing Conditions

Crescent Bay is located within the greater Columbia Basin ecoregion. This ecoregion is dominated by plant communities of sagebrush and bunch grass. The area is dry; trees are scarce. The major habitat types on the site are shrub-steppe and grasslands with the dominant sagebrush vegetation forming a patchwork patterned landscape. Noxious weeds such as Spotted knapweed, Rush skeletonweed, Dalmation toadflax and Leafy spurge persist throughout this heavily disturbed site.

The terrain of the region surrounding Crescent Bay is defined by small valleys that drain from a plateau south of Lake Roosevelt to create a series of coves bounded by steep slopes. Crescent Bay is located in one of these coves near Grand Coulee Dam. The shoreline surrounding Crescent Bay is composed of steep clay banks. The site is expansive with an open area above the cove and trees along the shore. Views of the lake and dam are available. Much of the natural terrain of the site has been disturbed by prior land use, leaving areas with informal dirt roads, old piles of fill, buried railroad ties and concrete chunks. Near the swim beach, large rocks have been brought in to prevent cars from driving onto the beach.



Steep banks surrounding Crescent Bay

Crescent Lake is surrounded by steep slopes of sagebrush, olive and non-native Tree-of-Heaven (*Ailanthus altissima*) with houses visible on the ridge above it. The water of Crescent Lake contains Eurasian water milfoil (*Miriophyllum aquaticum*), a non-native invasive aquatic plant. Crescent Lake water levels fluctuate only three to four feet. At full pool the water level is 12 feet above Lake Roosevelt. The shape of the bay on Lake Roosevelt is a continuation of the steep terrain of the canyon. Apart from a shallow slope at the existing informal swim beach the slope gets deep very quickly away from the shore.



View of existing swim beach day-use area looking towards Lake Roosevelt

The recreation site, located between the town of Grand Coulee and Grand Coulee Dam, is in a highly visible and accessible location and is the first recreation site encountered by visitors coming from the west, such as from Seattle. Existing facilities include a 60-foot boat ramp, information sign, informal swimming area and toilets. The boat ramp is full on weekends, with 108 trucks and trailers counted during one summer weekend day. When the nearby facility at Spring Canyon is full, boaters use Crescent Bay to launch their boats. On the informal dirt roads local residents often walk their dogs, and occasionally there is an overnight camper (although camping is not currently allowed). Visitors to Crescent Lake can fish, boat and hike. The small lake likely appeals to local residents who can use the small boat launch for non-motorized boats on the east end of the lake and a canoe launch. It is also used for recreation area ranger-led canoe interpretive programs.



Swim beach at Crescent Bay

Because of its shape, Crescent Bay, particularly the west side, is ideal for a deep water marina. Recent discussions with the Bureau of Reclamation have indicated that a marina this close to the dam may occasionally need to be closed during the highest federal security alert levels.



Crescent Lake

B. Crescent Bay Programming

Proposed facilities at Crescent Bay for the two concepts were developed from public comments and the 2008 Site Analysis Report. The 1978 proposed location for the marina was also re-evaluated. The proposals include both a developed area (marina and other concession facilities) and a more passive and open area (swim beach, fishing, non-motorized boating).

Program Elements Common to All

FULL-SERVICE MARINA

Previously insurmountable challenges to a public-private partnership at Crescent Bay have included:

1. The large initial private expense of constructing a marina before any income is realized,
2. The economic viability of marina operations and profit, and
3. National Park Service concessions policy.

These may be overcome in the current planning by developing supporting infrastructure within and around the marina facilities. Publicly funded infrastructure, such as utility lines, parking lots and the existing boat launch ramp, could enhance the value of a full-service marina contract and reduce the initial construction expense. Economic viability may be indirectly addressed by increasing the number of visitors to the site, and thus increasing the number of potential customers, and by developing other recreation attractions around the bay. NPS concessions policy is not subject to change, however, since it is determined at the national level by the Department of the Interior and Congress.

The proposed location of the marina would be at the mouth of the bay where the existing boat launch resides. This location works well with the existing boat launch, the deep water at the mouth of the bay, and allows greater separation between the active boat use at the mouth of the bay and the more passive swim use proposed for the interior of the bay.

The concessionaire would be required to develop a restroom, docks, slips, fuel, and small store in addition to the full-service marina. In addition, the following services would be authorized but not required: a restaurant (with restroom) and houseboat rentals. The type and size of some development features associated with the marina are not prescribed and would be determined by the concessionaire.

MARINA UTILITIES

The concessionaire would be responsible for on-site utilities in their buildings and development, and connecting these to the NPS-installed water, sewer, and power lines. Other facilities beyond the marina within the Crescent Bay site would be constructed and maintained by the NPS.



Marina at Seven Bays



Entry drive at Crescent Bay looking north towards proposed marina location

NPS Program Elements

INTERPRETIVE/EDUCATION CENTER

The following types of interpretive elements have been considered: an outdoor interpretive exhibit, an indoor education center, and a visitor contact station. The elements range from a grouping of signs to a building housing a visitor contact station, a classroom and restrooms. The interpretive facilities would expound on the recreation area's four interpretive themes: geology, natural history, cultural history, and recreation (GMP 2000, pg. 9).



Existing boat launch and dock during draw down

BOAT LAUNCH

A boat launch extension was considered but rejected on Crescent Bay due to the extreme labor and material costs that would be required. The base of the current ramp is at 1265' elevation. At the end of the existing ramp, the slope steepens, requiring a large amount of stable fill before a launch ramp extension could be constructed. The idea of a new small boat launch on Crescent Lake was also considered but rejected to preserve the quiet, non-motorized recreation experience currently found at the lake.

PARKING

The existing parking lot would require expansion and improvement, if and when a full-service marina is built. Additional parking areas would be considered in conjunction with any new facilities such as an education center building, interpretive exhibit, fishing pier, day-use areas, and trailheads.



Existing gravel entry road to Crescent Bay facility

ROADS AND PEDESTRIAN WALKWAYS

The entry road, connecting roads and pathways would need to be improved to handle increased traffic in the different concepts. The conceptual plans show new roads and paths and realigned roadways that connect NPS facilities with Highway 155. Construction and choice of materials would be consistent with the existing maintenance regime.

UTILITIES

The NPS may run and maintain water, sewer, and power lines as far as the footprint of the future full-service marina. Other potential facilities, such as the education center and restrooms in the day use area, would also require utility connections.



Picnic shelter at Evans Campground

SWIM BEACH AND DAY-USE

Day use/picnic areas would include picnic tables, shade trees, restrooms and additional parking. The existing informal swim beach would be improved with a floating swim barrier and potentially a floating swim platform. A playground was considered but rejected for inclusion in a day-use/picnic area due to a lack of need for the facility.

FISHING PIER

Depending on water quality analysis, a fishing pier on Crescent Lake would be considered as a passive recreation option so long as it was accessible to those with disabilities. A pier would be most ideally located near a day-use area.

CAMPING

Because informal camping sometimes occurs on the site on an ad-hoc basis, there is a demonstrated need for a more formalized facility that the NPS could monitor and patrol. A proposed campground could be modeled after the small Hawk Creek facility. Group camping was considered but rejected since this option already exists nearby at Spring Canyon.

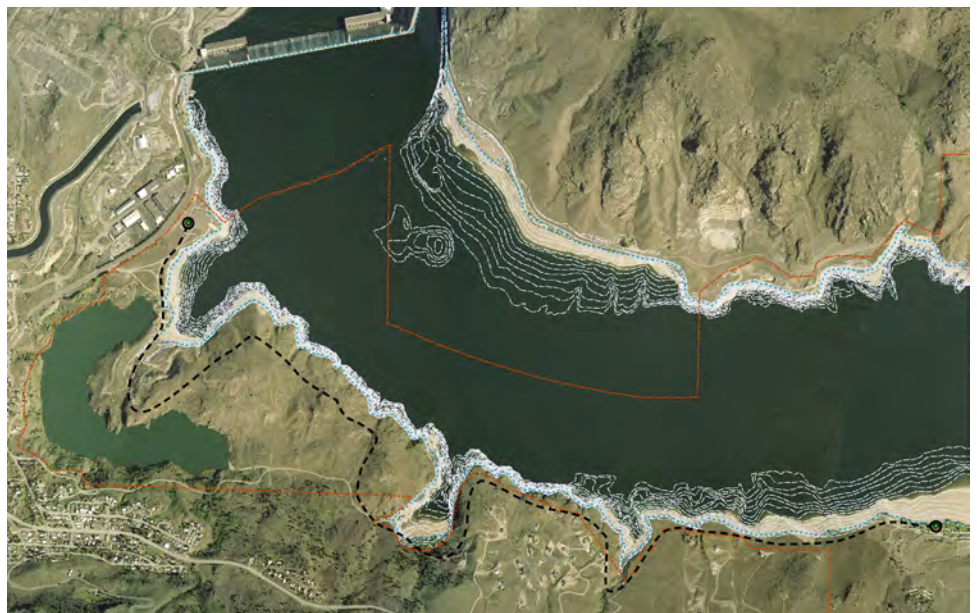


View of Grand Coulee from an overlook on Crescent Bay site

TRAILS

Both short and long distance trails have been considered for this site. The NPS and the local community have discussed a long-distance trail from Crescent Bay to Spring Canyon for many years. Some local residents support the idea, because there are few opportunities for hiking in the recreation area. The trail could serve a relatively large population in Grand Coulee and Coulee Dam. There are two primary concerns: a portion of the route would have to traverse private land, and the trail would not be shaded. While some property owners may welcome a trail easement across their property, others would not.

While the NPS negotiates with neighboring communities to determine the feasibility of the trail connection, the Crescent Bay to Eden Harbor segment could be constructed. The trail would be entirely on public land and could be a loop trail of up to three miles, moving through the diverse sagebrush biological community and providing views from the hillsides of the surrounding lake.



Potential trail from Crescent Bay to Spring Canyon (location undetermined)



Columbia plateau shrub-steppe vegetation

RESTORATION

Native plants would be used to restore the disturbed portions of the native shrub-steppe, sagebrush habitat. Areas of informal roads and trails would be directly planted with a mix of grassland and shrubby species (see Table IV-1). Areas of disturbed fill leftover from past industrial uses on the site would require importing native topsoil free of noxious weed seed, potentially from elsewhere in the south lake area where construction requires its removal. Shrubs could be planted as tublings, while grasses and herbs could be planted as hydroseed. If hydroseeding, hydromulch should not be used because it endures in the dry climate for many years. If mulch is necessary, a low-nitrogen compost would enhance germination of grass seed.

DOG-WALKING

Because this site currently is, and historically has been, popular with local residents for walking their dogs, designating dog-friendly areas on site is a possibility. The authority to allow pets in any unit of the National Park System is contained in 36 CFR 2.15 Pets. The Superintendent via the *Superintendent’s Compendium* can designate specific dog walking areas.

TABLE IV-1. NATIVE PLANTS FOR RESTORATION OF DISTURBED AREAS OF CRESCENT BAY

Scientific Name	Common Name	Notes
Grasses		
<i>Achnatherum hymenoides</i>	Indian rice grass	
<i>Hesperostipa comata</i>	Needle and thread grass	
<i>Poa secunda</i>	Sandberg's bluegrass	Small; early growth remains green in summer
<i>Pseudoroegneria spicata</i>	Bluebunch wheatgrass	Erect to 2'; well-drained, deep soil
Herbs		
<i>Balsamorhiza sagittata</i>	Arrowleaf balsamroot	
<i>Lupinus sericeus</i>	Silky lupine	
Shrubs		
<i>Amelanchier alnifolia</i>	Serviceberry	Decid shrub to 3 m; rocky slopes; white flwrs
<i>Artemisia dracunculus</i>	Tarragon	
<i>Artemisia tridentata</i> ssp. <i>trid.</i>	Basin big sagebrush	Large shrub; inconspic.flwrs.; gray-gr lvs; deep soil
<i>Artemisia tridentata</i> ssp. <i>wyom.</i>	Wyoming big sagebrush	Large shrub; inconspic.flwrs.; gray-gr lvs; deep soil
<i>Chrysothamnus nauseosus</i>	Gray rabbitbrush	Small peren. to 2'; tiny yellow flwrs; sandy soils
<i>Chrysothamnus viscidiflorus</i>	Green rabbitbrush	Small peren.; less common; no hairs on stems
<i>Grayia spinosa</i>	Hopsage	
<i>Purshia tridentata</i>	Bitterbrush	Shrub to 6'; decid; sandy soils
<i>Purshia tridentata</i>	Bitterbrush	Shrub to 6'; decid; sandy soils
<i>Salvia dorii</i>	Purple sage	Fragrant purple flwrs; to 3'; sandy to rocky soils
<i>Phlox hoodsii</i>	Hood's phlox	Compact perennial; pink flwrs
<i>Phlox longifolia</i>	Longleaf phlox	Compact perennial; sandy soils; pink flwrs

C. Alternative Concepts



Crescent Lake

Existing Plan – Alternative A

The “no action” alternative for the development of Crescent Bay would maintain existing facilities as they are with no new construction efforts except those specified under the *General Management Plan*.

As prescribed in the GMP, the NPS would continue to solicit concessionaires to develop and operate a marina complex. NPS would run utility lines to the site for use by the concessionaire. The boat launch, gravel parking area, and swim area would continue to be maintained by NPS. Any typical improvements of roads (such as paving them), parking, or the boat launch would continue as with all other facilities. Much of the use of the site would remain largely informal, with residents using dirt trails for hiking.

Concept 1 – Alternative B/C

Concept 1 would improve the economic viability of a marina development and take advantage of unique features of the Crescent Bay area. It focuses on maintaining a balance between active and passive recreation options to appeal to a wider array of visitors.

INTERPRETIVE/EDUCATION CENTER

- Construct both an outdoor interpretive exhibit and an indoor education center with the option of a small seasonal visitor contact station.
- Construct outdoor amphitheater.

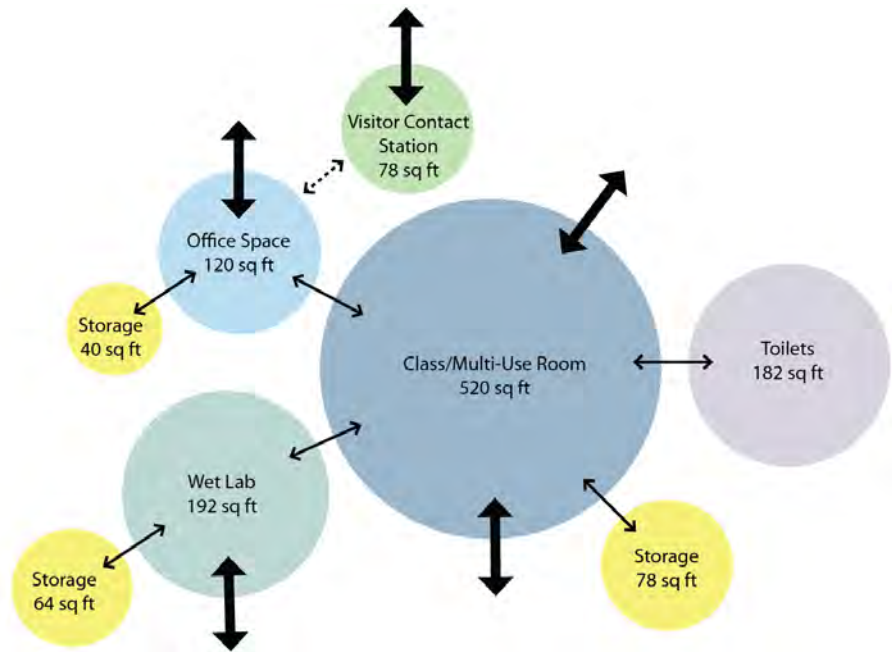
The outdoor interpretive exhibit would be a sheltered/open-air area with interpretive panels that are accessible year-round, un-staffed/self-serve and open to the public. This type of exhibit would require minimum maintenance while providing an orientation point for the public. The interpretive panels would be sited at a viewpoint overlooking Crescent Bay, Grand Coulee Dam, and the proposed marina.



Example of an education center
(Cedar River Watershed)

The indoor education center would be of a modest size (approximately 2,000 square feet) and include a classroom/multi-use space, office space, storage, toilets and a wet-lab. The visitor contact station could be associated or even attached to the education center building. This could be used seasonally during peak visitation periods. If attached, the visitor contact station would still need to be able to operate independently from the education center. All potential interpretive and educational programs are envisioned to be run by the NPS with ample support from the community and local schools. The interpretive/education center would serve as a main orientation point and should therefore be located near the facility main entry. The education parking and traffic would be separate from the marina parking and traffic. All parking and entrances would be required to meet federal Americans with Disabilities Act guidelines to maintain accessibility.

DIAGRAM OF PROPOSED EDUCATION CENTER SHOWING APPROXIMATE AREAS OF AND CONNECTIONS BETWEEN SPACES



Education Center

Example program space of 1000 to 2000 sq. ft.

Outdoor classroom space would complement the activities of the education center, so a small outdoor amphitheater that could seat 40 (approximately 700 sf) would be considered as a part of this development.



Existing informal canoe/kayak access point on Crescent Lake

BOAT LAUNCH

- Formalize existing informal kayak/canoe launch.

The proposed formalized launch would accommodate one canoe/kayak at a time. It would stay in its current location adjacent to the main road and across from the existing informal swim beach. This location slopes gently from the road to the lake, and is next to a large flat area set off from the road that could be used for staging.



Existing gravel parking lot by boat launch at Crescent Bay

PARKING

- Pave and maintain the boat launch parking area (150 spaces).
- Set aside an overflow parking area to accommodate up to an additional 100 parking spaces.
- Develop separate, smaller parking areas adjacent to the interpretive/education center, day-use areas, and fishing pier.
- Where practical, parking lots will include adjacent shade trees and other measures to shade cars, reduce the impact of reflective heat and intercept rainfall.

Adjacent to the existing boat launch, the existing parking would be improved before or during construction of the proposed full-service marina. 150 parking stalls will fit in an expanded area roughly corresponding to the existing parking, assuming the parking lot will be paved and striped. If additional parking spaces are needed for boat trailers, there is room for an overflow parking area to accommodate up to 100 more parking spaces. Because the additional parking spaces would only be needed during busy summer weekends, the overflow parking lot could be surfaced with gravel to save costs.

ROADS AND PEDESTRIAN WALKWAYS

- Realign entry road to accommodate new interpretive and education center and future uses.
- Pave roads to marina and campground.

All main roads throughout the site would be paved with asphalt. Some existing stretches of dirt road could be removed to re-grade and restore some ground to natural vegetation. Pedestrian walkways would be constructed with crushed gravel, except for in the highly developed areas of the marina. The entry road would be relocated or realigned to allow for more constructible space where the terrain is flat.

UTILITIES

Utilities lines for buildings and restrooms would be installed and maintained for water, sewer, and power on the site.



Example of swim platform at Fort Spokane swim area

SWIM BEACH AND DAY-USE

- Develop picnic area adjacent to swim beach that is large enough to accommodate groups.
- Consider adding to the swim beach a swim platform and a buoy swim barrier.
- Develop picnic area adjacent to interpretive exhibit that is large enough to accommodate groups.
- Construct covered picnic shelter on swim beach.
- Construct restroom associated with swim beach day-use.

Two day-use/picnic area locations would be constructed. A picnic area associated with an interpretive exhibit at an overlook of Crescent Bay would be large enough to accommodate groups. It would have a view of the bay and surroundings. The other picnic area would be associated with the swim beach, as part of a more elaborate day use area with restrooms and a shelter.

In the existing swim area the addition of a buoy swim barrier would prevent boats from parking on the swim beach and would increase the safety and passivity of the swim area. A swim platform would be considered, if found to be compatible with patrol and maintenance systems.

FISHING PIER

- Construct accessible fishing pier with ADA parking spaces next to day-use area.
- The fishing pier would be small, constructed with durable material similar to the recreation area courtesy docks and piers. ADA parking spaces would be needed adjacent to the pier.

CAMPING

- Construct campground with restrooms.

A proposed campground would be modeled after the existing Hawk Creek facility which has 20 campsites, each with a table, tent pad, fire ring and parking spot. A covered picnic shelter in the day-use area adjacent to the campground would be developed in order to address any concern of lack of shade on the site. A primitive restroom for the campground would be separate from a restroom associated with the day-use area.



Hawk Creek

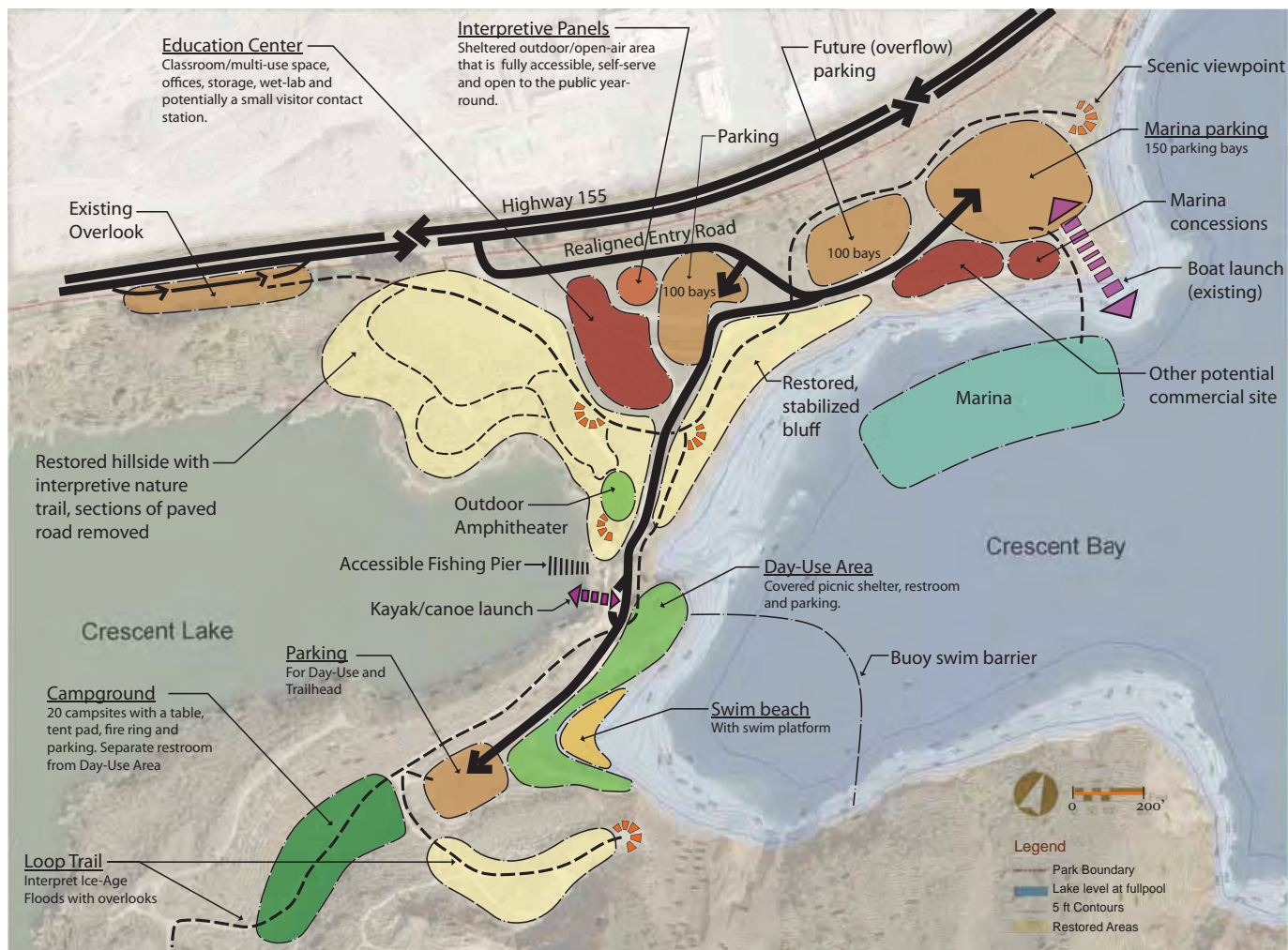
The campground would be located adjacent to the existing informal swim beach where there is a large flat open area between the swim beach and Crescent Lake. The campground would include walk-in campsites on the narrow hill between the campground and the lake for campers interested in a view of the lake and a more primitive experience.

TRAILS

- Construct interpretive loop trail with overlooks that interpret the ice-age flood.
- Locate trailhead near the swim beach day-use area.
- Designate the overlooks as the “Eden Overlook” and the “Crescent Bay Overlook.”
- Construct a portion of the pilot shoreline trail between Crescent Bay and Spring Canyon.
- Construct trail connecting the entry day-use area to the town of Grand Coulee.

An interpretive walk with overlooks showing views of Lake Roosevelt and Crescent Lake could tell the story of the ice-age floods. Short trails would connect the various park facilities in the immediate surroundings of Crescent Bay. A longer loop trail could be considered that covers a larger area of the recreation area near Crescent Bay moving over the hills east of the bay. The important overlooks and viewpoints would have small interpretive elements constructed where most appropriate. The trailhead would be located near the swim beach day-use area. Parking would be shared with the day use facilities.

A longer distance trail from Crescent Bay to Spring Canyon would continue to be explored. The trail would start at the Crescent Bay day use area, wind up among the hills to the east, pass through the Eden Harbor area, and find a way through two housing developments located on bluffs above Lake Roosevelt before ending up at Spring Canyon. The first half of the trail (1.5 miles) would be through NPS land. The second half of the trail (approximately 3 miles depending on route) would be located on public (NPS) and private land. The Crescent Bay to Eden Harbor segment would be constructed in the first phase. The trail would be on public land and could be a loop trail of up to three miles, moving through the diverse sagebrush biological community and providing views from the hillsides of the surrounding lake.



CONCEPT 1 - CRESCENT BAY DEVELOPMENT ALTERNATIVE PLAN



Native sagebrush shrub-steppe plant community of the Columbia River Plateau

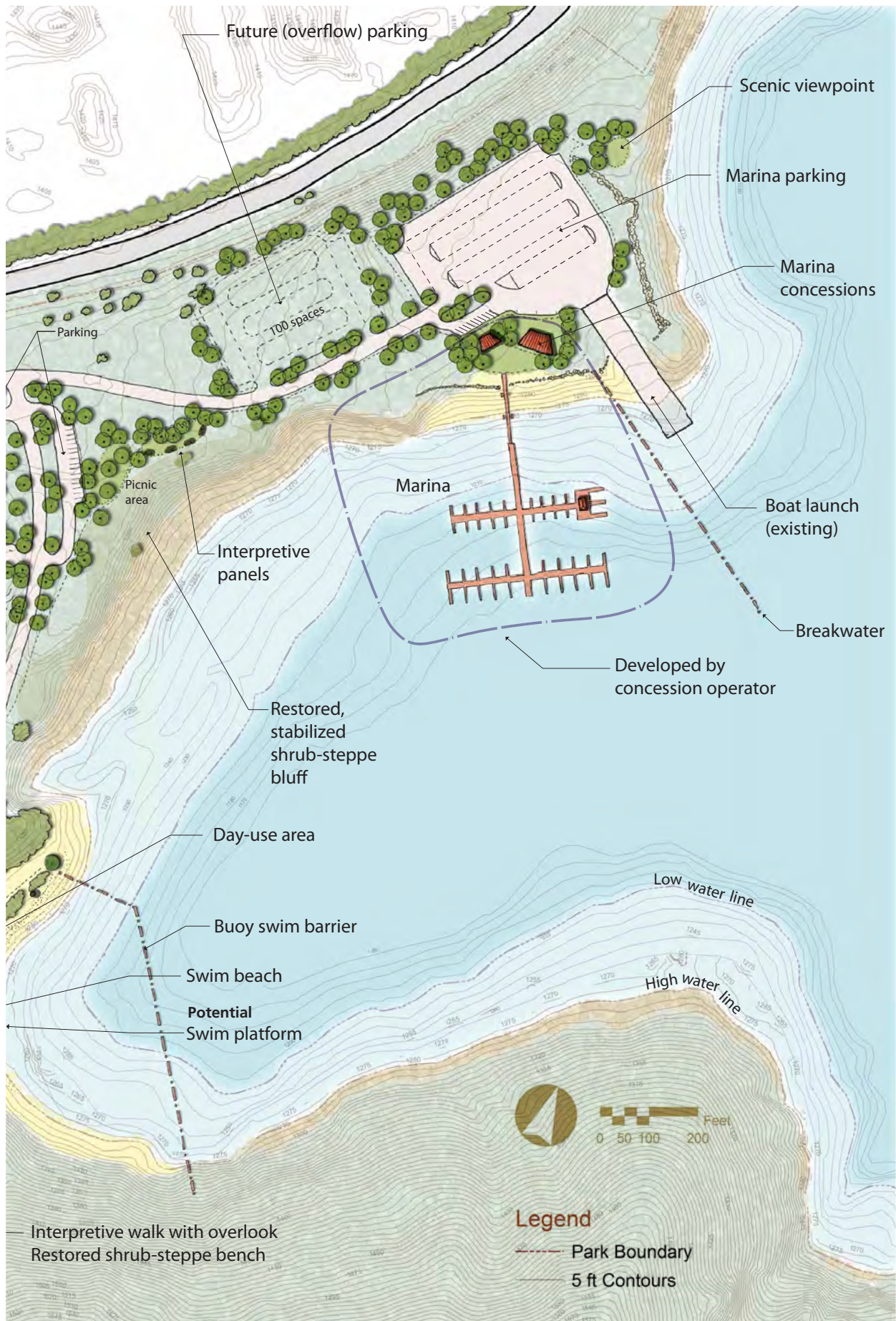
RESTORATION

- Remove sections of paved road adjacent to the entry area.
- Restore hillside adjacent to the entry area.
- Restore steep bluff encircling bay.
- Restore area surrounding the interpretive trail leading to the Crescent Bay Overlook.

Three main areas have been delineated for potential restoration where native vegetation has been degraded due to previous land use. The largest area includes the hillside adjacent to the facility entrance where some sections of paved road could be removed to both simplify circulation as well as allow the restoration of the natural topography and vegetation. The other areas that could be restored include the steep bluff section of land encircling the bay as well as a section of hillside south of the swim beach where there is potential to install an interpretive trail leading to the Crescent Bay Overlook.

CONCEPT 1 – CONCEPTUAL DESIGN OF PREFERRED ALTERNATIVE





Concept 2 – Alternative D

INTERPRETIVE/EDUCATION CENTER

- Construct outdoor interpretive exhibit.

The outdoor interpretive exhibit would be a sheltered/open-air area with interpretive panels that are accessible year-round, un-staffed/self-serve and open to the public. This type of exhibit would require minimum maintenance while providing an orientation point for the public. The interpretive panels would be sited at a viewpoint overlooking Crescent Bay, Grand Coulee Dam and the proposed marina.

BOAT LAUNCH

- Formalize existing informal kayak/canoe launch.

The proposed formalized launch would accommodate one canoe/kayak at a time. It would stay in its current location adjacent to the main road and across from the existing informal swim beach. This location slopes gently from the road to the lake, and is next to a large flat area set off from the road that could be used for staging.

PARKING

- Develop parking area to accommodate maximum number of parking spaces by boat launch.
- Develop separate, smaller parking areas adjacent to interpretive exhibit and swim beach day-use area.
- Pave and maintain the boat launch parking area (150 spaces).
- Set aside an overflow parking area to accommodate up to an additional 100 parking spaces.
- Develop separate, smaller parking areas adjacent to the interpretive/education center, day-use areas, and fishing pier.
- Where practical, parking lots will include adjacent shade trees and other measures to shade cars, reduce the impact of reflective heat and intercept rainfall.

Adjacent to the existing boat launch, the existing parking would be improved before or during construction of the proposed full-service marina. 150 parking stalls will fit in an expanded area roughly corresponding to the existing parking, assuming the parking lot will be paved and striped. If additional parking spaces are needed for boat trailers, there is room for an overflow parking area to accommodate up to 100 more parking spaces. Because the additional parking spaces would only be needed during busy summer weekends, the overflow parking lot could be surfaced with gravel to save costs.

ROADS AND PEDESTRIAN WALKWAYS

- Pave entry road; alignment remains as is.
- Pave road to marina and swim beach.

All main roads throughout the site would be paved with asphalt. Some existing stretches of dirt road could be removed to re-grade and restore some ground to natural vegetation. Pedestrian walkways would be constructed with crushed gravel, except for in the highly developed areas of the marina. The existing entry road would remain where it is currently sited.

UTILITIES

Utilities lines for buildings and restrooms would be installed and maintained by NPS for water, sewer, and power on the site.

SWIM BEACH AND DAY-USE

- Develop picnic area adjacent to swim beach.
- Develop large picnic/day use area encompassing the outdoor interpretive panels.

Two day-use/picnic area locations would be constructed. A large picnic area associated with the outdoor interpretive panels at an overlook of Crescent Lake would be large enough to accommodate groups. It would include a picnic shelter with a view of the lake and surroundings. A dog-friendly loop trail would be connected to the area.

The other picnic area would be associated with the swim beach, as part of a more elaborate day use area with restrooms. In the existing swim area the addition of a buoy swim barrier would prevent boats from parking on the swim beach and would increase the safety and passivity of the swim area. A swim platform would be considered, if found to be compatible with patrol and maintenance systems.

FISHING PIER

- Construct accessible fishing pier with ADA parking spaces next to day-use area.
- The fishing pier would be small, constructed with durable material similar to the recreation area courtesy docks and piers. ADA parking spaces would be needed adjacent to the pier.

CAMPING

There would be no camping in this alternative.

TRAILS

- Construct interpretive walk with overlooks that interpret the ice-age flood
- Designate the overlooks as the “Eden Overlook” and “Crescent Bay Overlook”
- Construct trail to connect the day-use area to Grand Coulee pedestrians
- Construct dog-friendly loop-trail on hillside adjacent to facility entrance

An interpretive walk with overlooks showing views of Lake Roosevelt and Crescent Lake would tell the story of the ice-age floods. Short trails would connect the various park facilities in the immediate surroundings of Crescent Bay. A longer loop trail could be considered that covers a larger area of the recreation area near Crescent Bay moving over the hills east of the bay. The important overlooks and viewpoints would have small interpretive elements constructed where most appropriate. The trailhead would be located near the swim beach day-use area. Parking would be shared with the day use facilities.

