

National Park Service
U.S. Department of the Interior

Ross Lake National Recreation Area



Ross Lake National Recreation Area

General Management Plan





"First Light." Watercolor courtesy of Molly Hashimoto.

Ross Lake National Recreation Area

General Management Plan

North Cascades National Park Complex
810 State Route 20
Sedro-Woolley, WA 98284
(360) 854-7200
Contact: Palmer (Chip) Jenkins, Superintendent

Prepared by:
National Park Service
Pacific West Region – Seattle Office
Park Planning and Environmental Compliance
909 1st Avenue
Seattle, WA 98104



Kayaks at Diablo Lake. Photo by David Snyder.

TABLE OF CONTENTS

| | |
|---|----|
| SUMMARY | V |
| Issues Addressed..... | v |
| Context for the Plan | vi |
| Summary of the Plan..... | vi |
| | |
| CHAPTER 1: INTRODUCTION..... | 1 |
| Description of Ross Lake National Recreation Area | 1 |
| History of the Establishment and Management of the North Cascades NP Complex | 4 |
| Purpose of the Plan | 9 |
| Need for the Plan..... | 9 |
| Relationship to Other Planning..... | 15 |
| Overview of the Planning Process..... | 15 |
| Implementation of the Plan..... | 18 |
| | |
| CHAPTER 2: FOUNDATION FOR PLANNING AND MANAGEMENT..... | 19 |
| Purpose | 19 |
| Significance | 20 |
| Fundamental Resources and Values..... | 21 |
| Interpretive Themes | 25 |
| Guiding Principles for Management | 27 |
| Special Congressional Designations, Authorizations, and Mandates | 27 |
| Desired Conditions and Potential Management Strategies Derived from Laws, Regulations, and Policies..... | 31 |
| | |
| CHAPTER 3: THE PLAN..... | 55 |
| Overview of the Plan..... | 55 |
| Elements of the Plan | 56 |
| Management Zones | 56 |
| Proposed Actions | 70 |
| Management of Specific Areas..... | 70 |
| <i>North Cascades Highway Corridor</i> | 70 |
| <i>Newhalem</i> | 72 |
| <i>Diablo Lake</i> | 74 |
| <i>Ross Lake</i> | 76 |
| <i>Hozomeen</i> | 77 |
| <i>Marblemount Ranger Station</i> | 77 |
| Natural Resources | 77 |
| <i>Ecosystem Functions and Processes</i> | 78 |
| <i>Air Quality</i> | 79 |
| <i>Soundscapes</i> | 79 |
| <i>Lightscares</i> | 79 |

| | |
|--|----|
| Water Resources..... | 79 |
| Geology..... | 79 |
| Glaciology..... | 79 |
| Soils/Erosion Control..... | 80 |
| Vegetation..... | 80 |
| Wildlife..... | 80 |
| Fisheries..... | 82 |
| Science Communication and Volunteer Programs..... | 82 |
| Cultural Resources..... | 82 |
| Archeology..... | 83 |
| Historic Structures..... | 83 |
| Cultural Landscapes..... | 83 |
| Ethnohistory..... | 83 |
| Museum Collections..... | 83 |
| Tribal Issues..... | 83 |
| Wilderness and Backcountry..... | 84 |
| Wilderness Designation..... | 84 |
| Wild and Scenic River Designation..... | 85 |
| Wild and Scenic River Eligibility and Suitability Study Summary..... | 85 |
| Additional Eligibility and Suitability Analysis..... | 85 |
| Recreation..... | 86 |
| Boating..... | 86 |
| Hunting and Fishing..... | 88 |
| Sport Climbing..... | 88 |
| Seaplanes..... | 88 |
| Commercial Scenic Air Tours..... | 89 |
| Stock Use..... | 90 |
| Backcountry Permit System..... | 90 |
| Fees..... | 90 |
| New and Emerging Recreational Uses..... | 90 |
| Interpretation and Education..... | 90 |
| Interpretation Programs..... | 91 |
| Visitor Orientation and Informal Education..... | 91 |
| Curriculum-based Programs..... | 91 |
| Outreach..... | 92 |
| Partnerships for Interpretation and Education..... | 92 |
| Access and Transportation..... | 93 |
| Park Entrance..... | 93 |
| Management of the North Cascades Highway..... | 93 |
| Access to Ross Lake..... | 94 |
| Thornton Lakes Road..... | 95 |
| Parking Areas..... | 95 |
| Maintenance and Gravel Storage Areas..... | 95 |
| Facility Design Standards..... | 95 |
| Safety and Security..... | 95 |
| Communication Facilities..... | 95 |
| Commercial Services and Concessions..... | 95 |
| Overnight Lodging..... | 95 |
| Skagit General Store..... | 95 |
| Interagency Cooperation and Collaboration and Partnerships..... | 96 |
| Seattle City Light..... | 96 |
| U.S. Forest Service..... | 96 |
| Other Federal and State Agencies..... | 96 |
| Climate Change..... | 96 |
| Unit Name..... | 97 |
| North Cascades National Recreation Area..... | 97 |

| | |
|-----------------------------|-----|
| Boundary Modification | 98 |
| Staffing | 100 |
| Estimated Costs | 101 |
| User Capacity | 101 |
| Mitigation Measures | 108 |

APPENDICES 115

| | |
|---|-----|
| Appendix A: Record of Decision | 115 |
| Appendix B: Legislation..... | 137 |
| Appendix C: Pertinent Laws, Policies, and Procedures..... | 143 |
| Appendix D: Summary of Skagit Wild and Scenic River Study | 147 |

CITED SOURCES..... 153

PREPARERS AND CONSULTANTS 155

INDEX..... 159

TABLES

| | |
|---|-----|
| Table 2.1 Special Congressional Designations, Authorizations, and Mandates..... | 27 |
| Table 3.1 Management Zones for Ross Lake NRA | 62 |
| Table 3.2 Staffing..... | 100 |
| Table 3.3 Estimated Costs | 101 |
| Table 3.4 Indicators and Standards | 103 |
| Table D-1 Summary of Outstanding Remarkable Values..... | 149 |

FIGURES

| | |
|---|---------------------|
| Figure 1.1 Regional Context..... | 3 |
| Figure 1.2 Ross Lake National Recreation Area | Insert after page 4 |
| Figure 3.1 Management Zones..... | 57 |
| Figure 3.2 Management Zones - Newhalem to Gorge Dam | 58 |
| Figure 3.3 Management Zones - Gorge Dam to Diablo Dam | 59 |
| Figure 3.4 Management Zones - Lower Ross Lake | 60 |
| Figure 3.5 Management Zones - Hozomeen | 61 |
| Figure 3.6 Ross Dam Trailhead Parking Lot | 73 |
| Figure 3.7 Boundary Modifications..... | 99 |
| Figure D-1 Eligibility Findings and River Classifications | 151 |

ACRONYMS

| | |
|-------|---|
| BMU | Bear Management Unit |
| CUA | Commercial Use Authorization |
| EIS | Environmental Impact Statement |
| ELC | Environmental Learning Center |
| EPA | Environmental Protection Agency |
| FERC | Federal Energy Regulatory Commission |
| FTEs | Full Time Equivalents |
| GMP | General Management Plan |
| NEPA | National Environmental Policy Act |
| NCI | North Cascades Institute |
| NHPA | National Historic Preservation Act |
| NOAA | National Oceanic and Atmospheric Administration |
| ORV | Outstandingly Remarkable Value |
| PEPC | Planning, Environment, and Public Comment |
| NPS | National Park Service |
| NRA | National Recreation Area |
| RNA | Research Natural Area |
| SCL | Seattle City Light |
| USFWS | United States Fish and Wildlife Service |
| USFS | United States Forest Service |
| WSDOT | Washington State Department of Transportation |
| WSR | Wild and Scenic River |





Diablo Lake from Sourdough Mountain.

SUMMARY

Ross Lake National Recreation Area was designated as a unit of the National Park System on October 2, 1968. It is managed as one unit of the North Cascades National Park (NP) Complex, which also includes North Cascades National Park (north and south units) and Lake Chelan National Recreation Area. Although comprised of three separate units of the National Park System, the complex is managed under the leadership of a single superintendent. The North Cascades NP Complex is located deep in the northernmost reaches of the Cascades Range in Washington State and borders British Columbia, Canada.

The North Cascades NP Complex encompasses a vast “sea of peaks” replete with over 300 glaciers, sawtoothed granite pinnacles, myriad creek and riverine systems, and vast expanses of wilderness. Its rugged topography is home to a multitude of plant, animal, and fish species. Rare lichens, ancient cedars, Chinook salmon, bald eagles, marmots, mountain goats, the elusive fisher, and some 1,600 identified species share this diverse and expansive landscape. Human evidence spans nearly 10,000 years of habitation, use, and technological development. Within Ross Lake National Recreation Area lie three placid reservoirs and their impressive mega-engineered facilities that harness nature’s hydropower and convert it to electricity for the people of Seattle.

Ross Lake National Recreation Area (NRA) is the most accessible part of the North Cascades NP Complex via scenic Washington State Route 20, the North Cascades Highway. Ross Lake National Recreation Area protects 116,798 acres of the Complex and includes three reservoirs: Ross Lake, Diablo Lake, and Gorge Lake -- water gateways to more remote areas. Ringed by mountains and glaciers, most of Ross Lake NRA is designated wilderness and offers many outdoor recreation opportunities along the upper reaches of the Skagit River and between the north and south units of North Cascades National Park.

The purpose of this Ross Lake National Recreation Area General Management Plan (GMP) is to articulate a vision and overall management philosophy for Ross Lake NRA that will guide

decision-making by current and future management teams during the next 15 to 20 years. This plan presents management strategies for resource protection and preservation, education and interpretation, visitor use and facilities, land protection and boundaries, and long-term operations and management of Ross Lake NRA. It replaces portions of the North Cascades NP Complex General Management Plan completed in 1988 that provided guidance for the management of Ross Lake NRA.

ISSUES ADDRESSED

Key issues for Ross Lake NRA were identified during the scoping phase of the GMP planning process and were subsequently addressed in formulating alternatives for this final plan. While the complete list of issues is described in Chapter 1: Need for the Plan, the issues generally fall into one of five major categories:

1. **Public Use and Recreation:** What kinds of visitor opportunities will be provided within Ross Lake NRA?

This issue includes a variety of topics, such as identifying the direction of interpretive and educational programs, addressing the types and levels of compatible recreational uses, while also providing a spectrum of opportunities for visitors to experience Ross Lake NRA.

2. **Development:** What kinds of facilities and services will be provided apart from the existing facilities?

This issue deals with potential changes to visitor facilities and services within Ross Lake NRA. Facilities for interpretation, education, day-use and overnight recreation, orientation, parking, and operations are considered.

3. **Natural and Cultural Resources:** How will natural and cultural resources be protected?

This issue concerns the protection of fundamental resources and values related to the North Cascades ecosystem, wilderness, and cultural history within Ross Lake NRA. It also addresses the Skagit River and its eligibility and suitability for designation as a wild and scenic river.

4. **Climate Change:** How will the park address climate related impacts on resources and visitor facilities?

This issue concerns the management responses to the potential destruction of visitor facilities by catastrophic weather events and discusses the range of potential climate related impacts on natural and cultural resources. It also addresses greenhouse gas emissions by visitors and park operations.

5. **Coordination with Partners:** How will the park coordinate with partner agencies and non-profit organizations to achieve the goals of Ross Lake NRA?

This issue addresses cooperative relationships, operations, and projects with Seattle City Light, the Washington State Department of Transportation, the U.S. Forest Service, and the many non-profit organizations that provide key services to Ross Lake NRA and its visitors.

CONTEXT FOR THE PLAN

Management direction and activities in the two other units of North Cascades NP Complex (North Cascades National Park and Lake Chelan National Recreation Area), the Mount Baker-Snoqualmie and Okanogan-Wenatchee National Forests, British Columbia Parks, Seattle City Light areas, and other public and privately

owned areas in the region will have broad effects on conditions and use in Ross Lake NRA. The decisions made for this general management plan will affect resources throughout the region, just as decisions made by other governmental agencies will affect management of Ross Lake NRA.

On a broader scale, the North Cascades ecosystem is experiencing change that could dramatically and irreversibly alter the long-term health of the ecosystem. Factors that are contributing toward this change are: climate change, introduced species, habitat fragmentation, air pollution, loss of pre-Euro-American fire regimes, and increasing human populations on the edges of the North Cascades. While these stressors are beyond the ability of any single governmental agency to control, they should be considered as decisions are made to protect park resources and values that also contribute to the protection and health of the broader ecosystem.

SUMMARY OF THE PLAN

The general management plan focuses on managing Ross Lake NRA as a gateway to millions of acres of wilderness, providing enhanced visitor opportunities along the North Cascades Highway, and making better use of facilities along that corridor while ensuring the long-term stewardship of natural resources, cultural resources, and wilderness.

The North Cascades Highway corridor will be managed to provide a variety of day-use and overnight recreational opportunities for visitors with a range of abilities and interests. Recreation in Ross Lake NRA will be enhanced along the North Cascades Highway corridor through the addition of limited new facilities, including day-hiking trails, reconfigured parking areas (such as the Ross Dam Trailhead Parking Lot), and the modest expansion of overnight facilities and concessions (such as a ten percent capacity increase at the Ross Lake Resort). The NPS will also recommend nomination and designation of the North Cascades Highway as a National Scenic Byway to reflect its nationally significant resources.

Interpretation and education will be a key component of the selected action, emphasizing hands-on experiential learning and stewardship programs delivered by both the NPS and its partners.

Management of wilderness and backcountry areas, including Ross Lake, will focus on ecosystem preservation while ensuring compatible recreational activities. The 3,559 acres of the Thunder Creek Potential Wilderness Area will be administratively designated a part of the Stephen Mather Wilderness now that Seattle City Light has formally abandoned plans for hydroelectric development. Management of recreation use in these areas will focus on providing visitors with opportunities for solitude and connections with the natural world. Self-propelled and non-mechanized recreation will be encouraged throughout Ross Lake NRA. Regulations for motorized water recreation will work to minimize noise, maintain the character and experience on the lakes and the Skagit River, and promote cleaner motor technologies. The NPS will develop an online permit system option for backcountry and wilderness visitors

that would allow for advance trip planning and a streamlined permitting process.

In response to anticipated changes in climate, including projected increases in extreme precipitation, facilities may be substantially damaged or destroyed over the lifespan of the plan. In the event of a catastrophic event and the destruction of visitor facilities, the NPS will adapt and may relocate facilities to reduce risk, and strive, as feasible, to offer similar visitor facilities in the vicinity of current facilities in order to limit net loss of visitor opportunities (the Statement of Findings for Floodplains is published in Appendix E of the Final GMP/EIS).

The NPS will recommend wild and scenic river designation of Goodell Creek, Newhalem Creek, and the Skagit River from the Gorge Powerhouse in Newhalem to the western boundary of Ross Lake NRA, totaling 33 river miles, based on the findings of the Skagit Wild and Scenic River Eligibility and Suitability Study (published in Appendix D in the Final EIS/GMP).



Sunrise at Colonial Creek Campground.

Finally, the NPS will recommend legislation to enable a name change for Ross Lake National Recreation Area to North Cascades National Recreation Area. This name change would enhance public awareness and foster a better understanding of the ecological continuity between the National Recreation Area and North Cascades National Park. Recreational activities authorized in the NRA but prohibited in the park, including hunting and hiking with dogs on trails, would continue.

Additional highlights of the plan include:

- Maintaining existing partnership and international and interagency cooperation for resource protection, recreational opportunities, and operational efficiencies.
- Continuing to work closely with the Skagit Tribes to preserve archeological sites and continue their traditional activities within Ross Lake NRA.
- Constructing facilities, such as a dormitory, staff housing, and a boathouse, on the North Cascades Environmental Learning Center (ELC) campus as outlined in the original plan and environmental assessment with funding from the North Cascades Institute. The ELC would continue to provide year-

round education services, curriculum-based educational programs and learning opportunities about the North Cascades ecosystem.

- Completing a Habitat Assessment for any proposed development that might affect a Bear Management Unit within Ross Lake NRA, North Cascades National Park, or Lake Chelan NRA in light of the 2001 North Cascades Ecosystem Grizzly Bear Habitat Assessment. This assessment would provide an analysis of impacts to grizzly bear habitat in addition to any changes to the percentage of core habitat. The NPS will strive to minimize, avoid, or mitigate impacts on high quality spring and fall grizzly bear habitat and would consult with the USFS in any circumstance where the development of potentially high use trails within the national park would affect a shared BMU that is currently below the 70 percent core area ratio or which could reduce the core area ratio below 70 percent overall for a shared BMU.
- Closing the upper one mile of the Thornton Lakes Road to vehicular access at the wilderness boundary to correct an administrative oversight and comply with wilderness regulations.
- Continuing to allow seaplanes to land and take off on Diablo and Ross lakes except



Backpackers look out across the North Cascades from Sourdough Mountain. Photo by Michael Silverman.

within 1,000 feet of Diablo Dam and Ross Dam, according to 36 CFR 7.69 and 36CFR 2.17. The NPS will work collaboratively with the seaplane pilot community to gather data on seaplane use, create noise abatement procedures and educate pilots about these procedures and general seaplane use on Ross Lake. The NPS will institute noise abatement procedures to minimize noise and establish a long-term acoustic monitoring program to better understand sound-scape impacts.

- Authorizing sport climbing to continue in Skagit Gorge between Newhalem and Diablo. Due to the manipulative actions required to establish sport climbing routes, new sport climbing area would be evaluated on a case by case basis, and will only be authorized by the NPS following appropriate site-specific surveys and assessments. These Climbing Management Areas (CMAs), will be identified in the Superintendent's compendium and described on the park website along with other climbing-related information.

Management Zones

This GMP also assigns management zones to areas of Ross Lake NRA in order to identify and describe the appropriate variety of resource conditions and visitor experiences to be achieved and maintained in different areas of the NRA. The management zones define and spatially apply management goals and objectives for resource management, levels of development, and different types of potential visitors' experiences as follows.

Frontcountry Zone

A wide variety of high quality recreational and educational visitor opportunities and facilities are provided in this zone. Natural and cultural resource conditions are maintained with some modification to accommodate visitor or management needs. The scenic east-west route through the North Cascades along the North Cascades Highway, Diablo Lake, Hozomeen, Ross Lake, and adjacent developed areas are primarily located in this zone.

Backcountry Zone

Limited visitor facilities provide a sense of remoteness and immersion in nature within a mountainous wilderness setting. Natural and cultural resource conditions are preserved and some resources may be enhanced through restoration. This zone includes undeveloped areas beyond the North Cascades Highway road prism and other areas that are dominated by natural conditions with structured opportunities for visitor recreation.

Wilderness Zone

A wilderness experience, limited primitive visitor facilities, and very few encounters with other visitors is the emphasis for visitor use in the Wilderness Zone. Natural and cultural resource conditions are preserved and resource stewardship and restoration is the primary focus. Designated wilderness and potential wilderness are located in this zone.

Skagit River Zone

Natural and cultural resource preservation of the Skagit River corridor and visitor facilities associated with river recreation are the focus of this zone. The Skagit River and adjacent riparian corridor below Gorge Powerhouse in Newhalem and up Goodell Creek to the wilderness boundary are located in this zone. This zone is approximately ¼ mile on either side of the Skagit River through most areas.

Hydroelectric Zone

Seattle City Light operations are paramount to resource conditions and visitor experience in this zone. Seattle City Light facilities and primary management areas, including the hydroelectric projects at Ross, Diablo, and Gorge Dams are located in this zone. Most visitor experiences are linked to learning about hydroelectricity and frontcountry recreational activities.

A more thorough description, list of actions in this plan, and information about Management Zones is located in Chapter 3: The Plan.





A student of Cascades Climate Challenge learns the ropes aboard the Ross Lake Mule. Photo by Michael Silverman.

CHAPTER 1:

INTRODUCTION

Ross Lake National Recreation Area is a unit of the national park system and is managed by the National Park Service (NPS). It is managed as one unit of the North Cascades NP Complex, which also includes North Cascades National Park (north and south units), and Lake Chelan National Recreation Area. The North Cascades NP Complex is located deep in the northernmost reaches of the Cascades Range in Washington State, with its northern boundary forming the international border with Canada. Ross Lake National Recreation Area is within Washington's Second Congressional District in Whatcom and Skagit Counties.

DESCRIPTION OF ROSS LAKE NATIONAL RECREATION AREA

Ross Lake National Recreation Area was established by Congress on October 2, 1968 “in order to provide for the public outdoor recreation use and enjoyment of portions of the Skagit River and Ross, Diablo, and Gorge Lakes, together with the surrounding lands, and for the conservation of the scenic, scientific, historic, and other values contributing to public enjoyment of such lands and waters” (82 Stat. 926) (Public Law 90-544). The purpose of Ross Lake National Recreation Area is to complement North Cascades National Park and conserve the scenic, natural, and cultural values of the Upper Skagit River Valley and surrounding wilderness, including the hydroelectric reservoirs and associated developments, for outdoor recreation and education.

Ross Lake National Recreation Area is the most accessible part of the North Cascades NP Complex. Ross Lake NRA protects 116,798 acres of public land and is the corridor for scenic Washington State Route 20, also known as the North Cascades Highway. It includes three reservoirs: Ross Lake, Diablo Lake, and Gorge Lake. These reservoirs also serve as water gateways to more remote areas. Ringed by mountains and glaciers, 69 percent of Ross Lake NRA is part of the federally designated Stephen Mather Wilderness established in 1988 with another 4 percent as potential wilderness. The Pyramid Lake and Big Beaver Research Natural Areas are located within Ross Lake NRA and were designated for their prime natural resources and processes.

Ross Lake NRA offers many outdoor recreation opportunities along the upper reaches of the Skagit River and between the north and south units of North Cascades National Park.

Ross Lake NRA is distinguished by two very different areas set within the North Cascades NP Complex. The first area is characterized as a scenic byway corridor along the North Cascades Highway from the western entrance into Ross Lake NRA, beside the free-flowing Skagit River, to the eastern entrance in the mountains beyond Ross Dam. This area stretches 28 miles and traverses lowland riparian zones along the Skagit River, past the Newhalem Townsite and the Seattle City Light hydroelectric facilities, below Ruby Mountain, and up beyond the reservoirs to the east side of the North Cascade Mountains. Many visitor opportunities exist along this corridor including day-hiking, river and lake boating, overnight drive-in camping, visitor information centers, the North Cascades Environmental Learning Center, and several trailheads that lead into the north and south units of North Cascades National Park. The Seattle City Light hydroelectric facilities which supply approximately one fourth of Seattle's current power needs are located within this corridor. These facilities include Gorge Dam, Diablo Dam, Ross Dam, power lines, powerhouses, and several associated penstocks that bore through mountains and hillsides. The hydroelectric facilities and portions of the townsites at Newhalem and Diablo comprise the “Skagit River and Newhalem Creek Hydroelectric Projects,” which was listed on the National Register of Historic Places in 1996. This popular scenic byway is the northernmost route across the Cascades and was

designated a Washington State Scenic Byway and National Forest Byway in 1984.

The second distinct area of Ross Lake NRA is Ross Lake proper and its environs. This area stretches from Ross Dam northward approximately 20 miles to the Canadian border and reservoir headwaters at Hozomeen. Vehicular access to Ross Lake is limited to the Hozomeen area from Canada. Otherwise, this large swathe of land and water is accessible only by foot, stock, boat, and air. Significant visitor use features in this area include Ross Lake Resort, comprised of concession-operated floating cabins at the southern end of Ross Lake, long distance trails such as the East Bank Trail, boat-in and walk-in back-country campsites, and the developed campground at Hozomeen. This area is characterized by the open serene waters of Ross Lake surrounded by scenic mountain wilderness.

Ross Lake NRA is part of the North Cascades NP Complex which spans the Cascade Crest from the wet temperate rainforest of the west side to the dry ponderosa pine ecosystem of the east. The Complex encompasses landscapes with over 9,000 feet of vertical relief. This results in a high diversity of plants, over 1,600 species so far identified, and many other organisms adapted to a wide spectrum of habitats. Within Ross Lake NRA, the Big Beaver and Thunder Creek watersheds contain supreme examples of remnant old-growth forests dominated by cedar and Douglas fir trees.

The geologically young mountains, glaciers, and streams of the North Cascades NP Complex lie near a dynamic interface of tectonic plates and provide an opportunity to study geologic processes unfolding through time. Geologists and others come here to seek greater understanding of global climate change, mountain building and erosion, volcanism, glaciation, stream dynamics, and more. Ruby Mountain and Hozomeen Mountain are the two highest peaks in Ross Lake NRA. The Skagit River and its tributary streams comprise the largest watershed draining into Puget Sound. Variation in elevation, soil types, rainfall and exposure combine to form eight distinctive life zones, from the lowland forests and wetlands to the alpine peaks and

glaciers. Located within Ross Lake NRA, the Skagit River is the only Puget Sound tributary to support all native species of anadromous salmonids and hosts one of the highest concentrations of wintering bald eagles in the lower 48 states.

Evidence of human settlement and use of the North Cascades NP Complex spans nearly 10,000 years of cultural and technological development. Humans have adapted to the changing climates and environments at all elevations of the North Cascades. Pre- and post-contact archaeological sites within Ross Lake NRA include the Newhalem rockshelter, campsites, quarries, and resource use areas. Early historic resources beginning in the late 1800s, such as homesteads, mining sites, and the Desolation Fire Lookout illustrate pioneering activities, resource extraction, and early tourism and recreation.

Beginning in the early 1900s, Seattle City Light began developing their hydroelectric facilities, first with Newhalem, then Gorge, Diablo and Ross. In 1972 the North Cascades Highway was completed, connecting the Skagit and Methow Valleys.

Regional Context

Ross Lake NRA, as part of the North Cascades NP Complex, is the core of over two million acres of federally designated wilderness. It is one of many publically owned and protected properties within the region. Others include the Okanogan-Wenatchee National Forest to the east and south, and Mount Baker-Snoqualmie National Forest to the west, all managed by the United States Forest Service. In Canada, Chilliwack Lake Provincial Park, Skagit Valley Provincial Park, and Manning Provincial Park are directly north of Ross Lake NRA and are managed by the British Columbia Parks.

Designated wilderness adjacent to the North Cascades NP Complex contributes to the extensive nature of the North Cascades ecosystem, making it part of the largest contiguous designated wilderness in Washington State and one the largest in the lower 48 states. Contiguous designated wilderness units include: Mount Baker, Pasayten, Noisy-Diobsud, Lake Chelan-

Regional Context
 Ross Lake National Recreation Area GMP

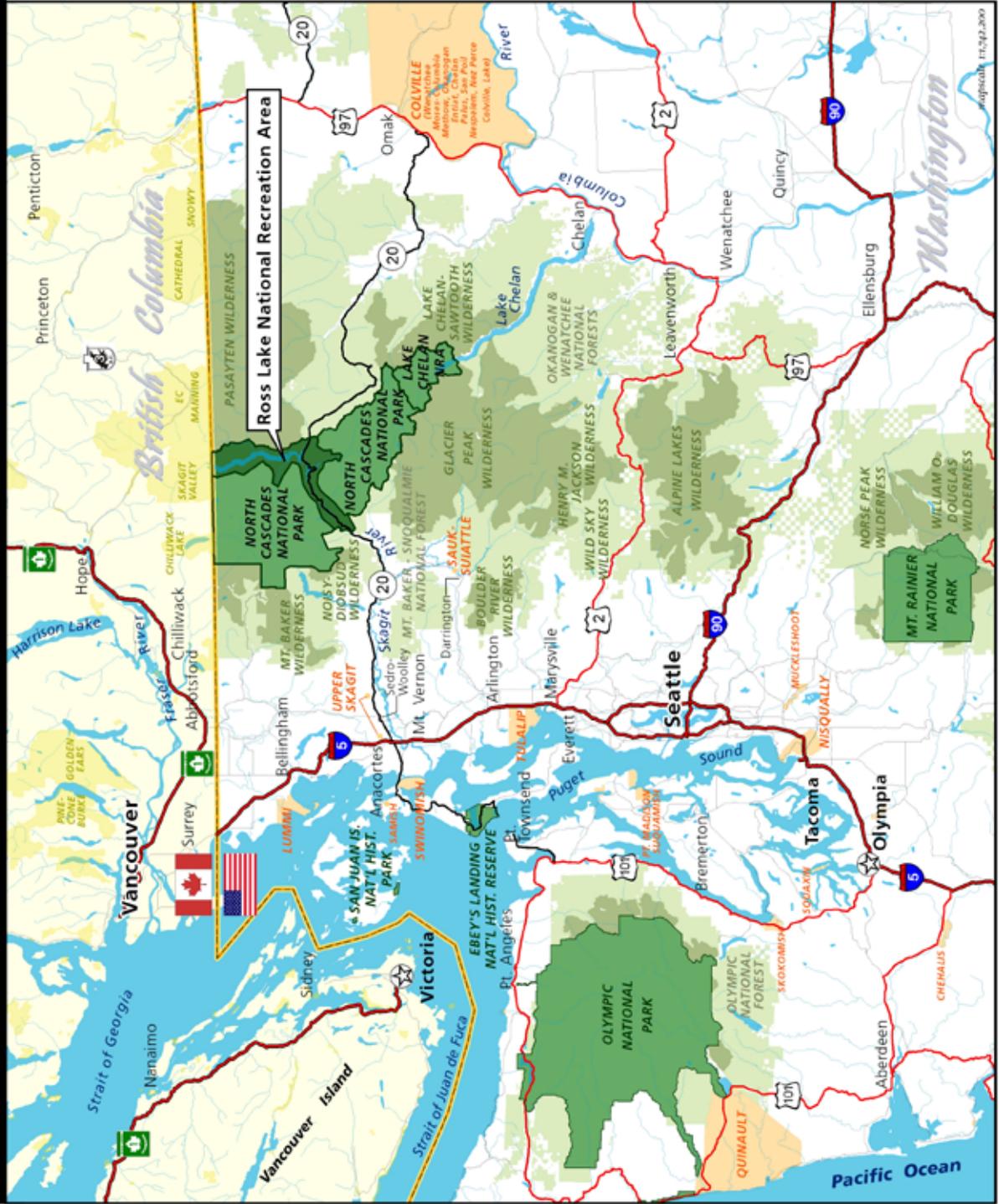
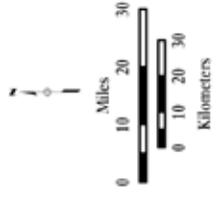


Figure 1.1

- Interstate/provincial highways
- US highways
- State and provincial highways
- Incorporated towns (US)
- National Park Service Units
- Ross Lake NRA
- US Forest Service
- USFS Wilderness
- Tribal Reservation
- Provincial parks



Produced by:
 National Park Service,
 North Cascades NPS Complex
 Geographic Information System
 10 May 2010
http://www.lake.rop/regional_context.html

Sawtooth, Glacier Peak, Henry M. Jackson, and Wild Sky wilderness units.

The closest communities to Ross Lake NRA are Marblemount to the west and Winthrop to the east. Within Ross Lake NRA, year-round residents live and work in Newhalem and Diablo to provide operational functions for Seattle City Light and to support NPS and county services.

The context for this plan is affected by adjacent land uses and other planning projects that are occurring outside Ross Lake NRA. Management direction and activities in the two other units of North Cascades NP Complex (North Cascades National Park and Lake Chelan National Recreation Area), the Mount Baker-Snoqualmie and Okanogan-Wenatchee National Forests, British Columbia Parks, Seattle City Light areas, as well as other public and privately owned areas in the region will have broad effects on conditions and use in Ross Lake NRA. The decisions made for this general management plan will affect resources throughout the region, just as decisions made by other governmental agencies and land owners will affect management of Ross Lake NRA. A list of plans and planning projects for adjacent lands is located in “Relationship to Other Planning” on page 15 in this chapter.

HISTORY OF THE ESTABLISHMENT AND MANAGEMENT OF THE NORTH CASCADES NP COMPLEX

Long before Ross Lake NRA was created, the “terra incognita” of the North Cascades was actually a well-known region, used and lived in by the native people for at least 9,500 years. The abundant natural resources of the mountains helped to sustain these people on both a seasonal and permanent basis. In more recent times, the past 5,000 years, evidence shows the Upper Skagit, Chilliwack, Lower Thompson, and Chelan people exploited mountain resources as they traveled through the valleys and mountain passes of the North Cascades, creating corridors of commerce and using the collected resources for trading purposes.

Euro-american exploration of the enigmatic territory in and around the North Cascades came much later, beginning with coastal expeditions in the 18th century, followed by inland expeditions first penetrating via the rivers and



A view of Diablo Lake.

then into the mountains themselves. By 1820, the first recorded journey into today's national park complex was accomplished. Fur trappers were the first to spread knowledge of the region to anglo-americans, and miners, loggers and eventually homesteaders followed in their footsteps, all realizing they could extract a living from the resources of the area. Simultaneously, the federal government expressed an interest in the remote region and assigned military personnel to conduct general reconnaissances there, as did private railroad concerns, all in an effort to improve transportation and communication networks in the growing territory and to take advantage of the abundant natural resources.

From the 1880s on, both miners and homesteaders claimed the loamy river bottomlands along the Skagit River. There were ten known homesteaders along the upper Skagit River, though only three filed homestead claims between 1889 and 1910 to gain full title to their lands. Over time, the squatters abandoned their efforts and claims to the land, as the federal government aggressively asserted its ownership of the acreage after the passage of the Forest Reserve Clause of 1891, wherein President Benjamin Harrison authorized the establishment of forest reserves throughout the country. In 1897, the Washington Forest Reserve was created, one of the largest under a Presidential Proclamation. In 1905, the forest reserves were transferred into the Bureau of Forestry in the Department of Agriculture, and the newly created United States Forest Service (USFS) was charged with protecting these lands from illegal settlement and other uses not officially sanctioned. The USFS's credo was "the greatest good for the greatest number" and the agency was led by a trained professional forester named Gifford Pinchot. Over time, the forest reserves became national forests in name, and their vast expanses were divided into management units with different forest supervisors watching over these public lands.

The primary function of the USFS was to ensure the nation had a reliable and sufficient wood supply. To that end, the agency built roads, lookouts, and trails, all in an effort to protect the forests from fire and illegal cutting. The agency also surveyed and mapped the backcountry of the region, further transforming the mostly

unknown territory into one that both exploiters and recreationists could enjoy. Ranger stations were built in the front country so forest rangers could have an office, storage, and residence from which they oversaw the operations of the forest. Additionally, backcountry ranger and guard stations were built to assist rangers in monitoring activities in the backcountry. Timber sales, land surveys, fire protection, and trail and telephone line construction and maintenance were all aspects of a forest ranger's work. The infrastructure created by the USFS left an indelible mark on the lands that were to become a national park complex.

Recreation was not a major concern for the USFS before the 1930s because of competition from special interest groups representing mining, timber, water and grazing. But as the agency watched their forest lands become national parks elsewhere in the country, recreation quickly became a use that the USFS made a priority. With that change of perspective, more trails and backcountry shelters were built to accommodate this new use.

Another new user of lands in the upper Skagit River basin was Seattle City Light (SCL). Beginning in the late 1910s, SCL embarked on an ambitious hydroelectric project to supply the growing city of Seattle with inexpensive and reliable electricity via a hydroelectric project. SCL not only transformed the upper river from a wild, free-flowing watercourse into a tame and predictable series of three lakes, but it also altered the wilderness by introducing foreign elements into a relatively pristine landscape. SCL employees relocated from metropolitan Seattle to a company town called Newhalem, and less than a decade later, a second company town, Diablo, was built to accommodate the growing number of workers needed for the enormous undertaking of the dam project. Paved streets and sidewalks, electric lights, houses, garages, a store, manicured gardens, and other amenities of civilization were brought in over time, forever altering the appearance of the Skagit River corridor. In 1924, the first of a multi-phased hydroelectric project began with the starting of the Gorge Powerhouse generators. By then, the drilling for Diablo Canyon dam was underway,

and when finished in 1930, it was the highest dam in the world.