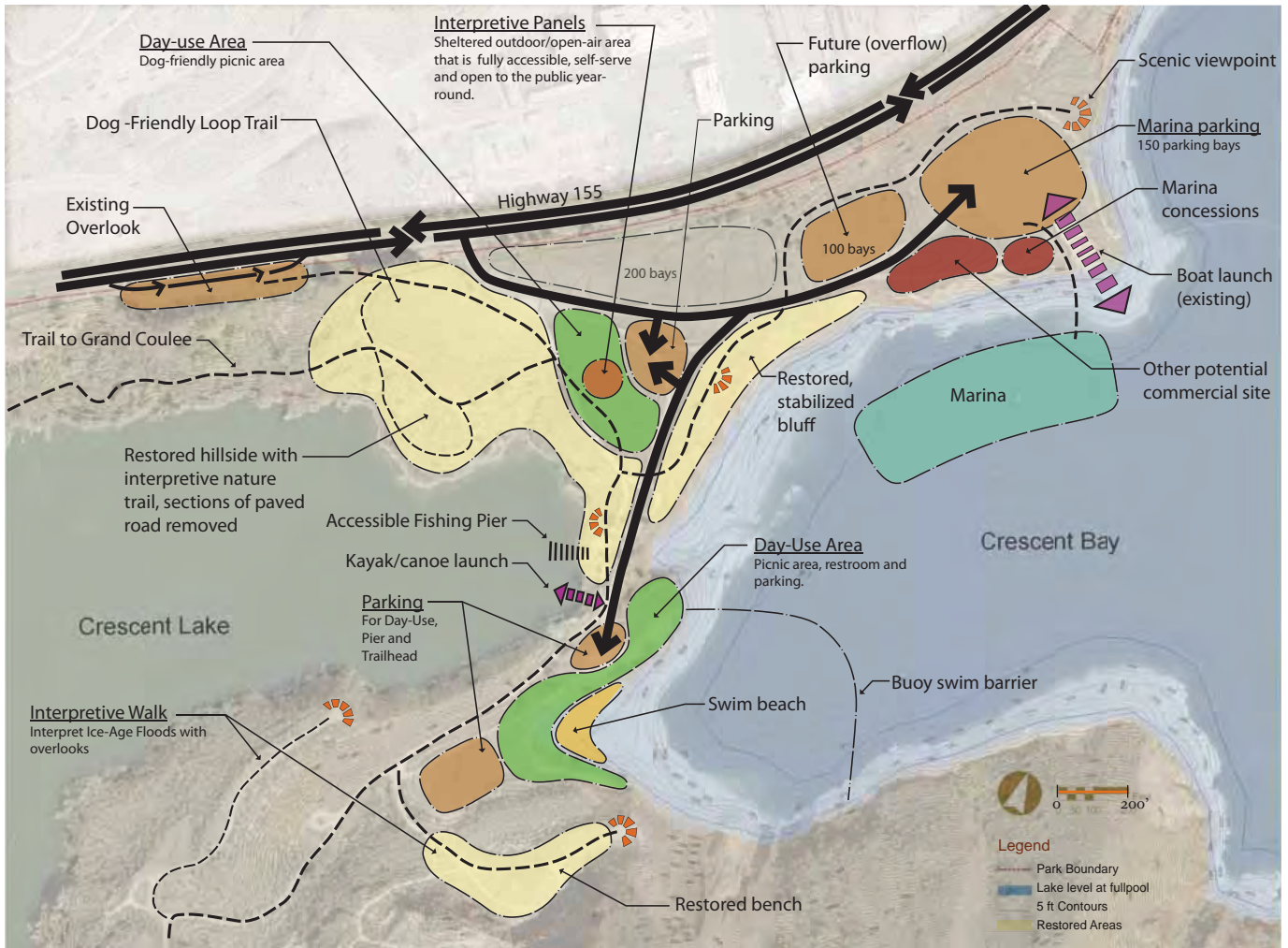
Dogs would be allowed in the entry picnic area and on a dog-friendly loop trail nearby. The authority to allow pets in any unit of the National Park System is contained in 36 CFR 2.15 Pets. The Superintendent via the *Superintendent’s Compendium* can designate specific dog walking areas.



RESTORATION

- Remove sections of paved road adjacent to the main entry area
- Restore hillside adjacent to the main entry area
- Restore steep bluff encircling bay

Three main areas, similar to Concept 1, have been delineated for potential restoration where native vegetation has been degraded due to previous land use. The largest area includes the hillside adjacent to the facility entrance where some sections of paved road could be removed to both simplify circulation as well as allow the restoration of the natural topography and vegetation. The other areas that could be restored include the steep bluff section of land encircling the bay as well as a section of hillside south of the swim beach where there is potential to install an interpretive trail leading to the Crescent Bay Overlook.

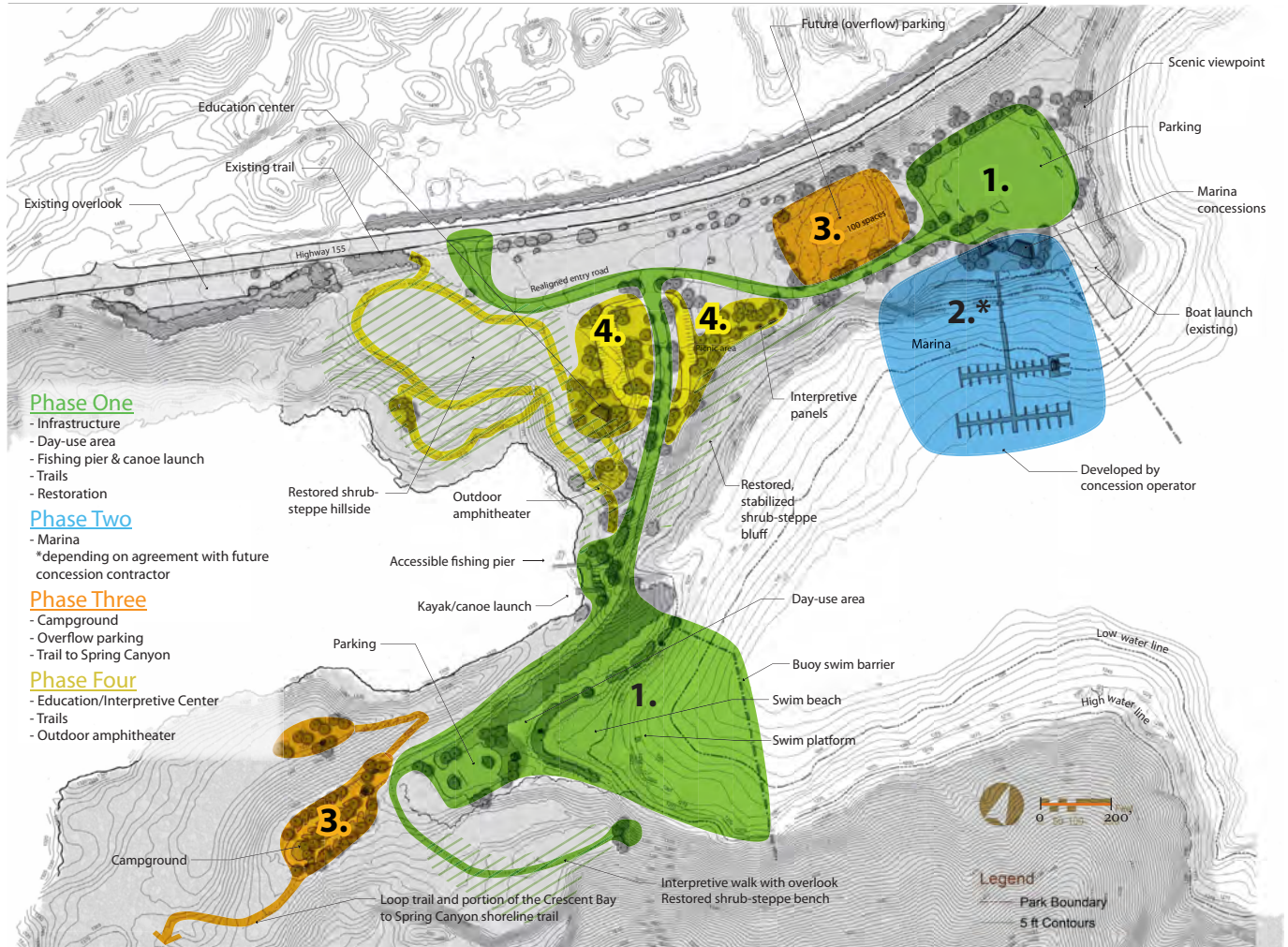


CONCEPT 2 - CRESCENT BAY DEVELOPMENT ALTERNATIVE PLAN

D. Phasing and Costs

Without immediately available funds for the entire project and a quick contract with a well-funded private concessionaire, the Crescent Bay development would be constructed in phases.

PREFERRED CRESCENT BAY ALTERNATIVE PHASING PLAN



This proposed phasing plan recognizes changes may occur between plan publication and implementation. The NPS would maintain flexibility in constructing the Crescent Bay development to facilitate implementation and a partnership with a concessionaire. Many aspects of Phase 2, development of a full-service marina, are beyond the control of the NPS and may not be implemented in the recommended order.

PHASE 1 – CRESCENT BAY INFRASTRUCTURE AND DAY USE AREA

Entry road, marina parking, fishing pier, canoe launch, swim beach, day use area, trails, utilities and restoration

Total \$932,000

PHASE 2 – FULL-SERVICE MARINA (BY OTHERS)

Docks, courtesy docks, fueling station, restaurant and convenience store, office, restrooms

by others

PHASE 3 – CAMPGROUND AND PARKING

Small campground, spur trail to Eden Harbor, overflow parking for marina

Total \$340,000

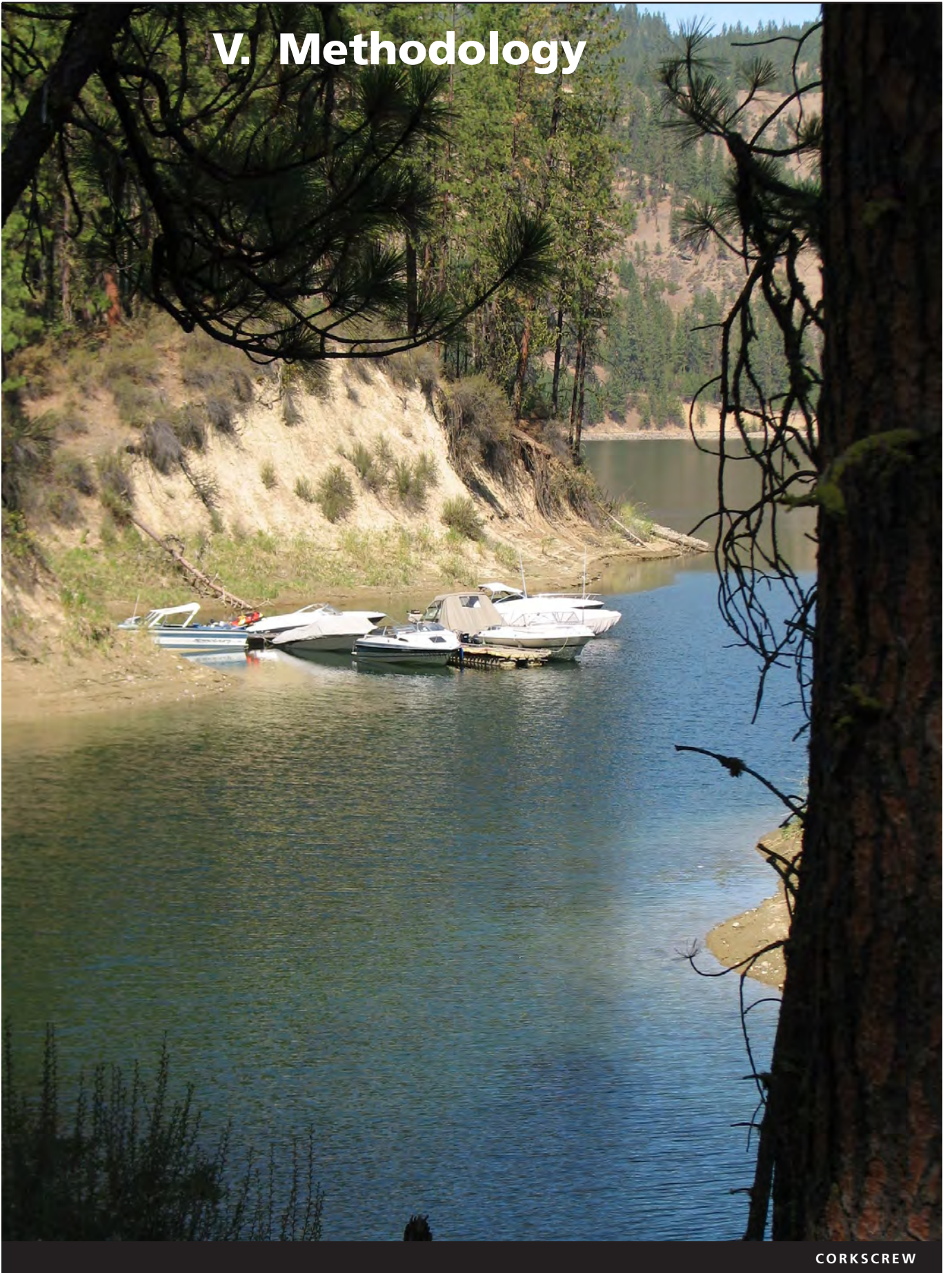
PHASE 4 – EDUCATION CENTER

Education center w/ wetlab, office, classroom, parking, interpretive panels, picnic area, trails, outdoor amphitheater

Total \$1,066,000

Cost estimates associated with the project’s phasing are based on the preferred conceptual plan of Crescent Bay development and are preliminary in nature. The estimates are based on 2009 construction costs. Inflation, programmatic changes, funding sources and the future concessions agreement may change the actual construction costs before construction begins.

V. Methodology



How Chapter V Is Organized

A. Impact Topics

Specific impact topics were developed to address potential natural, cultural, recreational, social and park operations impacts that might result from the Alternatives as identified by the public, NPS, and other agencies, and to address federal laws, regulations and executive orders, and NPS *Management Policies* (NPS 2006). A brief rationale for the selection or non-selection of each impact topic is given in this section.

B. Methodology

This section contains the methods/criteria used to assess impacts for specific resource topics. Additional information is found in the Environmental Consequences section preceding impact analysis. The definitions of impacts adhere to those generally used under the NEPA to describe impacts as well as to those used under Section 106 of the National Historic Preservation Act (NHPA) and those used under Section 7 of the Endangered Species Act (ESA).

A. Impact Topics



Lot overlooking Marcus Island area with a view of the lake

Impact Topics Analyzed

Impacts of each alternative have been analyzed for the following topics: soils; water resources, including wetlands and water quality; vegetation; wildlife; special status species; prehistoric and historic archeological resources; historic structures; cultural landscapes; visitor experience; and park operations.

PHYSICAL RESOURCES

LAND USE: While the overriding land use would remain as park lands, some land use would change as a result of the implementation of the alternatives described herein. Additional facilities would be constructed where there are now none.

AIR QUALITY: Lake Roosevelt is a class II area under the Clean Air Act. The Clean Air Act states that park managers have an affirmative responsibility to protect park air quality related values (including visibility, plants, animals, soils, water quality, cultural resources and visitor health) from adverse air pollution impacts. The park area has been designated a class II area for purposes of controlling increases in air pollution under the Clean Air Act. Class II areas allow only moderate increases in certain air pollutants. Some actions within the alternatives would result in ground disturbance and the potential for negligible to minor localized impacts to air quality.

SOILS: NPS *Management Policies* (2006) require the NPS to understand and preserve and to prevent, to the extent possible the unnatural erosion, physical removal, or contamination of the soil. The alternatives involve ground-disturbing activities with the potential for erosion impacts to occur with excavation and the potential for soil erosion.

WATER RESOURCES: The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act (CWA) (1977) is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, to enhance the quality of water resources, and to prevent, and control, and abate water pollution. *Management Policies* (NPS 2006) provide direction for the preservation, use, and quality of water in national parks.

The CWA is a national policy aimed at restoring, maintaining, and enhancing the chemical, physical, and biological integrity of the nation's waters and to prevent, control, and abate water pollution. Construction will result in earth disturbing activities, which increases the potential for erosion and sedimentation to occur.

Water Quality: Section 401 of the CWA as well as NPS policy requires analysis of impacts on water quality. Ongoing localized impacts to water quality are likely occurring from the inadequate disposal of human waste on the Lake Roosevelt shoreline. Actions in the alternatives address this issue.

BIOLOGICAL RESOURCES

VEGETATION: NEPA calls for examination of the impacts on the components of affected ecosystems. NPS *Management Policies* (2006) call for protecting the natural abundance and diversity of park native species and communities, including avoiding, minimizing or mitigating potential impacts from proposed projects. Actions within the alternatives would result in vegetation removal.

WILDLIFE: NEPA calls for examination of the impacts on the components of affected ecosystems. NPS policy is to protect the natural abundance and diversity of park native species and communities, including avoiding, minimizing or mitigating potential impacts from proposed projects. More than 300 native species of terrestrial and aquatic vertebrates have been recorded in the park, including 75 mammals, 200 birds, and 10 species of amphibians and 15 species of reptiles. Many wildlife species may reside in or near the area that would be affected by the Shoreline Management Plan.

SPECIAL STATUS SPECIES: The Endangered Species Act (ESA) requires an examination of impacts to all federally listed threatened or endangered species. *Management Policies* (NPS 2006) call for an analysis of impacts to state-listed threatened or endangered species and federal candidate species. Under the ESA, the NPS is mandated to promote the conservation of all federal threatened and endangered species and their critical habitats within the park boundary. NPS *Management Policies* include the additional stipulation to conserve and manage species proposed for listing. Ongoing informal consultation with the U.S. Fish and Wildlife Service, and Washington Department of Fish and Wildlife has identified several important rare, threatened and endangered species that occur in LARO that could potentially be affected by proposed actions.

CULTURAL RESOURCES (HISTORIC PROPERTIES)

PREHISTORIC AND HISTORIC ARCHEOLOGICAL RESOURCES/HISTORIC STRUCTURES/

CULTURAL LANDSCAPES: Consideration of the impacts to historic properties is required under provisions of Section 106 of the NHPA (1966), as amended, and the 1995 Programmatic Agreement among the National Park Service, the National Conference of State Historic Preservation Officers, and the Advisory Council on Historic Preservation (ACHP). It is also required under NPS *Management Policies* (NPS 2006).

Conformance with the Archeological Resources Protection Act in protecting known or undiscovered archeological resources is necessary. NPS *Management Policies* (2006) call for ongoing inventory and analysis of the significance of archeological resources found within parks.

Federal land managing agencies are also required to consider the effects proposed actions have on properties listed in, or eligible for inclusion in, the National Register of Historic Places (i.e., Historic Properties), and allow the ACHP a reasonable opportunity to comment. Agencies are required to consult with federal, state, local, and tribal government/organizations, identify historic properties, assess adverse effects to historic properties, and negate, minimize, or mitigate adverse effects to historic properties while engaged in any federal or federally assisted undertaking (36 CFR Part 800).

RECREATIONAL/SOCIAL RESOURCES

VISITOR EXPERIENCE: Depending on the selected alternative, a variety of impacts to visitor use may occur. Based on NPS *Management Policies* (NPS 2006), impacts to visitors are considered with respect to park undertakings. Among the impacts considered in this section are visitor access and opportunities, safety, and scenic resources.

PARK OPERATIONS: Impacts to park operations and visitor services are often considered in Environmental Assessments to disclose the degree to which proposed actions would change park management strategies and methods and what additional costs (including staffing) are associated with the proposal.

SOCIOECONOMICS: Socioeconomic impact analysis is required, as appropriate, under NEPA and *Management Policies* (NPS 2006) pertaining to gateway communities. The local and regional economy and most business of the communities surrounding the park are based on tourism and resource use. Agriculture, manufacturing, professional services, and education also contribute to regional economies. There would likely be some measurable effects to regional or gateway community economies, or changes in visitor attendance or visitor spending patterns as a result of the implementation of the actions described herein.

Impact Topics Dismissed From Further Analysis

The topics listed below either would not be affected or would be affected only negligibly by the alternatives evaluated in this Environmental Assessment. Therefore, these topics have been dismissed from further analysis. Negligible effects are localized effects that would not be detectable over existing conditions.

WATER RESOURCES

WATER QUANTITY: The increased/decreased use of water to provide for public use may also have an impact on park resources, such as amphibians. A slight (negligible) increase in the use of water would occur with the Crescent Bay campground in Alternatives B and C.

WETLANDS: Executive Order 11990 requires that impacts to wetlands be addressed. No wetlands would be affected by the proposals in this Environmental Assessment. Due to the fluctuating nature of the reservoir, few perennial wetlands exist along the shoreline. Wetlands were mapped by the National Wetlands Inventory (USFWS 1987). Jurisdictional wetlands are found at Colville Flats (north portion of the lake) and Mill Creek (south side of Spokane River). Other potential wetlands are located west of Lincoln Mill, along the south shore bluff, in an area immediately below the Little Dalles on the west shore and in an area in the Kettle River corridor south of Barstow (NPS 2000: 60). No wetlands would be affected by the actions in the Alternatives in this Environmental Assessment.

FLOODPLAINS: Executive Order 11988 (Floodplain Management) requires an examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. NPS *Management Policies*, DO-2 (Planning Guidelines), and DO-12 (Conservation Planning, Environmental Impact Analysis, and Decision Making) provide guidelines for proposals in floodplains. Executive Order 11988 requires that impacts to floodplains be addressed. Although all areas within the national recreation area that are below the 1,290 maximum pool elevation are within the floodplain of Lake Roosevelt, flooding is not a concern because it is controlled by Grand Coulee Dam and at other upriver dams and thus is predictable and occurs slowly. Park facilities within this area, such as docks and boat ramps, are designed to withstand fluctuating lake levels. Shoreline facilities comprise an exception to the Floodplain Management Guideline because they are recreational facilities that must occur near water. No overnight use is proposed in areas that would be subjected to an unpredictable rise in floodwaters.

FLASH FLOODS: The potential for flash flood in the tributaries and side canyons of the lake exists, but no evidence of flash flooding has occurred to date. Therefore, this impact topic has been dismissed from further analysis.

GEOLOGIC PROCESSES/GEOTHERMAL RESOURCES/GEOLOGICAL HAZARDS

There would be no increase or decrease in potential impacts associated with geology or geological hazards from the impacts of the proposed plan. Ongoing geological hazards associated with shoreline erosion would continue, but would not be influenced by the implementation of the alternatives.

AMERICAN INDIAN RELIGIOUS AND TRADITIONAL CULTURAL RESOURCES

Analysis of impacts to known resources is important under the NHPA and other laws, including the Native American Graves Repatriation Act (NAGPRA), American Indian Religious Freedom Act (AIRFA) and Executive Order 13007 (Indian Sacred Sites). The NPS defines American Indian traditional cultural (ethnographic) resources as any “site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it” (DO-28, Cultural Resource Management Guideline, p. 181). Traditional cultural properties are ethnographic resources listed on or eligible for the National Register of Historic Places.

There are two federally recognized tribes associated with the park, including the:

- Confederated Tribes of the Colville Reservation, and the
- Spokane Tribe of the Spokane Reservation.

Based on ongoing consultation, there have been no ethnographic resources found or identified in the proposed project area to date (also see “Chapter Eight: Consultation and Coordination”). Thus, there would be no effect on any known ethnographic resources as a result of the implementation of the proposed project under any of the alternatives in this Environmental Assessment.

To comply with the American Indian Religious Freedom Act (AIRFA), federal agencies must consider the effects of their actions on American Indian traditional religious practices. Based on analysis of the area of potential effects, there are no known traditional or religious use areas within the proposed project area. In addition, there are no known Indian sacred sites that would require compliance with Executive Order 13007. Areas that have potentially significant cultural/tribal resources have been excluded from proposed actions in this Environmental Assessment.

MUSEUM COLLECTIONS

Management Policies (NPS 2006) and other cultural resources laws identify the need to evaluate effects on NPS collections if applicable. The collections at LARO would not be affected by the proposed project, except by the potential addition of material to the collections if any is found (see mitigation measures under “Archeological Resources” in the “Environmental Consequences” chapter). Requirements for the management of museum objects are defined in 36 CFR 79.

PRIME AND UNIQUE FARMLANDS

Although soil surveys have not been conducted in most of LARO, no unique agricultural soils are believed to exist in this area.

ENERGY CONSUMPTION

Implementation of the proposed actions would not cause measurable increases or decreases in the overall consumption of electricity, propane, wood, fuel oil, gas or diesel associated with visitation or for park operations and maintenance.

ENVIRONMENTAL JUSTICE

Executive Order 12898 requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. This Executive Order does not apply to the subject of this Environmental Assessment. The actions evaluated in this Environmental Assessment would not adversely affect socially or economically disadvantaged populations.

B. Methodology



Marina at Kettle Falls

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of the proposed federal action, reasonable alternatives to that action, and any adverse environmental effects that cannot be avoided should the proposed action be implemented. NEPA requires consideration of context, intensity and duration of impacts, indirect impacts, cumulative impacts, and measures to mitigate impacts. In addition to determining the environmental consequences of the alternatives, NPS *Management Policies* (NPS 2006) and Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision-making require analysis of potential effects to determine if actions would impair park resources.

This section provides the reasoning associated with the analysis of the environmental impacts of project alternatives on affected park resources.

Environmental Impact Analysis

The analysis in the Environmental Consequences section compares the effects of the alternatives based on the following definitions of context, type of impact, duration of impact, and area of impact as well as cumulative impacts. Unless otherwise stated or demonstrated in the resource section in Environmental Consequences, analysis is based on a qualitative assessment of impacts.

CONTEXT

Setting within which impacts are analyzed – such as the project area or region, or for cultural resources – the area of potential effects.

TYPE OF IMPACT

A measure of whether the impact will improve or harm the resource and whether that harm occurs immediately or at some later point in time.

- **Beneficial:** Reduces or improves impact being discussed.
- **Adverse:** Increases or results in impact being discussed.
- **Direct:** Caused by and occurring at the same time and place as the action, including such impacts as animal and plant mortality, damage to cultural resources, etc.
- **Indirect:** Caused by the action, but occurring later in time at another place or to another resource, including changes in species composition, vegetation structure, range of wildlife, offsite erosion or changes in general economic conditions tied to park activities.

DURATION OF IMPACT

Duration is a measure of the time period over which the effects of an impact persist. The duration of impacts evaluated in this Environmental Assessment may be one of the following:

- **Short-term:** Often quickly reversible and associated with a specific event, one to five years
- **Long-term:** Reversible over a much longer period, or may occur continuously based on normal activity, or for more than five years.

AREA OF IMPACT

- **Localized:** Detectable only in the vicinity of the activity
- **Widespread:** Detectable on a landscape scale (beyond the affected site)

CUMULATIVE

The Council on Environmental Quality (CEQ) describes a cumulative impact as follows (Regulation 1508.7):

A “Cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The cumulative projects addressed in this analysis include past and present actions, as well as any planning or development activity currently being implemented or planned for implementation in the reasonably foreseeable future. Cumulative actions are evaluated in conjunction with the impacts of an alternative to determine if they have any additive effects on a particular resource. Because most of the cumulative projects are in the early planning stages, the evaluation of cumulative impacts was based on a general description of the project. Among the projects considered in the cumulative impacts analysis include the following. descriptions of many of these are provided in “Chapter Two: Purpose and Need”:

- *General Management Plan* (NPS 2000)
- *Programmatic Environmental Impact Statement and a Draft Supplemental EIS: Lake Roosevelt Incremental Storage Releases Program* (2008)
- *Lake Roosevelt Shoreline Management Waterfront Facilities Draw down Impact Study* (KPF Consulting Engineers 2008) (See “Chapter II: Purpose and Need” for a description of this study.)
- *Livestock Management Plan and Environmental Assessment* (2005)

- *Fire Management Plan* (Update 2009)
- *Concessions Management Plan* (1991)
- *Invasive Plant Management Plan* (in prep.)

IMPACT MITIGATION

- Avoid conducting management activities in an area of the affected resource
- Minimize the type, duration or intensity of the impact to an affected resource
- Mitigate the impact by
 - Repairing localized damage to the affected resource immediately after an adverse impact
 - Rehabilitating an affected resource with a combination of additional management activities
 - Compensating a major long-term adverse direct impact through additional strategies designed to improve an affected resource to the degree practicable.

ALL IMPACTS EXCEPT SPECIAL STATUS SPECIES AND CULTURAL RESOURCES

Note: Special Status Species and Cultural Resources impact determinations are formally determined under the Endangered Species Act (Section 7) and the National Historic Preservation Act (Section 106), respectively.

- **NEGLIGIBLE:** Measurable or anticipated degree of change would not be detectable or would be only slightly detectable. Localized or at the lowest level of detection.
- **MINOR:** Measurable or anticipated degree of change would have a slight effect, causing a slightly noticeable change of approximately less than 20 percent compared to existing conditions, often localized.
- **MODERATE:** Measurable or anticipated degree of change is readily apparent and appreciable and would be noticed by most people, with a change likely to be between 21 and 50 percent compared to existing conditions. Can be localized or widespread.
- **MAJOR:** Measurable or anticipated degree of change would be substantial, causing a highly noticeable change of approximately greater than 50 percent compared to existing conditions. Often widespread.

Note: Cultural resources impacts are also initially characterized as noted above, however the conclusion follows the format below, and makes a formal determination of effect under Section 106 of the National Historic Preservation Act. In accordance with National Park Service *Management Policies* (2006), the analysis in this Environmental Assessment fulfills the responsibilities of the National Park Service under Section 106 of the National Historic Preservation Act.

SPECIAL STATUS SPECIES IMPACTS

- **No Effect:** The project (or action) is located outside suitable habitat and there would be no disturbance or other direct or indirect impacts on the species. The action will not affect the listed species or its designated critical habitat (USFWS 1998).
- **MAY AFFECT, NOT LIKELY TO ADVERSELY AFFECT:** The project (or action) occurs in suitable habitat or results in indirect impacts on the species, but the effect on the species is likely to be entirely beneficial, discountable, or insignificant. The action may pose effects on listed species or designated critical habitat but given circumstances or mitigation conditions, the effects may be discounted, insignificant, or completely beneficial. Insignificant effects would not result in take. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not 1) be able to meaningfully measure, detect, or evaluate insignificant effects or 2) expect discountable effects to occur (USFWS 1998).
- **MAY AFFECT, LIKELY TO ADVERSELY AFFECT:** The project (or action) would have an adverse effect on a listed species as a result of direct, indirect, interrelated, or interdependent actions. An adverse effect on a listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (USFWS 1998).

CULTURAL RESOURCES IMPACTS

- **No Effect:** There are no historic properties in the Area of Potential Effect (APE); or, there are historic properties in the APE, but the undertaking will have no impact on them.
- **NO ADVERSE EFFECT:** There will be an effect on the historic property by the undertaking, but the effect does not meet the criteria in 36 CFR Part 800.5(a) (1) and will not alter characteristics that make it eligible for listing on the National Register. The undertaking is modified or conditions are imposed to avoid or minimize adverse effects. This category of effects is encumbered with effects that may be considered beneficial under NEPA, such as restoration, stabilization, rehabilitation, and preservation projects.
- **ADVERSE EFFECT:** The undertaking will alter, directly or indirectly, the characteristics of the property making it eligible for listing on the National Register. An adverse effect may be resolved by developing a memorandum or program agreement in consultation with the SHPO, ACHP, American Indian tribes, other consulting parties, and the public to avoid, minimize, or mitigate the adverse effects (36 CFR Part 800.6(a)).

- **SIGNIFICANT IMPACT:** An impact to a National Register historic property would be considered significant when an adverse effect cannot be resolved by agreement among SHPO, ACHP, American Indian tribes, other consulting and interested parties, and the public. The impact will diminish the integrity of location, design, setting, materials, workmanship, feeling or association characteristics that make the historic property eligible for inclusion in the National Register Historic Places. The resolution must be documented in a memorandum or programmatic agreement or the FONSI.

IMPAIRMENT

In addition to determining the environmental consequences of the alternatives, NPS *Management Policies* (NPS 2006) and Director's Order-12, Conservation Planning, Environmental Impact Analysis, and Decision-making, require analysis of potential effects to determine if actions would impair park resources. The following sections from *Management Policies* define impairment and highlight the difference between an impact and impairment.

1.4.3 The NPS Obligation to Conserve and Provide for Enjoyment of Park Resources and Values

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. This mandate is independent of the separate prohibition on impairment and applies all the time with respect to all park resources and values, even when there is no risk that any park resources or values may be impaired. NPS managers must always seek ways to avoid, or to minimize to the greatest extent practicable, adverse impacts on park resources and values. The laws do give the Service the management discretion, however, to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impact does not constitute impairment of the affected resources and values.

The fundamental purpose of all parks also includes providing for the enjoyment of park resources and values by the people of the United States. The enjoyment that is contemplated by the statute is broad; it is the enjoyment of all the people of the United States and includes enjoyment both by people who visit parks and by those who appreciate them from afar. It also includes deriving benefit (including scientific knowledge) and inspiration from parks, as well as other forms of enjoyment and inspiration. Congress, recognizing that the enjoyment by future generations of the national parks can be ensured only if the superb quality of park resources and values is left unimpaired, has provided that when there is a conflict between conserving resources and values and providing for enjoyment of them, conservation is to be predominant. This is how courts have consistently interpreted the Organic Act.

1.4.4 The Prohibition on Impairment of Park Resources and Values

While Congress has given the Service the management discretion to allow impacts within parks, that discretion is limited by the statutory requirement (generally enforceable by the federal courts) that the Park Service must leave park resources and values unimpaired unless a particular law directly and specifically provides otherwise. This, the cornerstone of the Organic Act, establishes the primary responsibility of the National Park Service. It ensures that park resources and values will continue to exist in a condition that will allow the American people to have present and future opportunities for enjoyment of them.

The impairment of park resources and values may not be allowed by the Service unless directly and specifically provided for by legislation or by the proclamation establishing the park. The relevant legislation or proclamation must provide explicitly (not by implication or inference) for the activity, in terms that keep the Service from having the authority to manage the activity so as to avoid the impairment.

1.4.5 What Constitutes Impairment of Park Resources and Values

The impairment that is prohibited by the Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and other impacts.

An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or identified in the park's general management plan or other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute an impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values and it cannot be further mitigated. An impact that may, but would not necessarily, lead to impairment may result from visitor activities; NPS administrative activities; or activities undertaken by concessioners, contractors, and others operating in the park. Impairment may also result from sources or activities outside the park . . .

1.4.6 What Constitutes Park Resources and Values

The “park resources and values” that are subject to the no-impairment standard include:

the park’s scenery, natural and historic objects, and wildlife, and the processes and conditions that sustain them, including, to the extent present in the park: the ecological, biological, and physical processes that created the park and continue to act upon it; scenic features; natural visibility, both in daytime and at night; natural landscapes; natural soundscapes and smells; water and air resources; soils; geological resources; paleontological resources; archeological resources; cultural landscapes; ethnographic resources; historic and prehistoric sites, structures, and objects; museum collections; and native plants and animals;

appropriate opportunities to experience enjoyment of the above resources, to the extent that can be done without impairing them;

the park’s role in contributing to the national dignity, the high public value and integrity, and the superlative environmental quality of the national park system, and the benefit and inspiration provided to the American people by the national park system; and

any additional attributes encompassed by the specific values and purposes for which the park was established.

1.4.7 Decision-making Requirements to Identify and Avoid Impairments

Before approving a proposed action that could lead to an impairment of park resources and values, an NPS decision-maker must consider the impacts of the proposed action and determine, in writing, that the activity will not lead to an impairment of park resources and values. If there would be an impairment, the action must not be approved.

In this Environmental Assessment determinations of impairment are provided in the conclusion section under each applicable resource topic for each alternative. Impairment determinations, however, are not made for health and safety, land use, visitor use, maintenance, operations, socioeconomic resources and other non-natural or cultural resources topics.

Mitigation Measures Incorporated into the Action Alternatives

The measures found in “Appendix 1” which are also listed under each resource section in Environmental Consequences have been developed to lessen the potential adverse effects of the action alternatives.

VI. Affected Environment



LUPINE AT STERLING POINT

Introduction



The interior area of eastern Washington is characterized by hot dry summers and cold winters. On the lake surface, small bays and coves freeze during the winter. The whole lake freezes approximately every 10 years, including in 1968, 1978, 1985, 1992, and 1997. Winter storms can be large, bringing significant snowfall.

The regulated hydrology of the lake caused by Grand Coulee Dam is important. The Bureau of Reclamation manages downstream flows from the dam to provide electric power, irrigation, water for salmon, water supply for cities and to control flooding. Although recreation needs are considered in the lake level regulation, the National Park Service does not participate in lake level decision-making. The lake level may vary up to 80 feet in elevation in a wet year: the lake is typically drawn down in the spring to provide future storage of spring runoff and snow melt.

A. Land Use



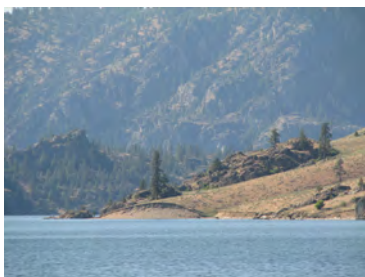
Town of Coulee Dam

Located in the northeastern corner of Washington State, Lake Roosevelt is surrounded by rural agricultural lands (primarily farming wheat, barley and lentils), numerous rural areas and several small towns. Small towns include Colville and Kettle Falls at the north end (with over 6,000 residents), and Coulee Dam, Grand Coulee and Electric City at the southwestern end (with more than 3,500 residents). Rural areas include Evans, Gifford, Cedonia, Hunters, Fruitland, and Enterprise. Nearby, but not adjacent to the recreation area are the small towns along U.S. Route 2, including Reardon, Davenport, Creston, and Almira. Spokane lies about 79 miles from Grand Coulee Dam and 85 miles from Kettle Falls and Seattle is about 230 miles southwest via Interstate 90 or U.S. Route 2. Five counties and two Indian reservations are adjacent to the recreation area. Clockwise starting at the northwest, the counties include Okanogan, Ferry, Stevens, Lincoln and Grant. The two Indian reservations are the Colville Indian Reservation in the central west, and the Spokane Indian Reservation on the central east (above the Spokane Arm of the lake). In addition to rural towns, the area supports agriculture (grain), timber production and mining.



Town of Hunters

The Confederated Tribes of the Colville Reservation and the Spokane Tribe of the Spokane Reservation are the largest surrounding landowners. In 1990, an agreement was reached that divided lake management among the NPS and the Colville and Spokane tribes. Shoreline areas within the reservations and all adjacent waters out to the centerline of the old Columbia River are managed by the tribes. The Five Party Agreement among the NPS, Bureau of Reclamation, the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and the Bureau of Indian Affairs stated purpose is to allow the tribes to manage their recreation lands in similar ways to the NPS, charging camping and boating fees and protecting large portions of shoreline.



Colville side of Lake Roosevelt across from Lincoln Mill

Land use adjacent to the reservation's shoreline is less developed than that on recreation area lands. The Colville Tribes do not allow homes within one mile of the lake shore, while the Spokane Tribe has also placed a moratorium on lake shore development outside the Two Rivers area. This lack of visible development across the lake on the reservations adds to the scenic quality from the lake and recreation area.

NPS recreation area lands are mostly comprised of Lake Roosevelt, but include surrounding shoreline areas that range from a few feet up to 0.5 miles wide. The NPS manages 312 miles of the shoreline, 47,438 acres of water and 12,936 acres of land along the shore. Seven miles of shoreline along the Kettle Falls arm and 29 miles of shoreline along the Spokane arm also make up part of the recreation area. Other shoreline and water surface areas are managed as part of the Colville Indian Reservation (managing approximately 93 miles of shoreline) and the Spokane Indian Reservation (managing approximately 37 miles of shoreline).

Surrounding lands have been dedicated to large scale ranching and agriculture since the establishment of the park. Property owners were spread thinly over a large area. Over the last twenty years, however, population growth in the region has resulted in the subdivision of large properties for homesites for both year-round residents and vacation homeowners.



Farm on Colville Reservation with Lake Roosevelt in the background

B. Air Quality



The U.S. Environmental Protection Agency has set health-based standards for six air pollutants: ozone, oxides of nitrogen, fine particulate matter less than 10 micrometers in diameter (PM₁₀), carbon monoxide, lead, and sulfur dioxide. When ambient concentrations of these pollutants exceed the standards, health problems can result. The Lake Roosevelt area is within an attainment area for national and state air quality standards for the six health-based air quality standards—ozone, oxides of nitrogen, fine particulate matter less than ten microns (PM₁₀), carbon monoxide, lead and sulfur dioxide. Attainment is based on representative air quality monitoring from nearby stations, including at Kettle Falls. Air quality related values, scenic vistas and pollution sensitive resources have not been identified.

Recreation area air quality is affected by a few pollutant sources. Among the sources of air pollution in the area include paper and pulp mills and smelter plants (sulfur dioxide, nitrogen oxides, and particulates), as well as motor vehicles and equipment. Occasional periods of high particulate concentrations occur from windblown dust from agricultural operations, unpaved roads, and exposed lake bottom areas during draw down. Other temporary air pollution impacts occur from smoke from wildland or management fires in the recreation area as well as in surrounding areas. These short-term events affect visibility (from increased particulates).

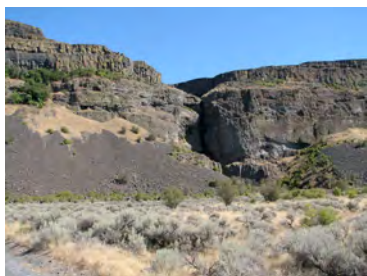
The federal Prevention of Significant Deterioration (PSD) program is designed to allow growth in areas of good air quality, without allowing pollutant concentrations to exceed the ambient air quality standards. For this program, the recreation area is a class II area, where moderate industrial growth may be allowed in the vicinity of the designated recreation area lands. The Spokane Indian Reservation and the Confederated Tribes of the Colville Indian Reservation, however, are class I areas, requiring a higher level of protection. As a result, only minimal long-term additional deterioration of air quality may occur in their vicinity.

C. Geology and Geological Hazards



Spokane Arm

Lake Roosevelt is contained within the upper Columbia River gorge and spans three distinct physiographic provinces: the Okanogan Highlands, the Kootenay Arc, and the Columbia Plateau—which has been sculpted by the Ice Age floods. The geologic features of these three regions are radically different and the juxtaposition of these landforms is a major factor that contributes to the unique character of the area (NPS 2000a: 37). In many locations, the geology is completely different from one side of the lake to the other. The Okanogan Highlands on the northwest are characterized by granites (volcanic rocks that cooled slowly underground); the Columbia Basin by basalts from massive outpourings of lava (from fissures or cracks in the earth’s surface, not volcanoes) that forced the river to change course and form a loop around the northern and western sides of the plateau; and the Kootenay Arc by metamorphic rocks and former ocean bottom sediments deposited in a trench where the North American plate overrode the Pacific plate (NPS 2000a:7, 37).



Basalt cliffs near Dry Falls

The landscape of Lake Roosevelt is dominated by the immense valley and gorge created by the Columbia River. The layers and landscapes of the Lake Roosevelt area show the geologic forces that shaped this scenery: changes that happened through gradual uplift, erosion, and occasionally—in sudden cataclysmic events. Over millions of years, intermittent lava flows created the Columbia Basin and earthquakes uplifted these basalt layers and nearby mountains that form the landscape within which Lake Roosevelt is located. The gradual erosion of these rock layers changed over time as the Cascade Mountains rose, forming a rain shadow that reduced the amount of precipitation in the Columbia Basin and nearby Okanogan Highlands (www.nps.gov/laro 2-25-08). During the last Ice Age a series of massive floods—the largest scientifically documented floods in North America—scoured the coulees (long, dry, steep-walled, trench-like gorges carved by water), channel scablands (an irregular land surface of bedrock and thin soil scoured of deep soils by flood waters), and other land forms in the Columbia Basin across eastern Washington. The floods were formed from collapsed ice dams in



Kelly Hills east of Kettle River

the Clark Fork Valley in Montana and Idaho (NPS 2000a:7). Ancient glacial Lake Missoula contained more water than some of the Great Lakes do today and about 176 times as much water as Lake Roosevelt at full pool (NPS nd:11) and were up to 700 feet deeper.

Bank erosion and landslides are common geological hazards at Lake Roosevelt. Ninety percent of the shoreline is composed of thick ice-age deposits made up of silt and sand. According to the GMP, terrace deposits on parts of the north shore of the lower reach of the reservoir near the Sanpoil River, in the middle reach near Nine-Mile Creek, Cedonia and at the mouths of the Kettle and Colville rivers have failed at hundreds of sites over the last 54 years (USGS 1961 and Schuster 1979 in NPS 2000a:58). These landslides are believed to be caused by the rapid draw down of the lake and reservoir below 1,240 feet. Risk of landslides is greatest from draw-downs greater than 50 feet, moderate for 30-50 foot draw-downs and a minor concern for 30 foot-draw-downs. As a result, the BOR has begun to limit draw-downs to 1.5 feet/day.

Landslides have resulted in the loss of private and public property and large waves on Lake Roosevelt. Four types of landslides, including slump earth flow, slip-off slope, multiple alcove and mudflow are known from Lake Roosevelt. For example, a 1952 landslide at Reed Terrace on the Spokane Arm caused the shoreline to retreat nearly 2,000 feet in one day, claiming three roads and considerable agricultural land. This landslide also caused a 65 foot high wave to cross Lake Roosevelt (USGS 1961) (NPS 2000b:80). In January of 2009, a large landslide affected docks on public lands near Mill Canyon on the Spokane River Arm. This landslide also caused a wave over 20 feet high wave to cross the Spokane Arm and erode the shore. Landslides have also been caused by landowner actions above the reservoir related to historic land use.



New home in the north Lake Roosevelt area

Bank erosion occurs when areas near the shoreline are disturbed by uncontrolled runoff from new construction. Wave erosion and freeze thaw processes also can cause bank erosion. It is estimated that bank erosion claims at least five acres/year on Lake Roosevelt (NPS 1997c in NPS 2008b:80). Slower, more gradual rates of bank recession also threaten sensitive cultural resources, campgrounds, trails, and other facilities on lower terraces near full pool elevation. Wave erosion and freeze-thaw processes are probably the main cause of gradual shoreline erosion in northern reservoirs (U.S. Army 1985; NPS 1990c in NPS 2008b:80). Surficial processes such as rilling and gullying on shorelines without vegetation are also important. Vegetation is disturbed by construction of new homes. Rills can expand to gullies when landowners fail to control site runoff. Much of the problem originates from the land occupied by single-family homes and new development (NPS 1997c in NPS 2008b:80).

D. Soils



Soils in the upper Columbia watershed reflect the geology and climate of the area. Soils found in the mountainous areas are primarily entisols, while aridosols dominate the Columbia Plateau. Detailed soil surveys from the Natural Resources Conservation Service (NRCS) are available for Ferry (1979), Stevens (1980) and Lincoln (1981) counties. These surveys provide detail on soil types and distribution as well as information on land use, erosion hazards, and engineering properties. Additional soil and surficial geological information is available for the Colville National Forest, and for some private, state, county and tribal lands within the Lake Roosevelt watershed (Riedel 1997:21).

Lake Roosevelt's shorelines are comprised of bedrock (10 percent) and thick ice age deposits (90 percent) (Jones *et al.* 1961 in Riedel 1997:21). Bedrock shorelines, found mainly on the south shore of the lower reach and in the Spokane Arm, are generally more stable than those composed of silt and sand. Terrace deposits are particularly extensive on parts of the north shore of the lower reach of the reservoir near the Sanpoil River, and in the middle reach near Ninemile Creek, Cedonia, and the mouths of the Kettle and Colville Rivers. These terraces have failed at hundreds of sites over the last 54 years (Jones *et al.* 1961 and Schuster 1979 in Riedel 1997:21).

Slower, gradual rates of erosion also threaten campgrounds, trails and other facilities located on lower terraces near the full pool elevation. Wave erosion and freeze-thaw processes, as well as vegetation loss are common causes of this erosion.

Soils at Crescent Bay were greatly disturbed from the construction of Grand Coulee Dam as well as from other activities that have taken place at the site. Soils consist of native sand and gravel interspersed with a great deal of fill and construction debris, such as concrete, asphalt and wood.



Exposed hillsides at Crescent Bay

E. Water Resources



Lake Roosevelt

The Lake Roosevelt watershed encompasses about 44,969 square miles. Eighty-eight percent of this watershed is in Canada. The lake extends more than 154 miles along the Columbia River through the national recreation area and includes the lower reaches of many rivers and streams, with approximately 132 miles within the boundary of the recreation area. Most of the water (89 percent) in the lake comes from glacial ice, lakes and snow high in the Canadian Rockies that feed the Columbia River. The national recreation area has two major tributaries, 30 miles of the 111-mile-long Spokane River in the south and 15 miles of the 175-mile-long Kettle River in the north. Smaller tributaries include the Colville and Sanpoil Rivers. Besides the Columbia River, other water in Lake Roosevelt comes from the Spokane River (7 percent) and the Colville, Kettle and Sanpoil Rivers combined (4 percent) (NPS 2000a: 59).

Full pool elevation is 1,290 feet above sea level, and minimum pool elevation is 1,208 feet. Excess runoff is discharged over the spillway at Grand Coulee Dam. At full pool, the reservoir surface covers about 81,000 acres with more than 500 miles of shoreline. Water depths range from 400 feet upstream from the dam to 14 feet below the international border. Historically, the reservoir level is highest from late June through the winter months. In the late winter and early spring, the water level is usually lowered to hold spring runoff (NPS 2000b:81).

The lake provides more than 9.4 million acre-feet of storage at any one time to support various uses such as power generation, flood control, irrigation, domestic water supply, industry, recreation, and additional flows for anadromous fish passage in the lower Columbia River. Periodic fluctuations in water level occur to accommodate these demands, sometimes leaving a draft of up to 82 feet and exposing floodplains and/or steeply eroding banks (NPS 2000b:81).

Surface water resources include Lake Roosevelt, springs and seeps, intermittent and perennial streams, and two major rivers that flow into Lake Roosevelt, the Spokane and Kettle Rivers.

Springs

Relatively few springs occur near Lake Roosevelt. The largest spring is within the Fort Spokane Military Reserve Historic District and supports domestic visitor and agency use and large-scale administrative and maintenance project needs. Ongoing monitoring of the spring's flow rates is occurring related to water usage.

Wetlands

Wetlands have been mapped for the national recreation area by the National Wetlands Inventory Program (USFWS 1987 in NPS 2008b:82-83). The two largest wetlands are at the mouths of the Kettle and Colville Rivers. Due to the fluctuating nature of the reservoir, few perennial wetlands exist along the



Colville Flats day use area

shoreline. More common are intermittent wetland areas that flood seasonally. Two areas within the national recreation area have been evaluated and delineated as jurisdictional wetlands (meeting federal criteria). These include Colville Flats in the northern portion of the lake and the Mill Creek inlet on the south side of the Spokane River. Other non-evaluated wetlands include an area west of Lincoln Mill along the south shore bluff, an area immediately below the Little Dalles on the west shore, and an area in the Kettle River corridor south of Barstow.

Surface Water Quality

Lake Roosevelt waters are classified by the State Department of Ecology as AA (extraordinary), which means that they are afforded the maximum level of protection under state water quality regulations (WAC 173, Sec. 201A) (NPS 2000a: 59). The quality of these waters shall markedly and uniformly exceed the requirements for all or substantially all uses. Characteristic uses designated for Class AA waters include, but are not limited to:

- Water supply for domestic, industrial and agricultural uses;
- Stock watering;
- Fish and shellfish (including migration, rearing, spawning, and harvesting);
- Wildlife habitat; and
- Recreation (primary contact recreation, sport fishing, boating and aesthetic enjoyment).



Kettle River

Lake Roosevelt National Recreation Area waters are designated as outstanding resource waters. The antidegradation policy of Washington State says “that water quality shall be maintained and protected in waters designated as outstanding resource waters” (Washington State Dept. of Ecology 1997 in NPS 2000).

Various water quality criteria have been established for Class AA waters, one of which includes:

“Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste” (Washington State Dept. of Ecology 1997 in NPS 2000). (Note: The impairment in this water quality standard is different from “impairment” as defined by the NPS in the Organic Act).

Water quality at Lake Roosevelt is a complex and critical resource issue. Because of its economic importance (near mining, smelting and timber), the lake is a repository for a wide range of organic and inorganic pollutants. The Spokane River, which drains into the Columbia, is the water supply for most of eastern Washington and a large part of the Idaho panhandle. Other waters drain into the lake from nearby agricultural lands (NPS 2000a: 59).

There have been concerns about water quality in the lake for several years, primarily due to a significant influx of pollutants from mining in Canada (see below) and related to a uranium mine on the Spokane Indian Reservation. There has been no regular monitoring to address pollution from boats, campgrounds, and human waste.

In 1997, according to several studies the water quality in Lake Roosevelt was generally considered poor due to point and nonpoint sources of pollution (NPS, 1997). There are two primary point sources of Canadian industrial pollution that affect the lake—the Teck Cominco lead-zinc smelter in Trail, British Columbia and the Celgar Pulp Mill in Castlegar, British Columbia. In the early 1980s, concerns about water quality in Lake Roosevelt were first reported in a USFWS study that reported elevated concentrations of arsenic, cadmium, lead, and zinc in fish. Follow-up studies identified the primary source of the contamination to be a lead-zinc smelter owned by Teck Cominco, a Canadian company with U.S. subsidiaries, on the Columbia River in British Columbia just upstream from the international boundary. Beginning in the 1950s, the smelter discharged several hundred tons of furnace slag and effluent per day into the Columbia River. At the time of the GMP, the slag discharge had almost been eliminated and a new smelter had been built.

The GMP noted that this, along with other improvements, should reduce the amounts of metals being discharged to the Columbia River (NPS 2000b:82). The current effects of these improvements are being studied as part of the Remedial Investigation/Feasibility Study.

Long-term threats to water quality remain severe (Riedel 1997:63). Threats include land use, recreational use, ongoing discharges from factories, and the existence of millions of tons of heavy metals on the bottom of Lake Roosevelt, near the international border. According to Riedel (1997:63) coarse grained sediments at the northern end of the reservoir contain higher concentrations of zinc, lead and copper; while finer grained sediments downstream have higher concentrations of mercury and cadmium.



Beach at Kettle Falls

In 1994, the Washington Department of Health issued a health advisory to lake users, recommending that the consumption of fish be limited due to toxic substances, dioxins and furans in lake water. These were attributed to the Celgar Pulp Mill, which later completed a multiyear upgrade to its facilities to reduce the potential for this contamination. Monitoring has shown a reduction in pollutant levels (NPS 2000a:60).

In June 2006, EPA released beach sediment data from samples that were collected from 15 beaches at Lake Roosevelt. In the spring of 2005, nine developed beaches within the recreation area were sampled, three beaches on the Colville and Spokane Reservations were sampled, and three beaches north of the recreation area were sampled. All 15 samples taken within the recreation area and reservations tested within acceptable health based risk standards for short-term recreational users (e.g., 14 consecutive days on one beach in the summer). The three beaches north of the recreation area had slightly elevated levels of arsenic and one of those beaches had slightly elevated levels of lead. These three beaches will be further evaluated by EPA as their study of the Upper Columbia progresses. Fish tissue analysis initial results were released in the summer of 2007 (<http://www.nps.gov/laro-2-25-08>). After reviewing the study, the Department of Health updated their fish advisory stating “fish in Lake Roosevelt contain chemicals, including mercury, that may be hazardous to your health. Women who might become pregnant, are pregnant, nursing, and young children less than six years old may be especially at risk. These individuals should limit the amount of fish they consume from Lake Roosevelt.”



Boating on the Spokane Arm

Lake Roosevelt water quality is also affected by runoff from wastewater treatment plants, nearby agriculture, logging and mining, shoreline erosion, rural and suburban development along the shoreline, poor waste disposal from recreational use and from the release of exhaust and unspent fuels from boating.

Water quality monitoring has been conducted sporadically, using various methods and sample designs since the late 1940s and 1950s (Riedel 1997:64). Broad-scale baseline water quality measurements with standardized methods were first completed in the late 1970s (Stober et al. 1981 in Riedel 1997:64). In the early 1990s, many of these baseline parameters were remeasured using the same protocols in the Stober study (Serdar 1993 in Riedel 1997:64).

Ground Water Quality

According to the GMP, groundwater resources are threatened by industry near Kettle Falls. Five wastewater disposal sites were being monitored for potential groundwater contamination. Although high concentrations of pollutants were found in soils at these sites, there has not been any confirmed contamination of groundwater to date (NPS 1997b in NPS 2000b:82).

Water Quantity

The constant shift between lake and dry land due to fluctuating water levels affects the preservation of natural and cultural resources. The lake level varies depending on inflow from rain and snow pack and outflow from the dam. The elevation of the surface of Lake Roosevelt is measured from sea level. An elevation of 1290 feet is considered “full pool,” however fluctuating water levels have gone as low as 1208 feet. Low lake levels leave boat ramps high and dry, and also expose a great deal of previously inundated land.

F. Vegetation



Lake Roosevelt National Recreation Area is located in a semi-arid transition zone and bisects two ecoregions, the Columbia Basin ecoregion and the Okanogan Highlands ecoregion. These areas are characterized by differences in water availability, surface geology and climate. As a result, plant communities along the 150 mile-long reservoir gradually change from shrub-steppe plant communities (dominated by sagebrush and bunchgrass) to ponderosa pine and white oak woodlands. Drier areas in the south near the dam are characterized by shrub-steppe and have rainfall averaging 11 inches per year, while wetter areas near Colville average about 17 inches per year and are characterized by ponderosa pines and Douglas-fir (NPS 2000a:37). Rural areas are dominated by pasture and agricultural lands, while areas of native vegetation contain plant communities from either the Columbia Basin or Okanogan Highlands ecoregions.

Plant communities in the Columbia Basin ecoregion include:

- Shrub-steppe: Shrub-steppe habitat is the major vegetation type throughout the Columbia Plateau, appearing in large landscape patches. Livestock grazing is the primary land use in the shrub-steppe although much of this area has been converted to irrigation or dry land farming.
- Ponderosa Pine Forest and Woodlands: On wetter north facing slopes above the lake shore, pine forests mix with the scrub-shrub vegetation of the shrub-steppe.
- Grasslands: The plateau above Lake Roosevelt is composed of gentle slopes with deep silty loess soils in an expansive rolling dune-like landscape (converted to agriculture in Lincoln County). Grasslands near the shore occur in a patchwork with shrub-steppe landscape, often created by brush removal, chaining or spraying, or by fire.
- Riparian-Wetlands: A minor component of the Columbia Basin ecoregion, riparian and wetland habitat occupies areas of seeps and stream beds providing dense vegetative cover (Jones & Jones, Inc. 2008:11).



Ponderosa pine forest

Plant communities in the Okanogan Highlands ecoregion include:

- Ponderosa Pine and Woodlands: This woodland habitat typifies the lower tree-line, transitioning to mixed conifers, shrub-steppe, grasslands, or agriculture.
- Canyon Shrublands: This habitat is generally found in steep canyons surrounded by grasslands and below or in a mosaic with the Ponderosa pine and eastside oak woodland habitat. This habitat can develop near talus slopes, at the heads of dry drainages, and toe slopes in moist shrub-steppe and steppe zones.
- Grasslands: Eastside grassland habitats appear below and in a matrix with lower tree-line ponderosa pine and eastside oak forests and woodlands. It can also be part of the lower elevation forest matrix. Agricultural uses and introduced perennial on abandoned or planted fields are common throughout the current distribution of eastside grassland habitats (Jones & Jones, Inc. 2008:12).



Grasslands south of the recreation area

The lower lake valley between Grand Coulee Dam and Keller Ferry is dominated by disturbed shrub-steppe. At the time of the GMP, the intact shrub-steppe community at Lake Roosevelt had retained nearly 70 percent of its historic extent. Antelope bitterbrush-steppe is one of the dominant plant communities of the shrub-steppe, providing food and cover for animals such as mule deer and the Great Basin pocket mouse. Common species in this section include grasses such as bluebunch wheatgrass, needle-and-thread grass, and hard fescue; forbs such as arrowleaf balsamroot, northern buckwheat, brittle prickly pear, alumroot, and lupine; shrubs such as sagebrush, bitterbrush, rabbitbrush, snowberry, greasewood, and serviceberry; and trees such as black cottonwood, ponderosa pine, and Douglas-fir. Dogwood and river birch are also along the tributaries.

Areas along the middle and upper lake, between the Spokane River and Kettle Falls, transition from shrub-steppe to a mix of dense ponderosa pine forests, Douglas-fir, and grasslands. Alder, willow, hazelnut, and black cottonwood are common along the waterways, and some rocky mountain juniper may be found on rocky river bars. Common shrubs include chokecherry, serviceberry, wild rose, Douglas hawthorn, snowberry, and occasionally some smooth sumac and elderberry. Forbs include hairy goldaster, phlox, and nodding onion.

The upper valley, north of Kettle Falls to Onion Creek near the boundary, traverses a forest dominated by second-growth ponderosa pine, Douglas-fir, and western larch. Some grand fir, mountain maple, paper birch, and aspen can also be found. Among the pines, and in dry, rocky areas, a variety of shrubs occur, including mallow ninebarks, Oregon grape, elderberry, chokecherry, snow berry, deer brush, and buck brush. Dominant grassland species include wheatgrasses and spring sunflower.

Although the dramatic rise and fall of water prevents riparian vegetation from establishing along the shoreline, a host of native plants have colonized the riparian edges along the lake. The area around 1290' is dominated by Reed canarygrass. It occupies most of the area within a few feet in elevation of the annual high water line. There are extensive stands of this grass in large shallow bays (such as near Kettle Falls Campground) and shoreline marshes (such as down from Napoleon Bridge). Other less abundant species occupy this zone as well; tickseed, sedge, short-awn foxtail have been found. Other species would be expected to be found by a more thorough survey.



Riparian vegetation in Moonshine Canyon

The general absence of shoreline vegetation has decreased the ecological function of the shoreline habitat area. Where shoreline vegetation is present, roots stabilize underlying soils and entrap and filter sediments and pollutants along the shore and from stormwater runoff. Plants also contribute shading and moderate shoreline water temperatures and provide wildlife habitat (Jones & Jones, Inc. 2008:13).

Open-water habitat in the lake and its tributaries support numerous species of aquatic vascular plants. The most common of these include water starwort,

waterweed, common watermilfoil (American watermilfoil), common hornwort (coontail), pondweeds, and pygmy weed (NPS 2000b:83).



Aquatic vegetation at Camp Nabor-Lee

In the areas that are submerged for the majority of the summer, aquatic plants are dominant. These plants are generally less coarse than the grasses and sedges at the full pool level and therefore may be more heavily grazed by waterfowl. Various species of pondweed are abundant, with the non-native Eurasian watermilfoil common in some areas. Eurasian watermilfoil is a highly invasive weed that forms dense surface mats that interfere with boating and angling and degrade water quality (Sytsma and Miller 2008). During the spring draw down, various small annuals can be found among the pondweed on the exposed lakebed, such as popcorn flower. (See “Chapter II: Purpose and Need” for a summary of the aquatic vegetation study conducted in 2007).

Non-native Invasive Plants

Although Lake Roosevelt has three distinct plant communities, the last 100 years of human occupation has added to, and in some case replaced, portions of these plant communities. Invasive species are defined as a species that is non-native (or alien) to the ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Introduction, in some cases, is accidental. In other cases, invasive plants spread naturally along transportation thoroughfares such as roads, trails and through water.

A preliminary survey of 1,233 terrestrial park acres (10% of LARO) identified 181 acres containing 12 different invasive plant species. The most common invasive plants identified in the upland areas were: spotted knapweed, rush skeletonweed, Dalmatian toadflax and leafy spurge. Other invasive species include Canadian, star and Russian thistle, diffuse knapweed, cheatgrass, common mullein, houndstongue, goatweed and baby’s breath. Several non-native species also thrive in the shallow littoral zones and riparian margins of the lake. The most common aquatic invasive plant identified in the lake was Eurasian watermilfoil.

In addition to the noxious weed management program, the park conducts ongoing hazard tree evaluation and treatment according to the 1984 Hazard Tree Management Plan. In addition, there are site-specific vegetation management plans for restoring the historic grounds at the Fort Spokane Military Reserve Historic District, including rehabilitation of the vegetative cover found there in the late 19th century.

Fire

Historically, fire cleared eastern Washington forests of undergrowth, allowing Ponderosa pine seedlings to open and germinate, thus contributing to an ecosystem of mixed forest and grassland clearings. Fire is now regulated under the guidance of the recreation area’s Fire Management Plan. Forest management activities, including thinning and fuel load reduction are conducted, usually in areas with low-density residential or urban interface (Jones & Jones, Inc. 2008:13).



Pine showing effects of fire at Marcus Island

G. Wildlife



Overview: Lake Roosevelt and the Columbia Basin is an area of rich biodiversity and serves as an important travel corridor and migration route for many species of wildlife including birds, mammals, fish, and butterflies.

Wildlife species are abundant and varied in the Lake Roosevelt area. More than 75 species of mammals, 200 species of birds, 15 species of reptiles, and 10 species of amphibians may occur in the recreation area. Systematic inventories of vertebrates and invertebrates have not been completed. The observations and research of other federal, state, and tribal biologists have contributed most information about the occurrence, abundance, and distribution of species (NPS 2000b:84).

Given the linear nature of the national recreation area and its limited landward area, terrestrial habitat for wildlife is somewhat limited. Natural areas of ponderosa pine forests, sagebrush, grasslands with water resources, and tributary riparian areas offer the greatest value as wildlife habitat. The lack of range and associated resources is the primary limiting factor influencing wildlife abundance and distribution. The initial loss of range for animals in the area can be attributed to inundation of bottomland from filling the reservoir. Continuing threats to wildlife include the reduction of habitat as the result of increased development and agricultural activities on adjacent lands, poaching, road kills, trespass livestock, illegal off-road vehicles, and the invasion of nonnative plant species.



Mammals

Common mammal species using the area include black bear, elk, mountain lion, whitetail deer, mule deer, and moose. These larger species tend to move through the area in response to seasonal conditions. California bighorn sheep were recently transplanted nearby and have dispersed into the recreation area. Small mammals found in the area include beaver, river otter, muskrat, mink, badger, raccoon, skunk, bobcat, coyote, and red fox. In addition, porcupine, cottontail rabbits, ground squirrels, chipmunks, yellowbelly marmot, pika, shrew, voles, bats, gophers, rats, and deer and house mice are common (NPS 2000b:84).

Birds

Perennial and intermittent wetlands attract an abundance of birds. Lake Roosevelt is within the Pacific Flyway and serves as a resting area during migration periods. Other birds nest or are year-round residents.



Osprey nest at Hunter

Several species of raptors nest, roost, and forage in the area. Among these are the osprey, golden eagle, bald eagle, prairie falcon, red-tailed hawk, Northern harrier, and American kestrel. Snowy owls migrate through the area every few years, coinciding with cyclic fluctuations of available food sources farther north.

Other common owls include the great-horned owl, saw-whet owl, screech owl, and barn owl.

Many species of small perching birds use the area for forage and nesting. The most common of these include swallows, finches, jays, chickadees, kinglets, ravens, magpies, robins, sparrows, blackbirds, and juncos.

Common waterbirds migrating through the area include surface feeding ducks (mallards, pintails, teal, and goldeneyes), diving ducks (redhead and canvasback), western grebes, coots, lesser scaups, common mergansers, common loons, and Canada geese. Tundra and trumpeter swans also use the area occasionally. Wading and shorebirds in the area include plovers, great blue herons, spotted sandpipers, gulls, snipes, common egrets, and yellowlegs.

Upland native birds include western sage grouse, Columbia sharp-tailed grouse, mourning dove, blue grouse, and the band-tailed pigeon. Introduced species include the ring-necked pheasant, chukar, Hungarian partridge, and California quail. The elimination of natural sagebrush and bunchgrass communities on adjacent lands has severely reduced populations of native grouse. Agricultural practices and elimination of fencerows have also reduced habitat for native and introduced species (NPS 2000b:84).

Reptiles and Amphibians

A systematic inventory of reptile and amphibian species in the national recreation area has not been conducted. Very little is known about species occurrence, abundance, distribution, or critical habitat. Known common reptiles and amphibians include the sagebrush lizard, short-horned lizard, western rattlesnake, gopher or bull snake, western terrestrial garter snake, bullfrog, western toad, and various salamanders.

Invertebrates

Invertebrates are common throughout the national recreation area, but data on these, except for some special status butterflies (see below), is limited due to lack of studies.