The establishment of North Cascades NP Complex is a chronicle of the conflict between those who loved the land and extracted its resources and those who loved the land and wanted to preserve its wildness for future generations. From the time the first park proposals appeared in the 1890s until the park was actually created in 1968, the North Cascades have been contested terrain. That contest has centered on how the range should be managed, and the preservationists were pitted against the utilitarian users of the mountains.

The history of the park's establishment evolved through three periods, beginning first with the Progressive Era, 1890s-1920s, where the idea of a national park emerged during the conservation movement but was defeated due to the rift between the economic interests and preservationists. The 2nd phase was during the New Deal Era, where the National Park Service submitted a proposal for a park only to see it defeated by a well-organized opposition still reeling from the establishment of Olympic National Park in 1938. The final stage of the movement to create a park in the North Cascades came in the aftermath of World War II with the rise of the modern environmental movement and the desire to preserve remaining areas of wilderness. After considerable compromise between all the parties, including the USFS, NPS, environmentalists, and economic interests, Congress created the North Cascades NP Complex composed of a national park (two units), and two national recreation areas. Ross Lake NRA was intended to provide for public outdoor recreational use and conservation of scenic, scientific, historic, and other values, but it also provided for the development and operation of hydroelectric projects, the use of renewable natural resources, and mineral development, the latter a gesture to the many privately owned mineral claims in place in the North Cascades. The many years of controversy revolving around how these forest lands, and now park lands, should be managed and maintained continues today, with environmentalists, recreationists, hydroelectric facility managers, miners, and others all advocating for their particular values and needs.

Following over 80 years of contentious debate about the basic philosophy of forest land management and protection, the creation of the park came at a time of dynamic change in the psyche of the American people. This time of change and turmoil led to many of the ongoing management challenges of the new park.

The reasons for recommending the creation of the park, as described by the 1965 North Cascades Study report, highlighted not only the magnificence and grandeur of the environment but also the need to provide access and infrastructure as well as economic development.

The National Park Service complex that resulted from enactment of Public Law 90-544 presented a different and very complex picture, unique in organization (having both national park lands and national recreation areas in a single administrative unit). The park was one of the few units created at this time primarily for its natural resources. This view reflected the new environmental awareness that, born in conflict, was beginning to prevail. This awareness led to park managers recognizing and adopting ecological principle-based resource management. This resource management paradigm led to support for ecological research that, it was believed, could maintain or re-create the "... (environmental) condition that prevailed when the area was first visited by white man," thereby producing a "... reasonable illusion of primitive America" (Leopold Report, 1963).

The first managers of the park were charged with not only creating the administrative direction of the park, but also shaping the transition from the prevailing USFS multiple mandate management to the more restrictive mandates of the NPS. The first managers of the park needed to not only implement the policies of the NPS, but also present them in a manner which would allow the citizens of surrounding communities who had accessed and used the lands for generations to embrace the new, more restrictive environmental preservation ethic. The managers of the park were not always successful in accomplishing this daunting task.

In 1970, the NPS management team completed a draft master plan for the area. It called for the

two national recreation areas to be managed as wilderness thresholds and for their great recreational potential. Ross Lake NRA would be a gateway to access the park's wilderness lands. State Route 20, which would help provide this access, was scheduled to be completed in 1972. The master plan called for four aerial tramways to get visitors into areas otherwise not available unless backpacking or climbing. At the time, trams were seen as a means of reducing road building in parks. After public hearings were held, the draft plan eventually dropped all of the tramway proposals except the Ruby Mountain and Arctic Creek tram. Ruby Tram was particularly controversial because it was intended to be the most developed area in Ross Lake NRA, with eating facilities, parking and interpretation occurring where the tram and highway met.

Another controversial development proposed in the draft master plan was for Roland Point on the east shore of Ross Lake. A large-scale waterfront development was considered, including an overnight lodge, marina, and campground, to serve the multitude of automobile tourists traveling to the park. Many, including some members of the Congressional delegation, saw Roland Point as critical to the park's success. Ross Lake NRA would become a model of visitor dispersion and make the park 'people friendly'.

Simultaneous to the draft master plan release, the park superintendent released the wilderness recommendation boundaries in 1970. The controversial nature of these proposed boundaries kept these boundaries, which were changing regularly due to lands being purchased and private enclaves being eliminated, from becoming official until 1988 when Congress designated the North Cascades NP Complex's wilderness by an official act. The language of the bill helped resolve numerous management concerns, including those surrounding the hydroelectric developments and the use of natural resources in Ross Lake NRA.

The North Cascades have a long history of hydroelectric power production and the centerpiece of it all is Seattle City Light's (SCL) Skagit River Hydroelectric Project, located in Ross Lake NRA. The project has three dams—Gorge,

Diablo and Ross—and three reservoirs with the same names. Dealing with SCL and its plans to expand its power production proved to be one of the most contentious episodes in the history of the new park.

The main focus for SCL was to increase the height of Ross Dam, which would have great ramifications for how the NPS managed Ross Lake NRA. Beginning in the late 1960s, SCL moved forward with its plans for High Ross. This project would have flooded additional lands in British Columbia (BC), Canada, flooding most of the Skagit River in BC. Approved by the International Joint Commission in 1942, BC government tried to back out of the agreement in the 1950s, and by the 1960s, with pressure to create the new North Cascades park, further stalling of the project occurred.

The contentious High Ross Dam proposal dragged on into the 1980s, with environmentalists lining up on both sides of the border to stop the project from moving forward. A particular issue revolved around the flooding of Big Beaver Valley, which was considered an irreplaceable laboratory of nature and one of the most ecologically significant sites in western Washington for studying a bottom-land cedar environment.

Legal suits and appeals resulted in an agreement between Seattle and BC in 1984, ending a 20 year struggle. The accompanying treaty between the U.S. and Canada expires in 2066, with Canada still controlling the future of Ross Lake. This treaty bonded the two countries with the establishment of the Skagit Environmental Endowment Fund of \$5 million for the enhancement of recreational opportunities in, and environmental protection of, the area above Ross Dam. The fund is administered by a joint commission known as the Skagit Environmental Endowment Commission, and includes members from tribes, the USA, and Canada.

In 1977, SCL's license to operate the Skagit Hydroelectric Project, Federal Energy Regulatory Commission (FERC) #553, had expired. The High Ross Dam controversy had delayed SCL's relicensing of the Skagit Project but FERC allowed SCL to operate on an annual license until this could be resolved.

The NPS submitted a mitigation package which proved to be effective during the negotiation forums. Fisheries, recreation and aesthetics, wildlife, erosion, and cultural resources were the five forums created by SCL for negotiation. Meetings required much time of NPS park and regional office staff, as each forum was charged with developing both an agreement and a mitigation plan. SCL agreed to the mitigation package.

Relicensing and settlement agreements were a legal process, and during the final months of negotiations between lawyers and technical representatives of the various federal and state agencies and interveners, participants on both sides were concerned people might break ranks, jeopardizing the entire relicensing effort. In September 1990, all parties signed a preliminary agreement which was non-binding; the signing of the official settlement by all parties occurred on April 26, 1991. The agreement called for SCL to provide \$100 million for mitigation over a 30 year period for a variety of facilities and activities, and it did allow SCL to maintain that High Ross Dam was still viable and included it in the license. This agreement and the new license for the Skagit Project was approved by FERC on May 16, 1995. With the relicensing of the Skagit Project, a new era was launched in the management of Ross Lake NRA. The license expires in 2025, and the re-licensing process will begin in approximately 2015.

In 1996, the “Skagit River and Newhalem Creek Hydroelectric Projects” were listed on the National Register of Historic Places. The original listing included more than 30 contributing resources, such as Diablo Dam, Gorge Powerhouse, and historic houses and structures related to the Skagit and Newhalem Hydroelectric Project. The National Register nomination was updated in 2010 and the District now encompasses more than 80 contributing resources, including Ross Dam and Powerhouse.

Legislation

North Cascades National Park, Lake Chelan National Recreation Area, and Ross Lake National Recreation Area (collectively referred to as the North Cascades NP Complex) were

established by Public Law 90-544, October 2, 1968. According to this legislation, the purpose of North Cascades National Park is:

... to preserve for the benefit, use and inspiration of present and future generations certain majestic mountain scenery, snow fields, glaciers, alpine meadows, and other unique natural features [16 U.S.C. §90].

The legislation further stated that the purpose of the Lake Chelan National Recreation Area and the Ross Lake National Recreation Area is:

... to provide for the public outdoor recreation use ... and for the conservation of the scenic, scientific, historic and other values contributing to the public enjoyment [16 U.S.C. §90a & 90a-1].

The legislation (as amended) provided for development and operation of certain hydroelectric projects, the use of renewable natural resources, and mineral development.

Administration of the National Park System has been further clarified as follows:

The authorization of activities shall be construed and the protection, management, and administration of these areas shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress [16 U.S.C. §1a-1].

The Stephen Mather Wilderness, comprised of 642,332 acres or 94 percent of the park and recreation areas, was established by the Washington Park Wilderness Act of 1988 (Public Law 100-668). The 1964 Wilderness Act defined Wilderness as follows:

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of

wilderness is further defined to mean in this chapter an area of underdeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticed; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, educational, scenic, or historical value [16 U.S.C. §1131].

PURPOSE OF THE PLAN

This general management plan establishes a management philosophy for Ross Lake National Recreation Area for the next 15 to 20 years. The purposes of this GMP are as follows:

- to develop the purpose, significance, and primary interpretive themes of Ross Lake NRA
- to describe any special mandates of Ross Lake NRA
- to clearly define resource conditions and visitor uses and experiences to be achieved in Ross Lake NRA
- to provide a framework for NPS managers to use when making decisions about how to best protect Ross Lake NRA's resources, how to provide quality visitor experiences, how to manage visitor use, and what kinds of facilities, if any, to develop in or near Ross Lake NRA
- to ensure that this foundation and plan for decision-making has been developed in consultation with the public, interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action

Legislation establishing the National Park Service as an agency (the Organic Act of 1916) and the range of laws governing its manage-

ment provides the fundamental direction for the administration of Ross Lake NRA and other units and programs of the National Park System. This GMP builds on these laws and the legislation that established and govern Ross Lake NRA to provide a vision for the park's future. (See Appendix B: Legislation.)

For more detail on the law and policy directing management actions, see Appendix C: Pertinent Laws, Policies, and Procedures. This general management plan address desired future conditions that are not already mandated by law and policy and which must be determined through a planning process. Where law, policy, and regulations do not provide clear guidance, management decisions will be based on the GMP, public concerns, and analysis of impacts of alternative courses of action, including long-term operational costs. Successful implementation of the GMP will result in the long-term preservation of natural and cultural resources and an enhanced visitor experience.

This general management plan does not describe how particular programs or projects will be implemented or prioritized. Those decisions are deferred to more detailed implementation planning, which follows the broad, comprehensive plan presented in this document.

NEED FOR THE PLAN

National Parks and Recreation Act of 1978

The National Parks and Recreation Act of 1978 (Public Law 95-625), requires the preparation and timely revision of general management plans for each unit of the National Park System. The National Park Service management policies call for each GMP to "...set forth a management concept for the park [and] establish a role for the unit within the context of regional trends and plans for conservation, recreation, transportation, economic development and other regional issues..."

Congress has also specifically directed (16 U.S.C. 1a-7[b]) the NPS to consider, as part of

the planning process the following elements: “General management plans for each unit shall include, but not be limited to:

- measures for the preservation of the area’s resources;
- indications of types and general intensities of development (including visitor circulation and transportation patterns, systems and modes) associated with public enjoyment and use of the area, including general locations, timing of implementation, and anticipated costs;
- identification of an implementation commitment for visitor carrying capacities for all areas of the unit; and
- indications of potential modifications to the external boundaries of the unit, and the reasons therefore.”

The *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement (December 2011)* identifies and evaluates the effects or impacts of alternative approaches to the protection and appropriate uses of Ross Lake National Recreation Area.

Planning Issues and Concerns

The 1988 *North Cascades NP Complex General Management Plan* no longer provides adequate guidance to address the policy and operational issues now facing park management for Ross Lake National Recreation Area. Most of the actions in the 1988 North Cascades GMP have been implemented or are now outdated.

Many conditions in Ross Lake National Recreation Area and throughout the region have changed since the *North Cascades NP Complex General Management Plan* was completed in 1988. These changes include the re-license of three hydroelectric facilities, new and diversified recreational uses, and long-term management of natural resources, cultural resources, and wilderness within Ross Lake NRA. Since the 1988 GMP was completed, Congress designated the Stephen Mather Wilderness, which encompasses 69 percent of Ross Lake NRA and an additional four percent of potential wilderness. The Federal Energy Regulatory Commission re-licensed the Skagit Hydropower Project for

Seattle City Light, which resulted in a settlement agreement and funds for resource protection and visitor use projects for the NPS in the North Cascades NP Complex, predominantly in Ross Lake NRA. Visitor use within Ross Lake NRA has diversified and significantly increased since the 1988 North Cascades GMP, due in part to the enhanced recreational facilities, and the park faces natural and cultural resource protection issues that need to be addressed in this GMP.

Due to these changing circumstances, interested members of the public, National Park Service staff, and representatives from other agencies and organizations identified a number of issues and concerns about Ross Lake National Recreation Area during the scoping phase of this planning process that are addressed in this general management plan.

Natural Resource Issues

- Invasive species, including floral and faunal species, have been introduced throughout the Ross Lake NRA unit and are affecting natural conditions throughout the North Cascades NP Complex. Affected resources and areas include fisheries, riparian areas, reservoir shorelines, and road and trail corridors. The GMP identifies strategies and suggests further planning to address invasive species within Ross Lake NRA.
- There are a variety of wildlife and fishery issues facing Ross Lake NRA including rare species, non-native species, and potential hunting and sport-fishing issues. This GMP identifies strategies to address these wildlife and fishery issues.
- The Skagit River is a designated a wild and scenic river managed by the U.S. Forest Service from the boundary of Ross Lake NRA to Sedro-Woolley. The Skagit River is free-flowing for 11 miles within Ross Lake NRA from the boundary to Gorge Powerhouse in Newhalem. Dozens of creeks and tributaries feed water into the Skagit River from the glaciers within the complex and peaks and crests of the watershed. In 1989, a draft report found that several river and creek segments were eligible for wild and scenic river designation. This GMP updates the eligibility study and conducts a wild and scenic

river suitability study of the Skagit River and tributaries within Ross Lake NRA.

Dynamic Landscape Conditions

- Climate change poses large-scale, irreversible, and imminent threats to maintaining a stable ecosystem within the North Cascades NP Complex. While the impacts are still being analyzed and modeled, it is clear that climate change has and will continue to dramatically impact resources within the Ross Lake NRA, including fisheries, plant and wildlife communities, water resources, old-growth forests, and high elevation meadows. Climate change will affect ecosystem processes, such as hydrologic processes, fires, floods, and avalanches which impact natural and cultural resources, operations and infrastructure, and visitor use and experience. Climate change is likely to alter how Seattle City Light operates the Skagit River Hydroelectric Project to optimize generation and
- meet recreation, fisheries, and flood control obligations. These changes may affect reservoir-based visitor recreation. Comprehensive planning provides an opportunity to address these changing conditions, as well as how the NPS can reduce emissions both from NPS operations and visitors.
- Natural ecosystem functions and processes such as floods, avalanches, landslides, river and creek channel avulsions, severe weather events, and fire result in a constantly changing and dynamic landscape. While these natural functions and processes are allowed to occur mostly unimpeded in the remote and wilderness areas, this is not necessarily true in the more developed areas along the North Cascades Highway corridor. These natural functions and processes have and will continue to affect facilities and operations within Ross Lake NRA. The GMP provides guidance for responding to destroyed facilities and siting the location of potential future facilities.



North Cascades Wild program participants remove reed canary grass from Ross Lake. Photo by Basil Tsimoyians.

Cultural Resources Issues

- While generally thought of as a wilderness and natural resource area, Ross Lake NRA also contains significant archeological and historic resources related to early human use of the Skagit watershed. These resources include submerged archeological sites that are exposed during the drawdown of the reservoirs, prehistoric resource extraction and use sites, and early mining and homesteading sites. The GMP guides stewardship and interpretation of these cultural resources.
- The “Skagit River and Newhalem Creek Hydroelectric Projects” are listed on the National Register of Historic Places. They include parts of the towns of Newhalem and Diablo, the Gorge, Diablo, and Ross Powerplant complexes, Ladder Creek Gardens, and a number of houses and other buildings built between 1917 and 1960. The GMP identifies mechanisms for future management that comply with NPS standards.

Wilderness Issues

- The Stephen Mather Wilderness encompasses 94 percent of the North Cascades NP Complex and is the unifying designation that crosses the unit boundaries within the complex. Though the wilderness designation is a unifying feature of the complex, visitor use regulations differ amongst the North Cascades National Park and Ross Lake NRA, such as allowing hunting in Ross Lake NRA. Within Ross Lake NRA, approximately 69 percent is designated wilderness and four percent is potential wilderness. The GMP provides general guidance for the management of wilderness and minimization of impacts within Ross Lake NRA wilderness. This allows the NPS to provide more detailed management prescriptions for the future revision of the North Cascades NP Complex 1989 Wilderness Management Plan.
- The Big Beaver and Thunder Creek corridors are in the designated potential wilderness areas. The GMP identifies zoning strategies that ensure the protection of these areas to retain their wilderness character and

recommends converting potential wilderness to designated wilderness.

Recreation Issues

- The GMP provides guidance for management of visitor use within Ross Lake NRA and addresses competing or conflicting visitor activities and user groups. This includes providing direction on hunting and fishing activities, commercial group use, scenic overflights, private seaplane use, climbing activities, seasonal use, use of the drawdown, stock use, extreme sports, and emerging uses, such as new climbing techniques. The GMP also considers water-based uses, and various types of motorized vehicles, such as motor boats and seaplanes.
- The reservation and permit system for visitor use in the North Cascades NP Complex is by personal interaction between visitors and NPS staff as well as an online reservation system for frontcountry overnight camping. The public has expressed a desire for more streamlined systems for acquiring reservations and permits for use in the complex. The GMP considers alternative methods for organizing and updating these systems.
- Overflights by recreational, commercial, and military planes are addressed in the GMP.
- The public expressed a desire for additional day-hiking opportunities within Ross Lake NRA. The GMP evaluates the trail system and identifies potential new trails.

Interpretation/Education Issues

- Recent studies have shown that youth are increasingly disconnected with the outdoors and nature. An important goal of the NPS is to engage youth and the public with our national treasures, in this case the resources of the North Cascades. Most of the interpretive and educational programs occur within the developed core of the complex in Ross Lake NRA at the visitor center, North Cascades Environmental Learning Center, and in the frontcountry areas of the park. New strategies and approaches for reaching youth and diverse audiences, such as providing information to visitors remotely, are considered in the GMP.



Horseback riding in Ross Lake NRA. Photo by David Snyder.



Learning the basics of birdwatching.

- There is increasing awareness of the need for the NPS to improve the communication of science information to the public, land managers, and internally and externally to the research community. As natural and cultural resource research and monitoring efforts increase in the North Cascades, staff will be expected to fulfill these science communication needs in various formats, and to a wide range of audiences, as a means of better fulfilling the role of protection of resources through improved education.
 - The GMP develops and evaluates interpretive themes for Ross Lake NRA within the context of connecting the unit's resources to relevant ideas, meanings, concepts, contexts, beliefs, and values. The interpretive themes are based upon a unit's purpose and significance. They provide the foundation on which the unit's educational and interpretive programs are based.
- explores other commercial services on Ross Lake for visitor boat transportation.
 - The Washington State Department of Transportation owns and maintains Highway 20, the North Cascades Highway, which passes through Ross Lake NRA and links the east and west sides of the North Cascades. The GMP considers how management and operations related to the North Cascades Highway can be improved through better communication with the Washington Department of Transportation. Issues include traveler safety, road hazards, avalanche control, and winter use.
 - The North Cascades Highway is a popular motorcycle touring route. Increased motorcycle traffic, excessive motorcycle speeds, and noise are concerns that have been expressed by the public, and the GMP considers management alternatives to address this use and its effects on resources.
 - At present, public transportation access to and within Ross Lake NRA does not exist. The GMP considers management alternatives to include public transportation on the North Cascades Highway. Public transportation, such as shuttle buses, are considered during peak visitation as an alternative to increasing parking lots and could employ energy saving practices.
 - Capacity at the Ross Dam Trailhead parking lot is overloaded during peak season. The GMP evaluates the opportunity to provide

Transportation, Access, and Circulation Issues

- Many of the campsites on Diablo and Ross Lake are boat-in and walk-in sites, which limit the numbers and types of visitors that can access these sites. There is one operating commercial water taxi on Ross Lake which is in high demand during the summer months. It provides transport for visitors to remote up-lake campsites and trailheads. The GMP

additional parking spaces or to manage or design parking in such a way as to prevent exceeding parking capacity.

- There are closed and remnant roads in the system that could be re-opened, closed but maintained for an alternate use, or restored to natural conditions.

User Capacity Issues

- Visitor capacity has not been comprehensively analyzed for Ross Lake NRA. The GMP provides an opportunity to more clearly understand visitor use, perspectives, and desires within Ross Lake NRA and the North Cascades NP Complex. The GMP provides clear guidance for management of visitor capacity within Ross Lake NRA.

Facilities Issues

- Ross Lake Resort is filled to capacity throughout its season of operation. The GMP considers the visitor demand, future demand, and the capacity of infrastructure and facilities at Ross Lake Resort.
- Campground management and infrastructure in the frontcountry auto-accessible sites may need to be improved. The public has expressed a desire for additional services at the campgrounds, including showers, additional bathrooms, group sites, and other types of accommodation other than camping.
- Staff housing is limited and is an issue that needs to be addressed in the GMP. Staff housing is most needed during the summer for seasonal employees both working in the frontcountry and backcountry areas of the complex.
- There is a concern that development of additional facilities on Ross Lake may change its existing character. The staff and public want to ensure that the character of the lake is not diminished by additional facilities.
- The Wilderness Information Center at Marblemount provides essential public and operational functions. The GMP considers alternatives that address facility design, location, and accessibility for public use.
- The Hozomeen Ranger Station is an A-frame structure in poor condition. It is seasonally

staffed to provide basic visitor orientation information. The GMP considers alternatives that address this facility's design and capacity.

- In the event that existing campgrounds are destroyed by catastrophic events, the NPS needs to consider alternative locations for potential replacement camping areas. The topography of the North Cascades features steep walled valleys that result in few buildable locations within the Ross Lake NRA that are outside of geohazard areas. These buildable locations are identified in the GMP for potential future construction.

Boundary Issues

- There is currently a patchwork of NPS and Seattle City Light land ownership along the North Cascades Highway corridor that is considered in the GMP. This patchwork of ownership contributes to operational, resource preservation, and visitor use issues.
- Diablo Townsite is located near the upper reaches of Gorge Lake near Stetattle Creek and close to the base of Diablo Dam. A significant feature about Diablo Townsite area is that it is one of the few relatively flat, geologically stable, and buildable locations in the North Cascades NP Complex. It is composed of two distinct areas: Hollywood, owned by Seattle City Light, and Reflector Bar, owned by the National Park Service. Hollywood contains over 25 houses and was the primary residential area for Seattle City Light staff working at Diablo powerhouse and vicinity. The Reflector Bar area includes Diablo Powerhouse, a school building, maintenance buildings, and several houses. At one time, Diablo Townsite was a thriving community of Seattle City Light employees and their families who worked and lived in this isolated setting. Today, Diablo Townsite is now used almost exclusively for hydroelectric power operations, and the majority of buildings, including the school and many of the houses, are now empty. The opportunity exists to develop new visions, future uses, and a new land ownership arrangement of Diablo Townsite.

International Boundary Issues

- There is the potential that the unpaved road from Hope, British Columbia to Hozomeen could be paved. This improved road access could significantly alter patterns of visitor use and the character of Ross Lake. The GMP considers this possibility in its evaluation of cumulative impacts on the area. The GMP also considers how to define desired conditions for Hozomeen and the character of the entry into the U.S. in conjunction with B.C. Parks, Canada.
- The GMP considers collaborative planning with British Columbia Parks to discuss cross-border joint management for resource protection, forest health, and fires. There are currently conflicting regulations and operations between NPS and British Columbia Parks that should be discussed, including visitor uses, solid waste management, campground fees, garbage collection, firewood gathering, and potential future uses, such as helicopter guiding. Neighboring federal and state agencies were consulted as part of the planning process.
- In cooperation with the U.S. Department of State, State of Washington, Canadian government, and Province of British Columbia, the GMP explores the concept of establishing an international park that joins B.C. Parks and the NPS while respecting existing jurisdictions.

RELATIONSHIP TO OTHER PLANNING

The following plans, agreements, and related documents have influenced the preparation of this general management plan, or may be modified based on the information in this general management plan. The following list is not all inclusive. Rather, it represents the plans most relevant to the management actions, issues, policies, and procedures addressed in this GMP.

National Park Service Plans

- General Management Plan for the North Cascades NP Complex

- General Management Plan for Lake Chelan NRA
- Fire Management Plan
- North Cascades NP Complex Wilderness Plan
- Mountain Lakes Fishery Management Plan
- Settlement Agreement for the Skagit River Hydroelectric Project

Plans for Adjacent Federal Lands

- Adjacent U.S. Forest Service Plans
- Skagit River Management Plan
- Recreation Facility Analysis for Mount Baker-Snoqualmie National Forest
- Plans for Adjacent British Columbia Parks, Ministry of the Environment, Canada
 - ♦ Skagit Valley Provincial Park Management Plan

State and Regional Plans

- State Route 20 North Cascades Scenic Highway Corridor Management Plans

OVERVIEW OF THE PLANNING PROCESS

An interdisciplinary planning team was assembled in January 2006 to develop this general management plan. The team was comprised of the North Cascades NP Complex superintendent, staff and specialists, and planners from the NPS Pacific West Regional Office in Seattle. The planning team met frequently between 2006 and 2011 to gather background information, develop the Foundation Statement for the North Cascades NP Complex, examine resources, identify issues, and develop and refine alternative management concepts and actions.

Throughout the planning process, public participation played a large part in helping to focus the plan, identify issues, and formulate alternatives. Overall, the planning process incorporated four formal rounds of public involvement: public scoping, public review of the draft alternatives, public review of the preliminary findings of the Skagit Wild and Scenic River Study, and public review of the Draft GMP/EIS.

Public Scoping Process

The official public scoping period was initiated on September 29, 2006 and closed on December 30, 2006. The NPS formally announced the public scoping period and invited public comment through newsletters; correspondence; press releases; public workshops; informal meetings; the NPS Planning, Environment, and Public Comment (PEPC) website; and a notice of intent in the *Federal Register*. NPS staff produced and mailed a scoping newsletter to approximately 350 individuals and entities on the park mailing list. Agencies, organizations, governmental representatives, and tribal governments were sent letters of invitation to attend the public workshops or individual meetings. Press releases were distributed to local and regional news media. The project was launched on the NPS Planning, Environment, and Public Comment (PEPC) website: <http://parkplanning.nps.gov/rola>, providing information about the Ross Lake NRA GMP and a method for taking public comments, and a notice of intent to prepare a general management plan and environmental impact statement for Ross Lake National Recreation Area was published in the *Federal Register* on October 30, 2006 (Vol. 71, No. 209, pp. 63351-63352). The public was invited to submit comments by regular mail, e-mail, fax, online, and at public workshops and individual meetings.

The NPS also held seven public scoping workshops in western Washington and British Columbia in October 2006 to provide the public with an opportunity to learn about the general management planning project and to offer comments. Meetings were held in Concrete, Marblemount, Sedro-Woolley, Seattle, and Bellingham, Washington and in Surrey and Chilliwack, British Columbia. Sixty-three people attended the meetings overall. During the public comment period, the NPS received a total of 19 written responses in the form of letters, e-mails, newsletter response forms, and web comments.

Public Review of the Draft Alternatives

The Draft Alternatives public process was an additional planning step to ensure that the public fully comprehended the range of draft alternatives and was able to comment effectively on these draft alternatives. The primary purpose of this planning step was to understand the public's concerns and preferences with regard to the range of draft alternatives and to assist the planning team in refining the draft alternatives and selecting a preferred alternative.

The official draft alternatives public process began in February 2008 when the NPS produced and mailed the Draft Alternatives Newsletter to



Public meeting in Bellingham during the public review of the Draft GMP/EIS, 2010.

approximately 450 contacts on the mailing list and announced this planning step on the NPS website (www.nps.gov/rola and <http://parkplanning.nps.gov/rola>). The newsletter fully outlined the concepts and actions in the draft alternatives and proposed management zones. A planning schedule including dates, times, and locations for the public workshops invited public participation and comments on the range of draft alternatives. The newsletter also contained a business reply questionnaire that asked the public to comment on the four draft alternatives. Press releases were prepared and mailed to local media in advance of the public meetings by the North Cascades NP Complex staff.

The NPS also held four public workshops in Concrete, Sedro-Woolley, Bellingham, and Seattle in February and March 2008 during this public comment period. Seventy people participated in the public workshops and provided oral comments, and 32 individuals, businesses, and/or agencies submitted written responses in the form of letters, e-mails, newsletter questionnaires, and comments submitted on the NPS Planning, Environment, and Public Comment (PEPC) website.

Public Review of the Preliminary Findings of the Skagit Wild and Scenic River Study

In fall 2008, the NPS released a summary newsletter and held two public workshops on the preliminary findings of the Skagit Wild and Scenic River Study. Several members of the general public as well as representatives from organizations attended these public workshops. The NPS also met independently with the Upper Skagit Tribe and the two other land managers in the river corridor, Seattle City Light and Washington State Department of Transportation.

In addition to comments received during public workshops and agency meetings, 46 individuals, businesses, government agencies and/or tribes submitted written responses in the form of letters, e-mails, newsletter questionnaires, and comments submitted on the NPS Planning, Environment, and Public Comment (PEPC) website. While a few agencies/neighbors expressed

concerns that related to the effects of WSR designation on existing operations or potential new projects in the river corridor, most other organizations and members of the public voiced their support of the designation, citing permanent protection of the Outstandingly Remarkable Values of these exceptional river systems, completion of the Skagit WSR designation from Sedro-Woolley to the Skagit Hydroelectric Project and opportunities for holistic watershed management, and prevention of new hydropower facilities and dams in this stretch.

Public Review of the Draft GMP/EIS

The official public review process for the *Ross Lake Draft General Management Plan and Environmental Impact Statement* began on July 1, 2010 and ended September 30, 2010. The NPS intentionally held the public review period during the peak summer visitation season in order to provide opportunities for the visiting public to learn about the NPS's preferred alternative for Ross Lake NRA and provide their comments on the draft plan. The draft plan and information about how to provide public comments were made available on the NPS and Planning, Environment, and Public Comment (PEPC) websites (www.nps.gov/rola and <http://parkplanning.nps.gov/rola>) on July 1, 2010.

The NPS announced the public review process through a Notice of Availability published in the *Federal Register* (v75, n136, pp. 41512-14) on July 16, 2010. In early July 2010, the NPS distributed approximately 160 paper and digital copies of the complete draft GMP/EIS to state congressional offices, local tribes, governmental agencies, and other interested organizations and individuals. The NPS also produced and mailed the Draft GMP/EIS Executive Summary Newsletter to over 900 contacts on the park mailing list. Press releases were prepared and mailed to local media in advance of the public open houses by the North Cascades NP Complex staff, and a series of posters were distributed to approximately 35 locations throughout Ross Lake National Recreation Area and the region announcing the public open houses and requesting public comment.

The NPS held six public open houses in Sedro-Woolley, Marblemount, Newhalem, Seattle, Bellingham, and Winthrop in July 2010. Seventy-seven people participated in these public open houses and provided oral comments.

The National Park Service received approximately 1,645 total comments on the draft plan by mail, e-mail, fax, hand delivery, oral transcript, and the Internet via the NPS Planning, Environment, and Public Comment (PEPC) website. A number of groups and individuals submitted duplicate comments by different means, and several people commented up to four times. Of the comments received, seven were from agencies and elected officials, five from businesses, and 22 from organizations. The remaining comments were from individuals. Approximately 1,220 individuals responded by using one of two different form letters.

Release of the Final GMP/EIS

The *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement* was released to the public on December 1, 2011, with the publication of the Notice of Availability in the *Federal Register* (vol. 76, n. 242, p.78252) on December 16, 2011. The full document or a CD with an electronic version of the plan was mailed to 144 agencies, organizations, and individuals, and a newsletter was sent to 1,189 contacts on the project mailing list. The NPS also sent the full document and CD to 11 representatives of local tribes. Upon closure of the 30-day public review process on January 17, 2012, the NPS received 11 comments on the final document via email and the PEPC website.

The Record of Decision for the *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement*, included in Appendix A, was signed on March 21, 2012 and was published in the *Federal Register* on May 22, 2012 (vol. 77, n. 99, p. 30320).

IMPLEMENTATION OF THE PLAN

This plan will be implemented in phases over the next 15–20 years or longer.

However, implementation of the specific actions and developments proposed within this management plan is dependent upon funding available at the time of need. The approval of this general management plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Instead, the plan establishes a vision of the future that will guide future management of Ross Lake NRA.

In addition to funding, the implementation of this plan could also be affected by other factors. More detailed planning, environmental documentation, and studies could be required before most conditions proposed in the plan are achieved. Additionally, this plan was developed on the assumption that certain mitigating actions would be incorporated into the proposed actions in order to reduce the degree of adverse impacts.

This general management plan does not describe how particular programs or projects should be prioritized or implemented. Those decisions will be addressed during the more detailed planning associated with strategic plans, implementation plans, or other plans. All of these future plans will tier from this approved general management plan and will be based on the goals, future conditions, and appropriate types of activities established in this plan.





Hozomeen Mountain from Desolation Peak.

CHAPTER 2:

FOUNDATION FOR PLANNING AND MANAGEMENT

This chapter contains two distinct components that provide a foundation for this general management plan: the foundation document and the desired conditions derived from law and policy. The foundation document presents a shared understanding of Ross Lake NRA's purpose, significance, fundamental resources and values, primary interpretive themes, and special mandates. These statements identify Ross Lake NRA's unique characteristics and what is most important about Ross Lake NRA. The desired conditions explained in this chapter provide the broadest level of direction for management of Ross Lake NRA and are based on laws and policies that guide the NPS. Together, these two elements provide basic guidance for decision-making and management of Ross Lake NRA. Each element is described in further detail below.

The foundation document is organized in tiers. First, legislation guides the purpose of the park unit. Second, park significance statements tier from the legislation and purpose. Third, fundamental resources and values tier and support the park significance statements. The park's interpretive themes are also guided by park significance statements. The special mandates section stands apart, as these mandates are legal requirements that must be followed in the management of the park unit.

The foundation document for North Cascades National Complex was developed during a planning team workshop held in the spring of 2006. The foundation document elements in this GMP are those that relate primarily to Ross Lake NRA. A full copy of the foundation document for North Cascades NP Complex is available on the park website.

PURPOSE

A park purpose is a statement of why Congress and/or the president established a unit of the national park system. A purpose statement provides the most fundamental criteria against which the appropriateness of all planning recommendations, operational decisions, and actions are tested. The purpose of the park is grounded in a thorough analysis of the park's legislation (or executive order) and legislative

history. A park purpose statement goes beyond a restatement of the law and details shared assumptions about what the law means in terms specific to the park unit.