Fisheries

Lake Roosevelt and its tributaries support a varied fish community that is considerably different from the native fish community of the early 1900s. Changes over time have been caused by the introduction of nonnative species, habitat alterations such as water pollution, the damming of rivers, and reservoir draw-downs. Today, there are possibly 28 native and 12 nonnative species that inhabit recreation area waters.

Native Fish Species

Before dams blocked fish passage, the Columbia River supported large numbers of anadromous sockeye and Chinook salmon and steelhead trout. Today, there are no anadromous runs of salmonids from the Pacific in Lake Roosevelt and its tributaries. Other salmonids native to the Columbia River system that occur in the national recreation area include kokanee (land-locked sockeye), rainbow trout, and bull trout. Other native fish include white sturgeon, burbot, and a variety of whitefish, minnow, sculpin, and sucker species. Native bull trout, burbot, and white sturgeon populations have declined substantially in the last 10 years, in part due to predation by competition with introduced species such as walleye.

Introduced Fish Species

Introduced game fish include brook trout, brown trout, walleye, yellow perch, largemouth bass, smallmouth bass, black crappie, white crappie, sunfish, and yellow bullhead. These nonnative species are important resources to recreational fishing; however, they have displaced the native fish populations.

H. Special Status Species

TABLE VI-1: FEDERALLY LISTED SPECIES

Common Name	Scientific Name	Status	Notes
Mammals			
Grizzly Bear	<i>Ursus arctos horribilis</i>	Federally Endangered State Endangered	No recent confirmed sightings
Gray Wolf	<i>Canis lupus</i>	Federally Endangered State Endangered	No confirmed sightings
Canada Lynx	<i>Lynx canadensis</i>	Federally Endangered State Threatened	Reported from northern end of Lake Roosevelt
Plants			
Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	Federally Endangered	
Spalding's Silene	<i>Silene spaldingii</i>	Federally Endangered	

TABLE VI-2: STATE LISTED SPECIES

Common Name	Scientific Name	Status	Notes
Mammals			
California Wolverine	<i>Gulo gulo luteus</i>	Federal Candidate State Candidate	Not known from Lake Roosevelt
Woodland Caribou	<i>Rangifer tarandus caribou</i>	Federally Endangered State Endangered	No confirmed sightings
Pygmy Rabbit	<i>Brachylagus Idahoensis</i>	State Endangered	Extirpated from Lake Roosevelt
Birds			
Peregrine Falcon	<i>Falco peregrinus anatum</i>	Federally Endangered State Endangered	Nesting Reintroduced to Lake Roosevelt
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Federally Threatened State Threatened	Large overwintering population. As of 2000, more than 10 known nests.
Columbian Sharp-tailed Grouse	<i>Tympanuchus phasianellus columbiana</i>	State Threatened	

Table VI-1 and 2 above lists the threatened, endangered and candidate species potentially found in or near Lake Roosevelt National Recreation Area. No other proposed or candidate species for listing are known to occur in or near the national recreation area (FR 1997).

Federally Endangered Species



Grizzly bear

GRIZZLY BEAR

Although grizzly bears occur in the Selkirk ecosystem in northern Idaho and Washington, population levels are believed to be low (IGBC 1987). No grizzly bears have been recently reported within the national recreation area. Grizzly bears eat a variety of food, from grasses to large mammals. Ungulates are important to bears because they provide a high-quality food source during early spring before most vegetal foods are available to bears. Grizzly bears feed on ungulates primarily as winter-killed carrion from March through May. In areas where animal matter is less available, roots, bulbs, tubers, fungi, tree cambium, and succulent herbaceous plants are eaten (USFWS 1982). Additionally, salmonids spawning in Columbia River tributaries may also provide a food source for grizzlies.

GRAY WOLF

No confirmed gray wolf sightings have been documented in the national recreation area ; however, numerous unconfirmed sightings have been reported in some surrounding areas in recent years. If wolves were in the area, they would depend on ungulates for food year-round. Elk, moose, and deer are the principal prey species and usually account for more than 90% of the biomass consumed by wolves. Smaller mammals are an important alternative to ungulates in the snow-free months (USFWS 1994).

CANADA LYNX

Lynx have been seen near the northern end of Lake Roosevelt; however no evidence of resident populations has been documented (NPS 1997b in NPS 2000b:88). Lynx prefer the density of coniferous forests and swamp areas where its coloring allows it to be camouflaged from its prey. Snowshoe hares make up most of the lynx's diet, but lynx will also eat rodents, birds, and fish (WDFW 1991 in NPS 2000b:88).

Federal Species of Concern and State Listed Species

PYGMY RABBIT

The pygmy rabbit is always found in association with dense stands of sagebrush or rabbitbrush. It eats mainly sagebrush. Its population status within the recreation area is not known, but habitat is present.

PEREGRINE FALCON

Peregrine nests have been found in the area surrounding the Lake Roosevelt reservoir. Peregrine falcons migrate through the region seasonally. Peregrines have also been reintroduced in the Lake Roosevelt area in an effort to restore a breeding population to the area. Use of the area by peregrines normally occurs during spring and fall migrations. Peregrine falcon foraging and nesting habitats

are usually associated with tall cliffs near water. Their diet consists primarily of waterfowl, shorebirds, and passerine species commonly found on and around lakes and streams.

The National Park Service, in cooperation with other agencies, reintroduced peregrine falcons in the area from 1993 to 1997. More than two dozen captive-produced fledglings from the Peregrine Fund hatchery facility in Boise, Idaho, have been released on Lake Roosevelt since the program began in July 1993. Releases continued until at least one breeding pair was established in the area. The project addressed the Northwest Power Planning Council's wildlife mitigation goals for this species for the Upper Columbia Subbasin and coincided directly with other federal and state peregrine falcon recovery goals of the Inland Northwest.

BALD EAGLE

Bald eagles maintain a large overwintering population (200+) in the area surrounding the reservoir from November through March annually. More than 10 bald eagle nests are in the vicinity and appear to be becoming more productive each year. Bald eagle habitat is usually associated with large bodies of water that provide an abundant source of food. Eagles feed primarily on fish, waterfowl, and carrion. Bald eagles have been killed within the recreation area and surrounding areas by poachers and from collisions with powerlines. Annual bald eagle surveys are conducted, and foraging and roosting studies have been completed for several sections of the reservoir. Annual midwinter eagle surveys have been conducted since at least 1985. At least one survey is conducted in January of each year in coordination with the Washington Department of Fish Wildlife, the U.S. Forest Service, and the tribes.

COLUMBIAN SHARP-TAILED GROUSE

The Columbian sharp-tailed grouse is a Washington State threatened species that seasonally uses the shrub-steppe habitat at Lake Roosevelt. Of eight remaining populations in eastern Washington, one small population remains in Lincoln County. Historically, the critically endangered Washington pygmy rabbit may have also occupied the Keller Ferry vicinity of the park. Declines in these species appear linked to dramatic declines in the quantity and quality of native sagebrush-steppe habitat.

Canadian Listed Species

BEHR'S HAIRSTREAK

The Behr's (Columbia) hairstreak butterfly, which also relies on bitterbrush, can also be found at Lake Roosevelt. The butterfly lays its eggs on the plant, and the emerging caterpillar larvae feed exclusively on bitterbrush. The hairstreak butterfly is currently listed as threatened in Canada due to conversion of bitterbrush habitat to vineyards.

State Species of Concern

In addition to the above, another 24 animal species of concern to the state of Washington (WDNR 1998) may occur in or near the national recreation area. These include the threatened ferruginous hawk (*Buteo regalis*); the candidates California floater (*Anodonta californiensis*), Columbia sharp-tail grouse (*Tympanuchus phasianellus columbians*), loggerhead shrike (*Lanius ludovicianus*), northern goshawk (*Accipiter gentilis*), Pacific fisher (*Martes pennanti pacifica*), pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), and Washington ground squirrel (*Spermophilus washingtoni*). State monitor species include the black tern (*Chlidonias niger*), potholes meadow vole (*Microtus pennsylvanicus kincaidi*), and four species of *Myotis* bats.

Other species of concern identified by the U.S. Fish and Wildlife Service (1998) include the California bighorn sheep (*Ovis canadensis californiana*), Columbia pebblesnail (*Fluminicola (=Lithoglyphus) columbians*), olive-sided flycatcher (*Contopus borealis*), Pacific lamprey (*Lampetra tridentata*), western burrowing owl (*Athene cunicularia hypugea*), Westslope cutthroat trout (*Oncorhynchus clarki lewisi*), and Yuma myotis bat (*Myotis yumanensis*). These species of concern are known to occur or historically occurred in northeastern Washington. Limited information is available, however, on the occurrence and abundance of remnant populations, if any, in the Lake Roosevelt area.

TABLE VI-3: STATE AND FEDERAL SPECIES OF CONCERN

Common Name	Scientific Name	Federal Status	State Status
Amphibians			
Columbia spotted frog	<i>Rana luteiventris</i>	Sp of Concern	Candidate
Reptiles			
Northern sagebrush lizard	<i>Sceloporus graciosus graciosus</i>	Sp of Concern	Candidate
Striped whipsnake	<i>Masticophis taeniatus</i>	None	Candidate
Birds			
Common Loon	<i>Gavia immer</i>	None	Sensitive
Western Grebe	<i>Aechmophorus occidentalis</i>	None	Candidate
Golden Eagle	<i>Aquila chrysaetos</i>	None	Candidate
Peregrine Falcon	<i>Falco peregrinus</i>	Sp of Concern	Sensitive
American White Pelican	<i>Pelecanus erythrorhynchos</i>	None	Endangered
Northern Goshawk	<i>Accipiter gentiles</i>	Sp. of Concern	Candidate
Ferruginous Hawk	<i>Buteo regalis</i>	Sp. of Concern	Threatened
Merlin	<i>Falco columbarius</i>	None	Candidate
Vaux's Swift	<i>Chaetura vauxi</i>	None	Candidate
Lewis' Woodpecker	<i>Melanerpes lewis</i>	None	Candidate
White-headed Woodpecker	<i>Picoides albolarvatus</i>	None	Candidate
Pileated Woodpecker	<i>Dryocopus pileatus</i>	None	Candidate
Sage Thrasher	<i>Oreoscoptes montanus</i>	None	Candidate
Mammals			
White-tailed Jack Rabbit	<i>Lepus townsendii</i>	None	Candidate

<http://wdfw.wa.gov/wlm/diversty/soc/soc.htm>

Plants

In addition to the federally listed endangered Ute ladies'-tresses and Spalding's silene, the following plant species of concern are known to occur in the area: black snake-root (*Sanicula marilandica*), Columbia crazyweed (*Oxytropis campestris* var. *columbiana*), crenulate moonwort (*Botrychium crenulatum*), giant hellborine (*Epipactis gigantea*), least bladderly milk-vetch (*Astragalus microcystis*), little grape-fern (*Botrychium simplex*), Nuttall's pussytoes (*Antennaria parvifolia*), palouse milk-vetch (*Astragalus arrectus*), and pygmy weed (*Crassula aquatica*) (WDNR 1998 in NPS 2000b:86). For the GMP, the U.S. Fish and Wildlife Service (1998) also identified several other rare plants that may occur in the area including the triangle-lobed moonwort (*Botrychium ascendens*), Two-spiked moonwort (*B. paradoxum*), Cusik's lupine (*Lupinus cusickii*), and Washington polemonium (*Polemonium pectinatum*). The list of special concern plants in the state is updated regularly by the Washington Natural Heritage Program.

I. Prehistoric and Historic Archeological Resources



Archeological information is derived from reports edited by Jerry Galm (1994) of Archaeological and Historical Services of Eastern Washington University in Cheney. J. Scott King and T. Webber Greiser of Historical Research Associates in Seattle (1995), give background information on the archeological resources in what is now the Lake Roosevelt basin (NPS 2000b:91).

Archeological resources abound in what are now recreation area lands. Because of the inundation of the valley floor following the construction of the Grand Coulee Dam, however, much has been lost. In preparation for the creation of Lake Roosevelt all surfaces expected to be submerged were cleared of trees and structures, though in most places stumps and foundations of entire townsites are all that remain to this day. Due to the fluctuating nature of the reservoir, even those elements that might have remained beneath the ground surface have been affected. The greatest density of cultural features was in proximity to the Columbia and Spokane rivers. As a result, a very high percentage of the cultural features contained in the Lake Roosevelt basin has been compromised, resulting in an irretrievable loss to the archaeological record of the Upper Columbia Region (NPS 2000b:91). Additional research, however, has resulted in identification of many new sites both below the full pool and above it.



"No digging" sign at the recreation area

Prehistorically and historically, habitation and fishing sites tended to cluster along the lower terraces of the Columbia and Spokane Rivers, which are now inundated by Lake Roosevelt. Many lower terraces in the upper reservoir become exposed during draw-downs. Other types of sites, such as those indicative of hunting and gathering, are more widely distributed and can occur in both the lower inundated terraces and the upper terraces, above the high-water line. Higher lake levels protect submerged archeological resources, which suffer potential exposure when draw-downs make them accessible, not only legally to archeologists undertaking excavation and data recovery, but also to looting and damage from vehicles illegally driven on the draw-down (NPS 2000b:93).



Shoreline at low lake levels

About 80 percent of the recreation area above the minimum operating pool of the lake (1,290 feet) has undergone initial archeological surveys. More than 200 archeological sites have been identified. The sites range from pictographs and petroglyphs to habitation and fishing sites and other evidences of human occupation. These include burial sites and cobble tools or modified core tools often found on upper terraces. Many sites are eroded surface scatters with little depth, although some sites do have considerable depth. Much is known, therefore, about the types of sites that occur and about their patterns of form and distribution, both prehistorically and historically (NPS 2000b:93).

The majority of cultural resources are inundated during peak use periods. During draw-downs, these cultural resources are exposed and vulnerable to damage from visitors or relic collectors. There are usually few visitors present during the annual spring flood draw-down. In recent years, however, draw-down has occurred in August for flow augmentation downriver for salmon recovery (NPS 2000b:93). With the additional 1.8 feet of draw-down, beyond the 1,280 foot level in summer, it is evident that more cultural resources will be exposed during periods of heavy visitation, making them more susceptible to discovery and loss.

J. Ethnography



Smoking salmon, circa 1939

The striking natural characteristics and resources of the Columbia and Spokane Rivers have defined the lengthy and complex history of the Lake Roosevelt area. The presence of these key water resources in an otherwise arid area attracted both Native Americans and later residents and visitors to the Lake Roosevelt area.

The Colville Indian Reservation and Spokane Indian Reservation border the recreation area. As a result, the desire for access to NPS areas is not so much for traditional use areas, which may be conveniently accessed on each reservation, but rather for land management concerns to further the conservation of their Indian heritage. In other words, the two Indian tribes seek to maintain an active role in resource management, especially cultural resource management (NPS 2000b:93).

Native American subsistence was based not only upon a rich fishery but also on gathering wild plants, manipulating plants by transplanting seedlings, and hunting small fauna as well as big game. This required a great deal of respect for and knowledge about different ecological/environmental zones and how their resources might be used. Fishing was important all along the Columbia River, but some areas had larger human populations, such as at Kettle Falls (NPS 2000b:90).



Native American fishing at Kettle Falls, 1901

The peoples now constituting the 12 Colville Confederated Tribes are the Colville, Lakes, San Poil-Nespelem, Southern Okanogan with a few Northern Okanogan, Moses/Columbia, Wenatchi, Entiat, Chelan, Methow, Palus, and the Chief Joseph band of the Nez Perce (Ackerman 1996, 19; Miller 1996, 130). In aboriginal times they occupied the tributaries of the upper Columbia River (see Confederated Tribes of the Colville Reservation map). Their way of life was compromised by ever-increasing European/American incursions in the form of fur traders, settlers, miners, the military, and the government bureaucracy associated with reservations (NPS 2000b:90-91).

In 1872 President Ulysses S. Grant established the Colville Reservation by executive order. On January 18, 1881, a reservation was also established for the Spokane Indians by President James A. Garfield. In 1892 President Benjamin Harrison approved of land being removed from reservation status to open it to settlement by non-Indians. And during President Franklin D. Roosevelt's time in office, 1933-45, the Grand Coulee Dam was authorized and built, with generators first running in 1941. The lake inundated some of the reservation lands, including those areas close to the river where the aboriginal culture was centered. The Grand Coulee Dam left no hope for salmon returning to their original grounds at such mighty fishing places as Kettle Falls, which was covered by Lake Roosevelt.

Colville shamans had long made a practice of transplanting certain plants (roots, herbs, willows, and so forth) to places where they would be most useful. Therefore, when fur traders introduced corn, potatoes, and other crops, chiefs and shamans took the lead in establishing communal tribal gardens on lakeshores (Miller 1996, 130 in NPS 2000b:91).

Ultimately, a way of life was lost, especially with no salmon-run provisions for the Grand Coulee Dam.

The Spokane Indian Reservation was created by an agreement in 1877 between the Lower Spokanes and the U.S. Later an executive order affirmed the boundary and the reservation. In 1887, another agreement included the Upper and Middle Spokanes. Later acts allowed taking back of the lands for mineral development, for electrical generation and for irrigation as well as for settlement by non-Indians. Use of both the Colville and Spokane reservation lands was granted in 1940 and modified in 1944 but also specified allowing an “Indian zone” on the reservoir. Subsequent acts transferred jurisdiction and management of these areas from the U.S. to Washington State and then to the tribes (Herron 1979).

Although ethnographic traditional cultural properties have been identified, none have undergone a determination of eligibility for nomination to the National Register. It is likely, however, that numerous sites are eligible, including traditional fishing areas near Kettle Falls and elsewhere.



Two Rivers Campground on the Spokane Reservation

Contemporary Native American Relations

Ongoing government-to-government relations with the Colville and Spokane Indian tribal governments is key to management of Lake Roosevelt. The NPS and the tribes meet with one another formally during the Five Party Agreement Meetings and informally, during day-to-day operations. Areas of mutual interest include effective communication and the sharing of information, knowledge and resources in planning and operations and in managing cultural and natural resources. Cooperative relationships with both the Colville and Spokane tribes has been essential to the development of the Shoreline Management Plan. Numerous ways to enhance information sharing and management strategies have been identified.

K. Historic Resources (National Register of Historic Places)



St. Paul's Mission

Saint Paul's Mission archeological site, included in the Kettle Falls Archeological District in Stevens County, was listed on the National Register of Historic Places on November 20, 1974. Fort Spokane Military Reserve in Lincoln County was listed on November 23, 1988 (NPS et al. 1994, 874 and 878 in NPS 2000b:95). These are currently the only properties in the national recreation area that are listed on the National Register of Historic Places.

An archeological site near Kettle Falls, which is primarily prehistoric with historic components, was found eligible for listing on the national register in February 1998 by the State Historic Preservation Officer. Eligible sites are required to be listed on the National Register.

The Fruitland irrigation canal, which is partially located in the national recreation area (near Rickey Point) has not been formally evaluated for eligibility for listing on the National Register of Historic Places. This is an archeological feature of the early 20th century focused on water withdrawal from the mouth of the Colville River. It extends south, parallel to what is now the lake for some 20 miles. Analysis by historical archeologists could include better understanding of its association with remaining habitations and agricultural operations, such as "ruins and foundations of homestead dwellings and outbuildings, and associated features. . . fences, dumps, and ditches" as part of the historic scene (Galm 1994, 11.14 in NPS 2000b:95).



Fort Spokane

L. Visitor Experience

The Five Party Agreement among the NPS, Bureau of Reclamation, the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and the Bureau of Indian Affairs allows the Colville and Spokane tribes to manage their recreation lands in similar ways to the NPS, charging camping and boating fees and protecting large portions of shoreline. Currently, many tribal policies are different, such as the regulations that allow fires at campsites in the summer and the designation of certain campgrounds for tribal members only. Most of the discussion below focuses on NPS-managed areas, while the discussion developed in the Alternatives and Environmental Consequences section focuses on options for unifying some of these differences and thus includes more relationship to Colville- and Spokane-managed areas.



Highway near Kettle River

Visitor Access

The park can be reached via numerous state and U.S. highways, including State Route 55, State Route 17, State Route 174, U.S. Highway 2, U.S. Highway 395, and Interstate 90. State Route 2 is the primary east-west route for the southern part of the park, while State Route 20 is the primary east-west route in the northern part of the park. Gateway communities, include the towns of Coulee Dam, Grand Coulee and Electric City, near the Grand Coulee Dam. Colville and Kettle Falls are on the north end of the recreation area, while smaller towns and unincorporated county areas make up the rest of the developed areas near the park.

In a 1996 visitor use study, most visitors were from Washington State (74 percent), from Canada (13 percent) or from other Pacific Northwest areas (5 percent). Only about seven percent were from other parts of the U.S. and less than one percent were from a foreign country. About 46 percent of the respondents were repeat visitors (NPS 2000a:50).



Swim platform Fort Spokane

Visitor Use

Visitor use at Lake Roosevelt reached one million visitors in 1987 and has continued to top that since (Table VI-4: Lake Roosevelt National Recreation Area Visitation). Although the recreation area is open all year, similar to most areas in the National Park System, visitor use is not evenly distributed throughout the calendar year. Visitor use is relatively stable between November and March, but begins to rise in April, until it reaches a summertime peak in July or August, whereupon it falls until November.

Visitor use is also uneven over the many individual dispersed visitor access points within the recreation area. A 1997 study showed the highest levels of visitor use at Kettle Falls (304,080), followed by Fort Spokane (119,088 for the visitor center and 116,714 for the campground), Spring Canyon (103,251), Seven Bays Marina (100,949), Keller Ferry Campground (88,053), Hunters Campground (77,832), and 61,687 (Hawk Creek Campground). Six areas accounted for between 4-8 percent of total visitor use, while four recorded more than 100,000 visits in 1997. Nine



Fort Spokane group camp area

other areas accounted for one quarter of one percent to three percent of visitor use (NPS 2000a:47).

Recreational use in the North District (Kettle Falls area) varies widely, with most use at Kettle Falls, Hunters, Gifford and Evans campgrounds. In the South District (Fort Spokane to Spring Canyon), use is more evenly distributed, with most occurring at Fort Spokane, Spring Canyon, Seven Bays Marina, Keller Ferry, Hawk Creek and Porcupine Bay.

In general, if visitation to Lake Roosevelt National Recreation Area is unregulated, it will likely continue to increase over the long term. Visitor use experienced increases and declines from year to year (Table VI-4: Lake Roosevelt National Recreation Area Visitation).

TABLE VI-4: LAKE ROOSEVELT NATIONAL RECREATION AREA VISITATION

Fiscal Year	Recreational	Non-Recreational	Total Visits *	Percentage Change
2008	1,337,024	1,200	1,338,224	-7.81%
2007	1,450,438	1,200	1,451,638	13.16%
2006	1,281,586	1,200	1,282,786	0.74%
2005	1,272,119	1,200	1,273,319	0.57%
2004	1,264,923	1,200	1,266,123	-7.22%
2003	1,363,483	1,200	1,364,683	-5.07%
2002	1,436,309	1,200	1,437,509	12.08%
2001	1,277,183	5,400	1,282,583	-10.02%
2000	1,407,448	18,000	1,425,448	-0.95%
1999	1,421,124	18,000	1,439,124	-7.26%
1998	1,533,842	18,000	1,551,842	10.62%
1997	1,384,812	18,000	1,402,812	29.76%
1996	1,063,112	18,000	1,081,112	-21.32%
1995	1,356,092	18,000	1,374,092	-10.97%
1994	1,525,337	18,000	1,543,337	30.16%
1993	1,167,762	18,000	1,185,762	-3.89%
1992	1,215,802	18,000	1,233,802	-30.86%
1991	1,766,420	18,000	1,784,420	22.53%

Recreational visits are entry onto lands administered by the NPS for recreation (any part of a day). Non-recreational visits include commuters, inholding, trades/business, government personnel, and government business traffic.

(Source: www.nature.nps.gov/stats)

Visitor Opportunities/Selected Current Visitor Use Regulations

Table VI-5 Existing Facilities in the National Recreation Area below shows NPS facilities in Lake Roosevelt National Recreation Area. Visitors to Lake Roosevelt come for sightseeing, picnicking, motorized and non-motorized boating, fishing, camping, swimming and other water recreation activities. On the lake, these activities are managed by the NPS, the Colville and Spokane tribes.

A visitor use survey in 1996 found that although there are many things to see and do at Lake Roosevelt, the most popular activities with the visitors represented by the survey (n=3,869) were camping in a developed campground (16 percent), swimming (15 percent), motor boating (11 percent), and fishing (10 percent). Family gatherings (8 percent), picnicking (8 percent), sightseeing (7 percent), and water skiing (6 percent) were the next most frequent responses from those surveyed. Thirteen other activities had participation rates of less than 5 percent (NPS 2000b:72).

At the time of the GMP, there were 28 public campgrounds, including 18 drive-in and 10 boat-in campgrounds. Now there are 26 campgrounds, including 17 drive-in and 9 boat-in. There are currently 22 boat launch ramps.

DRIVE-IN CAMPING

Some campsites at the following designated campgrounds are reservable: Kettle Falls, Fort Spokane, Keller Ferry and Spring Canyon. Group camping requires a reservation at designated campgrounds. Other camping is available first-come, first-served.

CAMPING

Overnight camping is available at 17 designated vehicle campgrounds and at 10 designated boat-in campgrounds. Camping is limited to 14 days per campground/area per year, or a maximum of 30 days per calendar year within the recreation area (section 36 CFR 2.10 (b)(9) of the 2008 Superintendent's Compendium). While most campers set up camp close to the water's edge, some spread activities beyond that, inadvertently encroaching on private property. The recreation area demarcates the boundary with property markers, but these markers are not always evident and may have been moved or removed. Therefore, encroachments occur.

BOAT LAUNCHING/BOAT-IN CAMPING

Although there is a charge for boat launching from NPS launch ramps, boat camping is currently first-come, first-served and free of charge and can occur at both designated boat-in campsites and along other shoreline areas, provided that these are at least 0.5 mile from the nearest developed area.



Boat launch at Daisy

BOATING REGULATIONS

Boats are allowed on the lake up to a maximum of 30 days per year. Although there is no boating speed limit, decibel limits affect speed and engine noise. These limits, however, are difficult to enforce because training and equipment provision are currently insufficient. Cigarette boats, likely because of the recent ban on these craft at Lake Coeur d'Alene have recently started coming to Lake Roosevelt. As a result, problems with noise have increased.

WALK-IN SHORELINE CAMPING

This activity is currently not permitted.

OPEN BEACH FIRES

These are currently permitted on NPS lands only from November 1 to May 1 (not during the summer), when the fire danger rating for the recreation area is at or below Level 2.

CAMPFIRES

When the Washington Department of Natural Resources closes their campgrounds because of fire risk, recreation area campgrounds are also closed. Park regulations limit beach fires to winter months. In winter, fishermen are allowed a "warming fire." Unless there is a fire closure in effect, campfires are permitted year-round in designated fire pits (usually a metal fire ring) in designated boat-in campsites and other designated campgrounds. Similarly charcoal grills and stoves are permitted year-round if there is no fire closure and if charcoal ashes are packed out and disposed of when cool in trash receptacles.



Fishing at Hawk Creek

HUMAN WASTE DISPOSAL

Shoreline camping currently requires overnight boaters to have a Marine Sanitation Device (MSD) or portable toilet approved for landfill disposal. Where toilets are provided at designated boat-in campsites, possession of an MSD or portable toilet is not required. Waste must be disposed of at concessionaire marine pump-out facilities or at dump stations. Only solid waste bags approved for landfill disposal may be deposited into trash receptacles. Three floating toilets/dump stations and one floating toilet are currently provided on the lake. These are located at Spring Canyon, 10 Mile, and Hansen Harbor, with one just south of Kettle Falls. Land based toilets occur at most developed sites (see Table VI-5: Existing Facilities in the National Recreation Area below).

FISHING

Lake Roosevelt supports significant fish populations, especially in areas deeper than 10 feet. Fishermen pursue rainbow trout, walleye, kokanee, whitefish, smallmouth bass, and yellow perch. Sturgeon are also found in the lake, although they are not breeding. A net pen program was started in 1984. Fingerlings are put in the pens in October and released in May or June. The program has resulted in a dramatic increase in rainbow trout. By 1999, 45 net pens were raising both rainbow trout and kokanee salmon for release into the lake. The net pens lie just off shore, some adjacent to recreation facilities like the swim beach at Hunters. There is no fishery management plan for Lake Roosevelt due to the tribes' extensive programs funded by the Bonneville Power Administration (Jones & Jones 2008:13).

COMMUNITY ACCESS POINTS

Community Access Points (CAPs) currently consist of areas where community organizations can install NPS-approved boat docks if the public is able to use a portion of the boat slips and there is public road access to the launch. Three community access points have been approved: Eden Harbor, Rantz Marine Park, and Rickey Point. Many others, where communities would discourage the public coming through their land, are currently under review. Several communities, such as Cayuse Cove, Moccasin Bay and Sunset Point, have had applications under review by the NPS.

The NPS currently uses a draft evaluation criteria to analyze potential new CAPs: A revised set of criteria can be found on pages 63 and 64.

MOORING BUOYS

Mooring buoys are currently prohibited. Unattended buoys are removed by rangers because they can be a boating hazard if unseen.

Area Descriptions

In the summer along the shoreline between formal campgrounds every cove with a bit of beach and a shade tree will be occupied by shoreline campers or day use visitors. Most of these spots have unofficial names that have arisen over time due to need for rangers to communicate their locations to one another. The stretch of shoreline between Fort Spokane and Porcupine Bay has the most popular coves and requires additional staff on weekends. Proposed actions in Alternatives B-D could affect the following areas.

SOUTH ZONE (CRESCENT BAY TO SEVEN BAYS)

CRESCENT BAY (RIVER MILE 1): Crescent Bay is dominated by shrub-steppe and grasslands. Noxious weeds such as Spotted knapweed, Rush skeletonweed, Dalmation toadflax and Leafy spurge persist throughout this heavily disturbed site as do a number of non-native trees and shrubs.

Crescent Bay is the first recreation site encountered by visitors coming from the west, such as from Seattle. Existing facilities include a 60-foot boat ramp, information sign, informal swimming area and toilets. The boat ramp is crowded; over 100 boat trailers have been counted on a busy summer weekend. Crescent Bay often is an overflow area for nearby Spring Canyon facilities when they are full. There are wide expanses with dirt roads and informal parking areas. Visitors to Crescent Lake currently can swim (although there is no designated swim area, fish, boat and hike. A small boat launch for non-motorized boats is available on the east end of the lake and canoes, including for NPS interpretive programs are informally launched on the other side.



Panorama of Crescent Lake and Crescent Bay looking north-east



Spring Canyon

SPRING CANYON (RIVER MILE 3): This campground and day use area was constructed in the 1950s and 1960s. With its wide array of facilities and close proximity to nearby towns, it is the most popular beach on Lake Roosevelt. The campground contains 80 sites, including group sites. The boat launch can accommodate four vehicles at a time. Parking for 126 cars and 52 boat trailers is available. In addition, there are restrooms, a picnic area, boat dock, and seasonal visitor center and small amphitheater, where interpretive programs are staged.



Keller Ferry

NEAL CANYON (RIVER MILE 10): This undeveloped area has no public facilities but can be accessed by public roads which cross private property.

KELLER FERRY (RIVER MILE 16): This area, located approximately 15 miles from the town of Wilbur, contains a 55-site campground, including group sites; a boat launch that can accommodate two cars at a time; parking for 140 cars and 71 boat trailers; a boat dock, waste disposal facilities, picnic/day use area with a group picnic area gazebo; swim area; and a concessionaire marina (Roosevelt Recreational Enterprises) with a small store and houseboat rentals. Keller Ferry Marina has been in operation since the late 1960's, providing water-oriented recreational facilities to the public.

PENIX CANYON (RIVER MILE 22): Located within walking distance along the shoreline from Jones Bay (where there are nine boat-in campsites and a small parking area), Penix Canyon is currently minimally developed, with three boat-in campsites. Penix Canyon is located in an open area with scattered Ponderosa Pines.



Lincoln

LINCOLN (RIVER MILE 36): This area was a sawmill until the mid-1960s. This day use area contains a boat launch with a skid-dock and a small parking area. Up to 100 boat trailers have been observed in the parking area.

TABLE VI- 5: EXISTING FACILITIES IN LAKE ROOSEVELT NATIONAL RECREATION AREA

Developed Area	# Sites	Day Use Picnic Sites	Comfort Stations	Toilets Vault
Bradbury Beach Campground	n/a	3	No	Yes
China Bend	n/a		No	Yes
Cloverleaf Campground	9		No	Yes
Crescent Bay Lake	n/a		No	Yes
Crescent Bay	n/a	3	No	Yes
Crystal Cove Campground	3		No	Yes
Daisy	n/a		No	Yes
Detillion Campground	12		No	Yes
Enterprise Campground	13		No	Yes
Evans Campground	43		Yes	Yes
Fort Spokane Campground	67 campsites; 2 group sites (45 each)	64 picnic tables	Yes	Yes
French Rocks	n/a		No	Yes
Gifford Campground	43		No	Yes
Goldsmith Campground	3		No	Yes
Haag Cove Campground	16		No	Yes
Hanson Harbor	n/a	2	No	Yes
Hawk Creek Campground	21		No	Yes
Hunters	37 camp-sites; 3 group sites	10	No	Yes
Jones Bay Campground	9		No	Yes
Kamloops Island Campground	17		No	Yes
Keller Ferry Campground	55 campsites; 2 group sites (25 each)	15 picnic tables	Yes	Yes
Kettle Falls Campground	76	25 picnic tables	Yes	No
Kettle River Campground	13		No	Yes
Lincoln Mill	n/a		No	Yes
Locust Grove Group Campsite	2 group sites (50 each)		Yes	Yes
Marcus Island Campground	27		No	Yes
Napoleon Bridge	n/a		No	Yes
North Gorge Campground	12		No	Yes
Penix Campground	3		No	Yes
Plum Point Campground	4		No	Yes
Ponderosa Campground	8		No	Yes
Porcupine Bay Campground	31	15	Yes	Yes
Seven Bays	n/a		No	Yes
Snag Cove Campground	9		No	Yes
Spring Canyon Campground	87 campsites; 2 group sites of 25 each	60 picnic tables	Yes	Yes
Sterling Point	3		No	Yes
Summer Island Campground	6		No	Yes
Two Rivers (Spokane Tribe)			No	Yes

* No water is available if the lake is below 1,265 feet.
SD = skid dock; SR = snow removal

Fee Area	Drinking Water Yes/No	Launch Ramp	Launch Elevation (in feet)	Boat Dock	Trailer Dump Station	Remarks
Yes	No	Yes SR	1,251	Yes SD	No	
Yes	No	Yes	1,280	Yes SD	No	Boat launch only; no camping /picnicking.
Yes	Yes*	No	n/a	Yes	No	
No	No	Yes	n/a	Yes	No	Nonmotorized craft only.
Yes	No	Yes	1,265	Yes SD	No	
No	No	No	n/a	No	No	Boat-only campground. Pack in-pack out.
Yes	No	Yes SR	1,265	Yes SD	No	Launch ramp only.
No	Yes*	No	n/a	Yes	No	Boat-only campground. Pack in-pack out.
No	No	No	n/a	No	No	Boat-only campground. Pack in-pack out.
Yes	Yes	Yes	1,280	Yes	Yes	Comfort station open mid-April/mid-Oct. Weather permitting.
Yes	Yes	Yes	1,247	Yes SD	Yes	Comfort station open mid-April/mid-Oct. Weather permitting.
Yes	No	Yes	1,265	Yes SD	No	
Yes	Yes	Yes SR	1,249	Yes SD	Yes	
No	No	No	n/a	Yes	No	Boat-only campground. Pack in-pack out.
Yes	Yes*	No	n/a	No	No	
Yes	No	Yes	1,253	Yes SD	No	Boat launch only, no camping.
Yes	Yes*	Yes	1,281	Yes	No	
Yes	Yes	Yes SR	1,232	No	No	
Yes	No	Yes	1,268	Yes	No	
Yes	Yes*	No	n/a	Yes	No	
Yes	Yes	Yes SR	1,229	Yes SD	Yes	Comfort station open mid-April/mid-Oct. weather permitting.
Yes	Yes	Yes SR	1,234	Yes SD	Yes	Comfort station open mid-April/mid-Oct. weather permitting.
Yes	Yes*	No	n/a	Yes	No	
Yes	No	Yes	1,245	Yes SD	No	Picnic area.
Yes	Yes	No	n/a	No	No	\$10.00 minimum, \$1.00 per person.
Yes	Yes*	Yes	1,281	Yes	No	
Yes	No	Yes	1,280	No SD	No	
Yes	Yes*	Yes	1,280	Yes	No	
No	No	No	n/a	Yes	No	Boat-only campground; pack in-pack out.
No	No	No	n/a	Yes	No	Boat-only campground; pack in-pack out.
No	No	No	n/a	No	No	Boat-only campground, pack in-pack out.
Yes	Yes	Yes	1,243	Yes SD	Yes	Comfort station open mid-April/mid-Oct. weather permitting.
Yes	Yes	Yes SR	1,227	Yes SD	No	Restaurant and boat moorage.
Yes	Yes*	Yes	1,277	Yes SD	No	
Yes	Yes	Yes SR	1,222	Yes SD	Yes	Comfort station open mid-April/mid-Oct. weather permitting.
No	No	No	n/a	No	No	Boat-only campground; pack in-pack out.
No	No	No	n/a	Yes	No	Boat-only campground; pack in-pack out.
Yes	Yes	Yes SR	1280	No	Yes	



Fort Spokane

SPOKANE ARM (FORT SPOKANE TO LITTLE FALLS)

FORT SPOKANE (RIVER MILE 43): This highly developed area contains a drive-in campground with 67 sites and two group sites as well as an amphitheater. The boat launch accommodates two cars at a time. There is parking for 81 cars and 88 boat trailers. There is a visitor center and historic fort with interpretive trails. It also contains a large swim beach (imported sand), a fish-cleaning station, and a picnic area with a picnic shelter and play structures. NPS maintenance and other offices are also located here.

COUGAR COVE (RIVER MILE 49): This undeveloped area has no public facilities and no public road access.

DETILLION (RIVER MILE 50): This fairly large boat-in campground contains 12 sites, two fire pits and two primitive boat ramps but no public road access. The campground is expanding into the adjacent forested area.



Porcupine Bay

PORCUPINE BAY (RIVER MILE 55): This area is one of the most highly used and popular sites within the Lake Roosevelt. The campground was constructed in the late 1950's. Campsite density is high since 16 sites were split to form the present 31-site campground. In addition to the campground, there is a boat launch which accommodates three cars at a time; a large swim beach; picnic areas on the lawn and in the trees; a fish-cleaning station; and parking for 33 cars and 92 boat trailers. Because of crowded conditions impacts from overuse led to an EA to modify the campground and parking area configuration and to upgrade the restrooms (including ADA access) (see "Chapter II: Purpose and Need"). Sediment deposition has caused aquatic vegetation to spread within the last few years and testing of a benthic barrier is currently underway to protect the swim area. Neighboring homes have sewer/water easements over park property and permitted seawalls since many are on the edge of the lake.

LAUGHBON BAY/LANDING (RIVER MILE 55): This undeveloped area has no public facilities but can be accessed by public roads. There was formerly a boat launch at this site because of formerly developed areas (a highway river crossing) now beneath the lake.

CAYUSE COVE (RIVER MILE 60): This undeveloped area has no public facilities and no public road access. An illegal boat launch, however, has been constructed. Cayuse Cove is a 45 minute drive from Porcupine Bay or a 10 minute boat ride.

MOCCASIN BAY (RIVER MILE 60): This area has no public facilities but does have public road access. There are private, non-CAP compliant boat docks and a primitive non-compliant boat launch. Nearby communities include Moccasin Bay, Arrowhead and Sunset Point. .



Hunters

HUNTERS/RICE AREA (ENTERPRISE TO COLVILLE RIVER)

HUNTERS (RIVER MILE 64): This developed area contains a drive-in campground with 29 sites, a boat launch, picnic area, swim beach (imported sand), day use area, and parking for 55 cars and 56 boat trailers. The unique parking area has medians planted with kinnickinnick (*Arctostaphylos uva-ursi*) and Oregon grape (*Mahonia aquifolium*).

JEROME POINT (RIVER MILE 71): This undeveloped area has no public facilities but is accessible from public roads.

GIFFORD (RIVER MILE 79): This developed campground contains 43 sites and is accessible from public roads.

RICKEY POINT (RIVER MILE 98): This area has no public facilities but does have public road access and contains a special use area at the end of the road with 16 vacation cabins. There is a CAP (mooring buoys) near the vacation cabins. In part, because there are no formal recreational facilities trash, human waste and non-native species are found.

KETTLE FALLS NORTH (KETTLE FALLS TO CHINA BEND)

KETTLE FALLS (RIVER MILE 102): This is the site of a full-service marina with an office, convenience store, houseboat rentals and fuel and dump station. The large area also includes NPS offices and maintenance buildings, a boat launch and parking, a campground, picnic and day use areas, a swim beach and a softball field.

MARCUS ISLAND (RIVER MILE 110): This site contains a campground with 27 sites, a small boat launch with a skid dock, a picnic/day use area, and swim beach. Except at full pool, the swim area is not functional due to sedimentation and what are now seasonally inundated wetlands with emergent vegetation.



Evans

EVANS (RIVER MILE 112): This developed campground has 43 campsites, a boat launch, and a day use, picnic and swim area.

KAMLOOPS ISLAND (KETTLE RIVER—RIVER MILE 112): This moderately sized campground contains 17 campsites and a boat dock. There is also a primitive boat launch.

Visitor Safety

The Tread Lightly[®] program is used at Lake Roosevelt not only to limit impacts to natural and cultural resources but to manage visitor safety. The program is not comprised of a set of rules or regulations, rather, it seeks to create a cooperative attitude, ethic and way of living that respects wildlands.

By following the principles of the program, visitor safety is enhanced:

- **TRAVEL RESPONSIBLY** includes observing rules and regulations such as no wake zones and not drinking and driving, as well as staying on designated trails and waterways open to the type of transportation.
- **RESPECT THE ENVIRONMENT AND THE RIGHTS OF OTHERS** includes being cautious of surroundings and yielding the right of way to non-motorized craft and complying with signage.
- **EDUCATE YOURSELF, PLAN AND PREPARE BEFORE YOU GO** includes using available maps and other information from visitor centers, maintaining watercraft in good condition, checking weather forecasts, thinking safety first (wearing life jackets and carrying water, fuel and fire extinguishers when appropriate), and sharing plans with friends or park staff.
- **AVOID SENSITIVE AREAS** includes not disturbing wildlife and shoreline vegetation and slowing down in shallow water.
- **DO YOUR PART** includes pack it in, pack it out, not burning garbage, not leaving unattended campfires or creating illegal ones, properly disposing of human waste (not digging cat-holes or dumping irresponsibly, and cleaning vehicles and equipment of weed seed before transporting it).

In addition, the NPS and other agencies conduct periodic boat launch ramp safety inspections and on-water safety checks. Safety information for boating is posted at launch ramps, while campgrounds and other visitor use areas contain safety information pertinent to their use. Safety messages are also conveyed in visitor centers, in the park map and newspaper, on the park's web site (www.nps.gov/laro) and as part of interpretive programs. Launch ramp safe lake levels are also posted and available in handouts. Mileage between facilities is noted on the park map and in the newspaper.



NPS bulletin board and interpretive sign at Hanson Harbor

The following key safety messages are in the park map and guide:

- Regulations differ among areas managed by federal, state and tribal agencies.
- Read bulletin boards, ask rangers, and know the rules.
- Beware of navigational hazards like deadheads (protruding logs and snags), sandbars and floating debris.
- Always wear a life vest (PFD) when on the lake.
- Never ride on the bow of a boat.
- There are no lifeguards; swim at your own risk. Do not swim alone.
- Dispose of human waste in proper sanitation containers. Do not use plastic bags. Use dumpstations and floating pumpout stations. Marine sanitation devices (MSD) are required when shoreline camping.
- Pets are not allowed on developed swim beaches or in picnic areas.
- Protect yourself from the sun and drink plenty of water.
- Please watch your children.
- Collecting artifacts is strictly prohibited. All plants, animals, rocks, historic areas, and submerged townsites are protected by federal laws.
- Call 911 for emergencies.

Scenic Resources

Note: The following discussion is taken from the Site Analysis Report prepared by Jones & Jones, Inc. for the Interdisciplinary Planning Team Alternative Development Workshop (Jones & Jones 2008:15 et seq.).

The ecological context of the lake strongly influences the aesthetic character and scenic values of the national recreation area. The intrinsic qualities of place—the dry sagebrush landscape of rolling hills and basalt cliffs, the pine needle-covered floor beneath the Ponderosa pines, or the exposed, eroding bank affect visitors' perceptions of the shoreline and the quality of their experience. Those special or landmark places, such as the Hawk Creek waterfall, serve to orient people within the recreation area and provide a visual image that defines the lake environment.

Several factors influence the quality of the aesthetic character of the shoreline:

- **VIEWPOINT**—A visitor camping on the shore experiences different views than a boater in the middle of the lake. For the visitor on the shore, the foreground is dominated by the individual trees and campground development, the middle ground by the lake, and the background by the surrounding hills. For the visitor on the lake, the foreground is the lake water, individual trees blur into a forest canopy in the middle or background and the surrounding hills provide context.
- **VIEWSHED**—All the places a visitor can see from any one point is the viewshed. An approximate viewshed has been created for Lake Roosevelt from the centerline of the old river. Using contour data and a Geographic Information System (GIS), viewsheds were calculated from points every three miles along the lake. The viewsheds were added together to show the surrounding landscape as having High, Medium or Low visibility from the lake.
- **VIVIDNESS**—Vividness, along with intactness and unity, form a three part description of aesthetic quality used heavily by the U.S. Forest Service and state transportation agencies. Vividness describes the visual power or memorability of the landscape components as they combine in striking and distinctive visual patterns. The shoreline of Lake Roosevelt can be striking and distinctive in specific places, but compared to other National Parks with more dramatic scenery, is not as highly vivid as a whole. Topographic elements, such as Whitestone Rock or the cliffs above Lincoln Mill, however, form a necklace of vivid landscapes seen along the southern lake shoreline. Along the Spokane Arm, the lake itself provides the only vivid element. While in the north, the combination of sweeping grasslands, pine forests and eroding cliffs contributes to vivid scenery in the intersections of disparate ecosystems.



Example segment of scenic viewshed assessment (orange indicates visibility from lake)



NPS development that blends into the scenic landscape



Lake Roosevelt shoreline

- **INTACTNESS**—Intactness is the visual integrity of the landscape and its freedom from non-typical encroaching elements. If all of the various elements of a landscape seem to “belong” together, there will be a high level of intactness. For the most part, non-typical, encroaching elements consist of man-made elements, such as power lines, vacation homes and houseboats not built with local materials and which contain patterns and colors that distract from the natural landscape. NPS development, even where significant such as at Keller Ferry, tends to blend in to the landscape, due to familiarity of the elements to the typical visitor and the consistent nature of their design and use. A few NPS developments, however, encroach on scenic intactness; these include floating pump-out stations, larger parking lots at the entrance to facilities (i.e., Seven Bays), and even areas with denuded vegetation or invasive species (i.e., patches at Crescent Bay). Scale and distance affect visitors’ perception of intactness. Seen at a great distance, the floating pump stations are dwarfed by the surrounding basalt cliffs, for instance. Since the recreation area boundary is fairly close to the lake shore, most of the visible hills surrounding the lake that influence the lake’s intactness are outside the control of the NPS.
- **UNITY**—Similar to intactness, unity is the visual harmony of the landscape considered as a whole. Unity represents the degree to which the visual elements maintain a coherent visual pattern. From Enterprise to China Bend, the lake shore exhibits a high degree of unity at full pool given the significant forest cover and the lack of shoreline development. When lake levels drop in the winter and spring, the extended exposed sand banks create a visual “bathtub ring” around the lake that reveals the artificial hydrologic regime. This exposed beach detracts from the unity of the mostly natural landscape. From Crescent Bay to Fort Spokane, the lake shore exhibits a lower degree of unity at full pool due to the lack of trees, and the visibility of encroaching development and land use patterns. Fluctuating lake levels do not have as significant an impact on unity, as in the north, because the exposed sand appears similar to the shrub-steppe landscape and coloration.

In general overall scenic views are enhanced from Lincoln and Stevens County areas because the Colville Tribes do not allow homes within one mile of the lake shore, and because the Spokane Tribe has placed a moratorium on lake shore development outside of the Two Rivers area.

M. Socioeconomics

Lake Roosevelt lands encompass five counties (Okanogan, Ferry, Stevens, Lincoln and Grant) and are adjacent to two Indian Reservations (Colville and Spokane). Lake Roosevelt is but one recreational opportunity among many in this part of eastern Washington. Within 100 miles of the dam there are four national forests (Okanogan, Colville, Wenatchee and Kaniksu), six other major lakes or reservoirs (Lake Chelan, Lake Coeur d'Alene, Lake Pend Oreille, Priest Lake, Banks Lake, and Potholes Reservoir), several smaller reservoirs on the Columbia or Snake Rivers, as well as three other national park areas (North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area).

The national forests have a substantial complementary recreation potential, which consists of smaller lake and stream fishing, camping, hunting and winter sports. Similar boating and fishing opportunities are available on the lakes. The potholes country, to the south in the channeled scablands formed by the ancient Ice Age floods, also offers fish and game bird oriented activities as well as a new Ice Age Floods National Geologic Trail. The Grand Coulee Dam itself is a tourist destination that attracts more than 300,000 visitors a year to tour the dam and watch the laser light show.

Population

Spokane is the closest metropolitan area to the national recreation area. Spokane and Spokane County have a population of about 462,677, about double the aggregate population of the six-county area.

Gateway Community Visitor Services

The towns of Coulee Dam, Grand Coulee, Electric City on the southwest, Kettle Falls and Colville on the north and Davenport and other towns along the Highway 2 corridor on the south offer a variety of services, including motels, RV parks, gas stations, grocery stores and tourist information. A new regional visitor center in Kettle Falls will be jointly staffed by the NPS. Other smaller towns and rural areas surrounding the recreation area offer fewer choices for food, lodging, fuel and other services. In general, the majority of visitor services are strung out along the major highways, including U.S. 97 in the Okanogan Valley, U.S. 395 in Stevens County between Canada and Spokane, I-90 to the south, and State Route 17 between Moses Lake and Coulee City.



Town of Coulee Dam

**TABLE VI-6: WASHINGTON STATE GROWTH MANAGEMENT ACT
COUNTY POPULATION PROJECTIONS 2000-2030**

	Census	Estimate		Projections			
	2000	2005	2010	2015	2020	2025	2030
Douglas	32,603	34,700	43,321	48,042	52,461	56,920	61,216
Ferry	7,260	7,400	9,294	10,128	11,207	12,305	13,375
Grant	74,698	79,100	96,565	104,425	110,922	117,349	123,302
Lincoln	10,184	10,100	11,402	12,085	13,336	14,590	15,798
Okanogan	39,564	39,600	46,414	50,000	53,040	56,034	58,790
Stevens	40,066	41,200	46,616	52,053	58,098	63,997	69,527

TABLE VI-7: COUNTY POPULATION 2000-2008

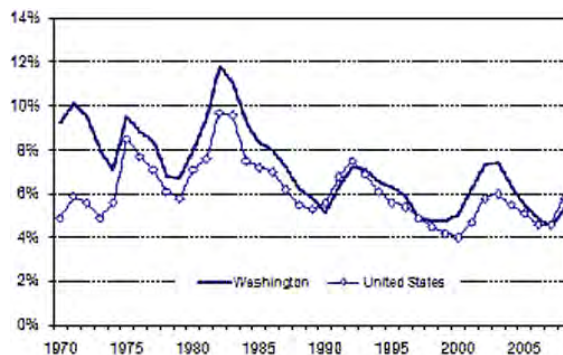
County	2000	2001	2002	2003	2004	2005	2006	2007	2008	Change 2000–2008	
										Number	Percent
Douglas	32,603	32,800	33,100	33,600	34,200	34,700	35,700	36,300	37,000	4,397	13.49
Ferry	7,260	7,300	7,300	7,300	7,300	7,400	7,500	7,550	7,700	440	6.06
Grant	74,698	75,900	76,400	77,100	78,300	79,100	80,600	82,500	84,600	9,902	13.26
Lincoln	10,184	10,200	10,200	10,100	10,200	10,100	10,200	10,300	10,400	216	2.12
Okanogan	39,564	39,700	39,800	39,600	39,600	39,600	39,800	39,800	40,100	536	1.35
Stevens	40,066	40,300	40,400	40,600	40,700	41,200	42,100	43,000	43,700	3,634	9.07

Source: <http://www.ofm.wa.gov/pop/april1/> (accessed 6/09)

TABLE VI- 8: SURROUNDING COUNTY INCOME

County	2007 Per Capita Personal Income (PCPI)	2006-2007 PCPI Growth	1997–2003 PCPI Growth
Douglas	\$27,260 66% state; 71% national	5.6%	3.6%
Ferry	\$21,520 52% state; 56% national	8.2%	2.9%
Grant	\$24,733 60% state; 66% national	5.2%	2.4%
Lincoln	\$27,108 66% state; 70% national	17.5%	2.2%
Okanogan	\$28,880 70% state; 77% national	5.8%	4.3%
Stevens	Unknown	Unknown	Unknown
	State Average: \$41,203 National Average: \$38,615	State: 6.6 % National: 4.9%	State: 4.5% Nation: 4.3%

WASHINGTON STATE UNEMPLOYMENT RATE 1970-2008



N. Park Operations

Budget and Staffing

Lake Roosevelt currently has 58 full-time equivalent employees who work in maintenance, visitor and resource protection, interpretation and education, natural and cultural resources management and administration. The park has an annual operating budget of over \$5,000,000. This is supplemented by additional money allocated for specific rehabilitation, construction, cyclic and other projects. Money to implement larger projects comes via congressional appropriations and concession fee funding.

Nine full-time rangers patrol the recreation area. The number of rangers decreased between 2006 and 2007. Two districts are used for park management, a north district centered at Kettle Falls and a south district centered at Spring Canyon/Fort Spokane. Rangers spend time, according to their own observations, either patrolling some or all of the 312 miles of shoreline or patrolling roads and developed areas on shore. Occasionally, an entire shift is spent managing traffic and other problems at a busy campground.

Ten to twelve youth are seasonally employed in the Youth Conservation Corps (YCC). These youth participate in a two month program where they are paid the Washington State minimum wage (\$8.07/hr during summer 2008). Their primary focus is on the campground/resource maintenance program but they are also exposed to other tasks experienced by park rangers, including patrolling the lake.



Boat launch at Seven Bays

Infrastructure

Where standardization has been applied, major launch ramps are 60-feet wide with a 10 to 12% slope and have a length as long as the site grade will allow. Depending on the grade, launches will continue to be operational after a draw down. Adjustable boat docks are 6 feet x 100 feet.

Potable Water Provision

If water is provided at an NPS facility, recreation area maintenance staff must sample water twice a month and sample chlorine every day to ensure adherence to potability standards. This activity requires a major investment of time and training for maintenance staff. The park also maintains four floating toilets. The park currently manages 72 vault toilets and 20 flush toilets or comfort stations. The comfort stations are winterized (closed in the winter).

Beach Cleanup/Monitoring

The park conducts a formal beach cleanup effort to monitor and assess whether signage or an increase in maintenance affects littering. Ongoing management problems stem from the construction of illegal fire rings, twine and driftwood houses and other structures, as well as from camping equipment, such as chairs, and trash left behind. For the cleanup, ten sites a year are monitored twice a week. Each year, after an initial cleanup, rangers break up structures or fire-rings but do not completely clean the area again until after monitoring is completed. A recent



Marcus Island facilities

visit to one of the sites, Cougar Cove, revealed a disturbed site with lots of trash and a fire ring even though it had been cleaned two weeks earlier. The recreation area is now experimenting with “Boat it in, Boat it out” signs used by Lake Mead National Recreation Area. Five of these signs have been put on beach cleanup sites on Lake Roosevelt to determine their effect on visitor behavior.

Special Management Provisions

Unlike some other national park areas, the recreation area allows hunting and the use of personal watercraft. It also has some special use management zones where the park encouraged the development of private cabins on public land in the 1950s.

Lake Patrols

Within the last twenty years, there has been an increase in the number of recreational boaters on Lake Roosevelt. Fishing seems to have remained steady. This increasing number of visitors has resulted in an increase in user conflicts and injuries. In the summer of 2007, there were two deaths and 19 medical evacuations for serious injuries on the water. Because many accidents and injuries go unreported these statistics do not provide an accurate depiction.

Emergency Response

Because there is no permit system for designated or informal boat-in campsites, it is very difficult to locate visitors when an outside emergency call is received by the park. Boating visitors could be anywhere along the more than 150 miles of shoreline. Because of the Colville and Spokane reservations, it is also difficult for visitors to determine in whose jurisdiction they are residing when placing emergency calls.

Encroachments

As of 2008, there were 272 documented trespasses/encroachments on the recreation area shoreline. Managing encroachments is a difficult and time consuming legal process.

Visitor Carrying Capacity Management

No comprehensive carrying capacity studies have been completed. The Concessions Management Plan examined houseboat carrying capacity. Physical carrying capacity is limited by facilities such as building or parking lot size. Although parking areas may fill, however, there may still be open beach areas nearby. Even at crowded, existing facilities, visitation can be facilitated through more intensive management, such as a one-in one-out strategy as has occurred recently at Porcupine Bay.

Interpretation and Education Programs

The recreation area’s interpretive and education programs are diverse, including both education for school and community groups and interpretive programming for the general public. The recreation area newspaper describes the availability of programs.

VII. Environmental Consequences



A. Impacts to Land Use



Impacts of Alternative A

There would be no major changes in land use associated with the implementation of Alternative A. Ongoing proposals that have not yet been implemented as a result of other plans would continue, including development of a marina at Crescent Bay, expansion of parking and camping at Porcupine and other actions from existing approved plans/environmental assessments.

Impacts of Alternative B

Implementation of Alternative B would result in new facilities in several locations, where existing land is comprised of native and/or degraded non-native vegetation. Proposed locations would comply with recreation area zoning established in the *General Management Plan* (NPS 2000). Facilities, at Moccasin Bay and Cayuse Cove, however, would constitute an amendment to the GMP stipulation regarding additional facilities on the Spokane Arm.

New areas of development in Alternative B would include allowing primitive boat launching near Kamloops Island and Laughbon Landing; walk-in camping along Highway 25 between Jerome Point and Daisy; a deepwater boat launch, day use area and parking at north Rickey Point; new facilities, including a marina, interpretive/education center, restrooms, picnic areas, a designated swim beach and trails at Crescent Bay; and a new restroom upstream of Cayuse Cove on the Spokane Arm. Expanded facilities would include extensions to boat docks and log-booms, expanded parking at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln; and a new primitive boat launch/dock at Moccasin Bay and Corkscrew. Combined, these new and expanded facilities would have moderate adverse effects on changing land use from passive to developed recreation, a use that is wholly consistent with the purposes of the recreation area. There would be approximately 7.95 acres of new developed areas and 10.32 acres of expansion. Restoration of approximately 12 acres would contribute long-term minor localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Impacts of Alternative C

As in Alternative B, Alternative C would result in new facilities in several locations, where existing land is comprised of native and/or degraded non-native vegetation. The same GMP amendment regarding facilities on the Spokane Arm would also be needed.

New areas of development in Alternative C would include the walk-in camping along Highway 25 between Jerome Point and Daisy and the same new facilities at Crescent Bay as in Alternative B. Compared to Alternative B, there would be fewer expanded facilities in Alternative C, with the same extensions to boat docks and log-booms, and expanded parking only at Crescent Bay, Keller Ferry, Porcupine

Bay, and Gifford, plus the expanded facilities at Moccasin Bay and Corkscrew. As in Alternative B, the combined effects of these changes would be localized and minor to moderate and would change passive recreation areas to developed recreation areas. There would be approximately 4.9 acres of new developed areas and 7.24 acres of expansion. Restoration of approximately 12 acres would contribute long-term minor localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Impacts of Alternative D

Alternative D would also result in new facilities where none are now present, including on the Spokane Arm.

New areas of development in Alternative D would include walk-in camping between Jerome Point and Daisy, with an additional walk-in camping area/rest area at Jerome Point; some new facilities at Crescent Bay (although these would be reduced compared to Alternatives B and C with only one developed parking area and outdoor interpretive exhibit panels instead of an interpretive/education center); the deepwater launch, combined with a day use area and additional designated swim beach at Rickey Point; and additional designated group boat-in campgrounds.

Expanded facilities would include not only the boat dock and log-boom extensions related to the proposed additional summer draw down of Lake Roosevelt, but also expansion of docks to accommodate increased visitor use at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Gifford and Evans. Expanded overflow parking lots would include those at Keller Ferry, Porcupine Bay and Fort Spokane, while other new facilities would also include Moccasin Bay and Corkscrew. The combined effects of these changes would be localized and moderate and would change passive recreation areas to developed recreation areas. There would be approximately 4.97 acres of new developed areas and 6.57 acres of expansion. Restoration of approximately 9.27 acres would contribute long-term moderate localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Measures to Avoid, Minimize, or Mitigate Impacts

- New areas of development would be the minimum needed to accommodate proposed activities.
- Development footprints would be concentrated, rather than spread out.
- Construction limits



Spring Canyon, circa 1961

- would be clearly delineated to prevent expansion of construction operations into undisturbed areas.

Cumulative Impacts

Over time, land use within and around Lake Roosevelt National Recreation Area has changed. Setting aside the effects of the creation of the dam, areas adjacent to the lake have, over time, been modified to accommodate additional recreational access to the lake. New areas have been developed and previous access areas have been redeveloped, such as Spring Canyon during the 1960s. In addition, there have been slight modifications of the recreation area boundary, such as the inclusion of the Crescent Bay area. These actions have both decreased and increased the amount of open space on public lands surrounding the lake. In addition, there has been ongoing private land use development outside the boundary of the recreation area that has resulted in a dramatically different landscape along this edge.

Alternative A would contribute negligible cumulative effects on land use, while Alternatives B, C, and D would contribute additional localized minor adverse effects on land use by expanding development into new areas and by expanding the development footprints of existing areas. Effects would be similar, but would be greatest in Alternative D, followed by B and C.

Conclusion

Alternative A would have minor adverse effects on land use and negligible cumulative adverse effects from the implementation of existing plans and programs. Alternative B would have localized moderate adverse effects on land use from new and expanded developments in some areas and would contribute minor cumulative effects on land use. Alternative C would have minor to moderate adverse effects on land use and minor cumulative adverse effects. Alternative D would have moderate adverse effects and minor cumulative adverse effects on land use. Alternatives B, C and D would also have long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.

B. Impacts to Air Quality



Impacts of Alternative A

Although air quality within the park is generally very good and meets attainment standards for all pollutant criteria measured, ongoing temporary impacts to air quality would continue to occur from existing operations, including from automobile, heavy equipment, and boat emissions, heating of nearby homes and businesses, NPS administrative operations, wildland and prescribed fires and weather conditions, such as temperature inversions. Particulates would continue to be released during windy conditions as the lake level is drawn down and the shoreline dries out and from driving on unpaved roads and parking areas. Minor localized adverse impacts would continue to occur from existing use of the recreation area.

Administrative operations, including operation of automobiles and diesel-powered tools and equipment, such as patrol boats, pump-out barges and other equipment would continue to cause negligible localized air quality impacts. In addition, periodic NPS construction and maintenance projects would also cause negligible to minor localized degradation depending on the project and its duration.

Impacts of Alternative B

In addition to impacts from Alternative A, short-term negligible to moderate localized adverse effects could occur from exhaust emissions and dust during construction activities for minor facilities, such as restrooms, and for major facilities, such as the proposed Crescent Bay development. These would be reduced, where possible, by using water trucks and other best management practices, such as those to minimize dust generation during excavation and to minimize trip generation by contractors and/or NPS maintenance staff by carpooling and other means.

Compared to Alternative A, there would be an increase in gravel overflow parking areas under Alternative B, with new gravel parking lots planned for boat launches at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln, there would be additional long-term negligible to minor localized adverse impacts on air quality from additional release of dust from driving over these unpaved surfaces. Additional minor to moderate localized adverse impacts would come from allowing beach fires year-round in designated fire pits, depending on the number of fires at boat-in and other campgrounds and on weather conditions. Negligible adverse effects would be contributed by increasing the number of floating toilets/dump stations, thereby increasing travel time to maintain these.

Negligible to minor long-term beneficial effects would occur from paving of roads and restoration of denuded areas in the Crescent Bay area, while long-term minor beneficial effects would occur from increasing the number of Community Access Point (CAP) facilities, including docks, launches and mooring buoys as well as from establishing new facilities that required residents to drive shorter distances to access Lake Roosevelt facilities (including new boat launches at Rickey Point, Moccasin Bay, Corkscrew, Laughbon Landing, and Kamloops Island and from expanding docks at various locations). These new facilities would help to minimize the need to continue boating up- or down-lake to access other facilities. Similarly negligible beneficial effects could also occur from the implementation of a zone-based boat-in camping permit system, which would confirm camping access instead of visitors having to boat until a free location was found as in Alternative A. For the same reason, these negligible beneficial effects could also occur from the proposed expanded campground reservation system and from extending dock or log-booms so that launches continued to be accessible during draw-downs.

Impacts of Alternative C

Adverse impacts would be similar to Alternative B; however, there would be fewer new overflow parking lots, with four, rather than six new overflow parking lots. This could result in fewer impacts from dust from construction and use of the parking lots, or it could result in future unanticipated impacts from visitors driving around more as they continued to search for available parking spaces. Because no additional floating toilets would be added, there would be no additional need for travel time to pump these out, thus impacts from floating toilet operations would be similar to Alternative A.

Impacts from construction of new facilities would be similar to Alternative B, with many of the same new facilities added, including some new boat-in campsites, Crescent Bay facilities, some new trails and beach access routes, and from changes to existing designated swim areas.

Beneficial effects would also be similar to Alternative B, with a variety of negligible to minor benefits, including those related to new facilities, to expansion of docks and log-booms related to the proposed additional draw down, and to the zone-based boat-in camping permit system; however there could be fewer CAPs since the ones at Laughbon Landing and Kamloops Island would not be used.

Impacts of Alternative D

As in Alternative C, adverse impacts from four new overflow parking areas would be similar to Alternative C, however, instead of an overflow lot at Gifford, there would be one at Lincoln. This could result in fewer impacts from dust from construction and use of the parking lots than in Alternative A, or it could result in future unanticipated impacts from visitors driving around more as they continued to search for available parking spaces.

Impacts from boaters driving long distances searching for camping facilities during high use periods would be the same as in Alternative A, because permit systems proposed in Alternatives B and C would not be implemented, however this would be partially mitigated by the addition of the boat-in campsites and the ability to continue to camp anywhere along the shoreline.

Compared to Alternatives B and C, there would be additional beneficial effects from adding directional signage on the lake to assist boaters in finding needed services, such as toilets and gas; and from expanding docks at areas such as Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Gifford, and Evans, as well as minor beneficial and negligible adverse effects from adding more floating toilets.

Measures to Avoid, Minimize, or Mitigate Impacts

- Spraying water over exposed soil, particularly during dry conditions to minimize fugitive dust.
- Covering trucks transporting cut or fill material to reduce or eliminate particle release during transport.
- Encouraging contractor and NPS employees to travel together to and from the project site to the extent possible (rather than in multiple separate vehicles).
- Revegetating bare and staging areas as soon as possible.
- Minimizing the extent of vegetation removal associated with construction activities.
- Encouraging the use of local labor sources and large-volume material delivery to minimize trip generation during construction activity.
- Using propane and solar devices for heating.
- Using low VOC paints, solvents and other chemicals in building construction.
- Restricting idling of construction vehicles and equipment to no longer than 15 minutes when not in use.
- Using biodiesel rather than traditional diesel fuel.
- Have flagger request that non-work vehicles be turned off if delays are longer than 5 minutes to reduce air pollution until traffic flow resumes.

Cumulative Impacts

Over time, human impacts such as the development of roads, businesses and housing have contributed to increasing vehicle travel to obtain goods and services and to access recreational experiences. In Washington, as elsewhere, population increases have resulted in dramatic increases in the number of vehicle miles traveled. In addition, these increases associated with vehicle travel have been coupled with increases in the number of industrial, commercial and other vehicle sources of pollution. With the passage of the federal and state clean air acts, emissions controls have been implemented on stationary and mobile sources of air quality degradation. Washington has been proactive in establishing vehicle emissions standards for urban areas. Over time, these standards have changed and have resulted in moderating the effect of ever increasing population and industry.