Listed below are the purpose statements developed for Ross Lake NRA as well as North Cascades National Park, the latter providing broader by applicable guidance.

Purpose of Ross Lake National Recreation Area

The purpose of Ross Lake National Recreation Area is to complement North Cascades National Park and conserve the scenic, natural, and cultural values of the Upper Skagit River Valley and surrounding wilderness, including the hydroelectric reservoirs and associated developments, for outdoor recreation and education.

Purpose of North Cascades National Park

The purpose of North Cascades National Park is to preserve a dynamic wilderness landscape of dramatic alpine scenery including a vast expanse of glaciated peaks, countless cascading creeks and deep forested valleys for the benefit and inspiration of all.

SIGNIFICANCE

Park significance statements express why the park's resources and values are important enough to warrant national park designation. Statements of the park's significance describe why an area is important within a global, national, regional, or systemwide context and are directly linked to the purpose of the park unit. Park unit significance statements are substantiated by data or consensus and reflect the most current scientific or scholarly inquiry and cultural perceptions, which may have changed since the park unit's establishment.

The significance statements for Ross Lake NRA are as follows:

North Cascades Landscapes

The North Cascades range reaches its finest expression in North Cascades National Park Complex, where a dense concentration of jagged glaciated peaks towers above alpine meadows and deep valleys and results in supremely majestic scenery.

Glaciers

The North Cascades National Park Complex contains more glaciers than any other protected area outside Alaska, representing one-quarter of all glaciers in the lower 48 states, and supporting ecosystems, communities, and industries in the Puget Sound and lower Columbia River basins.

Ecosystem and Biodiversity

From deep forested valleys to alpine peaks, the North Cascades National Park Complex encompasses extreme gradients of climate and topography that contribute to an impressive diversity of habitats and species. This area is the core of a vast mountainous ecosystem of protected public lands spanning the border of the United States and Canada. The ecological integrity of the Complex and the greater North Cascades ecosystem depend on one another.

Wilderness

Envisioned as a wilderness park from its inception, the North Cascades National Park Complex is part of more than 2 million acres of federally designated wilderness, which is one of the largest such areas in the lower 48 states. The Stephen Mather Wilderness, along with adjacent wilderness areas, is maintained to preserve and enhance the qualities of wilderness character.

Wilderness Recreation

North Cascades National Park Complex provides the wilderness traveler with great challenges of physical endurance, route-finding, and navigation through on- and off-trail hiking. The park contains climbing routes of high quality and aesthetic appeal guarded by remote, rugged terrain and volatile weather, resulting in mountaineering experiences of solitude, mental and physical challenge, and fulfillment.

Culture and History

Preserved within North Cascades National Park Complex is abundant evidence of nearly 10,000 years of cultural and technological development. This long history reveals a range of human adaptations to changing climates and environments at all elevations of the North Cascades.

Research and Education

North Cascades National Park Complex provides educational and scientific opportunities that support the understanding and preservation of park resources and values while contributing to public enjoyment and understanding.

Skagit River

The Skagit is the largest river draining into Puget Sound. Stable flows help make it the only Puget Sound tributary to host all native species of anadromous salmonids and one of the highest concentrations of wintering bald eagles in the lower 48 states.

Recreation in Ross Lake National Recreation Area

Ross Lake NRA provides a variety of high quality outdoor recreation opportunities, accommodating people with a wide range of interests and abilities.

Water-based Recreation

Ross Lake provides diverse water-based opportunities where visitors can experience the scenic reservoir amidst a mountain wilderness where small or nonmotorized watercraft characterize recreation in this serene setting.

Hydropower Landscape

Ross Lake NRA offers a relatively seamless transition between a utilitarian landscape and a remote wilderness.

FUNDAMENTAL RESOURCES AND VALUES

Fundamental resources and values are the most important elements, ideas, or concepts to be communicated to the public about a park unit. They warrant primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance. They provide a valuable focus throughout the planning process and the life of the plan and may include systems, processes, features, visitor experiences, stories, scenes, sounds, or other resources and values. They are the reasons for data collection, planning issues, management prescriptions, impact assessments, and value analyses.

The preeminent responsibility of park managers is to ensure the conservation and public enjoyment of those resources and qualities that are critical to achieving park purpose and maintaining its significance, otherwise known as fundamental resources and values. Given the complexity of identifying these resources and values for the entire North Cascades National Park Complex, the fundamental resources and



A vast array of recreational experiences are available in the North Cascades.



Glacier monitoring on the Silver Glacier. Photo by Jack McLeod.



Ross Lake NRA encompasses a variety of diverse ecosystems.



View of Hozomeen Peak.



The North Cascades has a rich history of cultural and technological development.



Visitors learn about and connect with the North Cascades at places like the North Cascades Institute's Environmental Learning Center on Diablo Lake.

values presented in this section are nested under headings that relate to significance statements for organizational purposes only. It is important to note that many of the fundamental resources and values identified below often relate to multiple significance statements. For example, ecosystem processes identified under ecosystem and biodiversity are also important to wilderness as part of the natural quality of wilderness character. The organization and format of this section is intended to assist the reader in tracking the fundamental resources and values rather than presenting a strict relationship between fundamental resources and values and significance statements.

The fundamental resources and values for Ross Lake NRA are as follows:

North Cascades Landscapes

Scenery. Majestic mountain scenery includes alpine meadows, countless cascades, towering mountains, and forested valleys.

Viewpoints. Majestic mountain scenery is observed from trails, overlooks, and viewpoints.

Night Sky. The general absence of artificial light ensures preservation of majestic nighttime views.

Ecology and Geology. Dynamic ecological and geologic systems and processes that created this scenery are active in Ross Lake NRA today.

Natural Soundscapes. Natural sounds predominate, supporting natural ecosystem function and providing an unrivaled wilderness experience.

Glaciers

Glaciers. The Complex contains 312 active glaciers, including ice fields, cirque glaciers, and hanging glaciers, which create unique microclimates and habitats and are dramatic indicators of climate change.

Glacial and Hydrologic Processes. Glacial and hydrologic processes that shaped the mountains in the past are still active today.

Ecosystem and Biodiversity

Climate Variability. Dramatic range in weather and climate contribute to a diversity of habitats and biological communities.

Diverse and Extensive Tracts of Intact Habitat. These areas provide for a diversity of life forms and are essential for native species, especially those with extensive home ranges such as wolves, wolverines, and grizzly bears.

Ecosystem Processes. Dynamic influences such as fire, flooding, mass wasting, and avalanches generally occur unimpeded.

Diversity of Old-growth Forest Types. The low-elevation forests associated with all major drainages in the Complex provide distinctive habitats.

Water Resources. Abundant glaciers, snowfields, lakes, ponds, tarns, wetlands, rivers, and streams of exceptional quality support ecological integrity.

High Elevation Meadows. Extensive alpine meadows exist and are maintained by heavy snowfall.

Plant Communities. The Complex contains one of the most diverse arrays of plants, including rare and listed species.

Fish Communities. The Complex's ecosystems support viable populations of resident and anadromous fish species that are found in their native habitats and the Complex's lakes, streams and reservoirs.

Wildlife Communities. The Complex contains a diversity of wildlife communities that are found in their native habitats, including rare and listed species.

Air Quality. The Complex's generally excellent air quality contributes to ecological integrity and beneficial air quality-related values such as outstanding visibility.

Wilderness

Natural Quality. North Cascades and its community of life exists as a functioning natural ecosystem on a large geographic scale with connectivity to other wild places.

Solitude. Opportunities exist for visitors to experience solitude and have relatively few encounters with others.

Undeveloped Quality. Largely devoid of modern human structures, minimal development creates the primeval nature of the North Cascades and contributes to a relatively intact wilderness landscape.

Untrammeled Quality. The North Cascades wilderness is essentially unhindered and free from modern human control or manipulation.

Wilderness Recreation

Trails. A variety of trails with a range of challenges provide access to peaks and a diversity of wildland recreation opportunities, including the Pacific Crest National Scenic Trail and the Pacific Northwest National Scenic Trail.

Trailless Areas. Much of the Complex is trailless, providing opportunities for wilderness exploration, solitude, and unconfined recreation.

Variable Terrain. The mixed terrain of the Complex, from flat valley floors and subalpine meadows to glaciers, snowfields, couloirs, and rock routes of solid gneiss and granite, enriches mountaineering experiences.

Research and Education

Access to Authentic Resources for Education. The Complex provides a diverse array of access to authentic resources, including the Environmental Learning Center, staffed interpretive and educational facilities, publications, wayside exhibits and signs, museum collections, interpretive programs, and physical access.

Access to Authentic Resources for Science. The Complex provides a diverse array of access to

authentic resources. These include five research natural areas, the research station, museum collections, and the Environmental Learning Center.

Partnerships. The Complex maintains partnerships with public, private, and other nonprofit groups for education and scientific research.

Culture and History

Pre- and Post-Contact Archeological Resources. These resources preserve evidence of the utilization and exploitation of the landscape in the form of pre-contact tool stone quarries, campsites, resource use areas, rock art, and historic period sites at areas such as Cascade Pass, Horseshoe Basin mines, and the Newhalem Rockshelter.

Cultural Landscapes. Cultural landscapes embody evidence of post-contact exploration, resource extraction and utilization, transportation, federal and tribal land management, and tourism and recreation at sites such as High Bridge Ranger Station, Buckner Homestead, and Golden West Lodge.

Historic Resources. Historic resources chronicle early utilization and exploration of the landscape by homesteaders, miners, trappers, tourism, and industry, and the protection and management of forest lands by the federal government.

Ethno-historic Resources. Human connections to, and experiences in, the North Cascades have been expressed through a variety of means, which have created the history, legends, and cultural traditions associated with the North Cascades.

Collections. The Complex's collections include cultural objects, photographs, oral histories, historic resource maps, archives, and biological specimens.

Skagit River

Water Quality and Quantity. Fresh, cold water is fed by glaciers, snowfields, groundwater, and seasonally abundant rainfall in the Complex.



A group from Cascades Climate Challenge look at zooplankton from Ross Lake. Photo by Michael Silverman.

In-Stream and Riparian Habitat. In-stream and riparian habitats support an assemblage of terrestrial and aquatic species.

Recreation in Ross Lake National Recreation Area

Visitor Resources and Opportunities. The reservoirs, highway, wilderness, recreational infrastructure, cultural resources, and educational services provide diverse experiences for visitors of different interests and abilities.

Accessible Opportunities. High quality opportunities for visitors with a range of abilities and diverse needs are provided that complement the natural setting, including trails, overlooks, campsites, and fishing platforms.

Water-based Recreation

Undeveloped Setting. Above Green Point, visitors experience a lake setting characterized by an undeveloped shoreline and surrounded by majestic mountain scenery that is almost entirely designated wilderness.

Limited Motorized Access. A primitive road minimizes vehicular access to the reservoir.

Lake Recreation. Ross Lake has high water quality and is a clear lake that has attracted generations of visitors for primitive, dispersed lakeshore camping, boating, and fishing.

Hydropower Landscapes

Scale and Style of Development. The architectural style and scale of infrastructure that began with Seattle City Light projects allowed for engineering accomplishments, but also left a relatively undeveloped footprint beyond the hydroelectric infrastructure, enabling future development that would provide a national park experience in the North Cascades.

INTERPRETIVE THEMES

Interpretive themes connect park unit resources to relevant ideas, meanings, concepts, contexts, beliefs, and values. They support the desired interpretive outcome of increasing visitor understanding and appreciation of the significances



Numerous commercial groups offer guided float trips on the Skagit River.

of the park's resources. Primary interpretive themes are based upon park purpose and significance. They provide the foundation on which the park unit's educational and interpretive programs are based.

The interpretive themes for Ross Lake NRA are as follows:

North Cascades Landscapes

Geologic and ecological processes have created a "sea of peaks" that reaches its finest expression in the North Cascades, resulting in majestic mountain scenery that provides opportunities for inspiration and personal reflection.

Glaciers

Over 300 glaciers of the North Cascades National Park Complex continue to shape the landscape, feed waterways connecting wilderness to the sea, and ensure adequate flows of water that sustain wild and human life.

Ecosystem and Biodiversity

The great range of elevations and the large variability in precipitation in the North Cascades create many different habitats to which thousands of plant and animal species have adapted, inspiring human curiosity and wonder at the diversity of life.

Wilderness

The Stephen Mather Wilderness is part of a national and international resource that is essential to our spirit and health as a nation, a critical anchor to the past and the natural world, and a refuge for native species, present and future.

Wilderness Recreation

Whether climbing the precipitous peaks or exploring the glacially carved valleys, travel in the Stephen Mather Wilderness provides superlative opportunities for personal challenge, exploration, and renewal in a setting where outcomes are uncertain.

Culture and History

Today we continue a long history of humans who, for thousands of years, have found refuge, sustenance, challenge, tragedy, and inspiration in the North Cascades.

Research and Education

The North Cascades National Park Complex is a library, laboratory, and classroom, which invites us to explore the natural world and our place within it.

Climate Change

Amidst the unequivocal scientific evidence that the planet's climate system is changing, staff of Ross Lake NRA and its partners monitor resources (such as glaciers and wildlife populations) and ecosystem processes (such as climate and vegetation change) to identify trends that can help inform park management decisions in an uncertain future.

Skagit River

The mighty Skagit, a life sustaining river for native species and people, links the jagged peaks of the North Cascades to the lowlands of Puget Sound.

Recreation in Ross Lake National Recreation Area

Ross Lake NRA offers inviting corridors for visitors to experience the grandeur and diversity of the North Cascades.

Water-based Recreation

The mountain wilderness serenity of Ross Lake attracts visitors to this unique, largely undeveloped reservoir.

Hydropower Landscape

The story of creating one of the last great wilderness parks in the lower 48 states and the ongoing struggle about how to provide for

wilderness preservation, a national park experience, and Seattle City Light's needs for hydro-power development began with the creation of North Cascades National Park Complex and continued through the landmark Federal Energy Regulatory Commission (FERC) negotiation and settlement. The story continues today as the needs for electricity, heritage preservation, and recreation evolve.

GUIDING PRINCIPLES FOR MANAGEMENT

The following principles are important in guiding the management of resources and values within North Cascades National Park Complex:

1. **Stewardship** – North Cascades National Park Complex strives to use science in making informed decisions. This science-based stewardship advances our knowledge and appreciation of the North Cascades.
2. **Partnerships** – North Cascades National Park Complex views partnerships as integral for achieving the purposes of North Cascades National Park, Ross Lake NRA, and Lake Chelan NRA.
3. **Transboundary Ecosystem Management** – Through its relationship with the Skagit

Environmental Endowment Commission and interactions with British Columbia Ministry of the Environment, the U.S. Forest Service, and other parties, the North Cascades National Park Complex is dedicated to the pursuit of cooperative transboundary activities focused on a wide range of visitor, resource, and operational issues.

SPECIAL CONGRESSIONAL DESIGNATIONS, AUTHORIZATIONS, AND MANDATES

Special congressional designations, authorizations, and mandates are legal requirements and administrative commitments that apply to a specific unit of the National Park System. They are mandated by Congress or by legal agreements with other entities that add another dimension to the park's purpose and significance. Mandates include the designation of an area in the park as wilderness or as an area that is managed by another entity. Mandates may also commit park managers to specific actions and limit their ability to modify land use in the park. The following table (2.1) is a list of mandates and constraints that are specific to Ross Lake NRA.

| Table 2.1 Special Congressional Designations, Authorizations, and Mandates | |
|--|--|
| Hunting and Fishing in Recreation Areas | |
| <i>Public Law 90-544. Sec. 402 (d) dated 2 October 1968</i> | "The Secretary shall permit hunting and fishing on lands and waters under his jurisdiction within the boundaries of the Ross Lake National Recreation Area in accordance with applicable laws of the United States and of the State of Washington, except that the Secretary may designate zones where, and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish and wildlife management, or public use and enjoyment. Except in emergencies, any regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the Department of Game of the State of Washington." |
| Road Construction | |
| <i>Public Law 90-544. Sec. 402 (e) dated 2 October 1968</i> | The construction of roads for vehicular access along the east side of Ross Lake shall not be permitted. |

Table 2.1 Special Congressional Designations, Authorizations, and Mandates

| North Cascades Highway | |
|---|---|
| <i>Public Law 90-544. Sec.503 dated 2 October 1968</i> | <p>The State of Washington maintains rights and privileges over property within the Ross Lake National Recreation Area which is being utilized for the North Cascades Highway, also known as State Route 20 and the North Cross State Highway.</p> <p>The North Cascades Scenic Highway was designated a National Forest Byway in 1984 and a Washington State Scenic Byway in 1984.</p> |
| Federal Energy Regulatory Commission Authority | |
| <i>Public Law 90-544. Sec.505 as amended by Public Law 100-668. Sec. 202 dated 16 November 1988</i> | <p>The Federal Energy Regulatory Commission (formerly the Federal Power Commission) maintains jurisdiction for power production purposes over the lands and waters within the Skagit River Hydroelectric Project, FERC Project 553, including the proposed Copper Creek, High Ross Dam, and Thunder Creek elements of the Project; and the Newhalem Project, FERC Project 2705 within the Ross Lake National Recreation Area; and existing hydrologic monitoring stations necessary for the proper operation of the hydroelectric projects listed herein.</p> |
| Wilderness Designation | |
| <i>Public Law 100-668. Sec. 201 dated 16 November 1988</i> | <p>The Stephen Mather Wilderness was established to include approximately 635,000 acres of designated wilderness in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area. Within Ross Lake NRA, over 80,000 acres are designated wilderness.</p> |
| Potential Wilderness Designation | |
| <i>Public Law 100-668. Sec. 201 dated 16 November 1988</i> | <p>Over 5,000 acres within Ross Lake NRA in the Big Beaver (1,554 acres) and Thunder Creek (3,559 acres) areas are designated potential wilderness.</p> |
| Pacific Northwest National Scenic Trail | |
| <i>Public Law 111-11, Omnibus Public Land Management Act of 2009, Title V, Subtitle C, Section 5205</i> | <p>This section of the Act amends the National Trails System Act to designate the 1200 mile trail extending from the Continental Divide in Glacier National Park, Montana to the Pacific Coast in Olympic National Park. The trail is to be administered by the Secretary of Agriculture. A 60-mile segment of the Pacific Northwest Trail passes through North Cascades National Park and Ross Lake National Recreation Area.</p> |
| Research Natural Areas | |
| <i>Director of the National Park Service to the Pacific West Regional Director, memo, 22 May 1990</i> | <p>Research natural areas (RNAs) are administratively designated areas identified for prime examples of natural resources and processes.</p> <p>Two research natural areas have been designated with Ross Lake NRA. They include the Pyramid Lake RNA (164 acres) established in 1972 and the Big Beaver RNA (3356 acres) established in 1990.</p> |

| Table 2.1 Special Congressional Designations, Authorizations, and Mandates | |
|--|--|
| High Ross Dam and Skagit Environmental Endowment Commission | |
| <i>Skagit River Treaty dated 2 April 1984</i> | The Skagit River Treaty, also known as the High Ross Dam Treaty, solidified an agreement between Canada and the United States not to engage in construction of High Ross Dam, which would have raised the water level 125 feet and flooded large parts of British Columbia. The treaty was signed in 1984 and expires in 2066. In exchange for this, Seattle City Light was given the right to purchase electricity from British Columbia hydroelectric sources in amounts equal to the power that would have been generated by a higher Ross Dam. The treaty further bonded the two countries in the protection of this parkland by establishing the Skagit Environmental Endowment Fund of \$5 million for the enhancement of recreational opportunities in, and environmental protection of, the area above Ross Dam. The fund would be administered by a joint commission, known as the Skagit Environmental Endowment Commission. |
| Skagit River Hydroelectric Project Settlement Agreement | |
| <i>Federal Energy Regulation Commission Project Number 553, Settlement Agreement issued 16 May 1995</i> | The Skagit River Hydroelectric Project re-license was completed in accordance with a settlement agreement between Seattle City Light, the National Park Service, and others. The agreement allowed continued operations for Ross, Diablo, and Gorge hydroelectric projects and decided upon measures and appropriate funding to lessen environmental impacts resulting from these operations. The agreement provided \$11.5 million to the NPS for actions for fisheries, recreation and aesthetics, erosion control, wildlife, and cultural resources. To date, Seattle City Light has transferred approximately \$4 million to the NPS. The license is for 30 years. |
| Newhalem Creek Hydroelectric Project | |
| <i>Federal Energy Regulation Commission Project Number 2705-003, Order issuing new license 7 February 1997</i> | <p>The Newhalem Creek Hydroelectric Project occupies 6.56 acres in Ross Lake NRA. Infrastructure includes a small dam, tunnel, penstock, and powerhouse. The Newhalem Creek Project began operation in 1921 to provide power for construction of the Skagit River Hydroelectric Project and the company town at Newhalem. The Federal Energy Regulatory Commission issued Seattle City Light a new operating license for the Newhalem Creek Hydroelectric Project in 1997 for 30 years.</p> <p>The license includes many provisions and details regarding operation, maintenance, and mitigation for erosion control, anadromous fish, historic resources, and recreational facilities.</p> |
| North Cascades Institute and Environmental Learning Center | |
| <i>Skagit River Hydroelectric Project No. 553, Settlement Agreement on Recreation and Aesthetics, April 1991</i> | <p>Under the conditions of the FERC re-license and settlement agreement for the Skagit River Hydroelectric Project, Seattle City Light would partner with the NPS and the North Cascades Institute to construct an environmental education facility as part of the mitigation package. As a result, North Cascades Institute, the National Park Service, and the City of Seattle joined together in a unique partnership. Seattle City Light funded the majority of construction completed in 2007 and owns the buildings. The campus exists on public lands managed by the National Park Service.</p> <p>Under terms of the agreement, North Cascades Institute outfits, maintains and operates the facility and offers Environmental Learning Center programs for all ages.</p> |

Table 2.1 Special Congressional Designations, Authorizations, and Mandates

| Ownership of the Skagit River Bed | |
|---|---|
| <p><i>Washington State Constitution, Article XVII Tide Lands, Section 1.</i></p> <p><i>Office of the Regional Solicitor, Pacific Northwest Region, memo dated 23 March 2009</i></p> | <p>Title to the beds of navigable bodies of water passes to a state upon its admission to the Union. The Washington State Department of Natural Resources contends the Skagit River is a navigable river and therefore asserts title to the bed of the Skagit River within the boundaries of Ross Lake NRA. The NPS, however, retains the authority over control of the uses along the river.</p> |
| Renewable Natural Resource Use in Recreation Areas | |
| <p><i>Public Law 100-668. Sec. 205 dated 16 November 1988</i></p> | <p>“Within the Ross Lake National Recreation Area the removal and disposal of trees within power line rights-of-way are authorized as necessary to protect transmission lines, towers, and equipment; Provided, That to the extent practicable, such removal and disposal of trees shall be conducted in such a manner as to protect scenic viewsheds.”</p> |
| Mineral Resource Use in Recreation Areas | |
| <p><i>Public Law 100-668. Sec. 206 dated 16 November 1988</i></p> | <p>Lands within Ross Lake National Recreation, “subject to valid existing rights, are hereby withdrawn from all forms of appropriation or disposal under the public land laws, including location, entry, and patent under the United States mining laws, and disposition under the United States mineral leasing laws.”</p> |
| Land Acquisition | |
| <p><i>Public Law 90-544. Sec. 301 dated 2 October 1968</i></p> | <p>“Within the boundaries of the park and recreation areas, the Secretary of Interior may acquire lands, waters, and interests therein by donation, purchase with donated or appropriated funds, or exchange, except that he may not acquire any such interests within the recreation areas without the consent of the owner, so long as the lands are devoted to uses compatible with the purposes of this Act.”</p> <p>“Lands owned by the State of Washington or any political subdivision thereof may be acquired only by donation.”</p> |
| <p><i>Public Law 90-544. Sec. 302 dated 2 October 1968</i></p> | <p>“In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property within the boundaries of the park and recreation areas and in exchange therefore he may convey to the grantor of such property any federally owned property under his jurisdiction in the State of Washington which he classifies as suitable for exchange or other disposal.”</p> |
| <p><i>Public Law 100-668. Sec. 203 dated 16 November 1988</i></p> | <p>“The Secretary is hereby authorized to acquire, with the consent of the owner, lands outside of the authorized boundaries of the North Cascades NP Complex for the purpose of construction and operation of a backcountry information center not to exceed five acres. The Secretary of the Interior is further authorized to acquire with the consent of the owner, lands for the construction of a headquarters and administrative site or sites, for the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area not to exceed ten acres. The lands so acquired shall be managed as part of the park.”</p> |

DESIRED CONDITIONS AND POTENTIAL MANAGEMENT STRATEGIES DERIVED FROM LAWS, REGULATIONS, AND POLICIES

To fully understand the implications, limitations, or requirements of actions proposed in this general management plan, it is important to compare the servicewide laws and policies with the management actions described in the plan. To facilitate this process, this section identifies what must be done at Ross Lake National Recreation Area to comply with applicable laws, regulations, and the policies. Management directives derived from these sources are summarized in two ways: as the desired conditions they set forth, and the potential management strategies park managers may employ to achieve them.

Many management directives for Ross Lake NRA are specified in laws, regulations, and policies guiding the National Park Service and are therefore are not subject to management actions outlined in this plan. For example, there are laws and policies about managing environmental quality, such as the Clean Air Act and the Endangered Species Act; laws governing the preservation of cultural resources and cultural values, such as the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act; and laws about providing public services, such as the Americans with Disabilities Act—to name only a few. In other words, a general management plan is not needed to decide, for instance, that it is appropriate to protect endangered species, control non-native

species, protect archeological sites, conserve artifacts, or provide for universal access— laws and policies already require the National Park Service to fulfill these mandates. The National Park Service would continue to strive to implement these requirements with or without a general management plan.

Some laws and executive orders are applicable solely or primarily to units of the National Park System. These include the 1916 Organic Act that created the National Park Service; the General Authorities Act of 1970; the National Parks and Recreation Act of 1978, relating to the management of the National Park System; and the National Parks Omnibus Management Act (1998). Other laws and executive orders, such as those addressing environmental quality, have much broader application.

The National Park System General Authorities Act affirms that while all National Park System units remain “distinct in character,” they are “united through their interrelated purposes and resources into one National Park System as cumulative expressions of a single national heritage.” The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system. Further, the Redwood Act of 1978 states that NPS management of park units should not “derogat[e]... the purposes and values for which these various areas have been established.” The National Park Service also has established policies for all units under its stewardship. These are identified and explained in a guidance manual entitled *NPS Management Policies 2006*. The actions proposed in this document incorporate and comply with the provisions of these mandates and policies.

The NPS Organic Act

The NPS Organic Act provides the fundamental management direction for all units of the National Park System. It states, “The National Park Service shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations...by such means and measure as conform to the fundamental purpose of 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.”

The most pertinent servicewide laws and policy topics related to planning and managing Ross Lake NRA are examined below. For each topic there are a series of desired conditions that the Ross Lake NRA staff is achieving, and will continue to strive to achieve, for that topic. The law or policy behind these desired conditions is cited, and examples of the types of actions being pursued by NPS staff are given.

Natural Resources

Ecosystem Functions and Processes

Law and Policy Source — NPS Management Policies 2006 (§1.5, 4, 4.1, 4.1.4, 4.4.1) provides general direction for managing park units from an ecosystem perspective.

Desired Conditions:

- Ross Lake NRA is managed holistically, as part of a greater ecological, social, economic, and cultural system.
- Ross Lake NRA develops and maintains a current land protection plan that identifies means of protection available to achieve the purposes for which Ross Lake NRA was created.
- Managers seek to maintain all components and processes of naturally evolving park ecosystems. Natural disturbance and change are recognized as an integral part of the functioning of natural systems.
- Through partnerships and cooperative agreements, Ross Lake NRA staff works with other land managers in the greater North Cascades ecosystem to accomplish mutual objectives for providing wildlife corridors, protecting biodiversity and key habitats, etc.
- In collaboration with landowners inside and outside Ross Lake NRA, viewsheds within and adjacent to the park are protected.
- Ross Lake NRA provides benchmarks or “control” conditions for studies of ecosystem processes in (largely) unmanipulated landscapes, helping to determine Ross Lake NRA’s own resource preservation goals and those of adjacent lands.
- Natural processes of ecosystem disturbance and change function unimpeded and are altered only as needed to provide for visitor

and staff safety and access, to protect park facilities in developed areas, and to maintain cultural landscapes.

- “Purification services” provided by park ecosystems are protected and maintained, thus helping to provide clean air and water for park resources and the surrounding area; soil and water resources are free of contaminants.
- Ecosystems and habitats damaged by human activities or non-native species are restored; future development avoids sensitive habitats and dynamic areas prone to natural disturbances, if possible.

Potential Management Strategies:

- Participate in collaborative planning efforts with adjacent land managers and tribal governments to identify common goals, pursue solutions, and build joint data sets through information sharing.
- Prepare a land protection strategy for Ross Lake NRA.
- Maintain intact ecological functions in keystone habitats.
- Restore habitats and disturbance regimes that have been altered in Ross Lake NRA while balancing needs to conserve threatened and endangered species, maintain existing critical facilities and road access, and provide for public safety.
- Protect and, as necessary, restore the natural cycling of nutrients in damaged ecosystems and habitats.
- Provide interpretive and educational programs about ecosystem processes, “ecological services,” and methods to sustain these.

Fire Management

Law and Policy Source — NPS Management Policies 2006 (§4.5); Federal Wildland Fire Management Policy; Director’s Order 41, “Wilderness Preservation and Management;” and Director’s Order 18, “Wildland Fire Management” and accompanying Reference Manual 18 provide guidance on the basic principles and strategic guidelines governing the management of wildland fire by the NPS.

Desired Conditions:

- Fire management programs are designed to meet resource management objectives prescribed for the various areas of Ross Lake NRA and to ensure that the safety of firefighters and the public are not compromised.
- All wildland fires are effectively managed, considering resource values to be protected and firefighter and public safety, using the full range of strategic and tactical operations as described in an approved fire management plan.
- Natural fire regimes are restored and maintained but will be modified to comply with air quality regulations and/or to protect listed species, cultural resources, and the safety of life and property.
- The best available technology and scientific information are used to manage fire within Ross Lake NRA, to conduct routine monitoring to determine if objectives are met, and to evaluate and improve the fire management program.
- Hazard fuel reduction efforts protect structures, wildland-urban interface areas, and cultural resources where appropriate and necessary.
- Ross Lake NRA managers develop a comprehensive cross-boundary fire management plan with adjacent land managers, recognizing fire as a natural process that does not acknowledge administrative boundaries.
- Minimum requirement methods and tools are used to manage fires in wilderness.
- Other fire management program goals and objectives from the 2007 Fire Management Plan for North Cascades NP Complex include: the natural role of fire is maintained to the maximum extent possible in designated zones; unplanned, human caused ignitions are suppressed; and forest composition in selected areas where natural ecosystems have been altered by fire suppression and other human activities are restored and maintained.

Potential Management Strategies:

- Maintain a current fire management plan to reflect the most recent wildland fire policy, managed fire applications, and the body of

knowledge on fire effects within the unit's vegetation types.

- Maintain cooperative agreements for fire suppression with appropriate federal, tribal, state, and local agencies and organizations.
- Monitor individual prescribed fires to provide information on whether specific objectives regarding smoke behavior, fire effects, etc. are met.
- Conduct fire history research and other studies to describe Ross Lake NRA's natural fire regime.
- Conduct research and monitor the effects of fires in Ross Lake NRA to ensure that long-term resource objectives are met.
- Use fire as a management tool to maintain native plant communities and control invasive, non-native species.
- Provide information to visitors about the role of fire in northwest ecosystems.

Air Quality

Law and Policy Source — The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts. *NPS Management Policies 2006* (§4.7) and “Natural Resource Management Reference Manual #77” provide further direction on the protection of air quality and related values for park units. Ross Lake NRA is a Class II air quality area under the Clean Air Act.

Desired Conditions:

- Air quality in Ross Lake NRA meets national ambient air quality standards for specified pollutants; air quality is maintained or improved with little or no deterioration.
- Visibility is excellent, such that scenic views, including integral vistas and views of landscapes within and outside Ross Lake NRA are clear and meet visibility standards.
- Ross Lake NRA management and visitor service activities promote preservation of excellent air quality, including healthful indoor air quality in NPS and concession facilities.
- Views from Ross Lake NRA overlooks, integral vistas, and scenic stops are not ob-

structed or marred by air pollution for most of each year.

- Air quality monitoring within or near Ross Lake NRA is able to verify whether trends are improving or deteriorating, and whether Class II air quality standards are met within Ross Lake NRA.

Potential Management Strategies:

- Cooperate with local air pollution control authorities, the Washington Department of Ecology, and EPA to monitor air quality and visibility and ensure that these authorities maintain high-quality characteristics consistent with EPA, state, and local standards.
- Inventory and monitor air quality-related values associated with Ross Lake NRA. Establish baseline conditions for and monitor native plants or other species that may be sensitive indicators of air pollution.
- Evaluate air pollution impacts, and identify causes.
- Participate in federal, regional, and local air pollution control plans and drafting of regulations, and review permit applications for major new air pollution sources that may affect Ross Lake NRA.
- Through timing and appropriate equipment, minimize air quality pollution emissions associated with Ross Lake NRA operations and visitor use activities. Use and demonstrate sustainable practices and pollution prevention measures in operations. Use best available practices and technologies to provide healthful indoor air quality at NPS and concession facilities.
- Form regional partnerships to develop alternative transportation systems and promote clean fuels.
- Provide information regarding air quality and related values to visitors.
- Conduct and assist research on air quality to learn about effects of local and long-range atmospheric deposition on plants, soils, and wetlands within Ross Lake NRA. Determine changes in ecosystem function caused by atmospheric deposition and assess the resistance and resilience of native ecosystems to the effects of air pollution.

Natural Soundscapes

Law and Policy Source — NPS *Management Policies 2006* (§4.9) and NPS Director's Order 47, "Sound Preservation and Noise Management" require park managers to strive to preserve the natural soundscape associated with the physical and biological resources, such as the sounds of the wind in the trees.

Desired Conditions:

- The National Park Service preserves the natural ambient soundscapes, restores degraded soundscapes to the natural ambient condition wherever possible, and protects natural soundscapes from degradation due to human-caused noise.
- Noise from management or recreational uses is minimized to provide a high-quality visitor experience and protect biological resources and processes that involve natural sounds (for example: species that use sound to attract mates, protect territories, locate prey, navigate, or avoid predators).
- Park and concession facilities use best available technology and methods to minimize or mitigate artificial noises produced by equipment and management activities.
- Visitors have opportunities to experience and understand natural soundscapes.
- Ross Lake NRA maintains an inventory of ambient sound levels and, as feasible, monitors key locations for maintaining natural soundscapes.
- Ecological interactions that depend upon or are affected by sound are protected.

Potential Management Strategies:

- Monitor and prevent or minimize unnatural sounds that adversely affect resources or values or visitors' enjoyment of them.
- Require NPS staff, concessioners, contractors, and tour bus companies to comply with measures designed to reduce noise levels.
- Minimize noise generated by NPS management activities by moderating administrative functions such as the use of motorized equipment.
- Use best technologies and methods to minimize noise when procuring or using equipment.

- Encourage visitors to avoid unnecessary noise, such as minimizing the use of generators and maintaining quiet hours in the campgrounds.
- Provide interpretive programs and materials to help visitors understand the role and value of natural soundscapes and the current adverse noise levels associated with motor vehicle use along the North Cascades Highway.