In the recreation area, existing adverse impacts to air quality (vehicle traffic, campfires, etc.) would not increase substantially as a result of the proposed actions under the alternatives described herein, nor would there be changes to existing long-term regional beneficial effects such as public transportation. Near Lake Roosevelt National Recreation Area, a large number of vehicle miles are traveled on surrounding roads to access recreation area facilities. In some cases the nearest boat launch or swim beach may be more than an hour's drive from nearby homes. As a result, over time, with the development of more facilities and as the areas surrounding the recreation area boundary have developed, long drives to access the lake have become less common for nearby residents. Because no additional long-term emissions sources would occur from the actions described herein, the contribution of Alternatives B-D to regional long-term cumulative effects would be small (negligible to minor) and would not be detectable. Alternative A contributions would be negligible since it would minimally change existing conditions.

Conclusion

Alternative A would have localized negligible to minor adverse effects on air quality. Alternatives B and C would have short-term localized negligible to moderate adverse effects and negligible to minor long-term beneficial effects on air quality, with fewer moderate adverse effects in Alternative C. Alternative D would also have a series of short-term negligible to moderate adverse effects related to construction, with some additional beneficial effects primarily related to improving signage to facilities from the lake. Alternative A would contribute negligible cumulative adverse effects, while Alternatives B-D would contribute negligible to minor long-term cumulative adverse effects and negligible beneficial effects on air quality. There would be no major adverse effects and no impairment of air quality or air quality related values from the implementation of the alternatives described in this Environmental Assessment.

C. Impacts to Soils and Vegetation



Impacts of Alternative A

There would be ongoing negligible to minor, localized adverse impacts to soils and vegetation from shoreline access trails; land based facilities, such as parking and access roads at community access points and primitive boat launches; overflow parking at high use areas; undesignated shoreline campsites; informal pedestrian access to shoreline areas; limited day use toilet facilities along the shoreline; allowing informal camping anywhere along the shoreline; as well as from ongoing maintenance of existing recreation area facilities, including trails, buildings and roads and native and non-native vegetation removal.

Impacts of Alternative B

In addition to ongoing negligible to minor impacts from existing operations as in Alternative A, Alternative B would have negligible to moderate localized impacts on soils and vegetation.

Additional localized negligible to minor adverse effects would occur from the following activities: controlling native and non-native aquatic vegetation in designated swim beach areas; constructing new designated boat-in campsites; designating additional group campsites; extending boat docks and log booms; permitting additional community access points; and formalizing or consolidating neighborhood beach access trails.

More extensive impacts (as described below) would occur from proposed actions at Crescent Bay, Moccasin Bay, Corkscrew and Rickey Point and from establishing new and overflow parking areas and trails and providing for walk-in camping.

TABLE VII-1: SUMMARY OF IMPACTS FOR NEW DEVELOPMENTS

	Miles of Paved Road	New Paved Surface Area (sq ft)	New Structure Footprint Area (sq ft)	Restored Area (sq ft)
Crescent Bay	0.7	188,800	5,100 (Alts B, C) 3,100 (Alt D)	485,900 (Alts B, C) 403,603 (Alt D)
Moccasin Bay	0.15	33,500	100	3,300
Rickey Point	0.5	145,250 (+ 7,500 boat launch)	175	n/a
Corkscrew	0.1 (unpaved)	30,500	100	n/a

CRESCENT BAY

There would be minor to moderate localized impacts on soils and vegetation from constructing and paving roads and constructing facilities (including formalizing the existing parking area; constructing an overflow parking area, education/interpretive center, outdoor amphitheater, restrooms, picnic shelter, kayak/canoe launch, fishing pier and campground) within the Crescent Bay development. Overall impacts on soils in the Crescent Bay area would be minor because this area has been heavily disturbed by dam construction and other activities and is largely comprised of non-native fill material and plants. Approximately 15 to 25 acres of fill with mostly non-native vegetation, interspersed with pockets of native shrub-steppe and other native vegetation are located at the Crescent Bay area. Another approximately 7.6 acres of this area currently consists of roads and parking areas currently used informally to access Crescent Bay Lake, an informal swim beach, and formally to access the existing boat launch. The education/interpretive center would occupy approximately 2,000 square feet, while the swim beach and campground area restrooms would each be about 100 square feet and the amphitheater would be about 3,800 square feet. Small (21,500 square-foot) parking areas would be located near the swim beach/day use picnic area, canoe/kayak launch, and education interpretive center. Approximately 20 drive-in campsites along a loop road would be constructed.

Among the vegetation that would be affected at Crescent Bay would be a variety of annual and perennial grasses, including needlegrass, bluegrass and wheatgrass; herbs such as arrowleaf balsamroot, phlox, and lupine; shrubs such as sagebrush, bitterbrush, rabbitbrush, purple sage and serviceberry; as well as a variety of non-native trees.

MOCCASIN BAY

There would be minor to moderate localized adverse impacts on soils and vegetation from constructing a 800-foot long road and boat launch, as well as a small parking area. Minor beneficial impacts would occur from restoration of the area now containing access to the damaged boat docks/boat access. Approximately 0.1 acres of existing annual and perennial grasses, willows and other vegetation would be affected for the boat launch, while 0.77 acres (including the removal of various shrubs, forbs and grasses and three trees) would be affected for the parking area.

CORKSCREW

There would be minor to moderate localized adverse impacts on soils and vegetation from improving a short (100-foot ingress road, constructing a turnaround, and improving the short egress road in this area, as well as from delineating a small parking area. Approximately 0.7 acres would be affected.

RICKEY POINT

There would be minor to moderate localized adverse impacts on soils and vegetation from constructing a new deepwater boat launch, parking area, day use/picnic area, and restroom near Rickey Point. Approximately 3.05 acres of existing low lying annual and perennial grasses and forbs with sporadic shrubs would be affected. Among the vegetation that would be affected at Rickey Point would be Ponderosa pine forest and open grasslands with a mix of native and non-native species, including willows, alders and apple trees.

OVERFLOW PARKING LOTS

The six overflow parking lots proposed in Alternative B for Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln would have minor to moderate localized adverse effects on soils and vegetation from the removal of a variety of trees, shrubs, and forbs to construct the parking lots and from compacting soil and fill with a gravel surface (see Table VII-2: New and Overflow Parking Lots). Affected vegetation and area size is identified in the table below.

WALK-IN CAMPING

Vegetation and soils would be disturbed to create the walk-in campground (approximately 12 sites with a short (0.4 mile) access trail and a small parking area (10,000 square feet) between Jerome Point and Daisy. This walk-in camp area would comprise an area of approximately 0.55 acres and is currently comprised of mixed Ponderosa pine and grasslands.

TRAILS

Minor to moderate, localized adverse effects on soils and vegetation would also occur from the construction of trails, including the shoreline trail between Crescent Bay and Spring Canyon (approximately 3.75 miles) and Crescent Bay and Grand Coulee (approximately 0.5 miles to the interpretive panels or 1.0 mile to the swim beach), from Bradbury Beach to Rickey Point (approximately 3.5 miles), from Kettle River Campground to Napoleon Bridge (approximately 1.85 miles) and for the interpretive overlook (0.15 miles) and loop trails at Crescent Bay (approximately 1.5 miles for a short loop and 3.0 miles for a longer loop). Negligible vegetation impacts would occur from formalizing trails within the shrub-steppe hillside at Crescent Bay (approximately 2.5 miles). Linking other recreation sites by trail would also have minor to moderate localized impacts on soils and vegetation. These trails pass through the following vegetation communities: shrub-steppe, non-native grassland, and Ponderosa pine forest.

TABLE VII-2: NEW AND OVERFLOW PARKING LOTS

Parking Lot	General Description	Vegetation	# Cars # Boat Trailers	Size of Proposed Parking Area
Crescent Bay Overflow (Alt B)	New overflow parking area.	Disturbed shrub-steppe	100 boat trailer	83,500 sq ft 1.92 acres
Crescent Bay Parking (Alt B, C, D)	Install paved parking area for boat launch and marina	Disturbed shrub-steppe and existing crushed gravel	50 car 100 boat trailer	108,000 sq ft 2.48 acres
Keller Ferry Overflow (Alt B, C, D)	New parking area adjacent to existing parking lot; extend existing parking lot 40 ft south; realign existing intersection of the main road, existing boat launch parking lot, campground road and concession road	Shrub-steppe	10 car 84 boat trailer	90,320 sq ft 2.07 acres
Porcupine Bay Overflow (Alt B, C, D)	New parking area southwest of the existing parking lot. Use existing gravel service road for access; requires thinning within the wooded area	Ponderosa pine forest	30 boat trailer	40,000 sq ft 0.85 acres
Lincoln Overflow (Alt B)	Private gravel lot was acquired by recreation area to be used as overflow. No new development	N/A	40 boat trailer	36,000 sq ft 0.83 acres
Gifford Overflow (Alt B, C)	New parking area to the northeast of the existing parking area	Ponderosa pine forest	40 boat trailer	43,560 sq ft 1.00 acre
Fort Spokane Overflow (Alt B, D)	New parking area and one-way road; relocate fee station; widen launch ramp	Disturbed roadside grasses with mix ponderosa pine and shrub steppe	80 boat trailer	98,010 sq ft 2.25 acres
Rickey Point (Alt B,C, D)	New deep water launch, parking and day-use area	Mix ponderosa pine and shrub steppe	40 day use 110 boat trailer	133,000 sq ft 3.05 acres
Moccasin Bay (Alt B, C, D)	New launch with parking	Mix ponderosa pine and shrub steppe	3 car 10 boat trailer	33,500 sq ft 0.77 acres
Corkscrew (Alt B, C, D)	New launch with parking	Ponderosa pine forest	8 boat trailer	30,500 sq ft 0.70 acres

Note: Most overflow parking areas would include an added base course and pervious crushed gravel surface with concrete bumper stops to orient vehicles.

Minor to moderate, localized, long-term beneficial impacts would occur from removing non-public constructed trails; from restoring the paved road and hillside near the entrance to Crescent Bay, and the steep bluff encircling the bay below and from restoration in the vicinity of the interpretive trail. Approximately 11.2 acres throughout the site would be restored to a native shrub-steppe community. Other restoration actions at Crescent Bay would have long-term minor to moderate beneficial impacts from removal of fill with intermittent chunks of concrete and other debris from long-time impacts at this site and replacement with topsoil and native vegetation. Restoration associated with the Moccasin Bay # Rickey Point developments would also provide long-term minor beneficial effects. Negligible beneficial effects would occur from increasing public education about native and non-native invasive weeds and from using volunteer work parties to control invasive weeds, from expansion of the Tread Lightly® program as well as from continuing interpretive programming for school children regarding lake ecology other key park resources.

Impacts of Alternative C

Impacts of Alternative C would be similar to Alternative B. For actions at Crescent Bay, Moccasin Bay, Corkscrew, and walk-in camping impacts would be the same as Alternative B, including negligible to moderate adverse effects and localized long-term beneficial effects from restoration. With no new facilities at Rickey Point, overall impacts affecting new areas would be reduced.

Other negligible to minor adverse impacts would also be similar, including for controlling native and non-native aquatic vegetation in designated swim beach areas; constructing new designated boat-in campsites; designating additional group campsites; extending boat docks and log booms; and from permitting additional community access points. Encouraging linked public trail connects to non-adjacent communities would also result in some negligible impacts (primarily from increased use of recreation area trails).

OVERFLOW PARKING LOTS

Rather than six overflow parking lots, as in Alternative B, there would be four in Alternative C (Crescent Bay, Keller Ferry, Porcupine Bay and Gifford) that would have minor to moderate localized adverse effects on soils and vegetation from the removal of a variety of trees, shrubs, and forbs to construct the parking lots and from compacting soil and fill with a gravel surface (see Table VII-2: New and Overflow Parking Lots).

TRAILS

Alternative C would have fewer minor to moderate, localized adverse effects on soils and vegetation from the construction of trails compared to Alternative B. As in Alternative B, negligible vegetation impacts would occur from formalizing trails within the shrub-steppe hillside at Crescent Bay (approximately one mile). While the shoreline trail between Crescent Bay and Spring Canyon (approximately 3.75 miles) and Crescent Bay and Grand Coulee (approximately 0.5 miles), and the interpretive overlook (approximately 0.15 miles) and loop trails at Crescent Bay (approximately 1.5 miles/3.0 miles) would be constructed, there would be no trails from Bradbury Beach to Rickey Point or from Kettle River Campground to Napoleon Bridge. Instead, new non-motorized multiple use trails would be encouraged, such as a trail from Kettle Falls to Colville. As a result, there would be some impacts within the recreation area and some impacts outside of it.

Negligible to moderate beneficial impacts associated with Crescent Bay, Moccasin Bay and restoration would be the same as in Alternative B. Other negligible beneficial effects would also be the same as Alternative B.

Impacts of Alternative D

Although Alternative D impacts to soils and vegetation would be similar to Alternatives B and C, Alternative D would establish some new facilities, including at Jerome Point and would likely have more formal beach access trails from nearby communities and a joint visitor center. Alternative D would also have fewer developed facilities at Crescent Bay (without an education/interpretive center, campground, and overflow parking area) but with a dog-loop trail through the shrub-steppe hillside (approximately 2.5 miles). Additional negligible to minor impacts could occur from expanding docks to accommodate increases in visitor use, including at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans.

JEROME POINT

There would be minor to moderate localized adverse impacts on soils and vegetation from developing a formal walk-in campground and day use/rest area facilities at Jerome Point in addition to the walk-in camping between Jerome Point and Daisy in Alternatives B and C. Approximately 12 walk-in sites within existing and enhanced vegetation would be developed in an area comprising approximately 0.55 acres. The rest area would comprise an additional 0.25 acres.

RELOCATING SWIM AREAS

There would be minor to moderate localized adverse impacts on soils and vegetation from relocating the Kettle Falls swim area to north Rickey Point and from relocating the Marcus Island swim area downstream.

CONSTRUCTING BEACH ACCESS TRAILS

Because many of the new trails would use existing disturbed pathways, there would be limited (minor) adverse impacts from establishing beach access trails at regular intervals throughout the recreation area.

JOINT VISITOR CENTER

Minor to moderate adverse impacts on soils and vegetation could occur from establishing a joint visitor center, depending on how large it was and where it was located. This action would likely require additional environmental analysis once a location is identified and specific plans developed.

Measures to Avoid, Minimize, or Mitigate Impacts

SOILS

- Locating staging areas where they will minimize new disturbance of area soils and vegetation.
- Minimizing ground disturbance to the extent possible.
- Avoiding precipitation times during construction.
- Minimizing driving over or compacting root-zones and using mats or plywood to minimize soil compaction impacts in sensitive areas.
- Salvaging topsoil from excavated areas for use in re-covering source area or other project areas.
- Not piling excavated soil alongside trees to remain, and providing tree protection for trees to remain.
- Windrowing topsoil at a height that will help to preserve soil microorganisms (less than three feet).
- Reusing (rather than removing) excavated materials from the project area.
- Revegetating project areas through native seeding and/or planting.
- Importing weed-free clean fill and topsoil.
- Delineating clearing limits to minimize the amount of vegetation loss.
- Clearing and grubbing only those areas where construction would occur.
- Installing silt fencing or other erosion control methods, to prevent loss of native soil.

VEGETATION

- Driving only on established roads and trails away from weed infested areas.
- Removing seeds from vehicles and equipment.
- Not driving recreation vessels through Eurasian water milfoil mats.
- Preventing the spread of Eurasian water milfoil by removing plant fragments from boat props, trailers, fishing lines, etc.
- Salvaging native plant material prior to construction and re-planting it afterwards.

Cumulative Impacts

Combined, past actions have had moderate, long-term localized adverse impacts on soils and vegetation due to an increase in the amount of impervious surface, decreased infiltration, soil compaction, loss of soil moisture and loss of organic soil horizons. These effects are spread throughout the recreation area. Ongoing effects from construction of the dam continue to occur, including from increased soil erosion from fluctuating water levels, lakeside instability, and windblown erosion during draw downs, as well as from an increase in water availability in new areas. Adverse impacts to soils and vegetation as a result of other past and ongoing actions include compaction, soil mixing, and soil and vegetation loss from removal and erosion, from development and concentrated visitor use in the recreation area, as well as from areas where soils have been disturbed and revegetation has not occurred naturally or been undertaken by the recreation area. There has been an overall decrease in soil infiltration, where hardening of surfaces (roads, walkways, buildings) has occurred. Revegetation and other restoration projects have contributed both minor beneficial and negligible adverse impacts. Compared to these recreation area-wide impacts, Alternative A would contribute additional negligible cumulative impacts on soils, while Alternatives B, C and D would contribute additional negligible to minor cumulative adverse impacts and long-term negligible to minor beneficial effects from restoration.

Conclusion

Alternative A would have ongoing negligible to minor adverse impacts on soils and vegetation and negligible cumulative adverse effects. Alternatives B, C and D would include most impacts from ongoing operations in Alternative A, but would have additional short- and long-term negligible to moderate adverse impacts on soils and vegetation and long-term moderate localized beneficial effects on vegetation and would contribute negligible to minor cumulative adverse and beneficial impacts. Impacts on soils and vegetation would likely be greatest (but still negligible to moderate) under Alternative D, followed by Alternative B and Alternative C. Alternative A would contribute additional negligible cumulative impacts on soils, while Alternatives B, C and D would contribute additional negligible to minor cumulative adverse impacts and long-term localized minor to moderate beneficial effects from restoration. There would be no major adverse effects and no impairment of soils and vegetation or their values from the implementation of the alternatives described in this Environmental Assessment.

D. Impacts to Water Resources (Water Quality)



Impacts of Alternative A

Marinas, campgrounds and other large developments along the reservoir can potentially impact water quality. Sanitary facilities and boat fuel and cleaning solvents at marinas are of particular concern (Riedel 1997:63). Nine sites within the recreation area still have pit toilets, while others have vault toilets and 16 sites contain running water. As a result, there would be ongoing impacts from the presence of these facilities on Lake Roosevelt. Where new marinas were permitted, such as the one at Crescent Bay, operations would need to adhere to management practices that would minimize the release of paints and solvents by providing boat cleaning facilities with state-of-the-art water treatment (similar to those provided for commercial car washes).

Ongoing water quality impacts, including the release of unspent fuel from boats and personal watercraft would also continue and would likely increase over time until better technology results in the reduction of these contaminants during boat and PWC operation. Although several reports (1980 and 2000 GMPs, and Water Resources Scoping Report (Riedel 1997)), have recommended water quality monitoring programs for human health at Lake Roosevelt, water quality monitoring has been conducted only sporadically. For awhile, it was conducted by the Washington State Department of Ecology (under Memoranda of Agreements with the NPS, counties, and USFS). This lack of consistent water quality monitoring would likely continue under Alternative A. Because there would be ongoing unknown impacts to water quality from ongoing operations, because new facilities would be added or replaced intermittently as needed, and because of potential impacts from the new marina at Crescent Bay, overall effects on water quality under Alternative A would likely continue to be minor to moderate and localized.

Impacts of Alternative B

Existing minor to moderate adverse impacts to water quality in Alternative A would mostly continue in Alternative B. Impacts would be similar to Alternative A, however, all new designated facilities, such as the drive-in and boat-in campgrounds would be required to have self-contained toilet facilities, rather than pit toilets thus reducing the potential to contribute water quality impacts. In addition, under Alternative B, day use boaters would be required (in addition to overnight boaters) to have portable self-contained toilets on board to minimize human waste, deposited in an unsanitary manner along the Lake Roosevelt shoreline. This requirement would result in long-term minor to moderate localized beneficial effects regarding potential impacts from human waste on Lake Roosevelt water quality.

Additional potential beneficial effects on water quality would occur from relocating and increasing the number of boater accessible toilets in Alternative B, including changing the location of the Kettle Falls floating toilet and adding vault toilets at Cayuse Cove and Corkscrew as well as a number of these associated with three new designated boat-in campgrounds. Other actions in this alternative related to improvements in the disposition of human waste would include the provision of waste bags at boat launches and a rebate program for returning these. The boat-in camping permit system would likely also reap negligible long-term beneficial effects from better understanding of park rules and regulations.

Long-term beneficial effects on water quality could also occur from the coordinated water quality sampling that would be conducted in cooperation with the tribes, other agencies and park partners. Such a monitoring program could lead to preventative closure of affected beach areas, investigation into poor water quality conditions at shoreline recreation sites, and better overall knowledge on the part of park managers under the 5-party agreement regarding how best to improve water quality in Lake Roosevelt related to human recreational use.

Impacts of Alternative C

Impacts from Alternative C would be similar to Alternative B, with long-term minor to moderate localized adverse effects from ongoing operations and from new pavement and marina runoff, however, there would be fewer long-term beneficial impacts because some of the provisions in Alternative B would not be implemented in Alternative C. Among those actions that would not occur in Alternative C would be the toilet at Cayuse Cove and the bag dispenser/rebate program. Therefore overall effects in Alternative C would continue to be minor and beneficial but would be less than Alternative B.

Impacts of Alternative D

Similar to Alternative C, Alternative D would also not contain the toilet at Cayuse Cove or the bag dispenser/rebate program. Alternative D would also not contain the boat-in camping permit system. As a result, the beneficial impacts in Alternative D would be fewest compared to other action alternatives but would improve conditions over Alternative A from the requirement for day use boaters to carry portable toilets and from better communication of recreation area rules and regulations. Therefore, Alternative D, like Alternatives B and C, would continue to have existing long-term minor to moderate adverse impacts from existing operations; however as in other alternatives these would be partially improved by actions in this alternative.

Measures to Avoid, Minimize, or Mitigate Impacts

- Establishing a long-term repeatable water quality monitoring program to detect undesirable effects on water quality.
- Using the water quality monitoring program to mitigate detectable adverse effects on water quality.
- Increasing the number of toilets within the recreation area.
- Implementing the provision to require day use as well as overnight boaters to carry portable toilets.
- Educating recreation area visitors about potential impacts to water quality from improperly disposed of human waste.
- Continuing to monitor study results from the industrial plant contamination on the Canadian border to implement any future recommendations.
- Adding runoff barriers to paved parking areas where possible to reduce contamination from petroleum products .
- Gradually incorporating new boating technology to reduce unspent fuel contamination in the park's administrative operations fleet.
- Considering a requirement for marinas to have self-contained wash-bays to prevent pollution runoff contamination within the lake.
- Delineating staging areas away from the lake and marking them to prevent incremental expansion.
- Covering stockpiled soil and rock throughout the duration of the project with a breathable, water repellent fabric anchored around the perimeter to minimize sedimentation.
- Minimizing the amount of disturbed earth area and the duration of soil exposure to rainfall.
- Minimizing soil disturbance and re-seeding or revegetating disturbed areas as soon as practical.
- Retaining silt fencing in disturbed areas until stabilization (by reseeding or revegetation).
- Installing protective construction fencing around, adjacent to or near wetland and/or riparian areas that are to be protected or other erosion control measures to protect water resources in the project area.
- Using vegetable based hydraulic fluid and biodiesel in heavy equipment, when possible.

- Paving (creation of impervious surface) would also be minimized.
- Requiring and approving an Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan to address hazardous materials storage, spill prevention and response before construction begins.

Cumulative Impacts

Past actions occurring in the recreation area and surrounding Lake Roosevelt have affected water quality. These actions include road construction, industrial releases, and recreational use. Visitor use and facilities in the recreation area contribute to sediments and pollutants, including oil and other contaminants from motor vehicles as well as litter that can enter drainages and affect water quality. Some restoration and development projects (e.g., addition of new visitor service facilities, restoration of old roads and campgrounds or building sites) would continue to occur within the recreation area and would contribute both beneficial and adverse impacts to water quality. Given the localized nature of these actions, overall effects on recreation area waters would generally be limited to short-term construction impacts coupled with long-term beneficial impacts from actions that preserve water quality such as properly disposing of human waste and refuse. Non-human factors, such as natural erosion of exposed soils can also have primarily short-term effects on water quality. Alternatives A–D would contribute additional short- and long-term negligible cumulative adverse effects on water quality from construction and from location of the marina as well as from ongoing operations. Alternatives B-D would also contribute long-term negligible beneficial effects.

Conclusion

Alternative A would likely continue to have short- and long-term, localized, minor to moderate adverse effects on water quality. Alternatives B-D would have short- and long-term localized minor adverse effects and long-term negligible to minor beneficial effects on water quality. Alternatives A-D would contribute additional short- and long-term negligible cumulative adverse effects on water quality from construction and from location of the marina as well as from ongoing operations. Alternatives B-D would also contribute long-term negligible beneficial effects. There would be no major adverse effects and no impairment to water quality or water quality related values from the implementation of the alternatives described in this Environmental Assessment.

E. Impacts to Wildlife



Impacts of Alternative A

Ongoing negligible to minor adverse impacts to wildlife would continue to occur, including noise and activity associated with administrative operations such as boat and road patrols, cleaning of facilities, wildland fire operations, and visitor contacts and interpretive programs. Resource management activities, such as removal of native and non-native aquatic vegetation in limited amounts and areas, would continue to have both negligible to minor beneficial and adverse impacts on wildlife.

Impacts of Alternative B

There would be above ambient noise, dust and activity during construction of facilities which could affect the use of surrounding habitats by wildlife. Much of the construction would also likely coincide with the peak visitor use season, when some of the heaviest visitor use and traffic occurs. The noise and activity associated with the construction would be similar to, but in addition to, the noise and disruption of wildlife caused by visitor use. Areas of greatest intensity of construction activity under Alternative B would include Crescent Bay, Rickey Point and other areas where docks or log-booms were extended, as well as in more isolated areas to add facilities for new designated boat-in campsites or to improve primitive launch areas such as Corkscrew and Moccasin Bay.

Habitat areas used for temporary staging would result in some short-term minor loss of habitat for wildlife, until these areas were restored. Excavation activities, including for building foundations for restrooms and the education center and to relocate the road at Crescent Bay could adversely affect small mammals and invertebrates. The importation of fill materials, including topsoil, combined with compaction from construction equipment has the potential to change the soil physical and chemical composition and therefore its viability for some organisms. The use or diversion of water could result in unnatural drying or wetting of habitats within and adjacent to construction sites. There would be increased likelihood of wildlife (such as small mammals and insects) being directly harmed or killed by construction traffic and machinery or by getting caught in construction areas.

Noise and activity would cause wildlife to temporarily avoid these areas. Where buildings and other facilities, including new paved and unpaved roads and parking areas were constructed, impacts would be long-term and would cause permanent displacement of wildlife. Paving could also increase the delivery of contaminants such as petroleum products originating from the asphalt, adversely affecting water quality for wildlife. Similarly unpaved parking areas could result in long-term inputs of dust to nearby surrounding areas and decreased production for plants and therefore habitat for wildlife. Habitat modification, including vegetation removal would preclude short and long-term return to the former level of use by

some species of wildlife, particularly perching birds, where loss of trees and shrubs occurred. Overall habitat for roosting, nesting, and foraging and food would be reduced.

Specific impacts associated with Alternative B would include minor to moderate short- and long-term adverse effects from the construction of a variety of facilities at Crescent Bay that would be used year-round by residents and visitors. Short-term effects would include noise and activity during construction, while long-term effects would include habitat modification with built facilities and additional visitor use activity in this seasonally quiet area.

Other short- and long-term minor adverse effects would occur from construction of facilities at Moccasin Bay, Corkscrew and Rickey Point and overflow parking areas and from the vault toilet upstream of Cayuse Cove on the Spokane Arm. These facilities would result in the loss of native and non-native plants and associated habitat for wildlife. There would also be impacts from noise and activity associated with construction or rehabilitation activities near or on the lake, such as dock and log-boom extensions, establishment of buoy fields, moving the Kettle Falls floating toilet, and modifications to boat-in campsites.

Proposed restoration, especially in the Crescent Bay area since it has lost much of its integrity, would result in short-term negligible adverse effects coupled with long-term localized minor to moderate benefits to wildlife and wildlife habitat from planting and seeding of native species. Smaller areas of restoration at Moccasin Bay and elsewhere would also have long-term minor beneficial effects. Off-season and other periods of low use would likely allow wildlife to return to levels near their former abundance and uninhibited use of the areas, a long-term beneficial effect.

Impacts of Alternative C

Impacts of Alternative C would be similar to Alternative B, however, there would be fewer overflow parking lots and a different array of trails, focusing on connecting recreation area developments with areas outside the park, instead of expanding the variety of trails within the park, except at the Crescent Bay area, which would have the same overlook and interpretive trails, trail connection to Spring Canyon and to Grand Coulee as in Alternative B.

These actions would have the same localized negligible to moderate impacts; however, because there would be fewer actions, there would be fewer overall impacts. Restoration of extensive areas at Crescent Bay, as well as in smaller areas associated with other developments would continue to provide minor to moderate long-term beneficial impacts.

Impacts of Alternative D

As with Alternative C, actions and impacts would be similar to Alternative B. Additional facilities would be constructed at Jerome Point, Rickey Point, and throughout the recreation area for beach access trails and there would be a number of additional boat dock extensions throughout the recreation area (at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans). Fewer facilities, however, would be constructed at the Crescent Bay development, and there would be fewer new trails within the park. Instead trails would be focused on linking recreational facilities, where possible within the park. There would also be a new designated dog-walking loop trail at Crescent Bay. And, at a location yet to be determined, a new joint visitor center would be established, either in an existing structure or from new construction.

Because there would be more facilities spread out over a larger area, there could be greater wildlife impacts. These impacts, however, would continue to be associated with short-term noise and activity during construction and long-term impacts from facilities where none previously existed after construction. As in Alternatives B and C, however, the facilities would be relatively small and set within primarily natural and/or restored landscapes, therefore impacts would continue to be localized and minor to moderate. The greatest long-term impacts in Alternative D would come from facilities at Crescent Bay, Moccasin Bay, Corkscrew, Rickey Point, Jerome Point, overflow parking area construction, and from the proposed visitor center. Alternative D would have more new on-lake facilities, including dock extensions not part of Alternatives A, B and C, and more floating and constructed toilets. Since shoreline camping would continue to remain open and unregulated by a permit system, unlike in Alternatives B and C, there would continue to be a potential for more widely dispersed impacts, although as in Alternatives B and C, there would be more designated boat-in campsites with facilities.

As in Alternatives B and C, restoration of areas associated with proposed developments, including a rather large area at Crescent Bay would provide long-term minor to moderate beneficial impacts on wildlife by enhancing habitat.

Measures to Avoid, Minimize, or Mitigate Impacts

- Scheduling construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., bird nesting and breeding seasons, periods of bat breeding, rearing and hibernating, etc).
- Minimizing the degree of habitat removal (clearing) by clearly delineating construction limits.
- Limiting the effects of light and noise on wildlife habitat through controls on construction equipment and timing of construction activities, such as limiting construction to daylight hours.
- Maintaining routes of escape for animals that might fall into excavated pits and trenches. During construction activities, Contractor personnel would maintain vigilance for animals caught in excavations and take appropriate action to free them.
- Ensuring that spill prevention measures are in place to prevent inadvertent spills of fuel, oil, hydraulic fluid, antifreeze, and other toxic chemicals that could affect wildlife.
- Discouraging construction personnel at work sites from providing a source of human food to wildlife, avoiding conditioning of wildlife and in human/wildlife conflicts.
- Maintaining proper food storage, disposing of all food waste and food-related waste promptly, in a bear-proof receptacle, if available and removing all garbage off-site at the end of each working day.
- Using sediment traps and other water quality protection measures around new parking areas to minimize the effects of runoff contaminated with petroleum products from vehicle use.

Cumulative Impacts

The combined effects of significant changes to the recreation area prior to its establishment from creation of Grand Coulee Dam, pockets of development in the recreation area, agricultural land uses and development outside the recreation area over time coupled with the purposeful eradication of predators through the mid-1900s have contributed to low level or extirpated wildlife populations of some key species. The unnatural, narrow truncated boundary of the recreation area also has resulted in the inability of the area to allow for long-term protection of wildlife from impacts associated with ongoing development, since it does not envelop a physiographic context that includes natural wildlife movement areas. Past and reasonably foreseeable development projects planned for the recreation area, such as additional construction of visitor and administrative facilities would result in additional negligible to minor cumulative effects to wildlife. The effects of existing development continue to take a toll on wildlife primarily from collisions on roadways as well as from occasional inappropriate wildlife-human interactions. Development within the recreation area has remained at relatively low levels; however, and because of the extensive protected areas in and around the recreation area on nearby federal lands, portions of the recreation area provide some protected, fairly intact habitat. Because no major land areas would be converted to developed areas under Alternatives A-D, these alternatives would contribute additional negligible to minor localized adverse effects on wildlife. Following the short-term impacts of construction, in most areas, most wildlife would return to their normal population levels and dispersion.

Conclusion

Alternative A would have negligible to minor adverse and beneficial effects on wildlife. Alternatives B, C and D would have a series of short- and long-term, localized negligible to moderate adverse and beneficial effects on wildlife. These impacts would be greatest under Alternative D, with more new and expanded facilities, slightly less under Alternative B and the fewest impacts would occur under Alternative C. Alternatives A-D would contribute negligible to minor cumulative adverse effects on wildlife. There would be no major adverse effects and no impairment of wildlife or wildlife values from the implementation of the alternatives described in this Environmental Assessment.

F. Impacts to Special Status Species



Impacts of Alternative A

There would be no impacts to special status species from proposed actions under Alternative A. Ongoing programs to monitor rare, threatened, and endangered species would continue and would continue to provide additional information about the life history and habitat of these species within the recreation area.

Impacts of Alternative B-D

There would be no known direct or indirect impacts to special status species. Actions under Alternatives B-D would have no effect on grizzly bears, gray wolves, Canada lynx, Ute ladies'-tresses or Spalding's silene. In addition, there would be no effect on other species considered rare, threatened or endangered by the State of Washington or species of concern noted by the USFWS.

Measures to Avoid, Minimize, or Mitigate Impacts

Continuing to conduct additional site specific surveys for special status plants and wildlife prior to actual implementation of project actions, where warranted, and as specific project implementation details are developed.

Cumulative Impacts

Over time, long-term adverse effects to special status species have occurred throughout Washington State as well as in much of the mountain west from development, predator control and from unnaturally frequent wildland fire as well as from habitat fragmentation, primarily from transportation corridors. Effects from past, present and future actions occurring within the recreation area would continue to be primarily from administrative and private development in areas in close proximity to where it has already occurred. Ongoing park operations would continue to have indirect, negligible to minor adverse effects. These NPS actions, however, would continue to be modified if possible pending identification of special status species through surveys and other analysis. Alternatives A-D would not contribute additional cumulative adverse effects from new and expanded development of recreation area facilities because no known species would be affected by proposals in these alternatives.

Conclusion

There would be no impacts (no effect) on special status species from the implementation of Alternative A. Actions under Alternatives B-D would have no effect on known special status species, including those considered rare by the State of Washington or on species of concern. There would be no contribution to cumulative effects on endangered species from the actions proposed herein. There would be no major adverse effects and no impairment of special status species or their values from the implementation of the alternatives described in this Environmental Assessment.

G. Impacts to Cultural Resources

(INCLUDING ARCHEOLOGICAL RESOURCES, HISTORIC STRUCTURES, AND ETHNOGRAPHY)



Impacts of Alternative A

Routine, ongoing maintenance activities would have limited additional ground disturbance. Because numerous archeological surveys have been conducted; because no archeological resources have been found in the project areas; and because the discovery of potential buried archeological resources would employ mitigation measures noted below there would be no effect on known archeological resources from proposed project actions.

Although ethnographic traditional cultural properties have been identified, none have undergone a determination of eligibility for nomination to the National Register and none are located in areas that would be affected by the implementation of Alternative A. Because no ethnographic resources have been identified from within the project area and because mitigation measures would be employed during project implementation, there would also be no effect on ethnographic resources.

No historic resources have been identified in areas that would be affected from the implementation of Alternative A. Therefore, there would be no effect on known historic resources.

Impacts of Alternative B

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternative B and because mitigation measures would be employed during project implementation, there would be no effect on archeological or ethnographic resources.

As noted in “Chapter Six: Affected Environment,” the Fruitland irrigation canal, which is partially located in the national recreation area (near Rickey Point) has not been formally evaluated for eligibility for listing on the National Register of Historic Places. Because this feature, from the early 20th century, could potentially be eligible for the National Register developing a trail alongside it in Alternative B could potentially affect it. As a result ongoing consultation with the State Historic Preservation Officer would need to occur prior to implementation of this action to ensure that proposed work would have no adverse effect. Other proposed work at Rickey Point under Alternative B could introduce additional visitors to the presence of this resource but would have no adverse effect on it.

Impacts of Alternative C–D

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternatives C or D and because mitigation measures would be employed during project implementation, there would be no effect on archeological or ethnographic resources.

Measures to Avoid, Minimize, or Mitigate Impacts

Based on the national Programmatic Agreement with the Association of State Historic Preservation Officers and the Advisory Council (NPS 2003), the following measures would be included in the proposed project to minimize impacts to archeological resources:

- Notifying the park archaeologist of the specific work schedule prior to staging and construction to have the opportunity to conduct any test excavation surveys prior to ground disturbance.
- Stopping work in the area of identification and nearby areas if archeological resources are discovered at any point during the project work, as directed by the park until the find could be evaluated and action taken to avoid or mitigate the impact. When it is necessary to stop work due to archeological resources discovery, the contractor would cease all activities in the area of discovery; allow the archeologist to complete investigations; and take measures to protect the resources discovered as directed by the park.
- Avoiding further impact by modifying project implementation as needed at the site if archeological resources are discovered during implementation. If this is not possible, as much information as possible would be collected about the site in accordance with applicable laws and regulations and additional consultation with applicable agencies and tribes would occur as specified in the implementing regulations for Section 106 of the NHPA.
- Monitoring ground disturbing actions as appropriate during construction to ascertain presence/absence of archeological materials within the proposed construction zone. Monitoring would be focused where buried historical deposits might be present beneath existing development.
- Determining if a monitoring plan is needed to detail the final construction plans, the cultural material that might be encountered, important archeological questions that could be addressed, and a range of treatment options (e.g., avoidance, data recovery) for any findings.
- Evaluating the eligibility of the site as a whole under National Register of Historic Places Criteria If monitoring results in the discovery of important materials.
- Following procedures outlined in the Native American Graves Protection and Repatriation Act in the unlikely event that human remains or any objects protected under NAGPRA are exposed. This would include the potential need to stop work for a minimum of 30 calendar days. During that time, work may resume in non-sensitive areas.

Cumulative Impacts

The majority of cultural resources are inundated during peak use periods. During draw-downs, these cultural resources are exposed and vulnerable to damage from visitors or relic collectors. There are usually few visitors present during the annual spring flood draw-down. In recent years, however, draw-down has occurred in August for flow augmentation downriver for salmon recovery (NPS 2000b:93). With the additional 1.8 feet of draw-down, beyond the 1,280 foot level in summer, it is evident that more cultural resources will be exposed during periods of heavy visitation, making them more susceptible to discovery and loss. To the degree that archeological and historical resources are known and can be additionally protected, there would continue to be long-term beneficial effects from discouraging use in sensitive areas and from increasing monitoring of known areas of potential impact.

Conclusion

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternative A-D and because mitigation measures would be employed during project implementation, there would be no effect and no contribution to cumulative effects on archeological or ethnographic resources. Similarly, evaluation of the Fruitland irrigation canal in Alternative C would ensure that there would be no adverse effect on the historic resources, if it is determined to be eligible for the National Register. There would be no major adverse effects and no impairment of archeological / ethnographic resources or their values from the implementation of the alternatives described in this Environmental Assessment.

H. Impacts to Visitor Experience



VISITOR ACCESS AND OPPORTUNITIES

Impacts of Alternative A

There would be no new visitor access points to Lake Roosevelt. Visitor access to Lake Roosevelt would remain the same under Alternative A. There would, however, be several new visitor use opportunities associated with the Crescent Bay area, including for the marina development called for by the GMP. Because no new access points would be created overall impacts regarding access would be long-term, negligible and beneficial, while impacts on visitor use opportunities from the new marina would be minor and beneficial.

Impacts of Alternative B

Under Alternative B, new visitor access points would be created at Moccasin Bay (boat launch, docks and parking), Corkscrew (primitive boat launch, courtesy dock, parking area and vault toilet), and Rickey Point (deep-water boat launch, day use area and parking). New designated, rather than informal, boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar and new walk-in camping between Jerome Point and Daisy. Unlike Alternative A, these boat-in camps would contain a toilet, picnic tables and fire pits and walk-in camping would be allowed, rather than prohibited. New trails at Crescent Bay, linking Crescent Bay to Spring Canyon, Kettle River Campground to Napoleon Bridge, and Bradbury Beach to Rickey Point would also provide new visitor use opportunities. Public buoy fields and new community access points would add new long-term mooring opportunities for boaters. Designated access trails to the shoreline would also expand access points. These new and expanded facilities would result in moderate, long-term beneficial effects on visitor access and opportunities.

Expanded facilities would include more parking at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln and a vault toilet at Cayuse Cove. Crescent Bay would also have a variety of expanded facilities, in addition to the current boat launch, restrooms and informal parking area. These would include the new marina (as in Alternative A), as well as a drive-in campground, accessible fishing pier, dock, education/interpretive center, outdoor amphitheater, day use picnic areas, a designated swim beach and trails along with a realigned road and designated parking areas. The new Crescent Bay education/interpretive center could eventually serve an expanded role as a visitor information center, giving visitors a better understanding of the recreation area and its resources, a long-term moderate beneficial effect.

Construction of new and expanded facilities would result in short-term minor to moderate localized adverse effects on visitors, depending on whether the construction required the closure of existing facilities or delays in accessing these facilities. Noise and activity associated with the construction areas could also impact natural quiet and visitor opportunities to enjoy some resources, such as wildlife, another short-term minor adverse effect.

Changes in the number and location of floating toilets would contribute long-term minor beneficial effects on visitor access to facilities. Expansion of facilities would also result in localized minor to moderate beneficial effects, especially at Crescent Bay, where both nearby residents and visitors would be able to take advantage of a range of new activities.

Besides facility improvements, Alternative B would also establish a permit system based on lake zones for boat-in camping. While the permit system could have short-term negligible to minor adverse effects on visitor access to informal boat-in camping opportunities, it would have long-term minor to moderate beneficial effects on visitor use opportunities by allowing visitors to identify beforehand what camping areas they will occupy and to ensure that these areas would be available to them.

Visitor access to information about facilities and operations on Lake Roosevelt would also expand under Alternative B. Because of new signage in gateway communities and wider provision of visitor use information not only throughout the park but also in improved communications with partners, visitors would have more opportunities to understand peak use conditions and lake level forecasts on Lake Roosevelt and to plan their visit accordingly, a long-term minor to moderate beneficial effect.

There would also be additional expanded communication from providing joint staffing of a new visitor center in Kettle Falls; from expansion of information provided at visitor centers; from a new toll-free phone line to direct visitor inquiries to; and better efforts to educate partners about differences in operations.

Impacts of Alternative C

Under Alternative C, a new community-constructed visitor access point would be created at Moccasin Bay and Corkscrew (boat launch, docks and parking). As in Alternative B, there would be new designated, rather than informal, boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar and new walk-in camping between Jerome Point and Daisy. Unlike Alternative A, these boat-in camps would contain a toilet, picnic tables and fire pits and walk-in camping would be allowed, rather than prohibited. There would be new trails at Crescent Bay, linking Crescent Bay to Spring Canyon and a new interpretive trail. There would also be an effort to link existing trail networks outside the recreation to facilities within it via trails. New community access points would add new long-term mooring opportunities for boaters and working with communities and counties there would be more designated access trails to the shoreline that would also expand access points. Combined, these new and expanded facilities would result in moderate, long-term beneficial effects on visitor access and opportunities.

There would be fewer expanded visitor use opportunities in Alternative C, with only one additional boat-in campground and four rather than six new overflow

parking areas. Expanded visitor use opportunities would include the new boat-in campground at Cougar Cove and expanded parking at Crescent Bay, Keller Ferry, Porcupine Bay, and Gifford and from changes in the number and location of floating toilets. As in Alternative B, Crescent Bay would also have a variety of expanded facilities, in addition to the current boat launch, restrooms and informal parking area. These would include the new marina (as in Alternative A), as well as a drive-in campground, accessible fishing pier, dock, education/interpretive center, outdoor amphitheater, day use picnic areas, a designated swim beach and trails along with a realigned road and designated parking areas. This expansion of facilities would also result in localized minor to moderate beneficial effects, especially at Crescent Bay, where both nearby residents and visitors would be able to take advantage of a range of new activities.

Impacts associated with construction of new and expanded facilities would be the same as described in Alternative B.

As in Alternative B, Alternative C would establish a permit system based on lake zones for boat-in camping. This permit system would have the same short-term negligible to minor adverse effects on visitor access to informal boat-in camping opportunities, and the same long-term minor to moderate beneficial effects on visitor use from additional certainty about camping availability.

Where possible, there would also be additional uniformity regarding rules and regulations among the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and the NPS-managed areas. These would potentially include regulations related to beach fires, securing permits, and related to other key visitor use activities as well as associated with exchanging fees for permits. If possible, the tribal fee system would be used as a model for the recreation area to make fee processes (if any) consistent. To the degree that additional uniformity would be established, these would result in long-term minor beneficial effects for visitors and adjacent residents, who could obtain a single permit, such as for beach fires, applicable to Lake Roosevelt endorsed by both the NPS and tribes. Joint and separate regulations would be showcased in a publication describing differences in management among the tribes and NPS, another long-term beneficial effect.

The volunteer boat monitoring patrol would potentially increase long-term negligible to minor beneficial effects on visitor access and opportunities by increasing the ability to gain compliance from boaters on the lake engaging in various activities while limiting effects of non-compliant boaters on the recreation area and other visitors, such as in increasing the tagging of unattended personal property when it is left to “reserve” an unreservable area.

New cooperation in aquatic weed management would allow recreation area neighbors to assist in control efforts under specific conditions, a long-term negligible beneficial effect on visitor opportunities. This would be combined with

benefits from the proposed “Living on Lake Roosevelt” program that would target neighbors.

As in Alternative B, visitor access to information about facilities and operations on Lake Roosevelt would also expand. Expansion would include many of the same actions in Alternative B, including expanded communication from providing joint staffing of a new visitor center in Kettle Falls; more information provided at visitor centers; and better efforts to educate partners about differences in operations, including consistency regarding adopting and enforcing noise regulations. There would be an expansion of signage in gateway communities and wider provision of visitor use information not only throughout the park but also in improved communications with partners, visitors would have more opportunities to understand peak use conditions and lake level forecasts on Lake Roosevelt and to plan their visit accordingly, a long-term minor to moderate beneficial effect. Unlike other alternatives, Alternative C would include expanded efforts to orchestrate or participate in seasonal meetings between NPS, chambers of commerce, local tourism industry officials and others to discuss opportunities for collaboration, another negligible long-term beneficial effect that would improve coordination of visitor services.

Impacts of Alternative D

Alternative D would include a major new facility not present in Alternatives A, B or C – a NPS/tribal jointly operated visitor center at a location and facility to be determined. This new visitor center would provide expanded recreation area information to a wide array of visitors. While there would be short- and long-term adverse effects from its construction, there would be long-term moderate beneficial effects on visitor access and opportunities once it was complete.

As in Alternative B, new visitor access points would be created at Moccasin Bay and Corkscrew (boat launch, docks and parking), Rickey Point (deep-water boat launch, day use area and parking) and new designated boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar, with a new walk-in campground between Jerome Point and Daisy. Unlike Alternative B, however, there would also be a designated swim beach at Rickey Point and a new rest area/day use area at Jerome Point as well as additional designated and reservable group boat-in campsites at Detillion and Penix Canyon. The additional designation of group campsites would increase the number of areas with amenities available. There would be new trails at Crescent Bay and these would be different than in other alternatives, including a designated dog-walking trail and fewer trail connections (only to Spring Canyon) and a shorter interpretive trail. For access trails to the shoreline, these would be both regular and more numerous than in other alternatives, with trails established at more frequent intervals along the shoreline. Other actions that would be the same as Alternative B would include public mooring buoy fields and new community access points. Combined, these new facilities would have long-term minor to moderate beneficial effects on visitor

access to the shoreline and visitor use opportunities by providing more facilities and more access points. Alternative D also would potentially add other public launch facilities in the future, a long-term beneficial effect on access to the lake.

Expansion of existing facilities would also be included in Alternative D, with expansion of boat docks beyond that needed to accommodate draw down effects to that needed to accommodate additional visitor use at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans. There would also be expanded overflow parking at Crescent Bay, Fort Spokane, Keller Ferry and Porcupine Bay. Unlike Alternatives B and C, there would be fewer expanded facilities at Crescent Bay. These would, however, include the new marina, dock, interpretive panels, day use picnic areas, a designated swim beach and trails, as well as new designated parking areas. Other changes in Alternative D would include moving the Marcus Island swim area downstream. This expansion of facilities would also result in localized minor to moderate beneficial effects.

Impacts associated with construction of new facilities and expansion of existing facilities would be the same as described in Alternative B, however there would likely be greater impacts because there would be more new and expanded facilities.

As in Alternative A, there would be new information and access opportunities for visitors from the new visitor information center on Highway 395; from educating school groups; from using neighborhood clean-up programs and stewardship groups to improve shoreline resources. As in Alternatives B and C, there would also be better information from using more sources to communicate facility availability; from educating neighbors about the public nature of the shoreline; and from publication of a welcome neighbor brochure.

Overall, there would be more new and expanded facilities in Alternative D that would increase the number of visitor use access points and opportunities and provide wide-ranging moderate long-term beneficial effects on visitor experience.



VISITOR SAFETY

Impacts of Alternative A-D

There would continue to be long-term negligible to moderate beneficial impacts on visitor safety associated with water quality from maintaining existing toilets, pump-out facilities, and dump stations under all alternatives and from requiring overnight visitors to carry and use portable toilets. Additional potential safety impacts would occur from visitors not knowing about the fishing advisory and eating excessive quantities of potentially harmful contaminants. Other long-term minor beneficial effects would continue to occur from ongoing employee patrols and availability to visitors during emergencies and as a source of visitor information about recreation area resources. Boating safety would be enhanced

by continuing to remove non-compliant docks and boat launches (that don't meet CAP criteria), from removing unattended buoys (thereby decreasing obstacles on the lake); and from expanded use of the Tread Lightly® brochure for mail and campground use.

Additional Impacts of Alternative B-D

Several of the potential negligible to minor long-term impacts on visitor safety in Alternative A would continue in these alternatives, including those associated with the fishing consumption advisory, and from potentially improper disposal of food. The action alternatives would have additional long-term minor to moderate beneficial impacts on visitor safety associated with water quality from increasing the availability of floating toilets by providing a longer season of use; from requiring day-use boaters to carry portable toilets; and from coordinating water quality sampling with agencies, tribes and other partners.

Beneficial effects on visitor safety associated with vehicle travel would include more and better signs about availability of recreation area resources; and coordinating with the county to ensure safe parking for proposed walk-in camping; and with the counties and Washington Department of Natural Resources on fire bans. Allowing year-round beach fires but only in designated fire pits would also improve visitor safety given other associated fire rules from the Tread Lightly® Program. Other benefits would come from enhance the provision of fire safety education with partners and neighbors and from increasing knowledge about lake level forecasts.

Additional Impacts of Alternative B

In addition to strategies that would enhance visitor safety from ongoing programs and activities (Alternative A) and from proposed new programs and activities (Alternatives B-D) as noted above, Alternative B would include potential additional enhancement of water quality from the provision of additional floating toilets where needed; from moving the floating toilet near Kettle Falls closer to Rice; from installing waste bag dispensers at boat launches and creating a rebate program to return them; from additional restrooms at new boat-in campgrounds, Cayuse Cove, Crescent Bay, and Rickey Point; and from the proposed new permit system for boat-in camping. Other benefits would likely occur from potential relocation of the Marcus Island swim area and from improving water circulation at the Kettle Falls swim area. Combined these would primarily be long-term negligible to moderate localized beneficial effects.

The proposed permit system for boat in-camping would also have long-term minor to moderate beneficial effects from informing visitors of the rules and regulations (on the back of the permit), including information about the expanded Tread Lightly® Program. Other beneficial effects from the permit system would include making it easier for law enforcement and other emergency personnel to find campers when the need arises. Enhancements to user education would also

come from additional signage, pamphlets and visitor contacts. Knowledge of recreation area regulations would help direct visitor activities toward more safe practices, a long-term minor beneficial effect.

Impacts of Alternative C

Although some actions proposed in Alternative B would not occur in Alternative C, many of the same long-term beneficial impacts on improving visitor knowledge of recreation area resources (such as from the boat-in camping permit system); and from the provision of a few additional toilet facilities would occur; other beneficial effects from the permit system would also be part of Alternative C. In addition, Alternative C would allow for the development of a volunteer boat monitoring network to supplement ranger patrols, thereby improving additional compliance with recreation area rules and regulations by having more uniformed personnel patrolling the lake. Other benefits in Alternative C would come from adopting a lake-wide fire permit system in coordination with tribes, which could result in long-term minor to moderate beneficial effects from knowing where permitted and illegal fires were occurring during questionable periods of moderate fire danger (before fire safety bans are enacted).

Impacts of Alternative D

In addition to strategies that would enhance visitor safety from ongoing programs and activities (Alternative A) and from proposed new programs and activities (Alternatives B-D) as noted above, Alternative D would include potential additional enhancement of water quality from the provision of additional floating toilets where needed; from moving the floating toilet near Kettle Falls closer to Rice; from installing waste bag dispensers at boat launches; and from additional restrooms at new boat-in campgrounds, Crescent Bay, Moccasin Bay, Corkscrew and Rickey Point. Other benefits would likely occur from relocation of the Marcus Island and Kettle Falls swim areas. Combined these would be long-term negligible to moderate localized beneficial effects.

As in Alternatives B and C, there would be enhancement to user education that would come from additional signage, pamphlets and visitor contacts. Signage would be greatest in Alternative D, with directional signage to more recreation area facilities that in many cases would be visible to boaters. Knowledge of not only recreation area regulations but also where the most convenient recreation area resources are located would help direct visitor activities toward more safe practices, a long-term minor beneficial effect.

Measures to Avoid, Minimize, or Mitigate Impacts (Visitor Access, Opportunities and Safety)

- Avoiding evening, weekend and holiday work by requiring approval from the superintendent. Longer construction delays or total road closures may also require approval from the superintendent.

- Conducting materials deliveries (to the degree possible) in the early morning and late evening hours.
- Distributing press releases to local media, signs in the recreation area and ferry information to inform visitors about construction conditions during the projects.
- Scheduling work around high visitor use days and times, such as holidays and weekends.
- Developing a safety plan prior to the initiation of construction to ensure the safety of recreation area visitors, workers, neighbors, and park staff.
- Controlling dust during construction (by minimizing soil disturbance, spraying water but no chemicals over disturbed soil areas during dry periods and revegetating disturbed soil areas as soon as practical following construction).



SCENIC RESOURCES

Impacts of Alternative A

Alternative A would have negligible effects on scenic resources from the location of a marina at Crescent Bay. Proposed facilities would be constructed to fit into the landscape according to recreation area and/or NPS design standards.

Impacts of Alternative B and D

With major new facilities at Crescent Bay and moderate facility development at Moccasin Bay, Corkscrew and Rickey Point, with a walk-in camping area between Jerome Point and Daisy, there would be long-term minor impacts on scenic resources from implementation of these alternatives. For the most part, however, these facilities would be concealed from most viewpoints above the lake since they are set alongside the shoreline, close to the lake. Negligible to minor impacts would occur from expansion of facilities in other areas, including for boat-in camping and overflow parking. Additional minor impacts would occur in Alternative D from the construction of not only the walk-in camping area between Jerome Point and Daisy, but also from the construction of a rest area/day use area at Jerome Point. Long-term negligible to minor beneficial effects would be achieved from increased efforts to cooperate with county land use planning departments regarding impacts from new developments, including scenic qualities, close to the shoreline/boundary of the recreation area.

Impacts of Alternative C

Similar impacts to scenic resources would occur in Alternative C, however, since the Rickey Point facilities would not be developed under this alternative, there would be no impacts to scenic resources in that vicinity. The grassy shoreline above Rickey Point would continue to remain as it is today. Alternative C would likely allow for more cooperation with county land use planning departments to

designate access trails to the recreation area and for preserving shoreline scenic qualities, a long-term minor beneficial effect.

Measures to Avoid, Minimize, or Mitigate Impacts (Scenic Resources)

- New structures, including signs, buildings and other facilities would be designed to fit into the existing vernacular landscape, including associated colors, textures and styles.
- New structures would be concealed from major viewpoints as much as possible.
- Additional cooperation with county land use planning departments for shoreline access and for mitigating the effects of boundary development along the recreation area would occur.



SOUNDSCAPE

Impacts of Alternative A

There would be ongoing short-term moderate adverse impacts from excessive boat noise based on special use permit exceptions to Code of Federal Regulations (CFR) noise requirements from periodic special events for cigar boats when these events are hosted by Lake Roosevelt managers (tribes and/or NPS). During other times of the year, the CFR regulation would be used to reduce noise when possible, subject to staffing and training.

There would be long-term negligible to minor adverse impacts on soundscape from the provision of the marina and other facilities at Crescent Bay, which would increase noise and activity in an area that is often quiet, except on weekends.

Impacts of Alternative B-D

Under all of the action alternatives, NPS would increase training and the procurement of specialized equipment to more effectively regulate excessive boat noise (except during special events when exceptions to these rules would apply based on permit conditions). In addition, the NPS would work with the tribes to regulate and to monitor these special events. As a result, there would be a reduction in excessive boat noise over time, a localized, long-term minor to moderate beneficial effect.

As in Alternative A, there would be long-term negligible to minor adverse impacts on soundscape from the provision of the marina and numerous other facilities at Crescent Bay, as well as in other areas where new or expanded facilities would be constructed, such as Rickey Point (Alternatives B and D), and Jerome Point (Alternative D). There would also be short-term negligible to moderate localized adverse impacts from noise and activity associated with construction

of new and expanded recreational facilities. These would be greatest under Alternative D followed by Alternatives B and C.

Measures to Avoid, Minimize, or Mitigate Impacts (Soundscape)

- Minimizing construction activities during normally quiet or sensitive times of day, such as during the morning, evening and at night.
- Considering changing the nature and scope of special use permits for cigar boat races and other special events if these events became more frequent or use of the boats more widespread.
- Have flagger request non-work idling vehicles to reduce noise pollution if delays will be more than five minutes until traffic flow resumes.

Cumulative Impacts

Over time there have been many visitor use facilities constructed within Lake Roosevelt National Recreation Area by the NPS and by the tribes. These facilities have had both short-term minor to moderate and long-term moderate to major beneficial impacts on visitor experience. Under all alternatives, the recreation area would continue to implement the direction found in the GMP to modify recreational facilities and to improve resource conditions. These new actions combined with ongoing management of recreation area resources would continue to result in negligible to minor adverse and beneficial effects on visitor experience. When the impacts of Alternative A are combined with these, Alternative A would have negligible cumulative adverse and beneficial effects on visitor experience, including access and opportunities, safety and scenic resources. Alternatives B-D would also contribute negligible to minor cumulative beneficial and adverse effects.

Conclusion

Alternative A would have short- and long-term negligible adverse effects and minor long-term beneficial effects on visitor experience, including visitor access and opportunities, safety, and scenic resources. Alternatives B-D would have short- and long-term negligible to moderate localized adverse effects and long-term negligible to moderate beneficial impacts. Adverse impacts would be greatest from Alternatives B and D, whereas beneficial impacts would be greatest in Alternatives B and C. As noted above, impairment conclusions are not made for visitor use opportunities or safety. There would be no major adverse effects to and no impairment of scenic resources or soundscapes or their values from the implementation of the alternatives described in this Environmental Assessment.

I. Impacts to Socioeconomics



Impacts of Alternative A

There would be short-term minor to moderate beneficial impacts during construction and long-term negligible to minor beneficial impacts during operations on local communities near Crescent Bay from the construction of the marina, depending on where employees were drawn from and the state of the local economy. To the extent that goods and services were purchased locally and employees were drawn from the area, beneficial impacts could be localized and moderate. Overall, under Alternative A, there would be few long-term beneficial impacts since most activities under Alternative A would be the same as those now occurring. Over time, the park would likely continue to add employees and these employees would have long-term beneficial effects on the local economy from the purchases of goods and services. Approximately \$1,220,000 is spent on annual operating costs.

Impacts of Alternative B

Alternative B would have additional short-term minor to moderate beneficial impacts from construction of a variety of new facilities, including from the marina as in Alternative A, but also from the new education/interpretive center at Crescent Bay, from dock and log-boom extensions throughout the recreation area; from construction of a new deepwater launch and other facilities at Rickey Point, Corkscrew and Moccasin Bay; and from the construction of the following additional facilities at Crescent Bay: dock, marina store, restrooms, campground, day use picnic areas, trails, swim platform, kayak/canoe launch, and accessible fishing pier.

Overall, there would be long-term minor beneficial impacts from other provisions in Alternative B that would improve facilities throughout the recreation area, potentially encouraging longer visits by both local and out-of-town visitors.

This alternative would result in more long-term park operational expenses than Alternative A, resulting in some long-term minor benefits on the local economy from additional employees and maintenance of facilities. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$6,847,000 for implementation of Alternative B, and \$468,000 in annual operating costs in addition to the current \$1,220,000 annual operating expense.

Impacts of Alternative C

Impacts from Alternative C would be similar to Alternative B, except that fewer overall facilities would be constructed, resulting in fewer short-term beneficial impacts on socioeconomics. Major facilities would be similar except that Rickey Point facilities would not be constructed and there would be fewer overflow parking areas and boat-in campsites. Long-term beneficial impacts would be similar with more money needed to manage new programs, maintenance of new facilities and for new employees. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,967,000 for implementation and construction of Alternative C, and \$437,000 in annual operating costs in addition to the current \$1,220,000 operating costs.

Impacts of Alternative D

Alternative D would result in the greatest number of new and expanded facilities being constructed, including most of those identified in Alternative B, except for some overflow parking areas and some of the Crescent Bay facilities (no campground, education/ interpretive center, fewer trails, and no amphitheater of fishing pier). Among the other new facilities would include a day use/rest area at Jerome Point, a new joint visitor center, and group boat-in campsites. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,572,000 for implementation and construction of Alternative D, and \$133,000 in annual operating costs in addition to the current \$1,220,000 annual operating costs.

Measures to Avoid, Minimize, or Mitigate Impacts

- Where possible projects would be combined or phased to allow for cost-savings measures related to staging remaining in place rather than setting up and taking down for sequential implementation actions.
- New facilities would be constructed according to LEED standards to minimize long-term operations costs.
- New buildings, facilities and other improvements would be constructed from recycled and reused materials to the extent possible.

Cumulative Impacts

National Parks, including national recreation areas like Lake Roosevelt have been shown to be a significant benefit to local community economies because of recreation dollars and park employee salaries paid. A 2005 money generation model study shows that Lake Roosevelt benefits the local economy by contributing 851 jobs, \$15,612,000 in personal income created (including NPS salaries), and \$35,677,000 in non-local visitor and park payroll spending (NPS 2006). Ongoing impacts from park spending on salaries and projects would continue and would continue to have a minor to moderate beneficial impact. Because there would be few major changes in Alternative A, it would contribute minor beneficial effects, primarily from employment and revenue generated as a result of the new marina complex at Crescent Bay. Alternatives B, C and D would also contribute the same minor employment and revenue generation from the new marina, but would also result in more money spent by Lake Roosevelt NRA in the local area, both for new employee salaries and for project work, including for employees, contractors and materials and supplies, these would constitute short- and long-term minor to moderate beneficial effects on the local economy.

Conclusion

Alternative A would have short-term minor to moderate beneficial impacts and long-term negligible to minor beneficial impacts. Alternatives B, C, and D would have more short-term moderate beneficial impacts (from construction) and long-term minor beneficial impacts. Based on very preliminary estimates, Alternatives B and C would have similar needs for additional operating costs (\$468,000 and \$437,000), while Alternative D would cost much less to operate annually (\$133,000), but would have about the same construction costs (which varied among the alternatives only by \$880,000 between B and C, with B being more expensive, and by \$395,000 between C and D, with C being more expensive).

J. Impacts to Park Operations



Impacts of Alternative A

There would continue to be ongoing minor to moderate impacts on park operations from managing a variety of programs related to the shoreline of Lake Roosevelt. These include maintenance and operations associated with visitor facilities, administrative facilities, resource management, and interpretive programming. Existing staff at Lake Roosevelt would continue to have duties associated with maintenance, administration, resource management and interpretation as well as management. Existing operations concerned with human waste and litter removal from beach campsites, illegal fire rings, aquatic vegetation management and other shoreline activities would continue at the same level as would aquatic vegetation management programs. Ongoing management of the CAP program would continue using existing and later refined criteria. Staff would continue to be needed to physically manage parking and day use at high use areas since visitors would continue to arrive at these areas on peak use days, not knowing they were at or over capacity. Existing management and operations staff would continue to need to meet regularly with the Confederated Tribes of the Colville Reservation, with the Spokane Tribe of the Spokane Reservation, and with the Bureau of Reclamation (BOR). Frequent meetings with the five counties, with the Washington Department of Natural Resources and other partners would also continue to be needed. A short-term increase in staffing or contracting oversight would also be needed under Alternative A to oversee the implementation of the dock and log-boom extension projects and concession marina development as well as for the proposed joint staffing of the Highway 395 joint visitor center. Included in ongoing park operations would be educational programming, ongoing maintenance operations, patrolling of the lake and shoreline access roads, and other projects that would continue to contribute to short- and long-term improvements in management of the recreation area, such as one-time, specially funded projects for research or resources management and routine and cyclic maintenance of facilities.

Impacts of Alternative B

Most of the park operations in Alternative A would continue in Alternative B, however, a number of key measures in Alternative B would both add more and redistribute some park operations. For some programs, such as the boat-in camping permit system, additional staff responsibilities would be created which would either have to be absorbed by existing staff or which would require new staff. The need to manage new signs and public information dissemination about facility capacity on peak use days would also likely require additional staffing or redistribution of responsibilities. With the increasing emphasis on partnerships in this alternative and in providing more information to the public, there would also be a greater need than in Alternative A for staff to be present at a variety of community meetings and for ongoing coordination with the tribes and BOR. The need for maintenance, engineering and contracting oversight staff would also be increased to manage the variety of projects that would be implemented under this alternative.

Over time, there would likely be less human waste to remove, fewer beach campsites to clean-up and fewer illegally constructed trails to be removed because of actions that would be implemented as a result of Alternative B, including the use of portable toilets by all boaters, a campsite permit system, and a system of designating beach access trails through cooperation with partners. There would also likely be fewer illegally reserved beach campsites and day use areas from ongoing efforts to tag apparently abandoned property. Allowing for CAP buoy fields would likely lead to fewer unattended buoys in unauthorized areas on the lake. Providing additional boat launches and other designated facilities in key areas would limit the need for visitors to drive many miles in search of an access point or facility and would likely increase overall compliance with park rules and regulations thereby avoiding some visitor encounters that would otherwise occur under Alternative A. More prominent provision of visitor information on boat-in camping permits, at visitor centers and in partner managed areas would increase visitor knowledge of recreation area resources and regulations and reduce the number of visitor conflicts. Allowing walk-in camping and creating a designated overnight campground at Crescent Bay would reduce some non-compliant visitor behavior that occurred when these facilities were unavailable, thereby negligibly reducing staff time to manage some of these incidences. There could also be a reduction in the law enforcement staff time needed to find boaters on the lake because the boat-in camping permit system would allow additional knowledge of what individuals were camped in different zones on the lake. This would likely also aid emergency personnel when responding to incidents since boaters would have a better idea of where they were.

Together the actions in Alternative B would have negligible to moderate adverse impacts on park operations, including the need to manage new facilities and programs, and to attend and facilitate additional cooperation among partners. There would be additional short-term minor to moderate adverse impacts as park staff implemented new programs. Long-term negligible to minor beneficial impacts would be realized from the successful implementation of some programs and from the consequent reduction in effort needed to manage visitors engaging in those activities.

Impacts of Alternative C

Actions and impacts would be similar to Alternative B, however because there would be fewer facilities, including no facilities at Rickey Point, less overflow parking and no public buoy mooring system, there would be less overall need for short-term construction oversight and long-term maintenance operations than in Alternative B. As in Alternative B, because of the permit system and additional information systems and some new facilities (such as the education/interpretive center at Crescent Bay), visitor services and interpretation staff would need to increase to manage these additional programs. In addition to the programs to improve visitor information and communications with partners in Alternative B, there would be broader programs to involve partners in Alternative C that would

mean more staff time for coordination efforts, such as for publishing a brochure of regulatory differences, and for working with the county and developers to establish legal access to the shoreline for neighboring communities. Other programs, such as developing a volunteer boat monitoring patrol and increasing tribal coordination and orchestrating meetings among partners to identify opportunities for collaboration would also require additional staff time.