Lightscaapes and Night Skies

Law and Policy Source — NPS *Management Policies 2006* (§4.10) recognizes that natural lightscaapes are natural resources and values that contribute to the visitor experience. The policy further states that the NPS staff will seek to minimize the intrusion of artificial light into the night scene. In natural areas, artificial outdoor lighting will be limited to meet basic safety requirements and will be shielded when possible.

Desired Conditions:

- Natural darkness and other components of the natural lightscape in Ross Lake NRA are protected.
- The National Park Service will seek the cooperation of park visitors, neighbors, and local government agencies to prevent or minimize the intrusion of artificial light into the night scene within Ross Lake NRA.
- Ross Lake NRA's inventory of natural resources identifies ecological processes or components that uniquely depend upon or are affected by nighttime light.
- Artificial light sources in developed areas are designed to prevent light pollution.
- Throughout a majority of Ross Lake NRA, visitors have opportunities to experience dark night skies free of light pollution.

Potential Management Strategies:

- Cooperate with park visitors, neighbors, and local government agencies to find ways to prevent or minimize the intrusion of artificial light into the night scene in Ross Lake NRA.
- In developed areas, artificial outdoor lighting will be limited to basic safety require-



Kayaking on Ross Lake.



Diablo Dam with the spillgates open.



The Skagit River meanders through the Skagit Valley enroute to the Puget Sound.

ments and will be designed to minimize impacts on the night sky.

- NPS staff will evaluate the impacts on the night sky caused by NPS operations. If light sources in Ross Lake NRA are affecting night skies, the staff will consider alternatives such as shielding lights, changing lamp types, or eliminating unnecessary sources.
- Interpretive programs and materials will be provided to help visitors understand the role and value of natural lightscape.

Scenic Resources

Law and Policy Source — NPS Organic Act and *NPS Management Policies 2006* (§1.4, 1.6, 3.1) call for the NPS to conserve and protect scenery and scenic vistas.

Desired Conditions:

- The scenic views at Ross Lake NRA continue to stir imaginations, inspire, and provide opportunities for visitors to understand, appreciate, and forge personal connections to the North Cascades.
- Intrinsically important scenic vistas and scenic features are not significantly diminished by development.

Potential Management Strategies:

- NPS staff will work with adjacent and nearby landowners to minimize any visual impacts from nearby developments and to ensure that developments do not encroach on Ross Lake NRA.

Water Resources

Law and Policy Source — *NPS Management Policies 2006* (§4.6.1, 4.6.2) calls for the NPS to perpetuate surface and groundwater as integral components of park aquatic and terrestrial ecosystems. “Natural Resource Management Reference Manual #77” provides further direction on the management of water quantity on parks, stating the NPS will manage and use water to protect resources, accommodate visitors, and administer park units within legal mandates. The Clean Water Act strives to restore and maintain the integrity of U.S. waters, which includes waters found in the recreation area. Other law and

policy guidance includes the Rivers and Harbors Act; Executive Order 11514, “Protection and Enhancement of Environmental Quality;” and Executive Order 12088, “Federal Compliance with Pollution Control Standards.”

Desired Conditions:

- Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards.
- NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.
- Water resources in Ross Lake NRA meet or exceed all federal and state water quality standards for temperature, bacteria, dissolved oxygen, turbidity, toxic substances, pH, and nutrients.
- Pollution prevention and protection of water quality to meet the needs of aquatic organisms are priorities.
- Almost all NRA water resources meet state criteria for “outstanding resource waters.”

Potential Management Strategies:

- For waters in Ross Lake NRA, or affecting resources, work with appropriate agencies and partners to determine minimum flow needs and to attain the highest possible water quality standards available under the Clean Water Act.
- Develop and implement an environmental management plan, which includes pollution prevention and environmental best management practices.
- Promote water conservation by the National Park Service, partners, visitors, and park neighbors.
- Apply best management practices to all pollution-generating activities and facilities in Ross Lake NRA. Take positive steps to reduce such activities.
- Minimize the use of pesticides, fertilizers, and other chemicals, and manage them in keeping with NPS policy and federal regulations.
- Monitor water flows and water quality in selected areas.
- In selected NRA waters, conduct water quality monitoring and research to target detection of change from atmospheric input.

- Manage stormwater runoff appropriately.
- Promote greater public understanding of water resource issues at Ross Lake NRA, and encourage public support for and participation in protecting watersheds.

Wild and Scenic Rivers, Rivers and Floodplains

Law and Policy Source — The Wild and Scenic Rivers Act (Act), passed in 1968, protects the free-flowing waters of many of our nation’s greatest rivers, while also recognizing the potential for appropriate use and development. The Act ensures the public’s enjoyment of the river and its resources for present and future generations. Floodplains are protected and managed in accordance with Executive Order 11988, “Floodplain Management;” NPS Director’s Order 77-2 and its accompanying procedural manual; and NPS *Management Policies 2006* (§4.6.4).

Desired Conditions:

- Natural floodplain conditions are preserved or restored.
- Long-term and short-term environmental effects associated with the occupancy and modification of floodplains are avoided when practicable.
- When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain, the National Park Service :
 - ♦ prepares and approves a statement of findings in accordance with Director’s Order #77-2
 - ♦ uses nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains
 - ♦ ensures that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60)
- The most current engineering methods and techniques that minimize adverse effects on natural river processes are used to protect roads and facilities located in floodplains.
- Visitors understand the dynamic nature of Ross Lake NRA’s river systems, and the variability and cycles of river flow, flooding, etc.

Potential Management Strategies:

- Identify 100-year and 500-year floodplains and any administrative, maintenance, operational, or visitor facilities located within them.
- Inventory flood-prone areas near facilities and roads, and develop a program to protect these using the most current techniques that minimize adverse effects on aquatic and riparian habitats and fluvial processes.
- Work with area partners, including tribes, federal, state, and county agencies, and others, to develop restoration plans for at risk river systems. Use current technologies, over time, to restore or improve floodplain and riparian functions altered in the past by bank-hardening techniques.
- In wilderness, natural river processes will be allowed, insofar as possible, to shape and control wilderness ecosystems, and management intervention should only be undertaken to the extent necessary to correct past mistakes, the impacts of human use, and influences originating outside of wilderness boundaries, using the minimum requirement concept.
- If facilities are damaged or destroyed by a hazardous or catastrophic natural event, thoroughly evaluate options for relocation or replacement by new construction at a different location. If a decision is made to relocate or replace a severely damaged or destroyed facility, it will be placed, if practicable, in an area believed to be free from natural hazards.
- Prepare evacuation plans for facilities in flood hazard areas.
- Protect shoreline areas that provide spawning, feeding, and rearing habitats for fish, and support rare aquatic plant species. During drought or other conditions warranting greater resource protection, this may involve occasional seasonal closures of specific areas.
- Provide information to visitors regarding river processes and natural flooding regimes.

- When emergency situations occur, consult with traditionally associated tribes to evaluate the potential impact of the proposal and consider tribal views in the decision-making process. Protocols for consultation would be developed when needed.
- Manage significant historic properties to protect cultural and scientific values and to educate the public about the river's cultural history.

Wetlands

Law and Policy Source — Wetlands are protected and managed in accordance with the Clean Water Act; Rivers and Harbors Act; Executive Order 11514, "Protection and Enhancement of Environmental Quality;" Executive Order 11990, "Protection of Wetlands;" NPS-77, "Natural Resource Management Guidelines;" NPS Director's Order 77-1, "Wetland Protection" and its accompanying procedural manual; and NPS *Management Policies 2006* (§4.6.5).

Desired Conditions:

- Natural and beneficial conditions of wetlands are preserved and enhanced.
- The National Park Service implements a "no net loss of wetlands" policy and strives to achieve a longer-term goal of net gain of wetlands across the National Park System through the restoration of previously degraded wetlands.
- To the extent possible, the National Park Service avoids long- and short-term adverse impacts associated with the destruction or modification of wetlands and avoids direct or indirect support of new construction in wetlands wherever there is a practicable alternative.
- The National Park Service compensates for remaining unavoidable adverse impacts on wetlands by restoring wetlands that have been previously degraded.
- "Keystone" species (such as beavers) that sustain and depend upon wetland habitats occur in natural distribution and sustainable numbers.
- Park visitors have the opportunity to learn about and understand the unique services and functions provided by wetlands.

- Wetlands near developed areas remain unaffected by maintenance of park or concession facilities or management or recreational activities.
- Wetlands adversely affected by prior human activity are restored where feasible.

Potential Management Strategies:

- Wetlands within Ross Lake NRA are inventoried and their conditions monitored. The distinct functions they perform are identified.
- Locate any new facilities, or relocate existing facilities, to avoid or restore wetlands if feasible. If avoiding wetlands is not feasible, undertake other actions to comply with Executive Order 11990, "Protection of Wetlands;" the Clean Water Act; and Director's Order 77-1, "Wetland Protection," such as compensation.
- Prepare a statement of findings if proposed actions would result in adverse impacts on wetlands, including an analysis of alternatives, delineation of the wetland, a wetland restoration plan, mitigation, and a functional analysis of the impact site and restoration sites.
- Conduct systematic surveys of watersheds within Ross Lake NRA to complete wetland inventories and include this information in the planning, management, and protection of wetlands.
- Encourage the use of wetlands for educational and scientific purposes that do not disrupt natural wetland functions.
- Participate in collaborative planning efforts with adjacent land managers and tribal governments to protect and restore wetlands within and outside the boundaries through cooperative conservation strategies.

Geologic and Soil Resources

Law and Policy Source — NPS *Management Policies 2006* (§4.8) and NPS-77, "Natural Resources Management Guidelines" provide general direction on the protection of geologic and soil resources, including geologic features and geologic processes. Other pertinent laws and policies include the 1988 Federal Cave Resources Protection Act and 1976 Mining in the Parks Act.

Desired Conditions:

- Ross Lake NRA's geologic resources are preserved and protected as integral components of its natural systems.
- The National Park Service actively seeks to understand and preserve the soil resources of Ross Lake NRA, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or the soil's contamination of other resources.
- Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy.
- Monitoring and research programs assess conditions and trends in Ross Lake NRA's geoindicators, particularly those that are both important to Ross Lake NRA's ecosystem and management and subject to human influence (such as glaciers, sea level and shoreline position, groundwater chemistry, streamflow, stream channel morphology, sediment load, slope failures, and erosion).
- Surficial geology is mapped for priority areas and critical habitats.

Potential Management Strategies:

- Assess human impacts to geologic and soil resources and restore as warranted.
- Monitor and inventory geologic hazards for Ross Lake NRA.
- Develop and maintain staff to inventory, monitor, and manage geologic resources.
- Implement the Natural Resource Challenge (a NPS initiative to enhance natural resource stewardship for national park units) and obtain soils and surficial geology inventories.
- Develop long-range plans that minimize infrastructure–resource conflicts (e.g. roads and rivers).
- Protect natural erosion rates as a key to the creation of new riparian habitat.
- Develop interpretation and management plans to address geologic and soil research and monitoring.
- Update geologic history of Ross Lake NRA, using modern theory and techniques.
- Update geologic interpretations at interpretive stops or displays.

- Identify interpretive themes or other opportunities for interpreting the notable geologic events or processes that are preserved, exposed, or occur in Ross Lake NRA.
- Prevent or minimize adverse, potentially irreversible impacts to soils from pollutants, compaction, etc. Possibly implement soil conservation and soil amendment practices to reduce impacts, and import clean off-site soil, or use soil amendments, as necessary to restore damaged sites.
- Minimize soil excavation, erosion, and off-site soil migration during and after any ground-disturbing activity.
- Consider agreements with the Washington State Department of Transportation and Seattle City Light for best management practices.
- Survey areas of Ross Lake NRA with soil resource problems and take actions appropriate to the management prescription to prevent or minimize further erosion, compaction, or deposition. See Skagit Project Erosion Control Plan.
- Apply effective best management practices to problem soil erosion and compaction areas in a manner that stops or minimizes erosion, restores soil productivity, and reestablishes or sustains a self-perpetuating vegetative cover.
- Limit construction in previously undisturbed locations in Ross Lake NRA.

Native Species

Law and Policy Source — NPS *Management Policies 2006* (§4.4) calls for the National Park Service to maintain natural ecosystems in parks and to restore native plant and animal populations. “Natural Resource Management Reference Manual #77” also provides general direction on the restoration of natural resources for Ross Lake NRA.

Desired Conditions:

- The National Park Service maintains, as parts of the natural ecosystem, all native living organisms within Ross Lake NRA, including all five of the commonly recognized kingdoms of living things (encompassing flowering plants, ferns, mosses, lichens, al-



Black bear. Photo by Michael Silverman.



Traditional Plant Camp. Photo by Michael Silverman.



Rock Shelter Trail.

gae, fungi, bacteria, mammals, birds, reptiles, amphibians, fishes, etc.).

- The National Park Service strives to protect the full range of genetic types (genotypes) of native plant and animal populations by perpetuating natural evolutionary processes and minimizing human interference with evolving genetic diversity.
- The National Park Service strives to restore extirpated native plant and animal species to parks when specific criteria are met regarding habitat availability, safety, genetic type, and reason for extirpation.
- Ross Lake NRA provides naturally evolving examples of plant and animal communities.
- Animal and plant populations in Ross Lake NRA are managed to promote long-term viability, including maintaining diverse age-structures, abundance, density and distributions within normal ranges, and a full range of natural genetic variability.
- Effects of native diseases and pests are within normal range of variation and are not worsened by human-caused factors.

Potential Management Strategies:

- Complete inventory of the plants and animals in Ross Lake NRA; regularly monitor the distribution and condition of selected species that indicate ecosystem condition and diversity.
- Develop and implement restoration plans for extirpated species (such as grizzly bear and fisher), subject to meeting all five criteria required by NPS *Management Policies 2006* for restoring native species (§ 4.4.2.2).
- Restore native biological communities and habitats. Minimize human impacts on native species, ecosystems, and the processes that sustain them.
- Review Washington State Department of Fish and Wildlife fishing regulations annually, and recommend revisions as necessary to protect fish and wildlife populations.
- Continue to prohibit stocking of invasive, non-native fish species or enhancement of non-native fish populations.
- Preserve genetic diversity by maintaining the abundance of unique populations at or above levels necessary for genetic variability.

- Promote harvest and management practices that protect wild salmonids. Work with area fisheries managers to implement escapement levels necessary to achieve the full role of anadromous fish in the ecosystem.
- In cooperation with other agencies and tribal governments, preserve healthy populations and provide safe migratory corridors for wide-ranging wildlife populations such as black bear, grizzly bear, wolves, wolverines, and fisher.
- Protect Ross Lake NRA's biotic communities from impacts due to human activities and facilities while ensuring that visitors have ample opportunity to visit and enjoy these ecosystems.

Invasive, Non-native Species

Law and Policy Source — NPS *Management Policies 2006* (§4.4) calls for the National Park Service to maintain natural ecosystems in parks and to restore native plant and animal populations. "Natural Resource Management Reference Manual #77" also provides general direction on the restoration of natural resources for Ross Lake NRA. Executive Order 13112, "Invasive Species" provides direction for the management of invasive, non-native species.

Desired Conditions:

- Populations of invasive, non-native plant and animal species are managed, including eradication wherever such species threaten park resources or public health and when control is prudent and feasible.
- Ecosystems are free of non-native species where feasible, with the exception of non-invasive species that are documented as innocuous, and are a contributing element of a cultural landscape (as defined by the Secretary of the Interior's Standards).
- Particularly sensitive habitats in Ross Lake NRA, including those containing endemic or rare species, are maintained free of non-native species.

Potential Management Strategies:

- Complete an inventory of plants, animals, and, as feasible, other organisms in Ross Lake NRA, and regularly monitor the dis-

tribution and condition of selected species, including invasive, non-native species.

- Participate in regional efforts to assess threats and develop mitigation strategies for aquatic invasive species, such as quagga and zebra mussels.
- Study the environmental and ecological effects of non-native species to assess threats, prioritize management actions, and prevent introduction and establishment of non-native species.
- Monitor the condition of native species, populations, and communities that may be vulnerable to non-native and potentially catastrophic diseases or organisms such as West Nile virus, whitebark pine blister rust, balsam and hemlock woolly adelgid, etc. Implement management programs to prevent, and develop a long-term program to reverse, the destructive effects of invasive, non-native species.
- Manage exclusively for native plant species in wilderness management zones; in other management zones, limit planting of non-native species to non-invasive, innocuous plants that are justified by the historic scene or operational needs.
- Control or eliminate invasive non-native plants, animals, diseases, and pest species where there is a reasonable expectation of success and sustainability. Base control efforts on:
 - ♦ the potential threat to legally protected or uncommon native species and habitats
 - ♦ the potential threat to visitor health or safety
 - ♦ the potential threat to scenic and aesthetic quality
 - ♦ the potential threat to common native species and habitat
- Implement management actions in Ross Lake NRA in a manner that minimizes the introduction or increase in invasive non-native species, both number and type.
- Work in cooperation with agencies, tribes, and local communities on invasive, non-native species control.
- Provide interpretive and educational programs on the preservation of native species.

Rare, Threatened and Endangered Species

Law and Policy Source — Under the Endangered Species Act, the National Park Service is mandated to promote the conservation of all federal threatened and endangered species and their critical habitats within park unit boundaries. NPS *Management Policies 2006* (§ 4.4.2.3) also calls for the agency to survey, protect, and strive to recover all species native to park units that are listed under the Endangered Species Act. In addition, the National Park Service is directed to inventory, monitor, and manage state-listed species in a manner similar to the treatment of federally listed species, to the greatest extent possible.

Desired Conditions:

- Federally listed and state-listed threatened and endangered species and their habitats are protected and sustained.
- Native threatened and endangered species populations that have been severely reduced in or extirpated from the unit are restored where feasible and sustainable.
- Threatened, endangered, or otherwise imperiled species in Ross Lake NRA show increasing trends in their population, leading to improvement in the species' status and ultimately, to recovery. State and federally listed wildlife populations are stable or increasing, as measured by recovery goals outlined in species recovery plans required for all listed species.
- Habitats that support or are suitable for sensitive, rare, endemic, or listed species are protected.
- Visitors learn about species in Ross Lake NRA that are listed under the Endangered Species Act as well as actions that may assist their recovery.

Potential Management Strategies:

- Support research that contributes to knowledge of rare and listed species and their habitat. Incorporate findings in interpretive and education programs.
- Inventory rare or listed species in Ross Lake NRA and regularly monitor their distribu-

tion, condition, and population trends; modify management plans to be more effective based on the results of monitoring.

- Manage designated critical habitat, essential habitat, and recovery areas to maintain and enhance their value for listed species.
- Consult with the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA) Fisheries to ensure that NPS actions comply with the Endangered Species Act.
- Implement management actions in Ross Lake NRA in a manner that minimizes the potential adverse effect on listed species and their habitat.
- Participate in the recovery planning process when appropriate. Cooperate with the U.S. Fish and Wildlife Service and NOAA Fisheries to implement recovery plans approved by those agencies for listed species found in Ross Lake NRA.
- To the greatest extent possible, inventory, monitor, and manage state and locally listed species in a manner similar to federally listed species.
- Work with neighboring land and resource managers to obtain information on status and trends of little known, but potentially at-risk wildlife species, such as wolf, wolverine, fisher, lynx, peregrine falcon, and common loon.
- Provide information to visitors regarding listed species that occur in Ross Lake NRA and measures to promote their recovery.

Cultural Resources

Archeology

Law and Policy Source — The Antiquities Act of 1906; Historic Sites Act of 1935; National Historic Preservation Act; Archeological Resources Protection Act; Executive Order 11593, "Protection and Enhancement of the Cultural Environment;" *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the

National Historic Preservation Act (2008); NPS *Management Policies 2006* (§5.3.5.1); and Director’s Order 28, “Cultural Resource Management Guideline” call for the National Park Service to manage archeological resources in situ unless physical disturbance is justified and mitigated by data recovery or other means in concurrence with the Washington State Historic Preservation Officer. (See also 36 CFR Part 79 and the *Secretary of the Interior’s Standards and Guidelines for Archeological Documentation*.) In addition, management of archeological sites along the reservoirs is conducted in partnership with the City of Seattle, pursuant to conditions specified in the City’s 30-year license issued by the Federal Energy Regulatory Commission (FERC project No. 553), set to expire in 2025. Ross Lake archeological resources are currently managed in compliance with the Archeological Resources Mitigation and Management Plan which is in the stages of final approval and has been reviewed by the Skagit River tribes.

Desired Conditions:

- Archeological sites are identified and inventoried, and their significance is determined and documented.
 - Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable.
 - When disturbance or deterioration of an eligible property is unavoidable, the site is professionally documented and excavated, and the resulting artifacts, materials, and records are curated and conserved in consultation with the Washington State Historic Preservation Office, the three Skagit River tribes (Upper Skagit, Sauk-Suiattle, and Swinomish), and Seattle City Light (the latter only in those sites managed under FERC relicense No. 553).
 - Some archeological sites that can be adequately protected may be interpreted to the visitor.
 - Archeological site baseline data are available. Site conditions are monitored to record changes in resource conditions as a result of environmental conditions or visitor use impacts.
- To the extent feasible, archeological resources degraded from environmental conditions and visitor impacts are mitigated through data recovery or other appropriate site treatment techniques.
 - Archeological resources threatened by project development are mitigated first through avoidance or secondly through other preservation strategies such as data recovery.

Potential Management Strategies:

- Manage archeological properties in compliance with the Ross Lake Archeological Resources Mitigation and Management Plan for the effective period of the FERC No. 553 license issued to the City of Seattle.
- Gather field data regarding rock shelters, lithic scatters, hunting camps, and other resource types to develop an accurate predictive model of prehistoric site distribution and to address related research questions.
- Inventory, evaluate, and manage archeological resources that reflect late 19th and early 20th century activities. These could include mining sites, homestead sites, resort sites, cabin remains, associated trash dumps, as well as forest and NPS developments. National Register-eligible resources will be documented and listed.
- As needed on a case by case basis, monitor sites monthly, annually, or biannually.
- Educate visitors on regulations governing protection and conservation of archeological resources.
- Document, track, and prosecute for violations of cultural resource laws.
- Survey and inventory archeological sites throughout Ross Lake NRA; determine and document their significance.
- Treat all archeological resources as eligible for listing on the National Register of Historic Places pending a formal determination of eligibility.
- Maintain new site data and update in the Archeological Sites Management Information System and assess site eligibility according to National Register criteria.

Historic Structures

Law and Policy Source —The Antiquities Act of 1906; National Historic Preservation Act; Executive Order 11593, “Protection and Enhancement of the Cultural Environment;” *Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008); and The National Historic Preservation Act call for analyzing the effects of possible federal actions on historic structures on, or eligible for, the National Register and for inventorying and evaluating their significance and condition. *NPS Management Policies 2006* (§5.3.5.4) calls for the treatment of historic structures, including prehistoric ones, to be based on sound preservation practice to enable the long-term preservation of a structure’s historic features, materials, and qualities. (See also the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* and Director’s Order 28, “Cultural Resource Management Guideline.”)

Desired Conditions:

- Historic structures are inventoried and their significance and integrity are evaluated under National Register of Historic Places criteria.
- The qualities that contribute to the listing or eligibility for listing of historic structures on the National Register are protected in accordance with the *Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation*, unless it is determined through a formal process that disturbance or natural deterioration is unavoidable.
- Laws pertaining to historic preservation remain applicable within wilderness but must be generally administered to preserve the area’s wilderness character.
- The historic character of historic structures are managed in accordance with Section 5.3.5.4 of *NPS Management Policies 2006*.
- Historic structure inventories and reports are prepared, and existing reports are

amended as needed. Actions identified in historic structure reports are implemented, and a record of treatment are added to the reports.

- Identified and evaluated historic structures are monitored, inspected, and managed to enable the long-term preservation of a resource’s historic features, qualities, and materials.

Potential Management Strategies:

- Employ the comprehensive maintenance, protection, and preservation measures in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties*. For properties lacking specific plans, preservation actions would be based on the Secretary’s Standards and NPS policy and guidelines. Treat all historic structures as eligible for listing on the National Register of Historic Places pending formal determination (by National Park Service and Washington State Historic Preservation Officer).
- Consider frontcountry historic structures not actively being used in Ross Lake NRA for adaptive reuse by other public and private entities to assist in preservation of the structures.
- Create design guidelines and/or historic structure/cultural landscape reports for all developed areas in Ross Lake NRA to preserve the architectural and landscape-defining features. Include design review oversight to ensure the compatibility of new planning, design, and construction.
- Pursue basic preservation maintenance activities to avoid reconstruction of historic structures or cultural landscapes.
- Comply with cultural resource protection and preservation policies and directives, and the wilderness minimal requirement concepts in wilderness areas, for the maintenance of historic structures and cultural landscapes.
- Before modifying any historic structure listed or eligible for the National Register of Historic Places, consult with the Washington State Historic Preservation Officer, cultural resource advisors, and the Advisory Council for Historic Preservation, as appropriate.

Cultural Landscapes

Law and Policy Source — The Antiquities Act of 1906; Historic Sites Act of 1935; National Historic Preservation Act; Executive Order 11593, “Protection and Enhancement of the Cultural Environment;” *Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008); and *NPS Management Policies 2006* (§ 5.3.5.2) call for the preservation of the physical attributes, biotic systems, and uses of cultural landscapes that contribute to historical significance.

Desired Conditions:

- Cultural landscape inventories are conducted to identify landscapes potentially eligible for listing in the National Register and to assist in future management decisions for landscapes and associated resources, both cultural and natural.
 - The management of cultural landscapes focuses on preserving the landscape’s physical attributes, biotic systems, viewshed, and use when that use contributes to its historical significance.
 - The preservation, rehabilitation, restoration, or reconstruction of cultural landscapes is undertaken in accordance with the *Secretary of the Interior’s Standards for the Treatment of Historic Properties* with Guideline’s for the Treatment of Cultural Landscapes.
 - Laws pertaining to historic preservation remain applicable within wilderness but must be generally administered to preserve the area’s wilderness character.
 - The cultural landscapes of Ross Lake NRA retain a high degree of integrity.
 - Identified and evaluated cultural landscapes are monitored, inspected, and managed to enable the long-term preservation of a resource’s historic features, qualities, and materials.
- Actions identified in cultural landscape reports are implemented, and a record of treatment is added to the reports.

Potential Management Strategies:

- Treat cultural landscapes that are potentially eligible for listing in the National Register as eligible until a formal determination is made (by the National Park Service and Washington State Historic Preservation Office).
- Comply with cultural resource protection and preservation policies and directives, and the wilderness minimal requirement techniques in wilderness areas, for the maintenance of cultural landscapes and their associated viewsheds.
- Create design guidelines and/or cultural landscape reports for all developed areas in Ross Lake NRA to ensure that the landscape-defining features of these areas are preserved. These guidelines would include provisions for design review oversight to ensure the compatibility of new planning, design, and construction.

Ethnohistory

Law and Policy Source — The Antiquities Act of 1906; American Indian Religious Freedom Act; Native American Graves and Repatriation Act; Executive Order 13007, “Indian Sacred Sites Act;” and *NPS Management Policies 2006* (§ 5.3.5.3) call for gathering ethnographic information through anthropological and collaborative community research that recognizes the sensitive nature of such cultural data and documents the meanings that traditionally associated groups assign to traditional natural and cultural resources and the landscapes they form. In accordance with the National Historic Preservation Act, the purpose is to preserve, conserve, and encourage the continuation of the diverse traditional prehistoric, historic, ethnic, and folk cultural traditions that underlie, and are a living expression of, American heritage as manifested in the traditional use of ethnographic resources in park units. Executive Order 13007 also calls for NPS managers to accommodate the access to and the ceremonial use of American Indian sacred sites by practitioners and to preserve the sites’ physical integrity.

Desired Conditions:

- Appropriate cultural anthropological research is conducted in consultation with groups traditionally associated with Ross Lake NRA.
- To the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, the National Park Service accommodates access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of these sacred sites.
- All executive agencies are required to consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments before taking actions that potentially affect federally recognized tribal governments. Native Americans and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items may be disturbed or are encountered on park lands.
- All ethnographic resources determined eligible for listing or listed in the National Register are protected. If disturbance of such resources is unavoidable, formal consultation with the Washington State Historic Preservation Officer and the Advisory Council on Historic Preservation, and with Native American tribes as appropriate, is conducted.
- The identities of community consultants and information about sacred and other culturally sensitive places and practices are kept confidential according to protocols established in consultation with the affected tribal governments.
- Potentially sensitive natural and cultural resources and traditional cultural properties (ethnographic resources eligible for the National Register of Historic Places) are identified, recorded, and evaluated through consultation with affected tribes. The integrity of traditional cultural properties is preserved and protected.
- Government-to-government consultation is conducted and maintained with each of the

tribes traditionally associated with the Skagit River watershed.

Potential Management Strategies:

- Survey and inventory ethnographic resources and assess their significance.
- Treat all ethnographic resources as eligible for listing in the National Register of Historic Places pending a formal determination by the National Park Service.
- Continue to encourage the employment of Native Americans in the NPS to improve communications and working relationships and encourage cultural diversity in the workplace.
- Conduct consultation with affiliated tribes throughout the course of the planning process for this and other documents.
- Continue to work collaboratively with the tribes when conducting research related to the resources they value.
- NPS staff will conduct government-to-government relations with each of the three Skagit River tribes that have traditionally associated with the Skagit Watershed.

Tribal Issues

Law and Policy Source — The Presidential Memorandum of April 29, 1994; Executive Order 13175; Executive Order 13007, “Indian Sacred Sites;” a variety of federal statutes (such as the National Historic Preservation Act); and *NPS Management Policies 2006* (§1.11.1) call for the National Park Service to maintain a government-to-government relationship with federally recognized tribal governments.

Desired Conditions:

- The National Park Service and three tribes culturally affiliated with Ross Lake NRA (Upper Skagit, Sauk-Suiattle, and Swinomish) maintain on-going government-to-government consultation. NPS managers and staff respect the viewpoints and needs of the tribes, continue to promptly address conflicts that occur, and consider American Indian values in management and operation of Ross Lake NRA.

Potential Management Strategies:

- NPS staff would continue to meet and communicate with tribal officials to identify problems and issues of mutual concern and interest and work together to take actions to address these concerns.
- Tribal officials would continue to be kept informed of planning and other actions in Ross Lake NRA that could affect the tribes.
- Upon request, NPS staff would provide technical assistance to the tribes, including sharing information and resources, to address problems and issues of mutual concern.
- NPS staff would continue to recognize the past and present existence of native peoples in the region and the traces of their land use and occupation as an important part of the cultural environment to be researched, preserved, and interpreted, as appropriate.
- NPS staff maintain and promote consultation protocols established with the three Skagit River tribes. Protocols include NPS staff attendance at tribal council or cultural committee meetings and other meetings involving NPS and tribal staff, maintaining agreed-upon tribal contacts in case of unanticipated discoveries, continuing to host project area tours for tribal staff, and seeking tribal involvement in cultural resource management efforts.
- NPS staff would accommodate access to traditionally used areas in ways that are consistent with NRA purposes and American Indian values; and that avoid adversely affecting the physical integrity of such sites and resources.
- NPS staff would conduct appropriate ethnographic, ethnohistorical, or cultural anthropological research in conjunction with, and in consultation with, American Indian tribes traditionally associated with Ross Lake NRA.

Museum Collections

Law and Policy Source — The Antiquities Act of 1906; Historic Sites Act of 1935; American Indian Religious Freedom Act; Archeological Resources Protection Act; Native American Graves and Repatriation Act; National Historic Preservation Act; Executive Order 11593, “Protection and Enhancement of the Cultural



Visitors enjoying the majestic views from the Diablo Lake Overlook. Photo by Michael Silverman.

Environment;” *Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation*; Programmatic Agreement among the National Park Service (U.S. Department of the Interior), the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008); and *NPS Management Policies 2006* (§5.3.5.5) state that the NPS “. . . will collect, protect, preserve, provide access to, and use objects, specimens, and archival and manuscript collections. . . in the disciplines of archeology, ethnography, history, biology, geology, and paleontology to aid understanding among park visitors, and to advance knowledge in the humanities and sciences.” Directors Order #24, “NPS Museum Collection Management,” and its corresponding handbook provide additional guidance and direction for ensuring that NPS managers and staff have information on standards and actions for successfully managing museum collections and providing a means of measuring and evaluating progress in preserving, protecting, documenting, accessing, and using museum collections.

Desired Conditions:

- All museum collections (objects, specimens, and manuscript collections) are identified and inventoried, catalogued, documented, preserved, and protected.
- Provision is made for access to and use of Ross Lake NRA’s museum collections for exhibits, research, and interpretation.
- The qualities that contribute to the significance of collections are protected in accordance with established standards.
- Research and development projects include plans for the curation of collected objects and specimens.
- Ross Lake NRA’s museum collections are housed in appropriate facilities that provide protection for current collections and allow for future collection expansion.
- Museum collections provide documentation of Ross Lake NRA’s natural and cultural resources.

Potential Management Strategies:

- Inventory and catalog all museum collections in accordance with standards in the NPS Museum Handbook.
- Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.
- Continue outreach efforts to visitors, provide access to and give tours of the collections to the community, and provide field assistance with research projects as needed.
- Collections facilities would be upgraded, improved, and expanded according to the recommendations of the North Cascades NP Complex Museum Management Plan 2004.
- Provide efficient access to reference materials and information.

Wilderness

Wilderness Resources, Character, and Values

Law and Policy Source — Wilderness Act of 1964; National Historic Preservation Act; Archeological and Historic Preservation Act; *NPS Management Policies 2006* (§6.3, 6.4); Director’s Order 41, “Wilderness Preservation and Management” and corresponding Reference Manual 41; and Director’s Order 28, “Cultural Resource Management Guideline” provide guidance and direction for the management of wilderness areas and the preservation of wilderness character and wilderness resources.

Desired Conditions:

- The National Park Service will manage wilderness areas including those proposed for wilderness designation “for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness” (16 USC 1131 Section 2(a)).
- The NPS ensures that the land’s “primeval character and influence” is retained and protected, that visitors continue to find “outstanding opportunities for solitude or a primitive and unconfined type of recre-

ation,” and that the landscape “generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable” (16 USC 1131 Section 2(c)).

- The Wilderness Act specifies that “each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character” (16 USC 1131 Section 4(b)).
- The Wilderness Act specifies that the designation of any area of the national park system as wilderness “shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system” under the various laws applicable to that unit (16 USC 1133 Section 4(a)(3)).
- Cultural resources that have been included within wilderness will be protected and maintained according to the pertinent laws and policies governing cultural resources using management methods that are consistent with the preservation of wilderness character and values.
- Natural processes, native components, and the interrelationships among them are protected, maintained, and/or restored to the extent possible, while providing opportunities for their enjoyment as wilderness.
- Present and future visitors enjoy the unique qualities offered in wilderness. These include the experiences of solitude, remoteness, risk, challenge, self-sufficiency, discovery, and observation of an untrammeled ecosystem.
- Wilderness management is based on the minimum requirement concept, allowing only those actions necessary and appropriate for administration of the area as wilderness and that do not cause a significant impact to wilderness resources and character. Implementation of such actions is done using techniques and types of equipment necessary to ensure that impacts on wilderness resources and character are minimized.
- The values of the wilderness in Ross Lake NRA are understood by the public and staff through education in wilderness ethics, use,

and using management skills and techniques to promote and preserve these values.

- Operations and wilderness functions are coordinated in Ross Lake NRA to manage and protect natural and cultural resources in wilderness and preserve wilderness character.
- On-going communication about wilderness management policies and projects is maintained with the U.S. Forest Service, and work will continue to be done with other local and regional groups, communities, agencies, and tribal governments to preserve wilderness values.
- The primary elements that define wilderness character (Untrammeled, Undeveloped, Naturalness, and Solitude or Primitive and Unconfined Recreation) are protected and managed for through a monitoring program.