Together, actions in Alternative C would have long-term negligible to moderate adverse impacts on park operations and long-term negligible beneficial effects from implementation. These would be coupled with short-term adverse effects as park staff got used to new responsibilities and changes in operations.

Impacts of Alternative D

There would be more new facilities and more expanded facilities in Alternative D, but fewer coordination efforts among partners. As a result, Alternative D would have more short-term but fewer long-term adverse impacts on park operations. Long-term impacts would primarily come from maintaining more facilities, and continuing to address visitor use impacts that remain unsolved by proposed actions. Ongoing management actions from Alternative A would continue for managing boat-in camping because there would be no permit system. Because visitors could continue to camp anywhere along the shoreline and would not have direct access to recreation area regulations there would likely continue to be a need for park staff to deal with human waste and other ongoing impacts. As in Alternative B, some benefits would be provided by the public buoy mooring system, by formal beach access trails, from additional designated boat-in campsites and from other actions. Because Alternative D would rely more on facilities, there would likely be fewer staffing impacts from implementation. Much of the agency coordination would come from joint visitor centers on Highway 395 and a new one at a location to be determined that would be operated in conjunction with the tribes.

Alternative D would likely have long-term negligible to minor adverse impacts on park operations, which would increase to moderate for maintenance staff; short-term adverse effects to manage construction and expansion of facilities; and long-term negligible beneficial effects during implementation.

Cumulative Impacts

Over time, Lake Roosevelt NRA has become more expensive to manage and to operate. Current operating costs run about 1.25 million dollars. Based on the need for additional personnel and services, Alternatives B and C would increase this by nearly 0.5 million dollars, while Alternative D would increase it by about 30 percent of that. Negligible adverse effects would be contributed to cumulative impacts on park operations from Alternative 1, and moderate adverse effects from Alternatives B and C, while minor adverse effects would be contributed in Alternative D.

Conclusion

Impacts to park operations would be negligible in Alternative A, moderate in Alternatives B and C and minor in Alternative D. Negligible adverse effects would be contributed to cumulative impacts on park operations from Alternative A, and moderate adverse effects from Alternatives B and C, while minor adverse effects would be contributed in Alternative D.

TABLE VII - 3: FACILITY IMPACTS FOR DRY AND DROUGHT YEARS

Facility	Amenities Impacted	Recommended Mitigation	Estimated Total Cost
Spring Canyon	three courtesy docks, PVC and wood swim booms	Add a 20-foot long dock section to each dock, add four logs, move four buoy anchors to log boom, and retrofit PVC boom for easy removal.	\$52,200
Plum Point	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Keller Ferry	two courtesy docks, wood swim boom	Add a 20-foot long dock section to each impacted dock, add four logs, and move three buoy anchors.	\$28,200
Goldsmith	one courtesy dock	Add a 20-foot long dock section.	\$15,000
Penix Canyon	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Jones Bay	two courtesy docks	Add two 20-foot dock sections to one dock.	\$24,000
Sterling Point	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Seven Bays	three marina dock systems	Move location of two docks and shore connections. Retrofit dock to allow temporary relocation to attach to main dock.	\$42,000
Fort Spokane	seven courtesy docks, wood swim boom	Add two 20-foot sections to one dock, and one 20-foot section to another. Mitigation of other docks not recommended, due to steep bank. Swim area mitigation not recommended, due to narrow deep channel.	\$55,000
Detillion	two courtesy docks	Add a 20-foot long dock section to each dock.	\$24,000
Porcupine Bay	two courtesy docks, PVC and wood swim booms	Add two 10-foot long sections to one dock and one 20-foot long section to the other. Add one log and two PVC pipes to swim booms and Sheet 2 anchors to enlarge swim area. Add plant prohibitory fabric to new swim beach.	\$37,100
Hunters	three courtesy docks, wood swim boom	Add a 20-foot long section to each dock. Add two logs to swim boom and one anchor.	\$49,500
Gifford	two courtesy docks	Add one 20-foot long dock section to one dock and two 10-foot long dock sections to the other.	\$35,000
Cloverleaf	wood swim boom	Add three logs and one anchor and relocate shore anchor.	\$5,000
French Rocks	one courtesy dock	Add a 20-foot long section to dock.	\$12,000
Kettle Falls	one government dock	Add a 10-foot long section to dock.	\$6,000
Evans	one courtesy dock, wood swim boom	Add a 20-foot long section to dock, add four logs, move two anchors, and add two anchors to swim boom.	\$21,000
Snag Cove	one courtesy dock	Add a 20-foot long section to dock.	\$12,000
		Total	\$454,000

TABLE VII - 4: IMPACT COMPARISON CHART

	Alternative A Impacts
Land Use	Minor adverse effects from the implementation of existing plans and programs. Negligible cumulative adverse effects.
Air Quality	Localized negligible to minor adverse effects Negligible cumulative adverse effects
Soils and Vegetation	Ongoing negligible to minor adverse impacts. Negligible cumulative adverse effects.
Water Resources: Water Quality	Short- and long-term, localized, minor to moderate adverse effects on water quality. Short- and long-term negligible cumulative adverse effects from construction and from location of the marina as well as from ongoing operations.
Wildlife	Negligible to minor adverse and beneficial effects. Negligible to minor cumulative adverse effects.
Special Status Species	No effect and no contribution to cumulative effects on grizzly bears, gray wolves, Canada lynx, Ute ladies'-tresses or Spalding's silene. No effect on other species considered rare, threatened or endangered by the State of Washington or species of concern noted by the USFWS.
Visitor Experience, including Visitor Access and Opportunities, Safety, Scenic Resources, Soundscape	Short- and long-term negligible adverse effects and minor long-term beneficial effects. Negligible cumulative beneficial and adverse effects.
Socioeconomics	Short-term minor to moderate beneficial impacts and long-term negligible to minor beneficial impacts. Annual operating and construction costs estimated at \$1,220,000 potential marina operation costs.
Park Operations	Negligible adverse effects. Negligible cumulative adverse effects.
Impairment	No impairment of park resources or values

Alternative B Impacts	Alternative C Impacts	Alternative D Impacts
<p>Localized moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>	<p>Minor to moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>	<p>Moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>
<p>Short-term localized negligible to moderate adverse effects and negligible to minor long-term beneficial effects.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>	<p>Similar to B except fewer moderate adverse effects.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>	<p>Similar to B except additional series of short-term negligible to moderate adverse effects related to construction, with some additional beneficial effects primarily related to improving signage to facilities from the lake.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>
<p>Short- and long-term negligible to moderate adverse impacts and long-term moderate localized beneficial effects on vegetation.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>	<p>Similar to Alternative B, except fewer localized moderate adverse effects.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>	<p>Similar to Alternative B, except more localized moderate adverse effects.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>
<p>Short- and long-term localized minor adverse effects and long-term negligible to minor beneficial effects.</p> <p>The contribution to cumulative impacts would be the same as Alternative A plus additional long-term negligible beneficial effects.</p>	<p>Same as Alternative B</p>	<p>Same as Alternative B, with fewer long-term beneficial effects.</p>
<p>Short- and long-term, localized negligible to moderate adverse and beneficial effects.</p> <p>Negligible to minor cumulative adverse effects.</p>	<p>Similar to Alternative B with fewer overall adverse impacts.</p>	<p>Similar to Alternative B, with greater overall adverse impacts.</p>
<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>
<p>Short- and long-term negligible to moderate localized adverse effects and long-term negligible to moderate beneficial impacts.</p> <p>Minor cumulative beneficial and negligible adverse effects.</p>	<p>Similar to Alternative B, with fewer long-term minor adverse effects.</p>	<p>Similar to Alternative B, with fewer long-term beneficial effects.</p>
<p>Greater short-term moderate beneficial impacts (from construction) and long-term minor beneficial impacts.</p> <p>Annual operating and construction costs estimated at \$468,000 (over Alternative A) and \$6,847,000.</p>	<p>Similar to Alternative B. Annual operating and construction costs estimated at \$437,000 (over Alternative A) and \$5,967,000.</p>	<p>Similar to Alternative B. Annual operating and construction costs estimated at \$133,000 (over Alternative A) and \$5,572,000.</p>
<p>Moderate adverse effects.</p> <p>Moderate cumulative adverse effects.</p>	<p>Same as B.</p>	<p>Minor adverse effects.</p> <p>Minor cumulative adverse effects.</p>
<p>Same as A.</p>	<p>Same as A.</p>	<p>Same as A.</p>

VIII. Consultation and Coordination



A. Project Scoping History



The NPS initiated a 30-day public scoping period for the proposed plan from August 14, 2008, to September 30, 2008. A public scoping announcement was placed on the park's webpage and in the following newspapers: Spokesman Review (Spokane), Davenport Times, Wilbur Register, Grand Coulee Star, and the Statesman Examiner (Colville). The park conducted both internal and external scoping with appropriate NPS staff, agencies, tribes, and the public to determine the range of issues to be analyzed in the EA. Internal scoping included analysis from specialists such as historical landscape architects, hydrologists, biologists, engineers and other NPS staff from Lake Roosevelt, the Denver Service Center, and the Pacific West Region, as well as staff from other agencies. Based on scoping comments received, and federal laws, regulations, and executive orders, the NPS determined that an EA was the appropriate level of compliance for this stage of the project. This scoping process was used to define the project purpose and need, identify issues and impact topics, outline reasonable and feasible alternative actions, and to describe and evaluate the relationship of the preferred alternative to other planning efforts in the park.

Approximately 37 public comment letters (including 18 questionnaires) containing about 295 individual comments were also received: 34 from individuals, three from non-profit or homeowner organizations (NPCA, Riverview Area Association, Upper Columbia Boat Club), four from business owners or managers (Grand Coulee Yacht Club, Seven Bays Marina, Comfort Inn), and one from a local government (City of Kettle Falls). These were received via PEPC (13 letters), U.S. mail (17), and/or email (3) or handed to staff at public meetings (4). All of the comment letters listed Washington State addresses. These comments were analyzed to identify issues and concerns, and the input was incorporated into the project design as appropriate. Park staff also continued to consider public and internal concerns as they arose throughout project planning, and to integrate these additional ideas where possible and appropriate. Another 28 comment letters were submitted on the alternatives newsletter (see "Chapter Two: Purpose and Need").

Comments were submitted directly to the park at the following address: Lake Roosevelt National Recreation Area, 1008 Crest Drive, Coulee Dam, Washington 99116-1259. Comments were also submitted via the NPS Planning Environment and Public Comment (PEPC) web site at <http://parkplanning.nps.gov/laro> or sent via e-mail to the superintendent, project manager or other staff. Information about the planning process was updated and posted on the park's web site: www.nps.gov/laro and on PEPC.

B. Consultation



U.S. Fish and Wildlife Service (USFWS)

Section 7 of the Endangered Species Act (1973) requires agencies to consult with the U.S. Fish and Wildlife Service (USFWS) regarding any action authorized, funded, or carried out by a federal agency to ensure that it does not jeopardize any listed species or its critical habitat. The NPS received a project-area species list from the USFWS in a letter dated January 2009 (reference number: 1-9-09-SP-0007). This list was used as the basis for the special-status species analysis in this EA. Because there would be no effect on any species listed or proposed as rare, threatened, or endangered, no additional consultation with the USFWS is necessary.

American Indian Tribes

Lake Roosevelt National Recreation Area is consulting with American Indian tribes having cultural association with areas affected by the Shoreline Management Plan, including the Confederated Tribes of the Colville Reservation and the Spokane Tribe of the Spokane Reservation. Representatives of the tribes were part of the Interdisciplinary Planning Team established by the recreation area for this project. A summary of this involvement may be found in “Chapter Two: Purpose and Need.” Ongoing consultation with the tribes is continuing through review of this Environmental Assessment and incorporation of requested information. Additional information sharing and project planning will continue throughout the planning and implementation of the proposed project.

State Historic Preservation Officer (SHPO)

Lake Roosevelt National Recreation Area consults with the State Historic Preservation Officer during projects that have the potential to adversely impact historic or prehistoric properties. Based on current analysis, there would be No Historic Properties Affected by the implementation of the proposed actions under Alternatives A - D. If analysis later reveals that historic properties could be affected, additional consultation with the SHPO would occur, including concurrence with the proposed determinations of effect. This is possible if the Fruitland Irrigation Canal is eventually incorporated as a trail and is determined eligible for the National Register of Historic Places and/or if previously unidentified archeological resources are found during proposed actions.

Public Review of this Environmental Assessment and Project Updates

This EA is available for a forty-five (45) day public review and comment period which begins the date the EA is distributed. The availability of the EA is being announced via press releases and the EA is being mailed or emailed to the list of persons and agencies that have expressed interest in Lake Roosevelt proposed actions and events. This includes agencies, public libraries, and organizations such as The Wilderness Society, The Alpine Club, Sierra Club, etc (see Distribution List in “Appendix 3”). The EA will also be available at local libraries in Colville, Grand Coulee, Davenport, Republic, and Kettle Falls. An electronic copy of the EA is also available on-line at <http://www.nps.gov/laro>.

Comments on the EA, or requests for additional copies of this EA (please specify CD or printed copy) should be directed to:

Superintendent
Lake Roosevelt National Recreation Area
1008 Crest Drive
Coulee Dam, Washington 99116-1259
(509) 633-9441
www.nps.gov/laro or parkplanning.nps.gov/laro

Comments will be documented and analyzed at the close of the public review period. If no significant impacts from the proposed action are identified, the EA will then be used to prepare a Finding of No Significant Impact (FONSI), which will be sent to the NPS Pacific West Regional Director for consideration.

During the public review period, additional consultation will occur to affirm determinations of effect (if needed) with the California State Historic Preservation Officer, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers. Consultation with the Confederated Tribes of the Colville Nation, the Spokane Tribe of the Spokane Reservation, and the U.S. Bureau of Reclamation is ongoing. Notice of concurrence with the determinations of effect will be documented in the FONSI, if prepared, for this EA (see above).

For more information concerning this EA, please contact the park Chief of Natural Resources and Compliance, Jerald Weaver at (509) 633-9441, extension 128.

C. List of Persons and Agencies Consulted/Preparers

The following people and agencies were consulted during the preparation of this Environmental Assessment:

Lake Roosevelt National Recreation Area

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Frank Andrews (former Chief, Cultural Resources Management)

Debbie Bird (Superintendent)

Ray Dashiell (Facility Manager)

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Nate Krohn (Landscape Architect)

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Lee Snook (former North District Interpretive Ranger/former Acting Chief of Interpretation)

Jerald Weaver (Chief, Compliance and Natural Resources Management, Preparer)

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Ferry County

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Brad Miller (County Commissioner)

Stevens County

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Merrill Ott (County Commissioner)

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Appendices



Appendix 1: Measures to Avoid, Minimize, or Mitigate Impacts

LAND USE

- New areas of development would be the minimum needed to accommodate proposed activities.
- Development footprints would be concentrated, rather than spread out.
- Clearly delineate construction limits to prevent expansion of construction operations into undisturbed areas.

AIR QUALITY

- Spraying water over exposed soil, particularly during dry conditions to minimize fugitive dust.
- Covering trucks transporting cut or fill material to reduce or eliminate particle release during transport.
- Encouraging contractor and NPS employees to travel together to and from the project site to the extent possible (rather than in multiple separate vehicles).
- Revegetating bare and staging areas as soon as possible.
- Minimizing the extent of vegetation removal associated with construction activities.
- Encouraging the use of local labor sources and large-volume material delivery to minimize trip generation during construction activity.
- Using propane and solar devices for heating.
- Using low VOC paints, solvents and other chemicals in building construction.
- Restricting idling of construction vehicles and equipment to no longer than 15 minutes when not in use.
- Using biodiesel rather than traditional diesel fuel.
- If delays for non-work vehicles will be more than five minutes, have flagger request that visitors turn off idling vehicles to reduce air pollution until traffic flow resumes.

SOILS

- Locating staging areas where they will minimize new disturbance of area soils and vegetation.
- Minimizing ground disturbance to the extent possible.
- Avoiding precipitation times during construction.
- Minimizing driving over or compacting root-zones and using mats or plywood to minimize soil compaction impacts in sensitive areas.
- Salvaging topsoil from excavated areas for use in re-covering source area or other project areas.
- Not piling excavated soil alongside trees to remain, and providing tree protection for trees to remain.
- Windrowing topsoil at a height that will help to preserve soil microorganisms (less than three feet).
- Reusing (rather than removing) excavated materials from the project area.
- Revegetating project areas through native seeding and/or planting.
- Importing weed-free clean fill and topsoil.
- Delineating clearing limits to minimize the amount of vegetation loss.
- Clearing and grubbing only those areas where construction would occur.
- Installing silt fencing or other erosion control methods, to prevent loss of native soil.

VEGETATION

- Driving only on established roads and trails away from weed infested areas.
- Removing seeds from vehicles and equipment.
- Not driving recreation vessels through Eurasian water milfoil mats.
- Preventing the spread of Eurasian water milfoil by removing plant fragments from boat props, trailers, fishing lines, etc.
- Prior to construction, salvage native plant material and re-plant after construction.

WATER QUALITY

- Establishing a long-term repeatable water quality monitoring program to detect undesirable effects on water quality.
- Using the water quality monitoring program to mitigate detectable adverse effects on water quality.
- Increasing the number of toilets within the recreation area.
- Implementing the provision to require day use as well as overnight boaters to carry portable toilets.
- Educating recreation area visitors about potential impacts to water quality from improperly disposed of human waste.
- Continuing to monitor study results from the industrial plant contamination on the Canadian border to implement any future recommendations.
- Where possible and retrofits occur, adding runoff barriers to paved parking areas to reduce contamination from petroleum products.
- As new boating technology arises to reduce unspent fuel contamination, gradually incorporating it into the park's administration operations fleet.
- Considering a requirement for marinas to have self-contained wash-bays to prevent pollution runoff contamination within the lake.
- Delineating staging areas away from the lake and marking them to prevent incremental expansion.
- Covering stockpiled soil and rock throughout the duration of the project with a breathable, water repellent fabric anchored around the perimeter to minimize sedimentation.
- Minimizing the amount of disturbed earth area and the duration of soil exposure to rainfall.
- Minimizing soil disturbance and re-seeding or revegetating disturbed areas as soon as practical.
- Retaining silt fencing in disturbed areas until stabilization (by reseeding or revegetation).
- Installing protective construction fencing around, adjacent to or near wetland and/or riparian areas that are to be protected or other erosion control measures to protect water resources in the project area.
- Using vegetable based hydraulic fluid and biodiesel in heavy equipment, when possible.
- Paving (creation of impervious surface) would also be minimized.
- An Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan to address hazardous materials storage, spill prevention and response would be in place and approved by the park before construction begins.

WILDLIFE

- Scheduling construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., bird nesting and breeding seasons, periods of bat breeding, rearing and hibernating, etc).
- Minimizing the degree of habitat removal (clearing) by clearly delineating construction limits.
- Limiting the effects of light and noise on wildlife habitat through controls on construction equipment and timing of construction activities, such as limiting construction to daylight hours.
- Maintaining routes of escape for animals that might fall into excavated pits and trenches. During construction activities, Contractor personnel would maintain vigilance for animals caught in excavations and take appropriate action to free them.
- Ensuring that spill prevention measures are in place to prevent inadvertent spills of fuel, oil, hydraulic fluid, antifreeze, and other toxic chemicals that could affect wildlife.
- Discouraging construction personnel at work sites from providing a source of human food to wildlife, avoiding conditioning of wildlife and in human/wildlife conflicts.
- Maintaining proper food storage, disposing of all food waste and food-related waste promptly, in a bear-proof receptacle, if available and removing all garbage off-site at the end of each working day.
- Using sediment traps and other water quality protection measures around new parking areas to minimize the effects of runoff contaminated with petroleum products from vehicle use.

SPECIAL STATUS SPECIES

- Continuing to conduct additional site specific surveys for special status plants and wildlife prior to actual implementation of project actions, where warranted, and as specific project implementation details are developed.

CULTURAL RESOURCES

- Notifying the park archaeologist of the specific work schedule prior to staging and construction to have the opportunity to conduct any test excavation surveys prior to ground disturbance.
- Stopping work in the area of identification and nearby areas if archeological resources are discovered at any point during the project work, as directed by the park until the find could be evaluated and action taken to avoid or mitigate the impact. When it is necessary to stop work due to archeological resources discovery, the contractor would cease all activities in the area of discovery; allow the archeologist to complete investigations; and take measures to protect the resources discovered as directed by the park.
- Avoiding further impact by modifying project implementation as needed at the site if archeological resources are discovered during implementation. If this is not possible, as much information as possible would be collected about the site in accordance with applicable laws and regulations and additional consultation with applicable agencies and tribes would occur as specified in the implementing regulations for Section 106 of the NHPA.
- Monitoring ground disturbing actions as appropriate during construction to ascertain presence/absence of archeological materials within the proposed construction zone. Monitoring would be focused where buried historical deposits might be present beneath existing development.
- Determining if a monitoring plan is needed to detail the final construction plans, the cultural material that might be encountered, important archeological questions that could be addressed, and a range of treatment options (e.g., avoidance, data recovery) for any findings.
- Evaluating the eligibility of the site as a whole under National Register of Historic Places Criteria If monitoring results in the discovery of important materials.
- Following procedures outlined in the Native American Graves Protection and Repatriation Act in the unlikely event that human remains or any objects protected under NAGPRA are exposed. This would include the potential need to stop work for a minimum of 30 calendar days. During that time, work may resume in non-sensitive areas.

VISITOR ACCESS, OPPORTUNITIES, AND SAFETY

- Avoiding evening, weekend and holiday work by requiring approval from the superintendent. Longer construction delays or total road closures may also require approval from the superintendent.
- Conducting materials deliveries (to the degree possible) in the early morning and late evening hours.
- Distributing press releases to local media, signs in the recreation area and ferry information to inform visitors about construction conditions during the projects.
- Scheduling work around high visitor use days and times, such as holidays and weekends.
- Developing a safety plan prior to the initiation of construction to ensure the safety of recreation area visitors, workers, neighbors, and park staff.
- Controlling dust during construction (by minimizing soil disturbance, spraying water but no chemicals over disturbed soil areas during dry periods and revegetating disturbed soil areas as soon as practical following construction).

SCENIC RESOURCES

- New structures, including signs, buildings and other facilities would be designed to fit into the existing vernacular landscape, including associated colors, textures and styles.
- New structures would be concealed from major viewpoints as much as possible.
- Additional cooperation with county land use planning departments for shoreline access and for mitigating the effects of boundary development along the recreation area would occur.

SOUNDSCAPE

- Minimizing construction activities during normally quiet or sensitive times of day, such as during the morning, evening and at night.
- Considering changing the nature and scope of special use permits for cigar boat races and other special events if these events became more frequent or use of the boats more widespread.
- If delays for non-work vehicles will be more than five minutes, have flagger request that visitors turn off idling vehicles to reduce noise impacts until traffic flow resumes.

SOCIOECONOMICS

Where possible projects would be combined or phased to allow for cost-savings measures related to staging remaining in place rather than setting up and taking down for sequential implementation actions.

New facilities would be constructed according to LEED standards to minimize long-term operations costs.

New buildings, facilities and other improvements would be constructed from recycled and reused materials to the extent possible.

Appendix 2: Site Analysis Summary of Lake Roosevelt Facilities

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
SOUTH—CRESCENT BAY TO SEVEN BAYS					
Crescent Bay	Launch	1	Concentrated Rec	Large, disturbed site in close proximity to recreation users	Potential for expanded boat launch, education center, deep water marina and day-use area
Eden Harbor	Community Access Pt.	2	Developed Rec	Primitive access; sheltered cove	
Spring Canyon	Campground & Launch	3	Concentrated Rec	Popular beach and group campsites	
Plum Point	Boat-in CG	7	Dispersed Rec	Small cove with shade trees	Potential for additional boat-in campsites
Neal Canyon	No facilities	10	Dispersed Rec	Large flat areas above high water	Potential new boat launch and parking lot, dependent on improved road access
Keller Ferry	Marina, CG & Launch	16	Concentrated Rec	Popular campground and small marina operate at full capacity in summer	Potential for additional camping and parking
Goldsmith	Boat-in CG	18	Developed Rec	Under-utilized boat-in campground	
Hanson Harbor	Launch	21	Developed Rec	Accessible launch ramp to alleviate demand at K. Ferry	Potential for additional parking
Jones Bay	Campground & Launch	22	Developed Rec	Secluded campground among Ponderosa pines	
Penix Canyon	Boat-in CG	22	Developed Rec	Little-used boat-in campground near Jones Bay	
Rantz Marine Park	Community Access Pt.	25	Developed Rec		
Sterling Point	Boat-in CG	31	Developed Rec		Potential for additional boat-in campsites
Lincoln	Launch	36	Developed Rec	Small enclosed site near old sawmill; constrained by topography and property lines	Unable to extend ramp; potential to formalize parking lot to the west
Hawk Creek	Campground & Launch	37	Developed Rec; Passive waters	Cool, small valley for tent camping and fishing	
Seven Bays	Marina, Restaurant & Launch	39	Concentrated Rec	Full-service marina where demand far exceeds capacity; restricted by topography and property boundaries.	Potential to change management area designation

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
SPOKANE ARM—FORT SPOKANE TO SUNSET POINT					
Fort Spokane	Day use area, Campground & Launch	Spokane Arm 43	Concentrated Rec	Large, historic, facility-rich area with popular campground and swim beach	Potential for additional parking, launch ramp extension and campsites
Crystal Cove	Boat-in CG	Spokane Arm 48	Dispersed Rec	Smallest boat-in campground; little use	
Cougar Cove	No facilities	Spokane Arm 49	Dispersed Rec	Popular informal beach area	Potential for small boat-in campground and vault toilet
Ponderosa	Boat-in CG	Spokane Arm 50	Dispersed Rec	Serves popular boating area	
Detillion	Boat-in CG	Spokane Arm 50	Dispersed Rec	NPS land area is narrow; Development does not match management area.	Potential to convert part or all of campground to boat-in group sites
Porcupine Bay	Campground & Launch	Spokane Arm 55	Concentrated Rec	Most popular camping area; closest to Spokane	Potential expansion of parking lot to SW of existing parking lot with some tree removal
Laughbon Bay	No facilities	Spokane Arm 55	Developed Rec	Road access across Spokane River prior to lake	
Teel Flats	No facilities	Spokane Arm 58	Developed Rec	Flat bench 10 feet above high water; public road access is possible	Potential for new large campground and boat launch
Cayuse Cove	Non-Compliant Launch	Spokane Arm 60	Developed Rec	Privately constructed road and boat launch area; no public road access; need for public toilet accessible to boats	Potential for vault toilet accessible from water
Moccasin Bay	Non-Compliant Dock	Spokane Arm 62	Developed Rec	Shallow bay with privately constructed boat launch and docks; public road access	Potential for new small boat launch with parking for boat trailers
Sunset Point	Non-Compliant Dock	Spokane Arm 62	Developed Rec	Shallow bay with privately constructed launch area and dock; no public road access	

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
HUNTERS AREA—ENTERPRISE TO COLVILLE RIVER					
Enterprise Bar	No facilities	50	Developed Rec	Large flat area north of Spokane Indian Res	Potential for new boat-in campground facility
Corkscrew	Non-compliant launch and dock	52	Developed Rec	Primitive launch with difficult access; steep cove walls	Potential for public, primitive launch if land-based access is resolved
Camp Na-Bor-Lee	Group Camp	53	Special Uses	Independent, non-profit camp for youth and families with kitchen facilities	
Enterprise	Boat-in CG	57	Dispersed Rec	Large site	Potential to add campsites
Hunters	Campground & Launch	64	Concentrated Rec	Largest facility between Ft Spokane and Kettle Falls	Potential to expand the campground and extend launch ramp
Jerome Point	No facilities	71	Developed Rec	Large forested area with public road access	Potential for boat launch and/or small day use area
Gifford	Campground & Launch	78	Developed Rec	Forested campground, parking and launch site	Potential to expand the facility if management area designation changes, including parking
Cloverleaf	Campground and day use area	79	Developed Rec	Small day-use and camping area with highway noise	
Daisy	Launch	85	Developed Rec	Popular launch for fishermen	
French Rocks	Launch	94	Developed Rec		
Bradbury Beach	Launch and day use area	95	Developed Rec	Day use area with popular beach; small campsite was closed	
Rickey Point	Vacation Cabins	98	Special Uses	16 cabins in gently sloping forest accessed by public road	Potential for new boat launch, day-use area and campground
Rickey Point CAP	Community Access Pt.	98	Special Uses	Sail boat moorage	
Haag Cove	Campground	99	Developed Rec	Small campground and picnic area	
Colville Flats	Day Use	100	Developed Rec	Popular day use area and swim beach; flat topography not conducive for a boat launch	Potential to improve access road and add vault toilets with better site delineation

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
NORTH—KETTLE FALLS TO CHINA BEND					
Sherman Creek	Vacation Cabins	101	Special Uses	8 cabins accessed by a steep, curvy road	Potential for small day-use area or boat-in campground (single or group)
Kettle Falls	Marina, CG & Launch	102	Concentrated Rec	Full-service marina, NPS facilities spread over large area; swim area has silted in	Potential for improvement through re-design
Marcus Island	Campground & Launch	110	Developed Rec	Forested launch area and campground on island; swim area has silted in	Potential for moving the swim area downstream
Summer Island	Boat-in CG	111	Developed Rec		
Evans	Campground & Launch	112	Concentrated Rec	Simple boat launch and campground; large open lawn	Potential for additional campsites
Snag Cove	Campground & Launch	115	Developed Rec	Sparsely populated area	
North Gorge	Campground & Launch	118	Developed Rec	Wooded hill with campsites and walk-in sites; protected cove	
China Bend	Launch	122	Developed Rec	Scenic, simple boat launch	
Kamloops	Campground	Kettle River 110	Developed Rec	Island campground and courtesy dock	
River Road Bar	No facilities	Kettle River 111	Developed Rec	Large flat area on Kettle River	Potential new boat launch and campground.
Kettle River	Campground	Kettle River 112	Developed Rec	Campground adjacent to shallow, river run	
Napoleon Bridge	Launch	Kettle River 113	Dispersed Rec	Little used simple boat launch without dock	Use does not fit with management area designation

Appendix 3: Plan Distribution List

On September 25, 2009, the Shoreline Management Plan / Environmental Assessment will be distributed to individuals and organizations for formal public review. Public distribution and notification of the comment period, September 28-November 11, 2009, will occur through web sites, press releases, cd copies, hard copies, and letters. On October 5th - 8th, open house meetings at Colville, Davenport, Coulee Dam, and Spokane will be held. The complete plan, including maps will be available on the NPS Planning, Environment and Public Comment (PEPC) website. A link to the PEPC site was added to the Lake Roosevelt NRA home page. The distribution list includes the following:

U.S. Congress

U.S. SENATOR MARIA CANTWELL

U.S. SENATOR PATTY MURRAY

CONGRESSWOMAN CATHY MCMORRIS RODGERS

REPRESENTATIVE DOC HASTINGS

Federal Agencies

U.S. NATIONAL PARK SERVICE

Columbia Cascade System Support Office, Seattle, WA

Pacific West Region, Oakland, CA

Regional Solicitor's Office

Pacific West Region Library

Amistad National Recreation Area, Superintendent

Great Basin National Park

Glen Canyon National Recreation Area

Water Resources Division, Denver and Ft. Collins, CO (Wetlands Specialist and Hydrologist)

Natural Resource Program Center, Denver, CO (Soils Scientist)

Inventory and Monitoring (Invasive Species Coordinator, Upper Columbia Network Coordinator)

Threatened and Endangered Coordinator for Pacific West

Invasive Species Coordinator, Fort Collins

U.S. BUREAU OF RECLAMATION

Grand Coulee Office, Planning

Ephrata Office, Realty Specialist

U.S. BUREAU OF LAND MANAGEMENT

Spokane Office, Range Management Specialist

U.S. FOREST SERVICE

Colville National Forest

Okanogan National Forest

U.S. NATURAL RESOURCE CONSERVATION SERVICE

Colville, Washington
Davenport, Washington
Ephrata, Washington
Okanogan, Washington
Colville Tribal Liaison

U.S. BUREAU OF INDIAN AFFAIRS

Natural Resources (Nespelem and Wellpinit, WA)
Superintendent (Nespelem and Wellpinit, WA)

U.S. FISH AND WILDLIFE SERVICE (SPOKANE, WA)

U.S. ENVIRONMENTAL PROTECTION AGENCY (SEATTLE, WA)

BONNEVILLE POWER ADMINISTRATION (SPOKANE, WA)

ARMY CORE OF ENGINEERS (IDAHO)

Indian Nations

CONFEDERATED TRIBES OF THE COLVILLE RESERVATION

Historic Preservation Office
Business Council
Environmental Trust
Fish and Wildlife
Parks and Recreation
Planning Department
Tribal Attorney

SPOKANE TRIBE OF THE SPOKANE RESERVATION

Business Council
Natural Resources
Historic Preservation Office
Planning

State of Washington

STATE REPRESENTATIVE, SHELLY SHORT

STATE REPRESENTATIVE, JOEL KRATZ

DEPARTMENT OF AGRICULTURE

DEPARTMENT OF ECOLOGY, WATER RESOURCES

DEPARTMENT OF FISH AND WILDLIFE

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

Counties

LINCOLN COUNTY

Weed Control Board Coordinator
Planning Department
County Commissioners

STEVENS COUNTY

Weed Control Board Coordinator
Planning Department
Federal Lands Advisory Committee
County Commissioners

FERRY COUNTY

County Commissioners
Planning Department
Weed Control Board Coordinator

Chamber of Commerce/Town Councils

ELECTRIC CITY

GRAND COULEE

KETTLE FALLS

TOWN OF COULEE DAM

DAVENPORT

Organizations and Educational Institutions

LAKE ROOSEVELT FORUM

NATIONAL PARKS AND CONSERVATION ASSOCIATION

NORTH CASCADES CONSERVATION COUNCIL

NORTH COLUMBIA FORESTRY ASSOCIATES

NORTHWEST ECOSYSTEM ALLIANCE

SIERRA CLUB

WASHINGTON STATE CATTLEMEN'S ASSOCIATION

WASHINGTON ENVIRONMENTAL COUNCIL

WASHINGTON STATE UNIVERSITY EXTENSION (LINCOLN AND FERRY COUNTY)

TRI COUNTY HEALTH



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.