Potential Management Strategies:

- Maintain a current wilderness management plan.
- Develop and implement research programs related to the wilderness ecosystem and key natural resources and visitor experiences.
- Inventory wilderness resources, facilities, and operational activities.
- Define a range of desired conditions for wilderness resources, visitor wilderness experiences, wilderness character, and management and operational techniques.
- Develop and implement a program to restore conditions that are outside the range of desired conditions for wilderness resources, visitor wilderness experiences, and wilderness character.
- Manage activities to maintain and restore resource conditions, to protect visitor experiences, and to protect and restore wilderness character.
- Develop an educational program for visitors, staff, local community members, and others that enhances the appreciation of wilderness resources.
- Monitor the wilderness resources and incorporate the results of monitoring to refine management programs.
- Develop and implement a wilderness character monitoring program based on inter-agency guidelines.

Recreation

Visitor Opportunities

Law and Policy Source — The NPS Organic Act; NPS General Authorities Act; Code of Federal Regulations, Title 36; Americans with Disabilities Act; Architectural Barriers Act; Rehabilitation Act; and NPS *Management Policies 2006* (§1.4, 8.1) all address the importance of park units being available to all Americans to enjoy and experience. Current laws, regulations, and policies leave considerable room for judgment about the best mix of types and levels of visitor use activities, programs, and facilities. However, all visitor use of the National Park System must be consistent with the following guidelines.

Desired Conditions:

- Ross Lake NRA's resources are preserved unimpaired for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in Ross Lake NRA. No activities occur that would cause derogation of the values and purposes for which Ross Lake NRA has been established.
- Visitors will have opportunities to understand and appreciate the significance of Ross Lake NRA and its resources and to develop a personal stewardship ethic.
- To the extent feasible, programs, services, and facilities in Ross Lake NRA are accessible to, and usable by, all people, including those with disabilities.
- For all zones or districts in Ross Lake NRA, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas.
- Visitors to Ross Lake NRA are able to obtain visitor orientation and trip-planning information through a variety of media; educational programs are available.
- Frontcountry day use visitation and overnight facilities are provided in some developed areas. Roads, trails, campgrounds, and related facilities are provided, but locations and numbers may be modified for resource

protection, restoration, visitor experience, or increased visitation.

- The level and type of commercial guided activities is managed to protect resources and the visitor experience.

Potential Management Strategies:

- For all zones, districts, or other logical management divisions in Ross Lake NRA, identify visitor carrying capacities for managing public use and ways to monitor for and address unacceptable impacts on resources and visitor experiences.
- Monitor visitor comments on issues such as crowding, encounters with other visitors in the backcountry, availability of campsites at busy times of the year, and availability of parking.
- Conduct periodic visitor surveys to stay informed of changing visitor demographics and desires to better tailor programs to visitor needs and desires.
- Develop outreach programs for and with schools, tribes, and community organizations.
- Provide a variety of educational opportunities in Ross Lake NRA with continued facility-based contacts and guided activities. Web-based education would be provided. Some activities could be for a fee.
- Coordinate education programs with partners and focus on improving the general understanding of Ross Lake NRA's natural and cultural resources, biodiversity, the protection of resources and natural processes, research, stewardship, wilderness, values, and recreational and visitor opportunities.

Public Health and Safety

Law and Policy Source — NPS *Management Policies 2006* (§8.2.5) states that the saving of human life would take precedence over all other management actions as the National Park Service strives to protect human life and provide for injury-free visits. Other federal statutes and regulations that apply to the protection of public health and safety include Director's Order 50 and RM-50, "Safety and Health;" Director's Order 58 and RM-58, "Structural Fire Management;" Director's Order 83 and RM-83,

“Public Health;” Director’s Order 51 and RM-51, “Emergency Medical Services;” Director’s Order 30 and RM-30, “Hazard and Solid Waste Management;” and OSHA 29CFR.

Desired Conditions:

- While recognizing that there are limitations on its capability to totally eliminate all hazards, the National Park Service and its partners work cooperatively to provide a safe and healthful environment for visitors and employees. The NPS staff strive to identify recognizable threats to safety and health and protect property by applying nationally accepted standards. Consistent with mandates and nonimpairment, the NPS staff reduces or removes known hazards or applies appropriate mitigating measures, such as closures, guarding, gating, education, and other actions.

Potential Management Strategies:

- A documented safety program would be maintained for Ross Lake NRA to address health and safety concerns and identify appropriate levels of action and activities.
- Maintenance efforts would continue to ensure that all potable water systems and waste water systems in Ross Lake NRA would continue to meet state and federal requirements.
- Interpretive signs and materials would be provided as appropriate to notify visitors of potential safety concerns, hazards, and procedures to help provide for a safe visit to Ross Lake NRA and to ensure visitors are aware of possible risks of certain activities. NPS staff would continue to work with local emergency and public health officials to make reasonable efforts to search for lost persons and rescue sick, injured, or stranded persons.

Transportation to and within Ross Lake NRA

Law and Policy Source — NPS *Management Policies 2006* (§9.2) calls for NPS managers to identify solutions to transportation issues that preserve natural and cultural resources while providing a high-quality visitor experience.

Management decisions regarding transportation generally require a comprehensive alternatives analysis and thorough understanding of natural systems and trends and their consequences. The location, type, and design of multimodal transportation facilities (such as roads, bridges, parking areas, sidewalks, bikeways, pedestrian trails, transit centers, and shelters) strongly influence the quality of the visitor experience and the preservation of park unit resources.

Desired Conditions:

- Multimodal transportation facilities in Ross Lake NRA provide access for the protection, use, and enjoyment of Ross Lake NRA’s resources. They preserve the integrity of the surroundings; respect ecological processes; protect natural, cultural and scenic resources; and provide the highest visual quality and a rewarding visitor experience.

Potential Management Strategies:

- NPS staff would participate in transportation studies and planning processes that may result in links to Ross Lake NRA or impacts to resources. NPS managers would work closely with other federal agencies (such as the U.S. Department of Transportation, Federal Highway Administration), tribal, state and local governments (such as the Washington State Department of Transportation), regional planning bodies, citizen groups; and others to enhance partnering and funding opportunities, and to encourage effective regional transportation planning.
- In general, the preferred modes of transportation would be those that contribute to maximum visitor enjoyment of, and minimum adverse impacts to, resources and values. Before a decision is made to design, construct, expand, or upgrade transportation access to or within Ross Lake NRA, non-construction alternatives—such as distributing visitors to alternative locations—would be fully explored. If non-construction alternatives would not achieve satisfactory results, then a development solution should consider whether the project:
 - ♦ is appropriate and necessary to meet management needs

- ◆ is designed with extreme care and sensitivity to the landscape through which it passes
- ◆ would not cause adverse impacts to natural and cultural resources, and would minimize or mitigate those impacts that cannot be avoided
- ◆ reduces traffic congestion, noise, air pollution, and adverse effects on resources and values
- ◆ would not violate federal, state, or local air pollution control plans or regulations
- ◆ would not cause use in the areas to exceed the areas' user capacity
- ◆ incorporates the principles of energy conservation and sustainability
- ◆ is able to demonstrate financial and operational sustainability
- ◆ incorporates universal design principles to provide for accessibility for all people, including those with disabilities
- ◆ takes maximum advantage of interpretive opportunities and scenic values
- ◆ is based on a comprehensive and multidisciplinary approach that is fully consistent with Ross Lake NRA's general management plan and asset management plan
- ◆ enhances the visitor experience by offering new or improved interpretive or visitor opportunities, by simplifying travel within Ross Lake NRA, or by making it easier or safer to see features within Ross Lake NRA.

Operations

Utilities and Communication Facilities

Law and Policy Source — The Telecommunications Act of 1996 directs all federal agencies to assist in the national goal of achieving a seamless telecommunications system throughout the United States by accommodating requests by telecommunication companies for the use of property, rights-of-way, and easements to the extent allowable under each agency's mission. The National Park Service is legally obligated to permit telecommunication infrastructure in park units if such facilities can be structured to avoid interference with park unit purposes.

Rights-of-way for utilities to pass over, under, or through NPS property may be issued only pursuant to specific statutory authority and generally only if there is no practicable alternative to such use of NPS lands. Statutory authorities in 16 USC 5 and in NPS *Management Policies 2006* (§8.6.4) provide guidance on these rights-of-way. Seattle City Light has powerline rights-of-way in Ross Lake NRA including an under-water powerline to Colonial Creek Campground. Additionally, they maintain a communications tower at the Babcock Creek site and fiber optic cables to support telecommunications.

Desired Conditions:

- Ross Lake NRA resources or public enjoyment are not degraded by nonconforming uses. Telecommunication structures are permitted in Ross Lake NRA to the extent they do not jeopardize Ross Lake NRA's mission and resources. No new nonconforming use or rights-of-way are permitted through Ross Lake NRA without specific statutory authority and approval by the director of the National Park Service or his/her representative and are permitted only if there is no practicable alternative to such use of NPS lands.

Potential Management Strategies:

- NPS staff would work with service companies, local communities, and the public to locate new utility lines and maintain existing lines so that there is minimal effect on resources.
- If necessary, and there are no other options, new or reconstructed utilities and communications infrastructure would be placed in association with existing structures and along roadways or other established corridors in developed areas. For reconstruction or extension into undisturbed areas, routes would be selected that minimize impacts on Ross Lake NRA's natural, cultural, and visual resources. Utility lines would be placed underground to the maximum extent possible, away from sensitive resources.
- NPS policies would be followed in processing applications for commercial telecommunication facilities.

Relations with Private and Public Organizations, Owners of Adjacent Land, and Governmental Agencies

Law and Policy Source — The NPS *Management Policies 2006* (§1.6) stresses the need for cooperative conservation beyond park boundaries. This cooperation is necessary in order for the National Park Service to fulfill its mandate to preserve the natural and cultural resources unimpaired for future generations. Local and regional cooperation may involve other federal agencies, tribal, state, and local governments, neighboring landowners, and nongovernmental and private sector organizations.

Desired Conditions:

- Ross Lake NRA is managed as part of a greater ecological, social, economic, and cultural system.
- Good relations are maintained with adjacent landowners, such as the U.S. Forest Service, BC Parks, surrounding communities, and private and public groups that affect, and are affected by, Ross Lake NRA.
- Ross Lake NRA is managed proactively to resolve external issues and concerns and ensure that the resources and values of Ross Lake NRA are not compromised.
- Because Ross Lake NRA is an integral part of a larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts, protect Ross Lake NRA resources, and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, American Indian tribes, neighboring landowners, and all other concerned parties.

Potential Management Strategies:

- NPS staff would continue to establish and foster partnerships with public and private organizations to achieve the purpose of Ross Lake NRA. Partnerships would continue to be sought for resource protection, research, education, and visitor enjoyment purposes.
- To foster a spirit of cooperation with neighbors and encourage compatible adjacent

land uses, NPS staff would continue to keep landowners, land managers, local governments, and the public informed about management activities. Periodic consultations would continue with landowners who might be affected by visitors and management actions.

- NPS staff would continue to respond promptly to conflicts that arise over NPS activities, visitor access, and proposed activities and developments on adjacent lands that could affect Ross Lake NRA.
- NPS staff may provide technical and management assistance to landowners to address issues of mutual interest. NPS staff would continue to work closely with adjacent landowners, local, state, and federal agencies, and tribal governments whose programs affect, or are affected by, activities in Ross Lake NRA.
- NPS managers would continue to pursue cooperative regional planning whenever possible to integrate the unit into issues of regional concern.

Climate Change and Sustainability

Law and Policy Source — The Energy Independence and Security Act of 2007; Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management;” Executive Order 13514, “Federal Leadership in Environmental, Energy, and Economic Performance;” DOI Secretarial Order 3226, “Evaluating Climate Change Impacts in Management Planning;” DOI Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources;” and the NPS Climate Change Response Strategy 2010 guide NPS actions surrounding climate change and sustainability.

Desired Conditions:

- The NPS would utilize environmentally preferable materials, products, and services to design, construct, maintain, and operate high performance sustainable buildings.
- The NPS would work together with other federal, state, tribal and local governments, and private landowner partners to develop

strategies at multiple scales, including landscape-level strategies, for understanding and responding to climate change impacts.

- The NPS would consider and analyze potential climate change impacts when undertaking long-range planning exercises, setting priorities for scientific research and investigations, and/or when making major decisions affecting natural and cultural resources.
- The NPS would engage in partnerships to implement projects and activities that contribute to the conservation of species, natural communities, and lands and waters placed at risk by changing climate conditions.
- The NPS would continue to provide and foster state-of-the-art science to better understand the impacts of climate change and to develop science-based adaptive management strategies for natural and cultural resource managers.
- The NPS would continue to minimize the park's contributions to climate change, implement strategies to improve sustainability and energy efficiency, and decrease the park's carbon footprint and consumption of resources.

- Develop, prioritize, and implement management strategies to preserve climate-sensitive cultural resources.
- Enhance the sustainable maintenance, design, and construction of park infrastructure.
- Substantially reduce the park's carbon footprint from 2008 levels by 2016 through aggressive commitment to environmentally preferable operations.
- Integrate climate change mitigation into the park's business practices.
- Promote biological carbon sequestration as a function of healthy ecosystems.
- Coordinate and distribute climate change information throughout the park.
- Increase climate change knowledge and understanding within the park.
- Provide external communications about the implications of climate change and the NPS response.
- Model and communicate sustainable practices that lead by example.

Potential Management Strategies:

- Engage in the Climate Friendly Parks program.
- Use the best available scientific data and knowledge to inform decision-making in regard to climate change.
- Collaborate with partners to develop, test, and distribute the best results from climate change models.
- Inventory and monitor key attributes of the natural resources, cultural resources, and visitor experiences likely to be impacted by climate change.
- Use best available science to evaluate and manage greenhouse gas storage and emissions in North Cascades NP Complex.
- Incorporate climate change considerations and responses in all levels of planning.
- Implement adaptation strategies that promote ecosystem resilience and enhance restoration, conservation, and preservation of park resources.





Youth participate in fish surveys on Ross Lake. Photo by Michael Silverman.

CHAPTER 3:

THE PLAN

This chapter outlines the various elements of the general management plan for Ross Lake NRA, including: an explanation of management zones in the NRA, a description of specific actions in the plan, the estimated costs of implementing the plan, guidance for user capacity, and mitigation measures that will be taken to reduce impacts to resources from implementation of this plan.

OVERVIEW OF THE PLAN

This general management plan focuses on managing Ross Lake NRA as a gateway to millions of acres of wilderness, providing enhanced visitor opportunities along the North Cascades Highway, and making better use of facilities along that corridor, while ensuring the long-term stewardship of the surrounding North Cascades ecosystem and wilderness.

To fulfill this vision, this general management plan balances visitor services and recreational access with the long-term protection of the natural and cultural resources and wilderness values that support the purpose and significance of the NRA.

Through the specific actions described in this plan, natural resources, including ecosystem functions and processes, air quality, soundscapes, water resources, vegetation and wildlife will be ensured long-term stewardship and preservation in the context of a functioning ecosystem, and impacted areas will receive appropriate restoration to maintain the integrity of the North Cascades ecosystem. Commitments to long-term ecological monitoring and expanded collaborative relationships and sustainable programs with partners will enhance understanding and management across the entire North Cascades ecosystem.

Management of wilderness and backcountry areas will focus on the qualities of wilderness character, ecosystem preservation, and compatible recreational activities. Conversion of the Thunder Creek Potential Wilderness to formal designation and inclusion in the Stephen Mather

Wilderness will add 3,559 acres to the National Wilderness Preservation System.

Cultural resources including archeology, historic structures, cultural landscapes, ethnohistory, and museum collections will be ensured long-term stewardship.

Additional and improved visitor amenities along the North Cascades Highway, such as new day hiking trails, updated interpretive displays at the North Cascades Visitors Center, renovated parking areas, and new camping facilities at established campgrounds, will enhance the visitor experience to Ross Lake National Recreation Area by improving visitor safety, increasing visitor access, and creating a more tangible connection to the greater North Cascades ecosystem. These development improvements will also concentrate impacts to the NRA along a previously disturbed highway corridor while maximizing efficient use of current facilities.

Management of Ross Lake and the other reservoirs will involve recreation management strategies, such as implementing clean boating technologies and noise abatement procedures for seaplanes, in order to maintain and improve visitor safety, soundscapes, and water quality while promoting visitor access and encouraging solitude and connection with the natural world.

Ultimately, this plan achieves an optimal balance between resource protection and visitor use and enjoyment for the next 15-20 years, the expected lifespan of this planning effort.

ELEMENTS OF THE PLAN

Management Zones

In order to consistently manage Ross Lake NRA and effectively balance visitor use and access with resource protection, the NPS developed and applied five management zones for Ross Lake NRA that define specific desired conditions and management approaches to be achieved and maintained in each area of Ross Lake NRA, including the types of activities and facilities that are appropriate in that management zone. These zones include:

1. Frontcountry Zone

This zone extends along the entire length of the North Cascades Highway and encompasses developed recreational sites and nearby areas, including: the North Cascades Visitor Center and campground areas, Goodell campsites, Diablo Lake, the Environmental Learning Center area, Colonial Creek Campground area, Thunder Knob, the southern portion of the Ross Lake area to Cougar Island and Hidden Hand on Ruby Arm, Hozomeen area, and the northern portion of Ross Lake from the international border to Silver Creek. Along the North Cascades Highway, this zone includes 100 feet on either side of the highway center line. Lands within this 200 foot corridor that are owned or managed through easements by either the Washington State Department of Transportation (WSDOT) or Seattle City Light (SCL) are zoned Frontcountry. This 200 foot corridor allows for limited and necessary modifications to the North Cascades Highway, while ensuring that areas outside of this corridor are protected from more intensive development and use. This zone covers about five percent of Ross Lake NRA.

2. Backcountry Zone

This zone includes areas that are dominated by natural conditions where recreational opportunities focus on providing a sense of remoteness and immersion in nature within a mountainous wilderness setting. The Backcountry Zone also conceptually

functions as a transition area between the Frontcountry and Wilderness Zones. In the Skagit River area, the Backcountry Zone is located between the Skagit River Zone and the Wilderness Zone, including the Thornton Lakes access area and upper Newhalem Creek. The Backcountry Zone includes most of Gorge Lake, upper Thunder Arm, and large expanses of land surrounding Diablo Lake and lower Ross Lake. The Backcountry Zone also covers the entire surface of Ross Lake and its shoreline from Cougar Island to Silver Creek on Ross Lake. This zone covers about 18.5 percent of Ross Lake NRA.

3. Wilderness Zone

The Wilderness Zone includes all designated and potential wilderness areas in Ross Lake NRA. Approximately 73 percent of Ross Lake NRA is in this zone.

4. Skagit River Zone

The Skagit River Zone includes the Skagit River and adjacent riparian corridor below Gorge Powerhouse in Newhalem and up Goodell Creek to the wilderness boundary. In conformance with the Wild and Scenic River Management Guidelines, this zone is ¼ mile on either side of the Skagit River through most areas. About three percent of Ross Lake NRA is in this zone.

5. Hydroelectric Zone

The Hydroelectric Zone includes SCL facilities and primary management areas, including the hydroelectric projects at Ross, Diablo, and Gorge Dams. About 0.5 percent of Ross Lake NRA is located in this zone.

See Figures 3.1-3.5 for maps of specific boundaries of the management zones.

The management zones and prescriptions for Ross Lake NRA are further presented in Table 3.1 which includes a zone concept, desired natural and cultural resource conditions, visitor opportunities and use, facilities, access and transportation, and lands, designations, and jurisdiction for each zone.

Management Zones Ross Lake General Management Plan

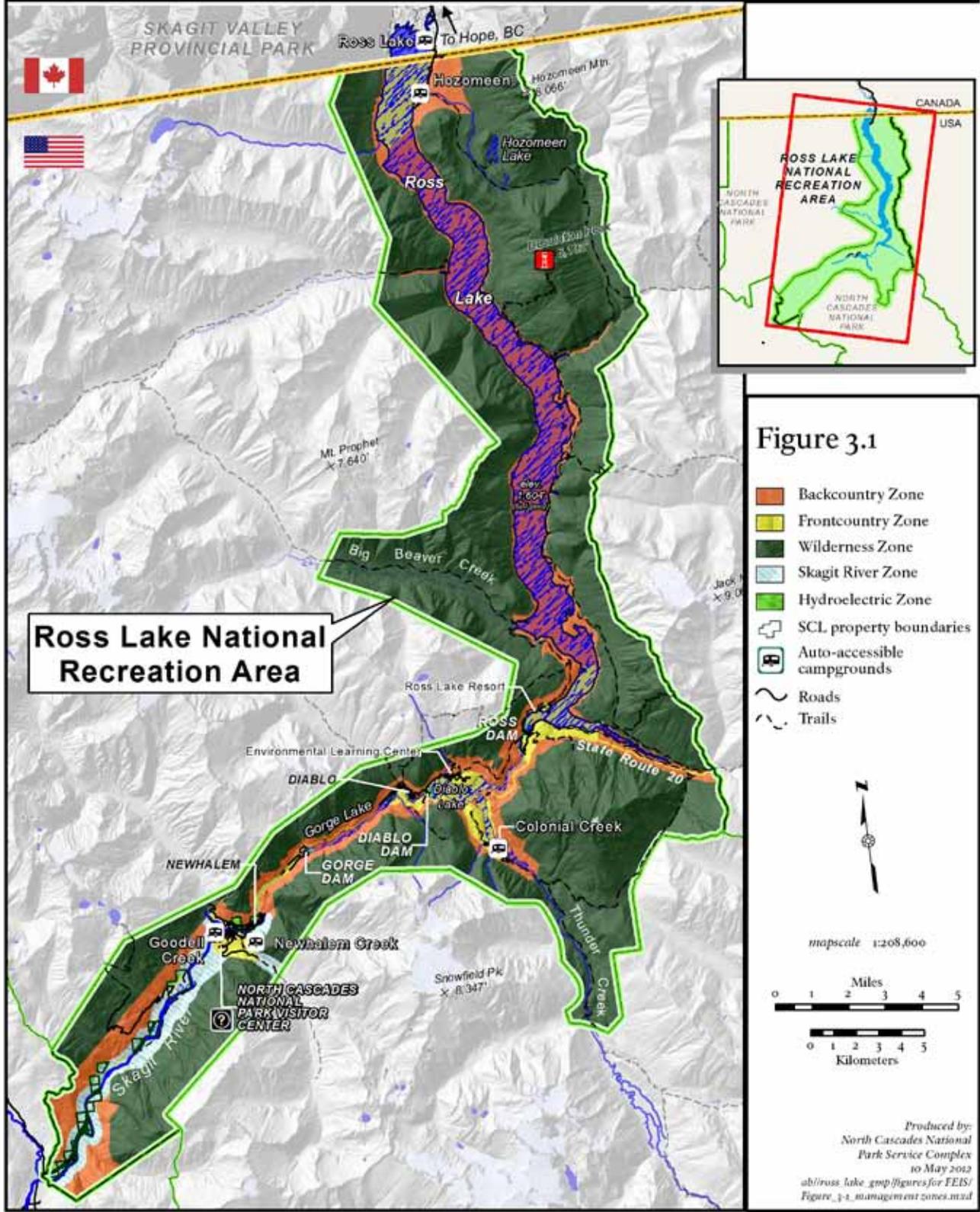


Figure 3.1

- Backcountry Zone
- Frontcountry Zone
- Wilderness Zone
- Skagit River Zone
- Hydroelectric Zone
- SCL property boundaries
- Auto-accessible campgrounds
- Roads
- Trails

N

mapscale 1:208,600

Miles
0 1 2 3 4 5

Kilometers
0 1 2 3 4 5

Produced by:
North Cascades National
Park Service Complex
10 May 2012
ab/ross_lake_gmp/figures_for_FEIS/
Figure_3-1_management_zones.mxd

Management Zones - Newhalem to Gorge Dam Ross Lake General Management Plan

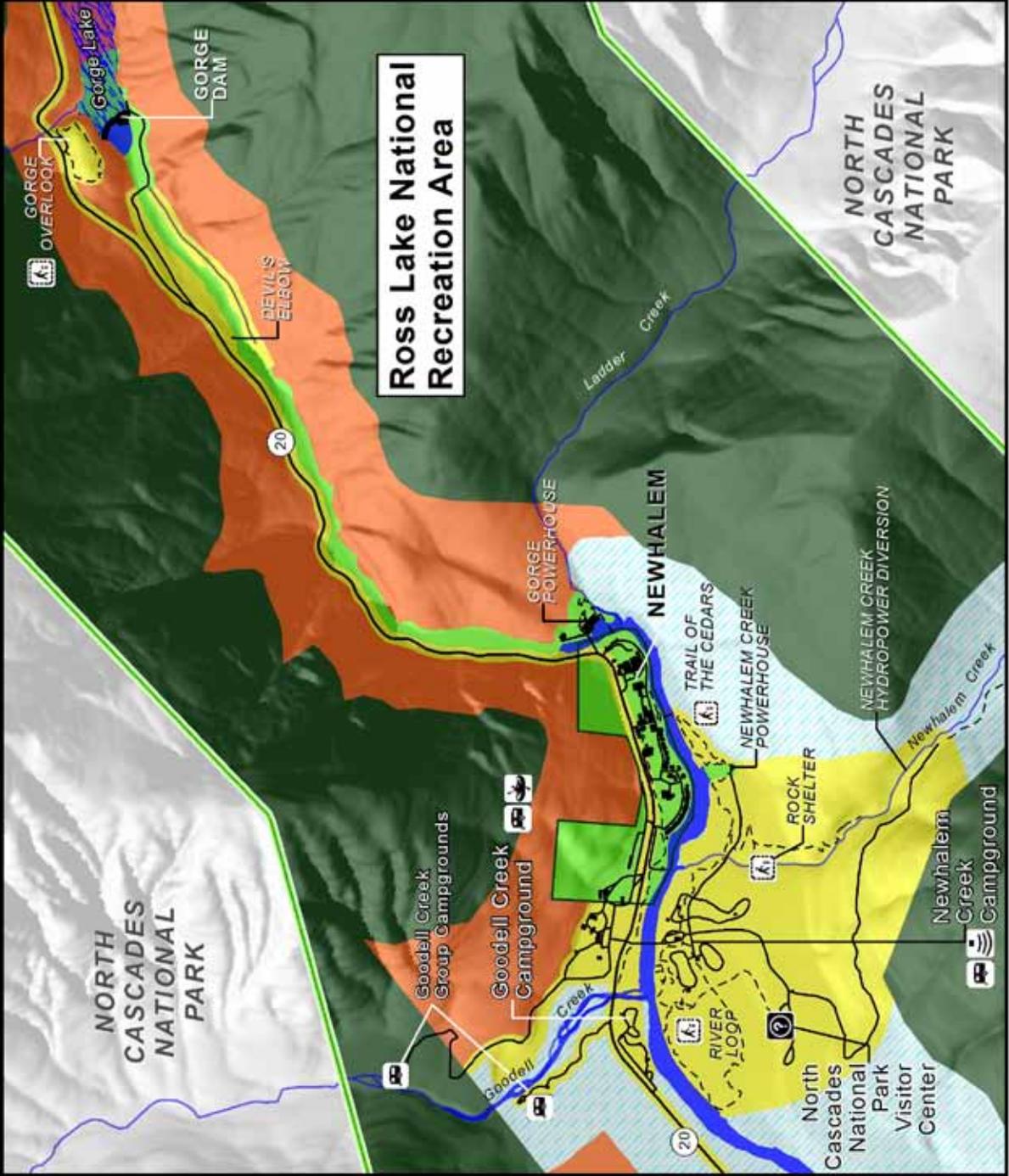
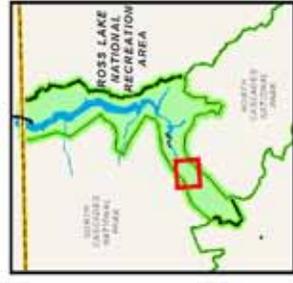


Figure 3.2

- Backcountry Zone
- Frontcountry Zone
- Wilderness Zone
- Skagit River Zone
- Hydroelectric Zone
- SCL property boundaries
- Structures
- Auto-accessed campgrounds
- Amphitheater
- Interpretive trails
- Visitor Center
- Raft launch/ take-out
- Roads
- Trails

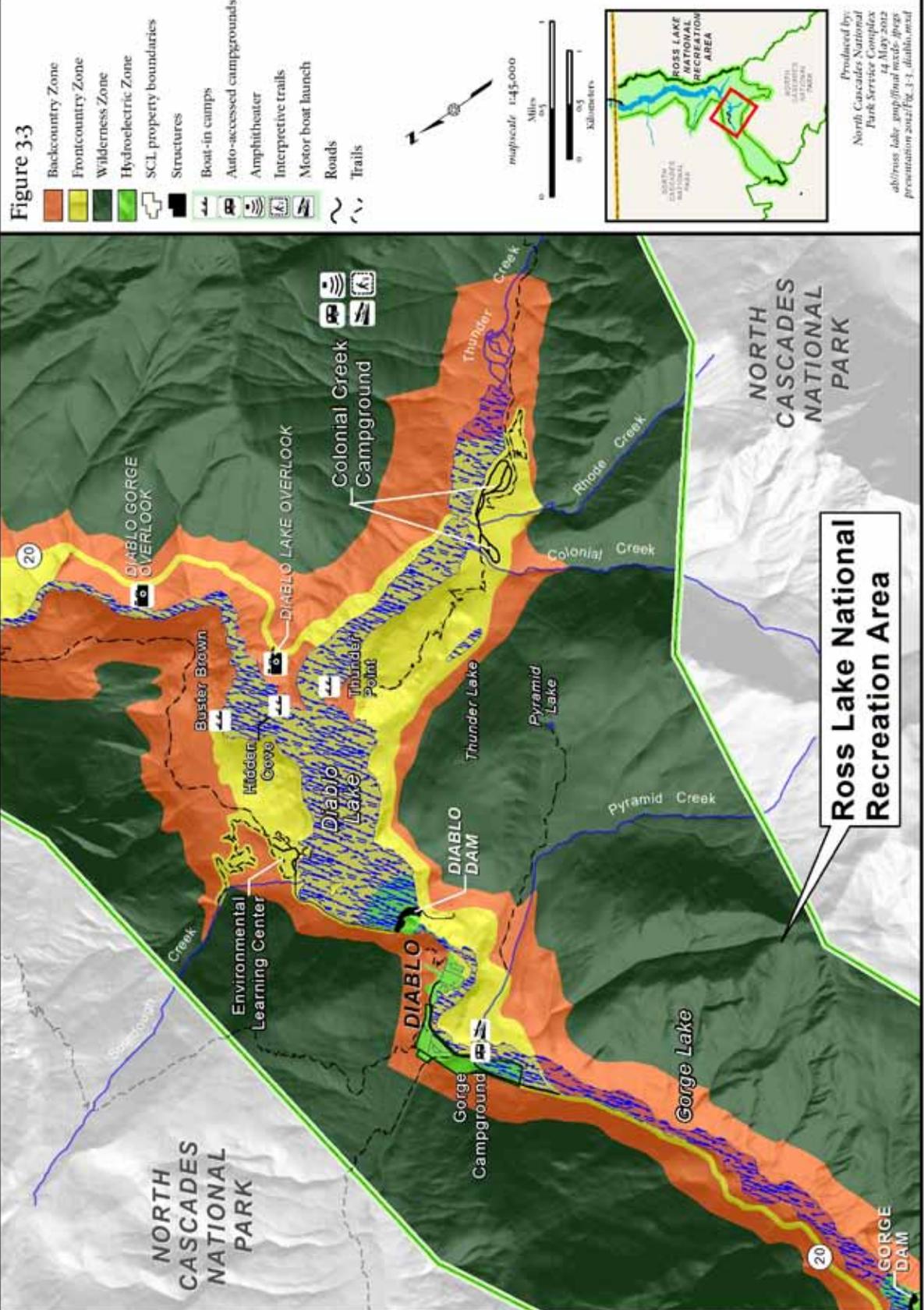


mapscale 1:26,000
 0 500 1000
 0 500 1000
 Yards Meters



Produced by
 North Cascades National
 Park Service Complex
 10 May 2012
 ab/ross_lake_gmp/figures
 for FEIS/fig_3.2_NorthGorge.mxd

Management Zones - Gorge Dam to Diablo Gorge Ross Lake General Management Plan



Management Zones - Lower Ross Lake Ross Lake General Management Plan

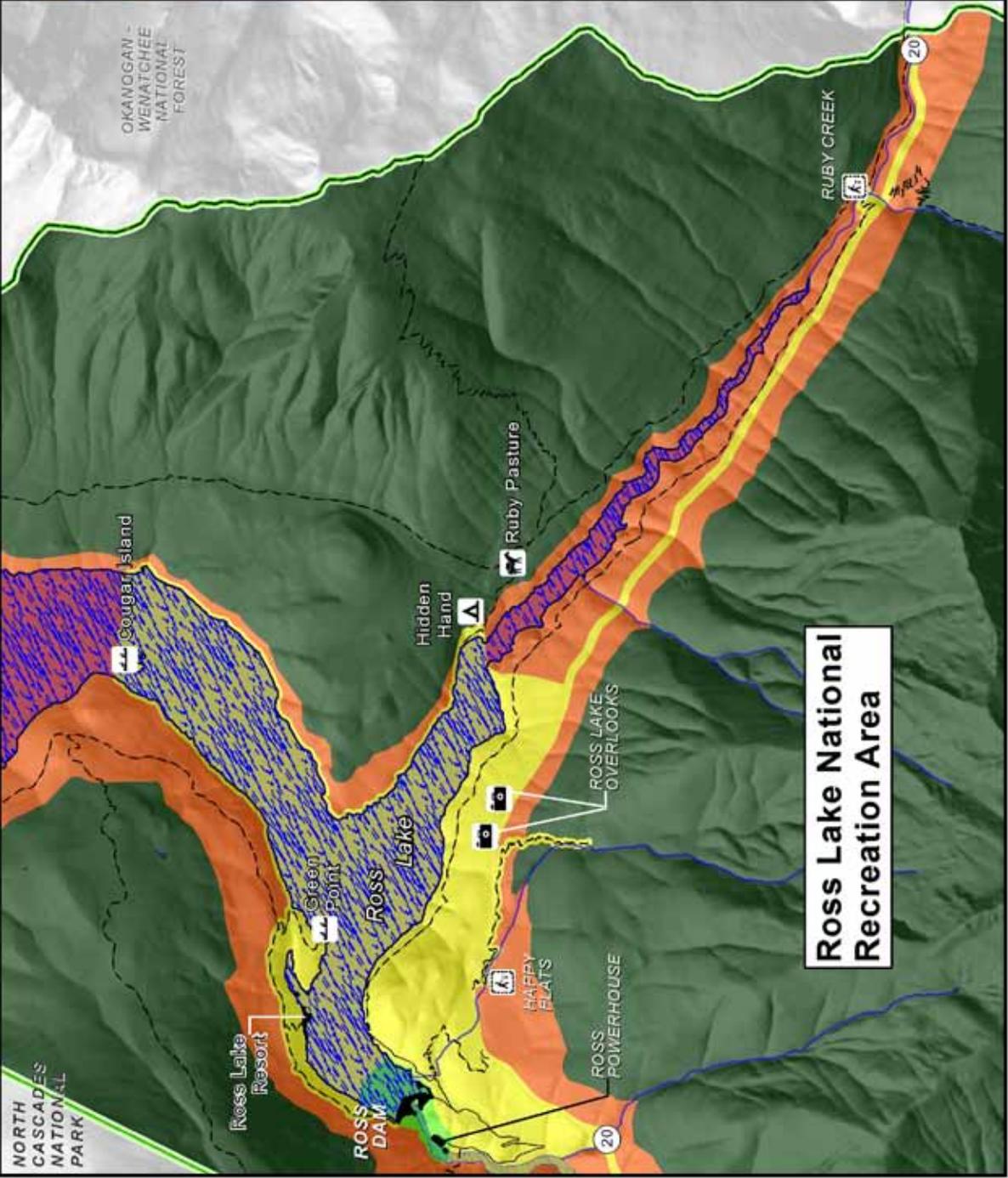
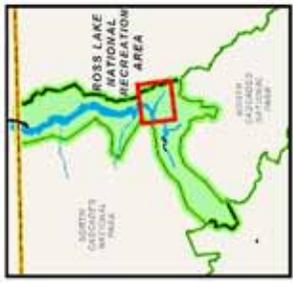


Figure 3-4

- Backcountry Zone
- Frontcountry Zone
- Wilderness Zone
- Hydroelectric Zone
- Structures
- Boat-in camps
- Hiker camps
- Stock camps
- Interpretive trails
- Roads
- Trails



map scale 1:38,000



Produced by
North Cascades National
Park Service Complex
14 May 2012
ah/ross lake_gmp/final/arcswp02a
presentation 2012/fig_3-4_rosslake.mxd

**Ross Lake National
Recreation Area**

Management Zones - Hozomeen Ross Lake General Management Plan

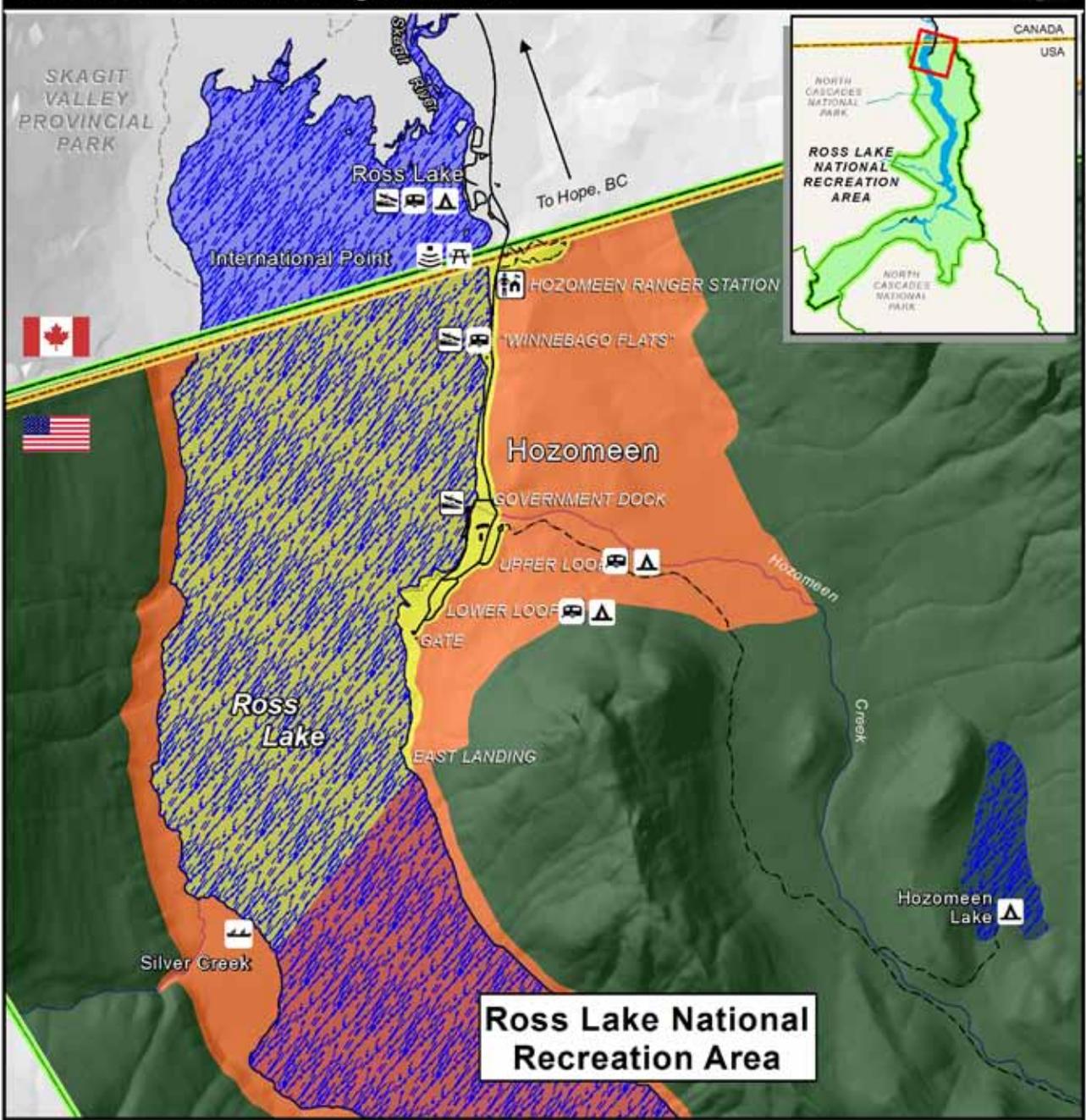
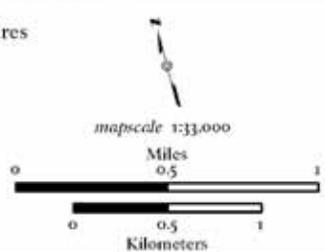


Figure 3.5

- Backcountry Zone
- Frontcountry Zone
- Wilderness Zone
- Roads
- Trails

- Hiker camps
- Boat-in camps
- Auto-accessible campgrounds
- Amphitheater
- Picnic area
- Motor boat launch
- Structures



Produced by:
 North Cascades National
 Park Service Complex
 14 May 2012
 ah/ross_lake_gmp
 final.mxd-jpeg presentation 2012/
 fig_3-5_hozomeen.mxd

Table 3.1 Management Zones for Ross Lake NRA

| | Frontcountry Zone | Backcountry Zone |
|------------------------------------|---|---|
| Summary | <p>The scenic east-west route through the Cascades along North Cascades Highway and developed areas is located in this zone.</p> <p>This zone includes a 200-foot corridor along the entire length of the North Cascades Highway within Ross Lake NRA. The 200-foot corridor includes the areas within 100 feet of the center line on each side of the highway.</p> <p>This zone maintains good natural and cultural resource conditions with some modified resources.</p> <p>A wide variety of high quality recreational and educational visitor opportunities and facilities are available in this zone.</p> <p>This zone covers about five percent of Ross Lake NRA.</p> | <p>This zone is characterized by areas that are dominated by natural conditions with structured opportunities for visitor recreation.</p> <p>This zone maintains good natural and cultural resource conditions and emphasizes resource preservation and restoration.</p> <p>This zone is characterized by visitor experiences and limited visitor facilities that provide a sense of remoteness and immersion in nature within a mountainous wilderness setting.</p> <p>This zone covers about 18.5 percent of Ross Lake NRA.</p> |
| Natural Resource Conditions | <p>Natural resource preservation and restoration will be emphasized, but resources could be altered to provide for recreation and visitor experiences.</p> <p>Recreation and management facilities and activities may be altered or managed to improve the quality of ecological resources and processes.</p> <p>Impacts from infrastructure, concentrated visitor use, and administrative activities will be minimized.</p> | <p>Natural resource preservation and restoration will be emphasized, but resources could be altered to provide for recreation and visitor experiences.</p> <p>Recreation and management facilities and activities may be altered or managed to improve the quality of ecological resources and processes.</p> <p>Signs of modern human impact will be minimal.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Wilderness Zone | Skagit River Zone | Hydroelectric Zone |
|------------------------------------|---|--|--|
| Summary | <p>Designated wilderness and potential wilderness are located in this zone.</p> <p>Research Natural Areas, including Big Beaver and Pyramid Creek Research Natural Areas, are included in this zone. Research Natural Areas are unmodified landscapes where unimpeded natural ecological systems and processes occur. The focus of the Research Natural Areas is on baseline ecological research and monitoring.</p> <p>This zone features excellent natural and cultural resource conditions and emphasizes resource preservation and restoration.</p> <p>This zone emphasizes wilderness experience, limited primitive visitor facilities, and very few encounters with other visitors.</p> <p>Approximately 73 percent of Ross Lake NRA is in this zone.</p> | <p>The Skagit River and adjacent riparian corridor below Gorge Powerhouse in Newhalem and up Goodell Creek to the wilderness boundary are located in this zone.</p> <p>This zone is approximately ¼ mile on either side of the Skagit River through most areas.</p> <p>Natural and cultural resource preservation of the Skagit River and visitor facilities associated with river recreation characterize this zone.</p> <p>About three percent of Ross Lake NRA is in this zone.</p> | <p>Seattle City Light facilities and primary management areas, including the hydroelectric projects at Ross, Diablo, and Gorge Dams are located in this zone.</p> <p>SCL operations are paramount to resource conditions and visitor experience in this zone.</p> <p>SCL provides and maintains most of the visitor services in this zone. Most visitor experiences are linked to learning about hydroelectricity and frontcountry recreational activities.</p> <p>About 0.5 percent of Ross Lake NRA is in this zone.</p> |
| Natural Resource Conditions | <p>Natural resource preservation, restoration, and ecosystem management will be the primary emphasis in this zone.</p> <p>Modern human use, interference, and disruption to natural resources and ecological processes will be minimized.</p> <p>When management action is needed, minimum tool requirements will be emphasized and implemented.</p> | <p>Ecological integrity of the riparian zone will be maintained and streamflow impacts from hydroelectric projects and the proximity of the North Cascades Highway will be minimized.</p> <p>The flows in the Skagit River will be managed for fishery resources.</p> <p>Riparian quality will be improved by removal of invasive non-native species and restoration of native vegetation in impacted areas.</p> | <p>Wildlife habitat, vegetation, and ecological processes could be altered to achieve other management objectives. While natural resources will not be a primary management emphasis, impacts from alterations.</p> <p>Natural resource restoration efforts will occur wherever possible.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Frontcountry Zone | Backcountry Zone |
|--|--|--|
| <p>Natural Resource Conditions <i>(continued)</i></p> | <p>All fires will be suppressed.</p> <p>Light and human-caused sounds will be reduced from current levels but may still be a common part of the environment in this zone.</p> <p>Wildlife crossings along the North Cascades Highway will be improved, wherever possible.</p> | <p>Ecological processes will remain unimpeded when possible. A full range of fire management strategies could be employed, depending on location, as well as prescribed fire.</p> <p>Natural night sky will be dominant. Human-caused sounds will be a part of the environment in this zone, but will be reduced where possible.</p> |
| <p>Cultural Resource Conditions</p> | <p>Management of cultural resources will be in concert with management of natural resources.</p> <p>Cultural resources, including non-sensitive archeological sites, ethnographic sites, historic structures, and cultural landscapes will be identified and evaluated, and nominated to the National Register, as appropriate. Significant cultural resources will be preserved.</p> <p>Historic structures will be maintained and functional through established use or adaptive reuse.</p> <p>To the extent possible, cultural resources will be visually accessible and interpreted to the public, recognizing visitor safety.</p> | <p>Management of cultural resources will be in concert with management of natural resources.</p> <p>Cultural resources, including non-sensitive archeological sites, ethnographic sites, historic structures, and cultural landscapes will be identified and evaluated, and nominated to the National Register, as appropriate. Significant cultural resources will be preserved.</p> <p>Historic structures will be maintained and functional through established use or adaptive reuse.</p> <p>To the extent possible, cultural resources will be visually accessible and interpreted to the public, recognizing visitor safety.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Wilderness Zone | Skagit River Zone | Hydroelectric Zone |
|--|--|--|---|
| Natural Resource Conditions <i>(continued)</i> | <p>Ecological processes, including fire, will occur unimpeded as much as possible.</p> <p>Natural sounds and night sky will be dominant.</p> | <p>All fires will be suppressed.</p> <p>Light and human-caused sounds will be reduced from current levels but may still be a common part of the environment in this zone.</p> | <p>All fires will be suppressed.</p> <p>Light and human-caused sounds will be a common part of the environment in this zone. Work with SCL to reduce light and human-caused sounds where possible.</p> |
| Cultural Resource Conditions | <p>Management of cultural resources will be in concert with management of natural resources.</p> <p>Cultural resources, including non-sensitive archeological sites, ethnographic sites, historic structures, and cultural landscapes will be identified and evaluated, and nominated to the National Register, as appropriate. Significant cultural resources will be preserved.</p> <p>Non-significant historic resources may be allowed to deteriorate through benign neglect.</p> <p>Cultural resources in the Research Natural Areas will be preserved consistent with the Secretary of the Interior's Standards and NPS policy. Significant cultural resources that might be preserved could be prehistoric and historic archeological sites and ethnographic resources.</p> | <p>Management of cultural resources will be in concert with management of natural resources.</p> <p>Cultural resources, including non-sensitive archeological sites, ethnographic sites, historic structures, and cultural landscapes will be identified and evaluated, and nominated to the National Register, as appropriate. Significant cultural resources will be preserved.</p> <p>Historic structures will be maintained.</p> <p>To the extent possible, cultural resources will be visually accessible and interpreted to the public, recognizing visitor safety.</p> <p>Cultural resources will be protected from flood damage, where feasible.</p> | <p>To the extent possible, National Register eligible sites will be preserved and used in conjunction with SCL operations.</p> <p>Cultural resources, including non-sensitive archeological sites, ethnographic sites, historic structures, and cultural landscapes will be identified and evaluated, and nominated to the National Register, as appropriate.</p> <p>To the extent possible, historic structures will be maintained and functional through established use or adaptive reuse.</p> <p>To the extent possible, cultural resources will be visually accessible and interpreted to the public, recognizing visitor safety, hydroelectric facility security, and residential privacy.</p> <p>SCL will continue its responsibilities to identify, preserve, rehabilitate, and interpret their cultural resources.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Frontcountry Zone | Backcountry Zone |
|-----------------------------------|---|---|
| Visitor Experience and Use | <p>A wide variety of day-use and overnight recreational opportunities will be provided for a range of visitor abilities.</p> <p>Activities include, but are not limited to, hiking, picnicking, fishing, swimming, self-propelled and motor boating, bicycling, sport climbing, canyoneering, sightseeing, scenic driving, camping, and lodging.</p> <p>Some opportunities to appreciate wilderness and connections with the natural world will be provided.</p> <p>This zone will offer some opportunities for challenge and risk.</p> <p>A wide range of visitor services will be provided, including educational services through activities at the North Cascades Visitor Center, Environmental Learning Center, SCL tours, and through wayside exhibits, interpretive programs, and personal services. Concessions operations will complement and augment NPS visitor services.</p> <p>Motorboats will be allowed.</p> <p>A high level of universal accessibility will be provided for visitors to see, experience and learn about heritage (natural and cultural) within this zone.</p> | <p>Recreational opportunities will focus on the enjoyment and appreciation of nature within a mountainous wilderness setting. Non-mechanized recreation will be the norm.</p> <p>Activities include, but are not limited to, hiking, picnicking, fishing, swimming, self-propelled and motor boating, sightseeing, wildlife viewing, and camping.</p> <p>Many opportunities to appreciate wilderness and connections with the natural world will be provided.</p> <p>This zone offers many opportunities to experience solitude, remoteness, challenge and risk.</p> <p>Visitor services, except for emergency response and limited commercially guided activities, will rarely be provided. Group sizes will continue to be limited. Ranger services could focus on permit compliance, resource and visitor protection, and Leave No Trace education.</p> <p>Motorboats will be allowed.</p> <p>Reasonable efforts to achieve universal accessibility will be taken to provide visitor opportunities.</p> <p>Reservoirs in this zone will provide scenic, remote, and serene water recreational experiences in largely undeveloped areas. Primitive overnight camping will be dispersed along the lakeshore at designated sites.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Wilderness Zone | Skagit River Zone | Hydroelectric Zone |
|-----------------------------------|---|---|---|
| Visitor Experience and Use | <p>Opportunities for wilderness-based recreational activities and non-mechanized recreation will be the focus in this zone. Activities include on and off-trail hiking, primitive camping, nature viewing, wildlife watching, fishing, hunting, stock use, and access to mountaineering.</p> <p>This zone will offer the greatest opportunities to appreciate wilderness and explore connections with the natural world.</p> <p>This zone will have the greatest opportunities to experience solitude, remoteness, challenge and risk.</p> <p>Visitor services, except for emergency response and limited commercially guided activities, will rarely be provided. Group sizes will continue to be limited. Ranger services could focus on permit compliance, resource and visitor protection, and Leave No Trace education.</p> <p>Motorboats will not be allowed except for emergency, law enforcement, and operational, research, and monitoring needs supported by a minimum tool analysis.</p> <p>There will be limited opportunities for universal accessibility.</p> | <p>Non-motorized river-based recreation will be the focus in this zone, including boating, fishing, nature viewing, and wildlife watching. Additional visitor opportunities will include picnicking and educational opportunities.</p> <p>Many opportunities to appreciate wilderness and connections with the natural world will be provided.</p> <p>This zone will have limited opportunities for solitude, and connections with the natural world will be primarily on the river.</p> <p>Visitor services will include commercially guided activities involving non-motorized river recreation, such as rafting and kayaking.</p> <p>Motorboats will not be allowed on the Skagit River except for emergency, law enforcement, and NPS and SCL operational needs.</p> <p>Reasonable efforts to achieve universal accessibility will be taken to provide visitor opportunities.</p> | <p>A variety of educational opportunities to learn about hydroelectricity and associated facilities and operations will be provided through SCL tours, educational programs, and special events.</p> <p>SCL will continue to provide for the visitor services stipulated in the Settlement Agreement and FERC license. These include guided tours of the Skagit Project; operation of the Skagit Visitor Information Center; operation of the tug boat/ferry service on Diablo Lake; maintenance of public facilities in Diablo and Newhalem; and maintenance of Ladder Creek Falls trail.</p> <p>Motorboats will be allowed on the reservoirs except for spatial or temporal restrictions that could apply for emergency, law enforcement, and NPS and SCL operational needs.</p> <p>Reasonable efforts to achieve universal accessibility will be taken to provide visitor opportunities.</p> |

Table 3.1 Management Zones for Ross Lake NRA

| | Frontcountry Zone | Backcountry Zone |
|---|--|---|
| <p>Visitor Experience and Use <i>(continued)</i></p> | | |
| <p>Facilities</p> | <p>A range of facilities and infrastructure will accommodate daytime and overnight visitor use as well as park operations. The highest level of development will occur in this zone.</p> <p>Visitor and recreation facilities could include:</p> <ul style="list-style-type: none"> • Campgrounds • Boat launches and docks • Picnic and day-use areas • Trails • Restrooms • Public lodging <p>Education facilities could include:</p> <ul style="list-style-type: none"> • Visitor center(s) • Wayside exhibits • Interpretive trails and signage • Environmental Learning Center • Signs <p>Transportation facilities could include:</p> <ul style="list-style-type: none"> • Roads • Parking lots • Pullouts and overlooks • Bicycle paths • Shuttle services <p>Administrative facilities for NPS and SCL could include:</p> <ul style="list-style-type: none"> • Administrative offices • Maintenance and storage sites • Staff housing | <p>Limited visitor facilities will accommodate backcountry recreation and park operations, and will be minimally obtrusive on the landscape and designed to be compatible with the northwest backcountry.</p> <p>Facilities could include:</p> <ul style="list-style-type: none"> • Trails • Primitive campsites and toilets • Food storage devices in all established campsites • Walk-in and boat-in campsites • Boat docks • Pedestrian bridges • Informational and interpretive signage • Limited roads and parking areas |

Table 3.1 Management Zones for Ross Lake NRA

| | Wilderness Zone | Skagit River Zone | Hydroelectric Zone |
|---|---|--|--|
| Visitor Experience and Use <i>(continued)</i> | In the Research Natural Areas, low levels of human use could occur on trails and climbing routes. The Research Natural Areas will be managed to ensure that existing low levels of human use do not adversely affect their scientific and educational purposes. | | |
| Facilities | <p>Very limited, primitive facilities are present and meet accepted wilderness standards.</p> <p>Facilities could include:</p> <ul style="list-style-type: none"> • Trails, some with limited to no maintenance • Primitive campsites and toilets • Food storage devices in all established campsites • Fire lookouts <p>In designated and potential wilderness, changes in campsite locations, new designated camps or trail re-routes will be permitted, following minimum requirement analysis standards. In large swaths of trailless wilderness in the NRA and North Cascades National Park, the NPS will strive to preserve opportunities for solitude and the untrammled and undeveloped character of wilderness when considering new trails.</p> <p>Existing trails and climbing routes could remain in Research Natural Areas, however research will be the predominant use. Research and monitoring devices could be evident.</p> | <p>Visitor facilities associated with day-use river recreation are present and accommodated.</p> <p>Facilities could include:</p> <ul style="list-style-type: none"> • Boat launch areas • Day-use areas • Interpretive information and signage • Trails | <p>A range of facilities and infrastructure accommodate SCL operations and visitor services for both daytime and overnight use.</p> <p>Visitor facilities could include:</p> <ul style="list-style-type: none"> • Interpretive trails and signage • Food, supplies, and souvenirs at the Skagit General Store • Public lodging <p>Facilities associated with SCL operations include:</p> <ul style="list-style-type: none"> • Dams • Powerhouses • Administrative/office buildings • Employee housing |

Table 3.1 Management Zones for Ross Lake NRA

| | Frontcountry Zone | Backcountry Zone |
|---|--|--|
| Access and Transportation | <p>Both public access areas and restricted areas for park administrative use will occur. Most open areas will be easily accessed by visitors.</p> <p>Access is from a wide variety of transportation methods, both motorized and non-motorized.</p> | <p>Public access will be available throughout the zone, but access to some areas might be challenging.</p> <p>Access is from both motorized and non-motorized transportation. Access is primarily by foot, boat, some stock animals.</p> |
| Lands, Designations, and Jurisdiction (regulations, land uses, easements, rights-of-way) | <p>Lands in this zone are owned by the NPS and SCL.</p> <p>SCL rights-of-way and/or easements, such as roads and powerlines, exist in this zone, and Washington State Department of Transportation right-of-way lies in this zone, passing through both NPS and SCL lands. Limited areas will be managed primarily for SCL and Washington State Department of Transportation operations.</p> | <p>Lands in this zone are owned by the NPS.</p> <p>SCL rights-of-way and/or easements, such as roads and powerlines, will exist in this zone and are governed by the Skagit River Treaty, also known as the High Ross Dam Treaty.</p> |

In addition to the management zones, park managers will continue to use the “Superintendent’s Compendium” provided in Title 36 of the Code of Federal Regulation to effect limitations or closures as necessary to protect resources and wilderness values.

Proposed Actions

Specific proposed actions in this plan are listed below; however, the reader must rely on the text, maps, and figures taken together to fully understand the contents of this plan as, in many cases, decisions or other discussions contained in this plan refer directly to maps and figures. Many decisions themselves are “map based.”

Management of Specific Areas

The following section presents an overview of the management strategies for specific areas of Ross Lake NRA and some of the anticipated changes that will occur.

North Cascades Highway Corridor

Under the guidance of this plan, the North Cascades Highway corridor will function as a “window on wilderness” where visitors will be provided with meaningful opportunities to see, experience, and learn about the North Cascades. The NPS will create a distinct sense of arrival to help visitors understand they have entered a unit of the National Park System. The NPS will work with WSDOT and SCL to improve signage with the goal of informing people about services and recreational opportunities in the North Cascades NPS Complex. Redesigned and constructed entrances will serve as portals into the North Cascades. Dramatic viewsheds of the Skagit River, jagged mountain peaks, waterfalls, and reservoirs will introduce visitors to the North Cascades along the highway corridor. The NPS will work to provide activities to entice people out of their vehicles via enhanced overlooks, the existing visitor center, and visitor facilities in partnership with SCL and the NCI.

Table 3.1 Management Zones for Ross Lake NRA

| | Wilderness Zone | Skagit River Zone | Hydroelectric Zone |
|---|--|---|---|
| Access and Transportation | The NPS will work to maintain public access through a network of trails. Some areas will be extremely challenging to access due to the conditions of terrain and the preservation and maintenance of wilderness character. Access is by foot or some stock animals. | Public access will be available in this zone. Access is from both motorized and non-motorized transportation. Access is primarily by boat, both private and commercial. | Both public access areas and areas restricted for SCL operations will occur. Access is from both motorized and non-motorized transportation. |
| Lands, Designations, and Jurisdiction (regulations, land uses, easements, rights-of-way) | Lands in this zone are owned by the NPS. These lands are designated or potential wilderness. Research Natural Areas, including Big Beaver and Pyramid Creek Research Natural Areas, will be located in this zone. | Lands in this zone are owned by the NPS and SCL. Limited areas will be managed primarily for SCL operations. SCL rights-of-way and/or easements could exist in this zone. | Lands in this zone are owned by the NPS and SCL. Most areas will be managed primarily for SCL operations. SCL will be authorized to operate the dams, powerhouses, and facilities on NPS land through the FERC license. |

Once out of their vehicles, the NPS and partners will provide opportunities for enjoyment and learning, such as ranger-led tours, Diablo Lake tours, and numerous hiking trails. Visitors will be encouraged to venture further into the North Cascades on dayhikes, ranging from short accessible trails to more strenuous hikes that leave the highway corridor and venture into the wilderness. Gorge and Diablo lakes within the North Cascades Highway corridor will continue to provide boating, fishing, camping, and sightseeing opportunities.

The NPS will provide improved day-use opportunities along the North Cascades Highway, such as dayhiking, water recreation, and increased interpretive, educational, and hands-on stewardship experiences for visitors with a range of abilities and interests who desire a variety of recreational activities. Changes to the existing conditions of the highway corridor are listed below.

Existing **campgrounds and campsites** within the corridor will be maintained for visitor enjoyment of the frontcountry areas of Ross Lake NRA. New camping facilities could be considered and constructed at Newhalem Creek Campground and Upper and Lower Goodell group sites. Other sites may be identified in cooperation with Seattle City Light. These sites will also be considered as replacement locations in the event of a loss of sites from storm impacts or other hazards at other campgrounds, such as Colonial Creek Campground. Additional services could also be provided at campgrounds, such as showers and electrical hookups, pending the results of a feasibility study. The NPS will also expand and upgrade the RV sites at Newhalem and Colonial Creek Campground for volunteers. The NPS will also identify additional locations for group picnic sites and evaluate additional group campsites that accommodate a range of group sizes. Similarly, the NPS will provide a frontcountry overnight campsite that accom-

modates stock use and is in close proximity to trailheads that permit stock.

Trails within the North Cascades Highway corridor will provide excellent dayhiking opportunities from accessible trails to launching points for more extensive hikes into remote areas of the North Cascades NP Complex. New trails could include the Goodell Landslide Trail, Newhalem Boardwalk Trail, Newhalem Falls Loop Trail, Skagit River Portage Trail at the S curves, Happy Creek Falls Trail, and Newhalem Spawning Channel Trail, and the rehabilitation of the Stetattle Creek Trail ending at Stetattle Falls. Additional dayhiking opportunities will be provided, including short frontcountry loops, portage trails and interpretive hikes, primarily in the North Cascades Highway corridor. The NPS will consider a modest expansion of trails to scenic vistas along the North Cascades Highway corridor in addition to the specific trails listed above.

In the event that trails, such as the Newhalem Creek Trail, are removed from the trails inventory as part of subsequent planning efforts for the complex, the remaining portion of trails within Ross Lake NRA will also be removed and the areas will be rehabilitated and restored where appropriate.

Along the highway, parking and pullouts will be enhanced to improve visitor access and safety. The **Ross Dam Trailhead parking lot** will be redesigned and constructed for visitor safety and will maintain approximately the same parking capacity as the existing parking lot (see schematic design in Figure 3.6). The footprint will be enlarged to accommodate a turn lane, single point of ingress and egress, pull-through spaces for six oversized vehicles, and capacity for approximately 43 passenger vehicles. New **pullouts and waysides** will be considered for several specific areas along the North Cascades Highway at Newhalem, Devil's Elbow, Gorge Lake, Panther Creek, and Ross Lake.

The NPS will continue to respond to **facilities damaged or destroyed by severe weather events**. Many of the facilities along the North Cascades Highway corridor are located in areas prone to flooding and disturbance by natural

events, such as landslides. The destruction of facilities from catastrophic and natural events appears to be occurring with greater frequency in the North Cascades due to severe storms and unpredictable climactic conditions. In 2003, severe weather and torrential rains resulted in landslides and creek channel migrations, impacting Colonial Creek Campground, the North Cascades Highway at Pyramid Creek, and other visitor facilities in Ross Lake NRA. The NPS will respond adaptively to facilities damaged or destroyed by severe weather events.

The NPS will close, abandon, or rehabilitate facilities that are destroyed by severe weather events. If facilities are impacted or destroyed, the NPS will first attempt to construct in the general vicinity in order to preserve the experiences and facilities that visitors value. Otherwise, the NPS will construct facilities at another feasible location to limit loss of facilities and visitor opportunities.

Goodell Creek Campground is located at the confluence of Goodell Creek and the Skagit River along the North Cascades Highway. The Campground is a popular location for its easy access from the highway, campsites adjacent to the creek and river, and raft launch area. The access road to Lower Goodell Group camp is threatened by flooding from Goodell Creek. An alternative access road will be provided to the west of the existing road, partially along a section of an old roadbed. Future channel changes could cause further flooding in portions of the main Goodell Creek Campground and campsites could be closed and rehabilitated to natural conditions. Alternative campsites will be provided to the west of the existing Lower Goodell Group Camp.

Newhalem

Newhalem contains the North Cascades Visitor Center, one of the primary drive-in campgrounds, and an extensive trail network. In addition to NPS facilities, Newhalem also contains the visitor facilities operated by SCL, including the Skagit Information Center, which serves as the starting point for tours of the Skagit power facilities, trails, and the Skagit General Store. There is ample parking, areas to picnic,

Ross Dam Trailhead Parking Lot: Schematic Design

Ross Lake General Management Plan

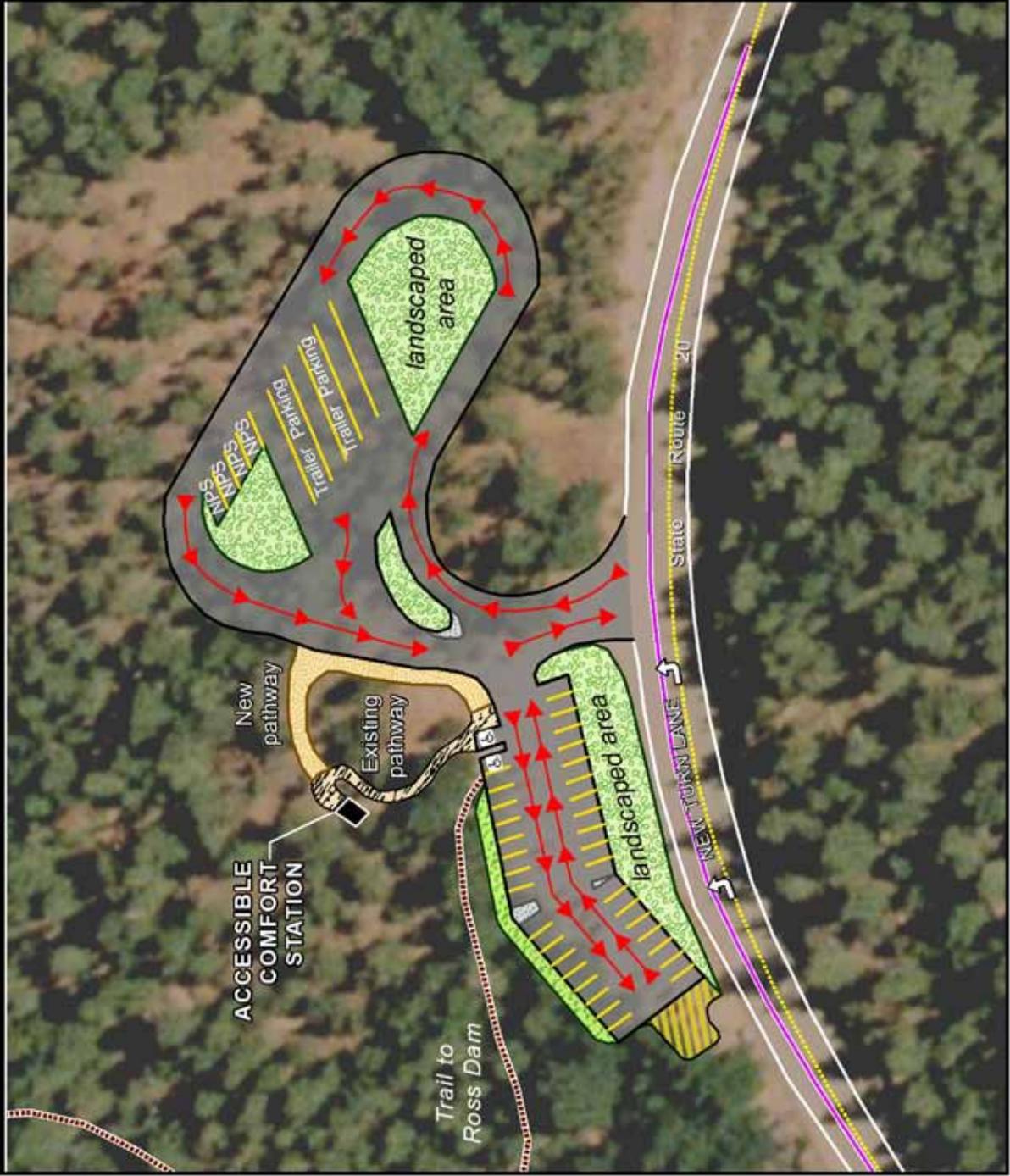
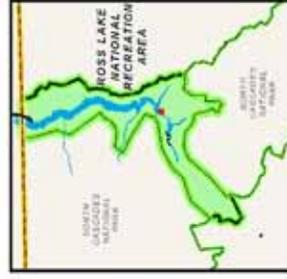
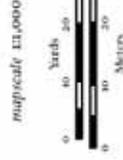


Figure 3.6

-  Vehicle turn-around
-  Vegetated filter strip
-  Landscaped area



Produced by:
 North Cascades National
 Park Service Complex
 14 May 2013
 ab/ross_tdr_gmp/
 final_mxd-fig-3.6_parking.mxd
 Fig. 3.6_parking.mxd

and utility systems that could support additional use. In addition, several sites and structures in Newhalem are listed on the National Register and owned and managed by SCL.

Newhalem will serve as a destination and hub of activity and will provide the starting point to a network of ranger-led and self-directed resource immersion activities. Partners will also be encouraged to use the visitor center as a point of origin for their programs and activities.

The long-term vision for Newhalem is to make it a primary destination and starting point for visitors who are travelling into the North Cascades wilderness. The NPS will seek to use the existing facilities and infrastructure in Newhalem more effectively to provide a more comprehensive experience for visitors. During the summer season, Newhalem will primarily serve general visitors. During the spring and fall seasons, Newhalem could serve as an outdoor classroom that is used by educators in concert with the NPS and partner educational programs. During the winter season, visitor facilities will be minimally maintained in response to seasonally low visitation.

The NPS will operate visitor facilities in partnership with SCL and others to provide visitors with a complete picture of recreation and learning opportunities in the Newhalem area and the North Cascades. The NPS and SCL partnership will be enhanced through new collaborative efforts, such as having NPS rangers working side-by-side at the SCL visitor contact station and providing interpretation on the SCL operated Diablo Lake tours. The NPS will encourage SCL to enhance services at the Skagit General Store and food services to better align with the needs and expectations of visitors to the North Cascades.

The **North Cascades Visitor Center** will continue to be the primary information and interpretive center for the complex. The exhibits, multi-media programs, and activities will be updated to provide visitors with more active and interactive opportunities that effectively use technology to provide engaging, fun, and educational activities that communicate the full spectrum of interpretive and educational mes-

sages and cultivate stewards of the North Cascades ecosystem.

The NPS will maintain the existing **bridge across the Skagit River in Newhalem** until such a time when the bridge needs replacement. In the future, there will continue to be a need for a bridge across the Skagit River in Newhalem to access the Newhalem Creek Campground, trails, natural features, and Seattle City Light hydro-power operations. Better pedestrian and bicycle access and a two lane option will be considered in the design for a replacement bridge.

Dayhiking and accessible trails will be maintained and expanded in Newhalem in partnership with SCL to provide access to additional features in the Newhalem area. These trails include the Newhalem Boardwalk Trail, Newhalem Falls Loop Trail, and Newhalem Spawning Channel Trail. The NPS will work with SCL to maintain and rehabilitate trails and sidewalks in Newhalem and to ensure connections between SCL trails (such as Ladder Creek Falls sidewalk and trails) and NPS trails to create a large network of trail-based opportunities in Newhalem.

Diablo Lake

Diablo Lake, a reservoir created by Diablo Dam on the Skagit River, is known for its beautiful turquoise/green color that is the result of suspended rock particles which have been ground by glaciers which can be seen from the popular Diablo Lake Overlook along the North Cascades Highway. Along the shores of Diablo Lake, visitor facilities include the Environmental Learning Center, Colonial Creek Campground offering drive-in campsites, one of the only public boat launches from the North Cascades Highway, and several dayhiking trails. SCL provides Diablo Lake tours and the shuttle boat to Ross Lake Resort. Diablo Lake is the most accessible lake and will continue to provide a variety of recreational and learning opportunities for visitors with a range of interests and abilities.

The **North Cascades Environmental Learning Center (ELC)** will continue to function as a center for outdoor learning and a campus for curriculum-based environmental education for

youth and families. New facilities on the ELC campus will be constructed as outlined in the original plan and environmental assessment. Facilities that were part of the original plan, but have not yet been built will be constructed, including a dormitory, staff housing, and boat-house, and additional outdoor learning shelters. A new camping area at Buster Brown will be considered for seasonal North Cascades Institute use and public use. Funding for the construction of these facilities and potential new camping area will be provided by the North Cascades Institute. The North Cascades Institute will continue to work in cooperation with the NPS and Seattle City Light on plans for the ELC and management of the area.

Colonial Creek Campground is located on a narrow unstable debris cone area where Thunder, Rhode, and Colonial creeks drain into Diablo Lake. During the summer season, Colonial Creek Campground is occasionally at capacity due to its easy access to the North Cascades Highway, many wooded lakefront campsites,

proximity to dayhikes, and primary boat launch area along the highway corridor. Rhode Creek regularly floods, sending rock and debris across the North Cascades Highway and occasionally flowing through the south side of the campground. In 2003, the Colonial Creek stream channel migrated over campsites and trails on the north side of the campground, significantly altering the landscape. To maintain camping opportunities at Colonial Creek Campground, the NPS will take proactive management actions at Rhode Creek to prevent campsites from being impacted by flooding, debris flow, and erosion. If campsites are affected in the future, the NPS will attempt reconstruction in the same area. If reconstruction at Colonial Creek is not feasible, the sites lost will be replaced elsewhere in Ross Lake NRA, preferably at another previously developed location such as Newhalem Creek Campground, to limit net loss of campsites in Ross Lake NRA.

The **boat launch at Colonial Creek Campground** has experienced siltation and shoaling



A young visitor watches geese along the lakeshore of Diablo Lake at Colonial Creek Campground.

since its construction. The boat ramp periodically becomes unusable during periods of low water. In some instances, boaters who entered the lake during high water cannot retrieve their boats and have been stranded. These problems are caused primarily by periodic debris flows from Rhode Creek and secondarily by continued expansion of the Thunder Creek Delta. As part of the relicensing of the Skagit River Hydroelectric Project, the NPS requested Seattle City Light to identify remedial measures to address this problem and incorporate those measures into the City's recreation plan for the Skagit Project. In the future, the boat ramp could no longer be useable given the expansion of the Thunder Creek Delta and more importantly, accumulation of sediment and debris from Rhode Creek (Ebasco Environmental, 1990). Should this happen, the NPS will consider the following options.

1. Relocating the boat launch to the north side of the highway in the vicinity of Diablo Lake boathouse, as recommended via previous assessments (Ebasco Environmental, 1990). This action may also require dredging to maintain this new boat launch. Parking will still remain on the south side. Ancillary facilities in the vicinity of the ramp such as a vault toilet and picnic area could be included.
2. Maintaining the launch in its current location by periodically dredging a channel from the launch to deeper water. This action will be done in coordination with Seattle City Light so dredging could be done at low water levels to minimize impacts to water quality.
3. If dredging is not feasible due to accelerated sedimentation rates, then the NPS will no longer attempt to maintain a boat launch in the vicinity of Colonial Creek Campground. The NPS will either seek to establish a launch elsewhere on the reservoir or abandon providing a boat launch on Diablo Lake. Boating will still be encouraged, but the loss of a boat launch will limit boating to paddlecraft, such as canoes and kayaks, or small motorboats, such as Jon boats, that could be launched without a ramp.

Ross Lake

Ross Lake stretches from Ross Dam along the historic alignment of the Skagit River approximately 22 miles northward to the Canadian border at Hozomeen and serves as a portal to the Stephen Mather Wilderness and Pasayten Wilderness. Ross Lake is a reservoir created to serve as a primary power supply for SCL and the city of Seattle. It is characterized by open waters surrounded by a scenic mountain wilderness in an undeveloped setting. Along the shores of Ross Lake are numerous walk-in and boat-in campsites, trails leading into the backcountry and wilderness, and the East Bank Trail which runs from the North Cascades Highway to Hozomeen. Water recreation on Ross Lake will focus on fishing, canoeing, kayaking, and limited motorboating.

Visitor experience on and near Ross Lake will be maintained largely as it is today. During the planning process for this GMP, public comments expressed a strong desire to preserve the unique character of Ross Lake by controlling access and use and limiting development. Water recreation, camping, and hiking will continue to be the primary forms of recreation on and near Ross Lake. Motorboat and seaplane regulations will be implemented to improve natural soundscapes, water quality, and the visual character of Ross Lake. The number of lakefront campsites on Ross Lake will be maintained at current levels. Should crowding become an issue on Ross Lake, the management goal will be to disperse people over the existing campsites, or manage use through reservations, as opposed to or before expanding the capacity or number of sites on the lakefront.

Ross Lake Resort will be minimally expanded within the capacity of the existing sewage system. The water storage system will need to be increased. New and replacement facilities will follow design guidelines provided by the NPS. Expansion of lodging facilities will not exceed 10 percent of guest and staff bed spaces. It will be up to the concessioner to determine how these bed spaces will be allocated between guests and staff. A second water taxi service will be included in the operations of Ross Lake Resort to provide access to campsites and trail-

heads on Ross Lake. Additional visitor services could be incorporated into the concession contract and operating plan.

Hozomeen

Hozomeen will continue to offer a unique camping experience as the only campground on Ross Lake that can be accessed by road. Primary access to Hozomeen will continue to be via the gravel road from Hope, British Columbia or by boat, foot, or stock from the U.S.

The NPS will evaluate and rehabilitate **Hozomeen Campground and Winnebago Flats** to promote a more organized and traditional campground experience. The NPS will also consider providing RV sites for volunteers.

The NPS, preferably in partnership with B.C. Parks, will replace the existing **ranger station** with a small newly constructed ranger station/orientation center that will provide visitor services, including back country permits, interpretive information, and a small office for law enforcement and interpretive rangers. The current facility is in poor condition. The new facility will allow for improved visitor services, adequate space, and improved operational efficiencies. The facility will be jointly used in partnership with B.C. Parks.

The NPS will work cooperatively with Canadian agencies to explore the feasibility of constructing a **connection trail** between Centennial/Skyline II Trail Junction near Whitworth Meadow horse camp to the East Bank Trailhead at Hozomeen. This trail will provide improved pedestrian access to Hozomeen and a link to other existing trails in the area.

Marblemount Ranger Station

The Marblemount Ranger Station will continue to serve as a primary base of operations and support center by providing buildings and space for NPS maintenance, resource management, administration, emergency response, and staff housing functions as well as some limited visitor services, including the Wilderness Information Center. The existing wilderness center was upgraded and expanded in 2009 to accommodate its existing functions as a visitor contact station

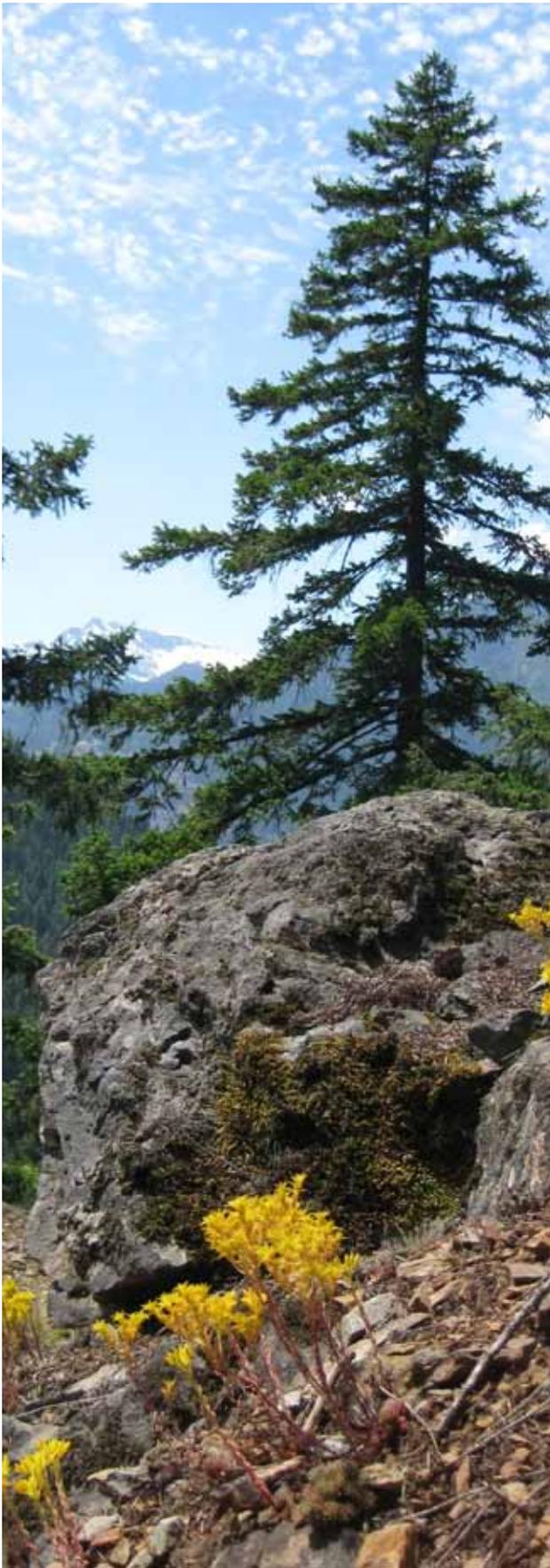
with restrooms, wilderness ranger offices, and the communications center; however, additional upgrades are needed to improve visitor services and operational efficiencies. Under this plan, the NPS will renovate the **Wilderness Information Center** to improve visitor services and operational efficiencies and will redesign the landscape for improved public orientation. This plan does not preclude moving public functions of the wilderness center to another location if found suitable and feasible in the future.

Employee housing in Marblemount will be improved through the addition of temporary seasonal housing for employees or volunteers which could be in the form of tent cabins or equivalent types of facilities with supporting infrastructure. This addition will fulfill a critical summer season need for employee housing in the area of Ross Lake NRA where it is operationally needed. Tent cabins or an equivalent type of facility will meet the seasonal housing need without creating infrastructure that requires year-round maintenance. Seasonal need in Ross Lake NRA is for a very short duration, approximately three months, making it difficult for staff to find private housing in the community, where leases tend to run for a six-month or one-year minimum. A site plan will be needed.

All Marblemount Ranger Station activities will be compatible with the significance of the National Register listed Marblemount Ranger Station Historic District and its associated structures, landscapes, and features.

Natural Resources

Natural resources, including ecosystem functions and processes, air quality, soundscapes, water resources, vegetation and wildlife, will be ensured long-term stewardship and preservation in the context of a functioning ecosystem. In cases where resources have been impacted, the NPS will seek appropriate restoration to maintain the integrity of the North Cascades ecosystem. The NPS will continue the long-term ecological monitoring and will prioritize existing programs before initiating new programs. The NPS will work to develop collaborative inventory and monitoring programs with neighboring national forests, B.C. Parks, and the Canadian



A rocky outcrop along the eastern shore of Ross Lake.

Ministry of the Environment to better understand and manage the entire North Cascades ecosystem. The NPS will seek to enhance this work based on clear priorities, such as responses to climate change, and using scientifically valid methods. Priority will also be given to performing this work through long-term sustainable partnerships.

Specific guidance for natural resource management includes new programs, plans, and approaches to management. The following list provides a complete list of these recommended actions.

Ecosystem Functions and Processes

Ecosystem functions and processes include fire, floods, and mass wasting in the forms of avalanches and landslides, among others. The NPS will work toward allowing natural ecosystem functions and processes to occur where possible and, through collaborative efforts with neighboring and partner agencies, improve management and maintenance practices. Ecosystem processes, such as fire, will be managed for the benefit of resources to the greatest extent possible. The NPS will work with Canadian land and fire managers to consider cross-boundary ecosystem fire issues, including considering the potential to allow lightning-caused fires and prescribed fires to burn across the international boundary and will expand collaboration with the USFS and work to allow lightning-caused fires to burn across the adjacent boundaries on the west side in addition to the east side.

The NPS will also strive to minimize conflicts between ecosystem functions and processes and developments by siting and/or relocating new facilities out of potential geohazard areas. As part of this effort, the NPS will consider relocating facilities (roads, structures, recreational sites) prior to bank hardening and channelization, and if needed, will give preference to employing techniques such as rock barbs, engineered log jams, and bioengineering. The NPS will also mitigate necessary emergency repairs at the earliest opportunity and will only consider off site mitigation if more invasive techniques such as rip rap are required. For human caused disturbances, the NPS will revegetate the area.

The NPS will work with Seattle City Light, the Washington State Department of Transportation, the Federal Highway Administration, and others to improve maintenance practices that trigger events and maximize mitigation for actions taken to protect roads and infrastructure. Similarly, the NPS will work with the Washington State Department of Transportation, Seattle City Light, and Skagit and Whatcom Counties to coordinate and identify disturbed areas for depositing debris and rock from construction projects and mass wasting.

Ecosystem functions and processes will be interpreted for the public as an important component of ecosystem health and conditions in the North Cascades. The NPS will also interpret mass wasting events, such as Goodell landslide, and work to increase awareness about the risk of mass wasting (such as avalanches, landslides) in Ross Lake NRA.

Air Quality

The NPS will continue to monitor air quality for visibility and acid deposition, particulates, and criteria air pollutants. The NPS will also pursue research and monitoring to determine levels of atmospheric contaminants (such as mercury, persistent organic pollutants, etc.) in Ross Lake NRA.

In addition, the NPS will pursue redesignation of the Class II Airshed within Ross Lake NRA to a Class I Airshed under the Clean Air Act, which will provide consistency with the surrounding park lands and the national forest lands east of the NRA. Areas redesignated as Class I Airsheds receive more stringent protection from some forms of pollution sources. The process to redesignate to a Class I Airshed will involve the State of Washington and EPA.

Soundscapes

The NPS will actively manage Ross Lake NRA for natural soundscapes. As part of this effort, the NPS will expand the soundscapes program to create a complete inventory of ambient sounds and implement an ongoing monitoring program to assess changes in the soundscape. The NPS will identify unacceptable sources of

human-caused noise and sound levels and look for ways (such as enforcement of existing noise standards and increased education along the North Cascades Highway) to protect natural soundscapes when feasible.

Lightscaapes

The NPS will complete an inventory of night sky conditions and will work with partners and adjacent land managers to protect night sky by reducing light pollution within Ross Lake NRA and on adjacent lands. For example, the NPS will work with Seattle City Light to reduce light pollution in Diablo and Newhalem.

The NPS will also factor in night sky for lighting new construction and actively retrofit exterior lighting to improve night sky conditions.

Water Resources

The NPS will develop and implement a water quality monitoring program for Ross Lake NRA and the upper Skagit tributaries.

In addition, the NPS will inventory and evaluate facilities, including abandoned mines, that could discharge into water sources, mitigate threats to water quality, and take action to relocate, replace, or remove facilities that do not meet water quality standards (such as wastewater treatment plants, pit toilets, etc.).

The NPS will also seek upgrades to point source contributors and mitigate non-point source threats to water quality, such as parking lot runoff and road maintenance activities.

Geology

The NPS will consider geologic features and processes when siting trails and facilities in order to protect interesting geologic features and avoid sensitive geologic areas.

Glaciology

The NPS will continue to operate a monitoring program on glaciers and associated processes to assess impacts of climate change and educate the public about these resources and their implications.

Soils/Erosion Control

Erosion and soil impacts will be inventoried and monitored in backcountry areas and reservoirs to better understand erosion, and a resource restoration plan will be developed for impacted areas. Erosion control will continue in priority/high-use areas, and limited restoration will continue on a case-by-case basis.

Vegetation

A vegetation management plan, with established priorities for restoration (based on the ecological threat posed by invasive species and/or threats to high quality and high value habitats), will be developed to guide the vegetation management program. Areas containing rare plant populations will be protected and enhanced, and hazard trees as wildlife habitat will be maintained, where feasible.

The NPS will implement an integrated pest management program that includes the following practices: prevention and early detection, inventory and monitoring, prioritization and control, restoration, and outreach and education. Invasive plant management principles will be followed as outlined in the Invasive Plant Management Plan. Invasive non-native species will be eradicated where feasible, and where eradication is infeasible, containment strategies will be used.

The NPS will collaborate with adjacent landowners and jurisdictions on cooperative weed management, such as working with the Washington State Department of Transportation to replace invasive non-native species with native species.

Wildlife

The NPS will expand the wildlife monitoring programs to provide additional data on wildlife and take additional actions to protect wildlife from disease or human disturbance. The NPS will also continue to participate in restoring extirpated species where feasible, monitor habitat conditions, and work to reduce the risk of bear-human conflicts. Along these lines, the NPS will work collaboratively on interagency recovery efforts and will expand cooperative efforts with

wildlife agencies and organizations in the U.S. and Canada on research and monitoring efforts to understand the habitat needs of these species in order to protect them on both sides of the boundary, as well as monitor individual animals of these species. The NPS will actively manage to reduce habitat fragmentation, such as consolidating development, and limiting construction of new facilities in undeveloped areas.

In an effort to minimize the possibility of wildlife obtaining human food, the NPS will provide and maintain food storage facilities, such as bear boxes or portable bear resistant containers, for overnight camping.

The NPS will also increase education and outreach efforts related to specific species including grizzly bear and wolves.

Grizzly Bear Core Area Management

The NPS will continue to work collaboratively as part of the interagency grizzly bear recovery effort.

Ross Lake National Recreation Area lies within the North Cascades ecosystem grizzly bear recovery zone. The recovery zone has been divided into 42 Bear Management Units (BMUs) for the purposes of habitat evaluation and population monitoring (USFWS 1993, USFS 1990). Each BMU represents an approximation of a female grizzly bear's home range and is drawn following natural features, encompassing a complete array of seasonal habitat needs for feeding, cover, and denning. Eleven BMUs are within, or overlap, the North Cascades NP Complex.

Desired conditions for each BMU are defined by the contiguity, size, and habitat quality of areas isolated from roads and high-use trails during the springtime ("early season," den emergence to July 15) and summer/ fall ("late season," July 16 to denning) foraging periods. In 1994 the Interagency Grizzly Bear Committee (IGBC) identified a task force to develop a consistent analysis process for defining the area within which road and trail density should be measured (IGBC 1994/ 1998). The basis upon which habitat effectiveness for grizzly bears will be determined is the amount and quality of "core areas" within a BMU. Core areas are defined as areas

with the following characteristics: (1) No motorized use of roads and trails during the non-denning period. (2) No roads or trails that receive non-motorized, high-intensity use. “High intensity use” was defined by the US Forest Service (1990, under the purview of the IGBC) as trails receiving an average of 20 or more parties per week. (3) A minimum of 0.3 miles (500 meters) from any open road, motorized trail, or high use trail. The 0.3 mile buffer was determined from a review of available research on the relationships among grizzly bears, roads, trails and habitat use (Mattson et al. 1987, McLellan and Shackleton 1988, Aune and Kasworm 1989, Kasworm and Manley 1990, Mace et al. 1996, Mace and Waller 1996).

In 1997, the North Cascades Ecosystem Grizzly Bear Management Subcommittee of the IGBC adopted interim guidelines for management of core area throughout the ecosystem. These guidelines called for a “no net loss of core area” within U.S. Forest Service and National Park Service lands within the North Cascades ecosystem with the expectation that when each federal agency undertook their next major public planning process, more formal management

direction would be determined for each agency. This general management plan is the mechanism by which the NPS formalizes direction for core area and habitat management within the North Cascades NP Complex.

During 1997 and 1998, the North Cascades Grizzly Bear Management Subcommittee directed its technical team to conduct an assessment of the availability of core areas and the seasonal habitat values in core areas across the ecosystem. The resulting North Cascades Ecosystem Grizzly Bear Habitat Assessment (2001) estimated seasonal habitat availability, recommended long-term core area goals for each BMU, recommended desired condition for seasonal habitat in core areas, evaluated the availability of habitat components in core area on federal ownerships within each BMU, provided recommendations to improve habitat suitability for BMUs not meeting the desired condition, and recommended using consistent definitions and approaches to access management as outlined in the Task Force Report (IGBC 1994/1998).

The two ecosystems where recovery has been most successful, the Yellowstone and North-



The colors of fall in Ross Lake NRA.

ern Continental Divide Ecosystems, have set standards of approximately greater than or equal to 70 percent core area per BMU. Current core area values within the North Cascades NP Complex range from approximately 53-92 percent/BMU. Three BMUs shared with the Mt. Baker-Snoqualmie National Forest (two within the north unit of the national park, one within the south unit) do not achieve 70 percent core area because of road and high-use trail densities primarily on national forest and private lands. One shared BMU achieves 71 percent core area, with most development occurring on national forest and private lands.

No new roads are proposed in this general management plan, and the removal of one mile of road is planned in order to comply with the Wilderness Act (1964). Trails proposed in this plan will constitute reductions in core area of less than one percent in each of the Pasayten, Granite Creek, Goodell-Beaver, and Thunder BMUs. These trails will not cause significant loss of core percentage, core area habitat quality, loss of high quality habitat from core area, or fragmentation of large blocks of isolated habitat.

A Habitat Assessment will be completed for any proposed development that might affect a BMU within Ross Lake NRA, North Cascades National Park, or Lake Chelan NRA. This will provide an analysis of impacts to grizzly bear habitat in addition to any changes to the percentage of core habitat. The NPS will strive to minimize, avoid, or mitigate impacts on high quality spring and fall grizzly bear habitat. The NPS will consult with the USFS in any circumstance where the development of potentially high use trails within the national park will affect a shared BMU that is currently below the 70 percent core area ratio or which could reduce the core area ratio below 70 percent overall for a shared BMU.

By retaining core area at a higher level than 70 percent, goals are met that will allow for population recovery. BMUs with high core values may also offset or compensate for BMUs where higher standards are not possible because of the distribution of private lands or roads that may not be closed because of jurisdictional or management concerns.

Fisheries

Under this plan, the NPS will implement the Mountain Lakes Fishery Management Plan.

In addition, the NPS will develop a fisheries management plan which will include a monitoring component for Ross Lake NRA. Priorities for the fisheries program will be to cooperate with partners, such as the Washington Department of Fish and Wildlife and Seattle City Light, to address fishery management issues. As part of this effort, the NPS will work in partnership with these agencies to maintain native fish stocks in the reservoirs and tributaries through a variety of measures such as establishing size limits, fishing moratoriums, and actively managing spawning habitat. The NPS will consider a variety of measures to protect spawning habitat such as maintaining side channels and minimizing adverse impacts from the North Cascades Highway and NPS infrastructure where feasible.

Science Communication and Volunteer Programs

The NPS will develop a formalized program and process to communicate the results of research and monitoring efforts to a variety of audiences, including the NPS, other agencies, and the general public. The NPS will engage partners, such as North Cascades Institute and Seattle City Light, in the process of communicating the results of research and monitoring to a wider public audience and will actively work to expand opportunities to engage volunteers in a variety of scientific research and monitoring projects and programs.

Cultural Resources

Cultural resources, including archeology, historic structures, cultural landscapes, ethnohistory, and museum collections, will be ensured long-term stewardship and preservation through a variety of measures. The NPS will continue identification, documentation, and research programs to learn more about human history in the North Cascades in all program areas, including archeology, collections, historic structures, cultural

landscapes, and ethnohistory. The NPS will also seek to expand opportunities for sharing information about cultural resources through interpretive and educational media and programs.

Specific guidance for cultural resource management includes new programs and approaches to management.

Archeology

The NPS will continue to focus on identification, investigation, documentation, and protection of archeological sites and will continue to conduct theoretical research investigations, through the archeology program and in partnership with others, that increase understanding of human use of the North Cascades. The NPS will also work to expand partnership opportunities for research related to paleoecological processes.

The NPS will develop a program for paleoecological investigations in partnership with others to expand understanding of past ecological processes and climate conditions.

The NPS will continue to offer and expand opportunities for qualified researchers and visitors to engage in new archeological projects.

The NPS will increase opportunities for archeological site interpretation in the field and will develop interpretive materials based on research results.

Historic Structures

The NPS will continue to identify, document, and treat historic structures according to management preservation decisions and will investigate the potential for adaptive re-use of historic structures, where feasible.

The NPS will also develop interpretive opportunities emphasizing the development and utilization of significant historic structures, such as distinguishing trapping, recreation, and mining sites.

Cultural Landscapes

The NPS will continue to identify, document and treat cultural landscapes according to management preservation decisions and will prioritize preservation treatments for cultural landscapes that provide for interpretation of human uses in the North Cascades.

The NPS will develop interpretive opportunities that illustrate human use of the North Cascades.

Ethnohistory

The NPS will continue to encourage conducting oral histories and research investigations documenting human use of the North Cascades. The NPS will also develop interpretive opportunities communicating human use of the North Cascades.

Museum Collections

The NPS will maintain collections and archives in their existing location and increase storage capacity and staffing to preserve and protect paleoecological and emerging collections and archives.

The NPS will provide access to the collections and archives for qualified researchers and public access to collections items both on-line and on-site. The visitor center exhibit area will be expanded to display museum collection objects.

Tribal Issues

The NPS will continue to work closely with Skagit Tribes to preserve archeological sites and continue their traditional activities within Ross Lake NRA.

As part of this effort, the NPS will cooperate with and provide guidance to Skagit Tribes to access locations used for ceremonial activities and will monitor levels of use and potential resource effects. The NPS will also conduct tours and guided visits for the Skagit Tribes and selected groups to archeological and ethnographic sites and will consult with Skagit Tribes to document resource use areas and traditional cultural properties. In addition, the NPS will research and inventory ethnohistoric tribal uses of traditional plant, animal, and mineral resources.

Wilderness and Backcountry

Under this plan, the NPS will focus on wilderness character, ecosystem preservation, and compatible recreation activities in designated wilderness, potential wilderness, and some backcountry areas in Ross Lake NRA. Within these areas, recreational activities, expanded wilderness education, and park operations will be compatible with preserving the wilderness character.

The NPS will prioritize the protection of resources, natural ecosystem functions and processes, and significant cultural resources. Visitors will be provided with opportunities for solitude, tranquility, and connections with the natural world. The backcountry permit system will continue to monitor and manage numbers of visitors in these remote areas in order to minimize visitor impacts to resources.

In designated and potential wilderness, changes in campsite locations, new designated camps, or trail re-routes will be permitted. All such changes will meet the park's minimum requirement analysis standards.

Construction of new trails will be minimal and limited to along the North Cascades Highway corridor. In large swaths of trailless wilderness in the NRA and North Cascades National Park, the NPS will strive to preserve opportunities for solitude and the untrammled and undeveloped character of wilderness when considering new trails.

Wilderness Designation

Seattle City Light has determined that a hydroelectric project on Thunder Creek is not economically or environmentally feasible. SCL has abandoned hydroelectric development plans for Thunder Creek and thereby has removed the possibility of a nonconforming use or incompatible condition. Conversion of this area to designated wilderness will be completed in accordance with the Washington Parks Wilderness Act of 1988, Title IV(a)(2) which states "any lands designated as potential wilderness additions, upon publication in the *Federal Register* of a notice by the Secretary of the Interior that all uses thereon that are inconsistent with the Wilderness Act have ceased or that non-Federal interests in land have been acquired, shall there-



Looking out across the Stephen Mather Wilderness from Trappers Peak.

by be designated as wilderness and managed accordingly.” Conversion to designated wilderness will also comply with NPS Management Policies 2006 (§ 6.2.2.1) which states, “. . . these potential wilderness areas will become designated wilderness upon the Secretary’s determination, published in the *Federal Register*, that they have finally met the qualifications for designation by the cessation or termination of the nonconforming use.”

The Thunder Creek Potential Wilderness Area, totaling 3,559 acres, will be converted through administrative designation to wilderness and included in the Stephen Mather Wilderness as part of the National Wilderness Preservation System. This action will ensure that the Thunder Creek area’s wilderness character and wilderness resources will be preserved in an unimpaired condition, in accordance with the Wilderness Act. These lands will be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical uses.

In recognition of Seattle City Light’s easements under the Skagit River Treaty, the Big Beaver Valley Potential Wilderness Area is not proposed for wilderness designation at this time.

Wild and Scenic River Designation

Wild and Scenic River Eligibility and Suitability Study Summary

Rivers and streams within Ross Lake NRA will be preserved in their free-flowing condition, and they and their immediate environments will be protected.

Based on the findings of the Skagit Wild and Scenic River Eligibility and Suitability Study, the NPS will recommend Congressional legislation for wild and scenic river designation of the Skagit River from Gorge Powerhouse downstream to the boundary of Ross Lake NRA, Goodell Creek, and Newhalem Creek. This river segment and creeks were found eligible based upon their free-flowing conditions and outstandingly remarkable values and based upon analysis, public comments, and consultation with partners and tribes. A wild and scenic

designation will complete the Skagit Wild and Scenic River System from Sedro-Woolley up to the start of the Skagit Hydroelectric Project at the Gorge Powerhouse, providing an opportunity for holistic watershed management.

The 11-mile Skagit River segment, from Gorge Powerhouse to the Ross Lake NRA boundary, contains the following outstandingly remarkable values: fish, wildlife, geology, pre-history, history, scenery, and recreation. The Skagit River would be classified as “Recreational,” due to the hydropower dams upstream and presence of the North Cascades Highway paralleling the river for this entire stretch. The Skagit River between Gorge Dam and Gorge Powerhouse is not eligible because this largely dewatered reach does not meet the free-flow requirements of the Wild and Scenic Rivers Act.

Goodell Creek, 12.7 miles from its headwaters to its confluence with the Skagit River, possesses the following outstandingly remarkable values: fish, wildlife, geology, and scenery. Goodell Creek would be classified as “Wild” from its headwaters to river mile 0.5 and “Recreational” from river mile 0.5 to its confluence with the Skagit River.

Newhalem Creek, 9 miles from its headwaters to its confluence with the Skagit River, possesses the following outstandingly remarkable values: wildlife, geology, history, pre-history, and scenery. Newhalem Creek would be classified as “Wild” from its headwaters to upstream of the diversion dam at river mile one and “Recreational” from river mile one to its confluence with the Skagit River.

The complete Skagit Wild and Scenic River Eligibility and Suitability Study is included in Appendix D of the final GMP/EIS.

Additional Eligibility and Suitability Analysis

Three other tributaries of the Skagit River above Gorge Dam (Thunder Creek/Fisher Creek, Ruby Creek, and Big Beaver Creek) were also found eligible in previous study efforts.

The NPS will evaluate and/or update eligibility for rivers or river segments in the Skagit River Watershed within the North Cascades NP Complex. This evaluation will include, but is not limited to: Bacon Creek, Thunder Creek/Fisher Creek, Ruby Creek, Big Beaver Creek, Little Beaver Creek, and Lightning Creek. If eligible, the NPS will also conduct a suitability analysis for these creeks. Evaluations of Bacon Creek, Lightning Creek, and Ruby Creek will be conducted in cooperation with the Okanogan-Wenatchee and Mt. Baker-Snoqualmie National Forests.

Recreation

Recreational activities at Ross Lake NRA will continue much as they do today. Visitor experiences will include a mix of recreational activities and resource-focused activities while minimizing impacts through education and the use of defined high use areas. A wilderness experience will continue to be available to those who prefer solitude and tranquility in more remote areas of Ross Lake NRA.

The NPS will continue to attract visitors who seek experiences to interact with the natural environment and wilderness through traditional recreational activities while providing additional opportunities along the North Cascades Highway corridor for visitors with a wide range of interests and abilities. For example, the NPS will provide enhanced day-use opportunities along the North Cascades Highway, such as dayhiking, road biking, water recreation, sport climbing, picnicking, increased interpretive services, and hands-on stewardship experiences. In addition, the NPS will provide some additional overnight experiences such as new or improved camping areas, including a location for stock camping.

Interactions with knowledgeable, uniformed staff will be widely available, particularly in frontcountry areas of Ross Lake NRA. The NPS will communicate the variety of recreational opportunities available in Ross Lake NRA and the park complex through improved information sharing and cooperative efforts with Seattle City Light, Washington State Department of Transportation, North Cascades Institute, and others.

Boating

Boating on Ross, Diablo, and Gorge lakes and the Skagit River will continue to be primary forms of water recreation on, and visitor experience of, Ross Lake NRA's water resources. Self-propelled and non-mechanized recreation will be encouraged throughout Ross Lake NRA. Motor boating will be managed to maintain or improve the current visitor experience, visitor safety, soundscapes, and water quality on all water bodies in Ross Lake NRA.

The NPS will manage the number of boats on the lakes by maintaining current access to the lakes as well as the existing capacity of boating infrastructure, such as boat-in campsites, boat launches, and moorage sites on all lakes in Ross Lake NRA.

The Ross Lake Resort will also be permitted to run two water taxis on Ross Lake. This increased service will enhance opportunities for visitors to efficiently move around Ross Lake, accessing campsites and trailheads, while still maintaining the quality of the experience on Ross Lake.

Beginning in 2015, the National Park Service will implement a Clean Engine Requirement, and boats that do not meet the Environmental Protection Agency Rules for gasoline spark-ignition marine engines will be prohibited on all lakes within Ross Lake NRA. The National Park Service will require the exclusive use of four-stroke engines, direct-injection two-stroke engines, or equivalent technology. The Clean Engine Requirement will apply to NPS and concessions vessels in addition to personal or private vessels operating on all lakes within Ross Lake NRA. Any NPS-operated diesel engines, as they reach the end of their life, will be replaced with cleaner technology.

No wake zones will be established to maintain or enhance visitor experience, safety, and soundscapes on the reservoirs. The intent of no wake zones will be to preserve and enhance the experience for non-motorized and small motorized boaters and could be established near developed campsites, docks, dams, and log

booms. Wake limits will also be established for proximity to other boaters.

Boating recreation that involves towing people behind boats at high speed, such as water skiing or tubing, will be prohibited on all reservoirs.

The NPS will establish horsepower, boat size, and/or speed limits on all lakes in Ross Lake NRA for concessions, commercial, and private boats should congestion become an issue, tranquility and noise remain a concern, or other assumptions about current constraints to motorboat activity change. Specific limits will be set through the NPS operational and rule-making procedures under 36 CFR 1.5 which allows the superintendent to implement closures or set public use limits. The NPS will actively engage the public and provide opportunities for public involvement when specific limits are developed. Provisions for emergency, law enforcement, NPS and SCL operations, and the water taxi will be made.

The NPS will improve signage and educational materials to guide visitors on known hazards associated with boating on the reservoirs, such as alerting visitors to fluctuating lake levels.

On the Skagit River, regulations for river rafting will be established for resource protection and improving visitor experience. Regulations could include group size limits and limits on the number of concession operated boats. Motor boats will be excluded on the Skagit River, except for emergency, law enforcement, NPS and SCL operational, research, and monitoring needs. Boating on the Skagit River is characterized predominantly by independent paddle boaters and concession operated river rafting trips. As of this writing, very few recreational motor boats travel the Skagit River within Ross Lake NRA. Thus, restricting motor boats within this reach of the river will not significantly change visitor use on the Skagit River overall, rather it will serve to enhance the visitor experience for the majority of NRA visitors who experience the river by self-propelled boat.

Many of these boat management strategies and regulations were proposed by members of the public during scoping for this GMP and then supported by the public during the draft alternatives and draft GMP/EIS public review process. These actions respond to public concerns about preserving and improving water recreation while ensuring that these activities are safe and minimize impacts to resources.



Paddling on Ross Lake towards Pumpkin Mountain. Photo by Michael Liang.

Hunting and Fishing

Hunting will continue in Ross Lake NRA, and there will be a focus on maximizing visitor safety during hunting season. In response to public concerns about hunting safety and recent hunting accidents in the region, the NPS will seek to expand safety zones in the vicinity of trails and developed areas and improve visitor awareness about hunting activities and visitor safety in Ross Lake NRA. Hunting regulations will continue to be coordinated with the Washington State Department of Fish and Wildlife to reduce conflicts between general recreationists and hunters during hunting seasons. Lead-based ammunition will be prohibited, and some limits to types of firearms could be established.

The Washington State Department of Fish and Wildlife will continue to regulate fishing in Ross Lake NRA, and the NPS will work with the Department of Fish and Wildlife to prohibit use of lead tackle in Ross Lake NRA.

Sport Climbing

Sport climbing within the Ross Lake NRA in the Skagit Gorge from Newhalem to Diablo will continue to be managed separately from other forms of recreation because sport climbing is a unique activity that requires manipulation of the climbing environment including installation of bolted anchors. Due to the manipulative actions required to establish sport climbing routes, the NPS will continue to allow sport climbing in the four areas already agreed upon between NPS and the climbing community and will maintain and monitor routes and access through an Adopt-A-Crag program. Some routes or areas could be closed for resource protection.

In addition, the NPS will allow new routes that require placement of fixed anchors and replacements within designated Climbing Management Areas (CMAs). These new CMAs will be evaluated, authorized, and managed on a case by case basis, subject to funding and personnel and following appropriate site-specific surveys and assessments. A map and description of authorized CMAs will be identified in the superintendent's compendium and maintained on the park website along with other climbing-related information.

The process for establishing new Climbing Management Areas will be initiated upon written request by the CMA proponent in advance of route development. The NPS will survey a proposed CMA to determine if the area is appropriate for sport climbing development and use. The NPS will evaluate various factors such as presence of natural and cultural resources, access, and other site-specific concerns. If surveys and assessments indicate sport climbing is appropriate within a proposed CMA, then the area will be formally designated as a CMA via the superintendent's compendium and managed according to site-specific conditions.

Climbing Management Area boundaries will follow obvious topographic or cultural features (such as creeks and roads) to make it clear to the public and law enforcement personnel where climbing will be allowed or prohibited. Information about Climbing Management Areas will be posted and made readily available to climbers and the public. The NPS will also evaluate and formalize access and parking to climbing routes for safety and resource protection.

The NPS will prohibit intentional physical manipulation of the landscape including scrubbing of lichen, moss, and vegetation; movement of rocks and debris (such as terracing); and harm to cultural resources that exceeds de-minimis impact, in accordance with 36 CFR 2.1 (a) Preservation of natural, cultural, and archeological resources and other regulations.

The NPS will also strongly support programs that encourage climbers to take an active role in stewardship of Climbing Management Areas.

Seaplanes

Seaplanes will be allowed to land and take off on Diablo and Ross lakes except within 1,000 feet of Diablo Dam and Ross Dam, according to 36 CFR 7.69 and 36 CFR 2.17. Seaplanes could continue to use 9 of the 19 campsites on Ross Lake that are suitable for seaplane docking. Seaplane users who overnight at lakefront campsites will continue to need a backcountry permit similar to all users of these sites.

The NPS will work collaboratively with the seaplane pilots community to gather data on seaplane use, create noise abatement procedures and educate pilots about these procedures and general seaplane use in Ross Lake NRA. Noise abatement procedures (such as reducing propeller speed as much as possible for take-off, avoiding prolonged flight at low altitudes, and maintaining distance from campsites and vessels on the lake) will be instituted through the superintendent's compendium or through voluntary compliance. These noise abatement procedures will seek to minimize noise during take-off and while flying in or near Ross Lake NRA. The NPS will also establish a long term acoustic monitoring program and encourage research to better understand soundscape impacts, particularly on wildlife.

It is recognized that seaplane use in Ross Lake NRA occurs infrequently because of several limiting factors, such as weather, the steep terrain and physical geography of Ross and Diablo lakes, reservoir levels, border security, Federal Aviation Administration regulations and licensing, and costs. Additionally, existing data shows that seaplane use is not anticipated to increase in the near or long term future.

Safety is vital for all recreational activities in Ross Lake NRA, including seaplane use. Strong winds from the south and limited available water surface make landings and takeoffs aeronautically challenging on Ross Lake. North facing docks are best suited for seaplanes because they provide shelter from the southerly swells. Together with dock requirements, these limiting factors narrow the options for safe access and use on Ross Lake to a handful of lakefront campsites that are located sporadically along the full length of Ross Lake.

Seaplane use is recognized as a mode of transportation, similar to other motor vehicles, to access Ross and Diablo lakes and campsites along the reservoirs.

Commercial Scenic Air Tours

Commercial scenic air touring will be managed to protect soundscapes and the recreational experiences of visitors on the ground. While the



Rock climbing in Ross Lake NRA.

NPS will recommend that pilots maintain a 2000 foot above ground level (AGL) limit when flying over NPS lands (FAA AC91-36D), the NPS will also coordinate with the Federal Aviation Administration to develop an air tour management plan that could establish use levels for commercial scenic air tours and designate appropriate air tour locations. Concern about overflights, and specifically air tours, was expressed by the public during the planning process. Commenters wanted to ensure that the remote and wilderness character of Ross Lake NRA is not diminished by the presence of air tours.

Stock Use

The NPS will continue to allow stock use on trails where currently allowed and under existing regulations, such as use of weed-free feed and restricting grazing. In addition, the NPS will expand education and outreach to stock groups on the importance of weed-free feed in Ross Lake NRA.

The NPS will also evaluate designating additional frontcountry campsites and/or facilities for stock use.

Backcountry Permit System

The purpose and objectives of the backcountry permit system will be maintained, but the process for obtaining a permit will be changed. The NPS will develop an online permit system option that could allow for advance trip planning and permitting and a streamlined permit process. This will allow visitors to guarantee a permit for a specific camp in advance. The objective of the permit system is to disperse visitor use, reduce crowding and conflicts, and provide information and education about safe and low-impact wilderness and backcountry use, thereby providing a quality wilderness experience that protects natural resources. Permits will still be picked up at one of the eight permit stations en route to the backcountry trip location (Marblemount, Hozomeen, Winthrop, Sedro-Woolley, Newhalem, Glacier, Stehekin and Chelan), and a percentage of permits will be set aside for walk-up permits. Staff will be on hand to assist with wilderness trip planning and ensure that visitors understand the current conditions and risks, as well as the legal requirements for protecting the

resources and experience of other visitors. This will still be done in person to provide current information and to track last minute changes in trip plans, but the process will be streamlined to be more efficient for those who choose to pre-plan and obtain an advance permit.

Fees

The NPS will evaluate and consider establishing user fees for specialized services, reservations, and permits. Fees could be used to sustain reservation and permit systems and improve visitor services and resource programs.

New and Emerging Recreational Uses

The NPS will evaluate and respond to new and emerging recreational uses on a case-by-case basis as soon as they arise to protect resources and preserve the visitor experience. Potential commercial recreational services will be handled under concessions.

Interpretation and Education

Ross Lake NRA will be a platform and classroom for education about the resources and history of North Cascades ecosystem as well as civic engagement, stewardship, and environmental leadership. There will be opportunities for both structured and unstructured activities, including self-guided exploration, discovery, and fun. Activities will be focused in the Frontcountry Zone but could expand into the Backcountry Zone. Activities in the Wilderness Zone will be limited. The NPS will develop, conduct, and evaluate interpretive and educational programs and will work with partners to conduct and deliver these programs. The focus of NPS and partner programs will be to develop stewards of the greater North Cascades ecosystem.

Educational and interpretive programs will respond to seasonal changes in visitation and visitor needs. During the spring and fall seasons, programs and associated facilities will be geared to curriculum-based education and school programs. These programs will focus on immersion, hands-on experiential learning, and environmental stewardship. During the summer season, programs will be geared to general visitors and families through on-site and outreach programs.

Interpretation Programs

Interpretive programs and materials offer visitors opportunities to learn about and find meaning in Ross Lake NRA. Information will be provided through both formal and informal ranger-led programs and activities, exhibits, and diverse media (such as video, publications, website, social media, etc.).

The NPS will use current and dynamic methods to develop, deliver, and evaluate interpretive programs and materials so that they generate curiosity, passion, enthusiasm, and respect for park resources and build a sense of stewardship for the North Cascades ecosystem. The NPS will provide a balance of traditional facility-based interpretive programs and opportunities for people to talk with rangers and be immersed in the park. The NPS will improve traditional interpretive programming within existing facilities, possible new facilities, and select areas of Ross Lake NRA. The NPS will work with partners, including NCI and SCL, to develop, deliver, and evaluate the programs so that they convey a broad range of interpretive themes.

Visitor Orientation and Informal Education

A visit to Ross Lake NRA will be much as it is today, and Ross Lake NRA will continue to serve as a portal to the North Cascades wilderness. Efforts will go to creating a sense of arrival



A NPS interpretive ranger provides trail information to visitors at the North Cascades Visitor Center.

at destinations within Ross Lake NRA, such as Newhalem, Diablo Lake, and the Environmental Learning Center, by using existing developed areas more effectively.

Visitor orientation and informal education will be enhanced through improved signage, multi-media, and exhibits at existing waysides, contact stations, and along interpretive trails. Improved signage will provide visitors a sense of approach and arrival as well as better orientation to the services and resources within Ross Lake NRA. Visitors will experience consistent messages from all contact stations and partners as well as from pre-trip planning through the completion of their visit. The NPS will make efforts to provide additional training and materials to all NPS staff, volunteers, and partners so that the quality of information and informal education being provided is consistent throughout all visitor contact points.

Curriculum-based Programs

Curriculum-based programs help students, teachers, and parents use the park as a classroom to educate themselves about the North Cascades ecosystem and history of the area. Similar to interpretation, programs are intended to generate curiosity, passion, and respect for the park among students and build a sense of stewardship. Curriculum-based programs will emphasize low-impact recreation, hands-on ac-



Participants of First Bloom revegetate Diablo Lake Overlook. Photo by Brad Metler.

tivities, and increase relevance to students' lives, using a broad range of educational and interpretive messages and methods.

Outreach

The NPS will expand participation in outreach programs as one of many mechanisms to build local and regional stewardship of the North Cascades ecosystem. Outreach programs designed to build relevancy between the park and Latino and Hispanic members of surrounding communities will be expanded. The park will also expand collaboration with its partners to develop an increased number of pathways for youth from education and stewardship programs to employment opportunities.

Partnerships for Interpretation and Education

Partnerships help the interpretive messages reach a broader audience through programs, additional interpretive displays, and distribution of interpretive material and media, including retail. Partnerships also help expand stewardship by engaging volunteers in NPS projects and programs.

The NPS will enhance partnerships with Seattle City Light (SCL), British Columbia Parks, the Forest Service, North Cascades Institute, concessioners, and others to attract a broader more diverse audience of visitors and connect people to the outdoors and the North Cascades. The NPS will work with partners to develop and evaluate the interpretive and educational programs and messages and set a standard of excellence. The NPS will emphasize training and collaboration with partners to enhance NPS and partner capacity to develop, distribute, and deliver relevant interpretive and educational services. The NPS will also seek to provide interpretive rangers co-located at partner visitor contact stations and at eastside entry points.

Environmental Learning Center

The ELC will continue to function as a center for outdoor learning and a campus for curriculum-based environmental education for youth and families. The center will also continue to provide year-round educational and interpretive

services through curriculum-based educational programs and continued learning opportunities about the North Cascades ecosystem.

To continue and enhance the distinctive partnership with North Cascades Institute (NCI) in the areas of education and interpretation, the NPS will devote staffing, funding, and NPS resources to Environmental Learning Center (ELC) programs and operations. The NPS will develop and evaluate the interpretive and educational messages with NCI, setting a standard of excellence, and increasingly collaborate with NCI staff based from the ELC to distribute and deliver relevant interpretive and educational messages.

Hozomeen Interpretive Programs

The NPS will expand the partnership with B.C. Parks to provide joint NPS and Canadian land- and water-based interpretive programs to enhance learning opportunities related to the broad range of interpretive and educational messages. The NPS will also recruit joint campground hosts to provide visitor services and serve agency functions at both Ross Lake (B.C.) and Hozomeen Campgrounds. In addition, the park will expand basic visitor services and improve access to staff and backcountry permits in Hozomeen.

Seattle City Light Interpretive Programs

The NPS will continue to rely on Seattle City Light to provide interpretive information about the history, function, and value of the Skagit Project hydropower operations. In addition, the NPS will develop a more collaborative relationship with Seattle City Light to introduce visitors to the variety of activities and information available in the area and ensure visitors receive consistent information and messages, which could include developing additional programming and exhibits that tell about the history and operations of hydropower and the Skagit Project.

The partnership with SCL will be enhanced through working side-by-side to introduce the North Cascades to visitors and the variety of available activities in the area. This could include such partner activities as having NPS rangers provide interpretation on SCL's Diablo Lake

boat tours and assist SCL employees at the SCL visitor contact station in Newhalem. SCL could also enhance the Skagit General Store operations to not only meet the needs of SCL employees and residents, but to also provide food and merchandise to visitors to the North Cascades NP Complex. Other partnership endeavors could include adaptively reusing facilities in Newhalem for visitor services and NPS and partner organizations, such as food service, staff housing, and visitor lodging.

The NPS will also seek to integrate information from Seattle City Light staff, research, and their resource management activities into NPS interpretive programs.

Concessions, Commercial Use Authorizations (CUAs) Interpretive Programs

The NPS will enhance collaboration with concessionaires and CUA permit holders to share best practices and standards as well as ensure consistent delivery of interpretive and educational messages and help reach a broader audience.

Access and Transportation

Mechanized and non-mechanized access and transportation will largely be maintained to and within Ross Lake NRA with some additions. Improved parking, pullouts, and waysides will provide visitors with vehicular and bicycle access to the frontcountry and some backcountry areas of Ross Lake NRA. Boat launches on the lakes and Skagit River will continue to allow access by both motorboats and paddle boats to Ross Lake NRA's waterways.

Park Entrance

New park entrance portals will be developed at the east and west ends of the park along the North Cascades Highway to provide a distinct sense of arrival in the North Cascades NP Complex. The entrance portals will be sculptural expressions of the North Cascades ecosystem and will be consistent with design principles and architectural themes of the complex.

Site elements will include parking and a kiosk or signboard to provide orientation and basic

interpretive materials for visitors. Site design will need to consider both pedestrian use and vehicular circulation to ensure visitor safety along the North Cascades Highway.

Management of the North Cascades Highway

The North Cascades Highway is a designated National Forest Byway and Washington State Scenic Byway. The NPS will recommend nomination and designation of the North Cascades Highway as a National Scenic Byway to be reflective of its nationally significant resources.

The NPS will coordinate with WSDOT on the management and maintenance of the North Cascades Highway. This includes efforts to manage hazard trees, clear vistas, manage non-native plants, and eliminate invasive non-native plants from gravel and sand sources used in road maintenance activities. The NPS will also coordinate with WSDOT for construction projects on the North Cascades Highway such as signs, parking, and pullouts, consistent with the Highway Easement Deed.

The NPS will also coordinate with WSDOT, SCL, and NCI to determine appropriate conditions for when avalanche control will be necessary on the North Cascades Highway within the boundaries of Ross Lake NRA, as well as techniques for avalanche control, in order to prevent the use of explosives to minimize disturbance to wildlife and wilderness values. The NPS will consider solutions proactively in cooperation with WSDOT to avoid catastrophic channel avulsion, road closure, and to minimize impacts to fish populations and other resources. The NPS will identify and agree upon appropriate mitigation sites for potential future actions.

The NPS will also encourage Washington State Department of Transportation (WSDOT) to construct a longer bridge across Goodell Creek on the North Cascades Highway to minimize the potential for channel avulsion.

The NPS will work with its partners to reduce excessive noise resulting from motor vehicle use on the North Cascades Highway through education and enforcement of Chapter 173-60

WAC, Maximum Environmental Noise Levels and Chapter 173-62 WAC, Motor Vehicle Noise Performance Standards.

During winter, the North Cascades Highway will continue to be closed to throughway vehicular access from the Ross Dam Trailhead parking lot to milepost 170, 14 miles west of Mazama, due to safety threats posed by avalanches and the high cost of plowing and wintertime road maintenance, and salt applications will continue to be banned. Motorized and non-motorized recreational activities, such as skiing and snowmobiling, will continue on this closed portion of the road. Overlooks and trailheads on the open portion of the highway within Ross Lake NRA will be plowed during the winter months to provide access for winter recreational activities.

Improvements to waysides, pullouts, and overlooks, such as an additional pullout at Ross Overlook, improvements to Newhalem and Gorge Lake pullout, improvements to the Panther Creek pullout and trailhead, and a wayside at Devil's Elbow in coordination with Seattle

City Light, will be evaluated. The river access and a take-out at the Portage will be improved.

The NPS will encourage WSDOT to construct a larger bridge across Goodell Creek on the North Cascades Highway to minimize the potential for channel avulsion.

The NPS will also improve facilities (such as covered shelters, and stands) in campgrounds for bicyclists and will coordinate with the Washington State Department of Transportation to improve signage for safety of bicyclists.

Access to Ross Lake

No additional road access from the North Cascades Highway to Ross Lake will be developed. The only public vehicular access to Ross Lake will continue to be the 40 mile gravel road from Hope, B.C. to Hozomeen. The NPS will recommend the road be maintained as a gravel road as paving the road could fundamentally alter the character of Hozomeen and Ross Lake itself as a remote outpost for recreationists.



Ross Lake Resort. Photo by Michael Silverman.

Thornton Lakes Road

The upper one mile of the Thornton Lakes Road will be closed to vehicular access at the wilderness boundary to comply with wilderness regulations. The Wilderness Act of 1964, Section 4(3)(c) states, “Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act...” The closed portion of the road will be rehabilitated. A parking lot and trailhead will be formalized at the wilderness boundary in an existing disturbed area. The NPS will maintain and upgrade trail access to Thornton Lakes. Future planning will determine whether trail access to Thornton Lakes is a direct trail up and back along the same alignment, a loop trail, or a new alignment. The rationale for a loop trail, which could be of various lengths, is to gain opportunities for subalpine views.

Parking Areas

Parking areas and public access at Diablo Ferry dock, Goodell Creek raft area, will be reconfigured, formalized, or developed in cooperation with partners as necessary.

Maintenance and Gravel Storage Areas

Maintenance and gravel storage location areas for park operations will be formalized to minimize resource impacts, such as invasive, non-native plant infestations.

Facility Design Standards

The NPS will develop design standards to create a visual and architectural identity for the North Cascades NP Complex. The design standards will be based upon existing examples of design in the complex, including such facilities as the North Cascades Visitor Center and Newhalem and Colonial Creek Campground entrance stations. New construction, renovation, and upgrading of facilities in Ross Lake NRA will conform to these new design standards.

Safety and Security

The NPS will continue to emphasize safety through programs and activities that enhance the safety of visitors, park operations, and park staff. In addition, the NPS will continue to work with Seattle City Light and other relevant agencies on security plans, evacuation plans, and emergency response plans.

Communication Facilities

The installation of non-administrative communication facilities in wilderness will be prohibited, consistent with existing laws and policies. In the event that additional communication facilities are considered outside the wilderness in Ross Lake NRA, the NPS will restrict the location of communication facilities to areas where there is already existing infrastructure in order to minimize impacts to natural and cultural resources and the visual setting.

Commercial Services and Concessions

The NPS will develop a commercial services plan for Ross Lake NRA and establish limits on commercial use authorizations if user capacity limits are exceeded.

Increasing concession operated visitor services, such as boat transportation services, a second water taxi and/or a scheduled boat ferry around Ross Lake, and boat rentals will also be explored. Some new facilities could be constructed to support the operations.

Overnight Lodging

The NPS will work with gateway communities to provide additional lodging outside the complex.

Skagit General Store

The NPS will enhance partnerships with Seattle City Light on store operations, including available food service. In the event Seattle City Light terminates the store operation, the NPS will explore feasibility of a concession operated store in Newhalem to provide adequate visitor services.

Interagency Cooperation and Collaboration and Partnerships

Existing partnerships and international and interagency cooperation will be maintained for resource protection, recreational opportunities, and operational efficiencies. The NPS will continue to work collaboratively with SCL, the Forest Service, British Columbia Parks, and non-governmental entities including the North Cascades Institute and the Skagit Environmental Endowment Commission, among others.

Seattle City Light

The NPS will continue to work cooperatively with Seattle City Light and international agencies and organizations, including the Skagit Environmental Endowment Commission, to develop projects and conduct programs for the international benefit of the Upper Skagit Watershed. These projects and programs address resource protection and management, visitor use, and education.

The NPS will also increase cooperation with Seattle City Light to define and clarify management roles and responsibilities for a range of issues and operations such as maintenance, housing, sharing resources, project compliance, interpretation and education, and other functions within Ross Lake NRA.

The NPS will conduct scientific research to determine how best to manage woody debris and keep organic matter in the aquatic ecosystem. Following the initial outcome of research on use of woody debris, the NPS will work with Seattle City Light to create standards for managing woody debris on the lake. These standards will include using woody debris improving riparian areas, wildlife habitat, other restoration and construction projects, and visitor use whenever appropriate. Other management strategies that remove wood from the system should consider ecological impacts and sustainability as well as costs.

The NPS will explore opportunities to partner with Seattle City Light to use existing housing or adaptive reuse of buildings for housing at Diablo and Newhalem excess to their needs for

NPS and partner housing, including the North Cascades Institute.

The NPS will continue to provide utilities and infrastructure to Seattle City Light for maintenance duties associated with Ross Lake reservoir on both sides of the Canadian border.

U.S. Forest Service

The NPS will expand partnership activities and collaboration for resource management, education and interpretation, and operational issues. This could include improved collaboration with USFS for education and interpretation at Washington and Rainy Pass, such as improved waysides and joint staffing.

Other Federal and State Agencies

The NPS will expand collaboration with other state and federal agencies on resource management, protection and visitor use issues.

Climate Change

Climate change impacts and Ross Lake NRA's carbon footprint will be addressed through a variety of strategies and actions including the reduction of emissions, use of green energy, adaptive management, and support for scientific research and educational programs. The NPS will engage in the Climate Friendly Parks program and will lead regional efforts for North Coast Cascades Network on climate change research and planning. The complex will also serve as a leader in interpreting climate change and its effects on glaciers, watersheds, resources, and people.

In addition, the NPS will continue to purchase "green power" for all facilities along the North Cascades Highway corridor. Photovoltaics will continue to run at select facilities; biodiesel fuel will continue to be used; hybrid vehicles in the park's vehicle fleet will continue to be maintained; and four-stroke motorboats engines will continue to be used. The NPS will also implement specific actions for reducing carbon emissions and improving sustainability and efficiency whenever and wherever possible. The NPS will phase out two-stroke motorboat engines throughout Ross Lake NRA. Existing vehicles,

machinery, and equipment will be upgraded or replaced with appropriate technologies such as hybrid transmissions and the use of green energy, such as photovoltaic systems, biodegradable fuels and oils, or other emerging products and technologies. Non-motorized recreational activities, such as hiking, bicycling, and paddle boating, will also be encouraged in Ross Lake NRA, and opportunities for shuttle systems or public transportation will be explored.

The NPS will work with other agencies, non-governmental organizations, and the public to develop ecosystem adaptation strategies to address anticipated changes to natural and cultural resources and the park infrastructure. Such adaptation planning is in a very early stage of development within the global community, but in general the body of knowledge is currently coalescing around several key aspects of adaptation planning. These steps will include: 1) establish a measurable natural and cultural resource baseline, 2) develop key partnerships among land management agencies, non-governmental organizations, and individuals which will be affected by any actions taken, 3) identify and develop adaptation strategies, including identifying opportunities and projects that will increase ecosystem resiliency, 4) implement adaptation strategies, and 5) revisit and revise these strategies based on experience and updated science.

The NPS will support, encourage, and conduct scientific programs and research related to climate change. Programs and research will include understanding the effects of climate change on resources, natural processes, recreation, operations, facilities, and hydropower.

The NPS will prioritize green facility design for any new construction and will focus on retrofitting and upgrading facilities to the greatest extent possible. The NPS will also prioritize contractors and concessioners that use sustainable practices and local products when selecting contractors for construction, operations, and concessions activities.

Unit Name

North Cascades National Recreation Area

During the planning process for this GMP, a consistent theme in public comments received was the expressed desire for a better connection to North Cascades National Park. The North Cascades are recognized as an iconic landscape where scenery is supreme. Communities on both sides of the North Cascades market themselves as “gateways” to the North Cascades, and State Route 20 is called the North Cascades Highway. Visitor and education facilities within the Ross Lake NRA are called the North Cascades Visitor Center, and the North Cascades Institute runs the North Cascades Environmental Learning Center. People’s affiliation with the area is with the North Cascades, and visitors come seeking a national park experience in the mountains known as the North Cascades. For most visitors, the “North Cascades” and “national park” names are important in defining what type of visitor experience is envisioned and expected.

Most visitors never actually enter North Cascades National Park; rather they enter and travel through Ross Lake NRA, causing confusion for many visitors who seek a “North Cascades” or “national park” experience. Visitors arriving from the west side enter Ross Lake NRA and drive 22 miles along the Skagit River and past Gorge and Diablo Lake before catching a glimpse of Ross Lake and then travel south for 6 miles to the eastern boundary of the Complex. The experience of Ross Lake for highway visitors is momentary, whereas the experience of the North Cascades is continuous along the North Cascades Highway corridor.

To address the public desire for an improved connection to the “North Cascades,” while understanding the implications and benefits of maintaining the national recreation area designation, the NPS will propose and recommend to Congress a name change from Ross Lake National Recreation Area to North Cascades National Recreation Area. The name North Cascades National Recreation Area is consistent with the North Cascades National Park units to the north and south, the names of the visitor

facilities currently located within the NRA, and with the concept of naming the recreation area after the mountain range in which it resides.

No other change to the enabling legislation, regulations, or policy will occur, and activities traditionally allowed within Ross Lake NRA (such as hunting and hiking with dogs on trails) will be allowed to continue in the North Cascades NRA.

Congressional legislation will be required to authorize this name change.

Boundary Modification

Diablo Townsite is located near the upper reaches of Gorge Lake near Stetattle Creek and close to the base of Diablo Dam. A significant feature of the Diablo Townsite area is that it is one of the few relatively flat, geologically stable, previously disturbed and developed, and buildable locations in the North Cascades NP Complex. It is composed of two distinct areas: “Hollywood,” an approximately 44 acre parcel owned by Seattle City Light and “Reflector Bar,” a 25 acre area owned by the National Park Service as depicted in Figure 3.7.

Hollywood contains over 25 houses and was once the primary residential area for Seattle City Light staff working at Diablo Powerhouse and vicinity. The Reflector Bar area includes Diablo Powerhouse itself, a school building (now used as a cookhouse, museum, and administrative office), maintenance facilities, sewer treatment plant, an incline lift and associated waiting station (previously used for tours of the hydroelectric project), and several houses.

At one time, Diablo Townsite was a thriving community of Seattle City Light employees and their families who worked and lived in this isolated setting. As technology advanced, control of the day-to-day operations of the facilities was moved to Seattle and fewer staff were needed on-site to operate the dams and powerhouses. Today, several houses in Diablo Townsite are empty or used as temporary lodging for staff or contractors from out of the area.

In 1989 and 1996, several buildings and structures in Diablo Townsite were listed as contributing resources on the National Register of Historic Places. In 2010, Seattle City Light had the National Register nomination updated to evaluate the historical significance and eligibility of the remaining buildings, structures, sites, and landscape elements associated with the Skagit River Hydroelectric Project in Diablo Townsite. The nomination includes 47 contributing resources in Diablo Townsite.

The operational and administrative uses of Reflector Bar by Seattle City Light require management of the area exclusively for the purposes of power production. This is a longstanding and customary use that dates back to the inception of the Skagit River Hydroelectric Project. Seattle City Light, the Federal Energy Regulatory Commission, and the Department of Homeland Security are presently concerned about protection of the facilities that support power production. To reduce security concerns, these agencies are moving to reduce public access to Reflector Bar. The National Park Service is also concerned about ensuring protection of these facilities, as well as ensuring basic public safety by limiting visitor access to the hydroelectric industrial zone.

Under this plan, Hollywood will continue to be used for housing employees necessary to operate the Diablo facilities of the Skagit River Hydroelectric Project. The NPS will partner with Seattle City Light to adaptively use houses in Hollywood for NPS and partners, such as the North Cascades Institute.

The NPS will also work with Seattle City Light to improve the Stetattle Creek and Sourdough Mountain Trailheads in Hollywood which are presently confusing to find and lack support facilities. Improvements will include redesigning the trailheads with parking, signage, visitor information, and a restroom. The NPS will also engage Seattle City Light in joint, on-site interpretation to share the history of the Skagit Project.

Reflector Bar will continue to be used primarily in support of hydropower development, with respect for its setting in Ross Lake NRA and its

Boundary Modifications Ross Lake General Management Plan

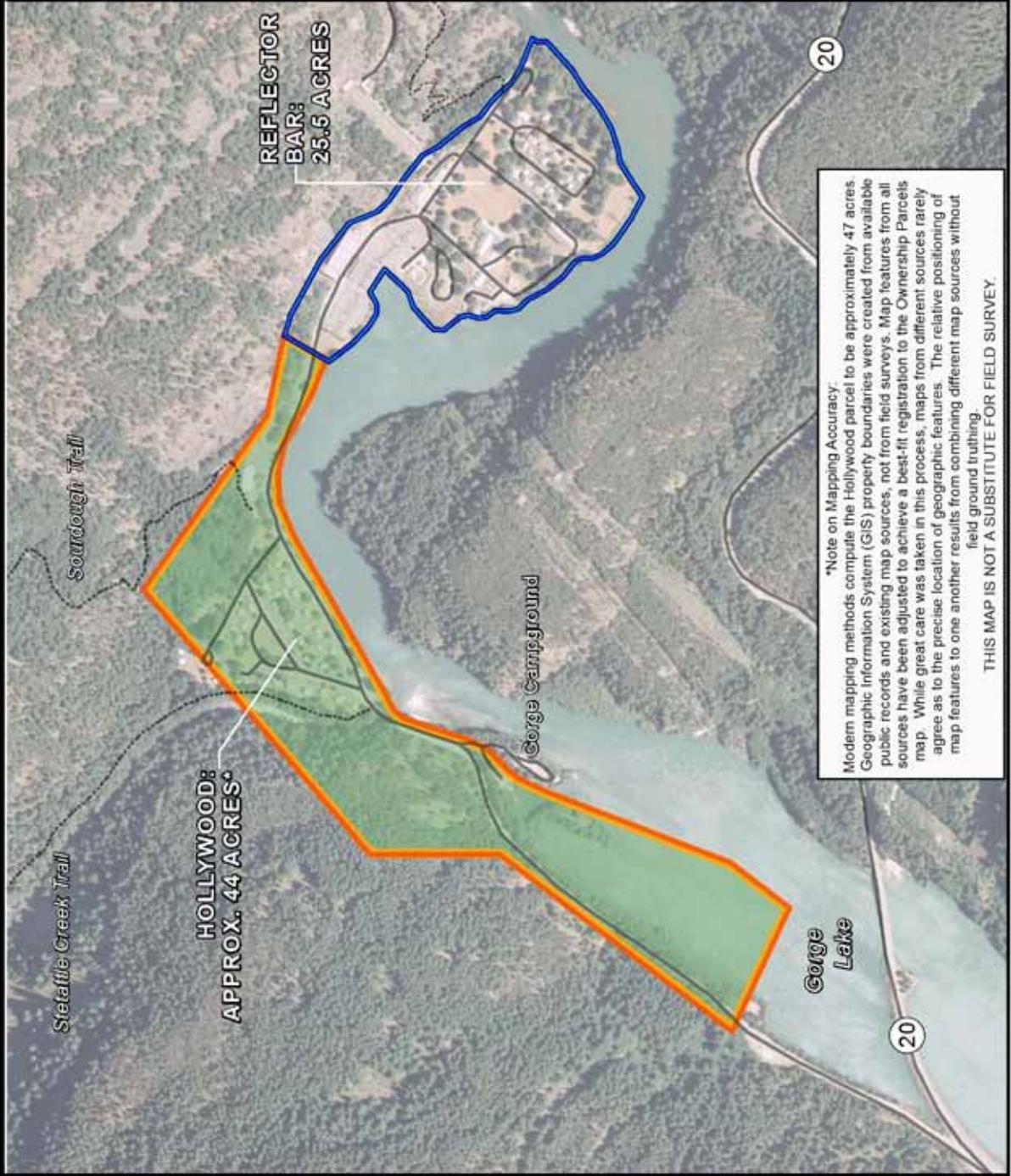
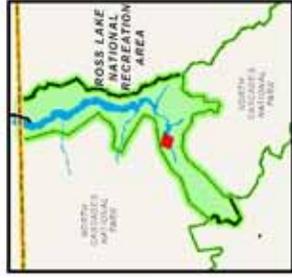


Figure 3-7

- Diablo - NPS-owned
- Seattle City Light-owned



mapscale: 1:7400



Produced by:
North Cascades National
Park Service Complex
14 May 2012
ab/ross_lake_ump/final_mxd/page
presentation 2012/
fig_3-7_boundarymod.mxd

***Note on Mapping Accuracy:**
Modern mapping methods compute the Hollywood parcel to be approximately 47 acres. Geographic Information System (GIS) property boundaries were created from available public records and existing map sources, not from field surveys. Map features from all sources have been adjusted to achieve a best-fit registration to the Ownership Parcels map. While great care was taken in this process, maps from different sources rarely agree as to the precise location of geographic features. The relative positioning of map features to one another results from combining different map sources without field ground truthing.

THIS MAP IS NOT A SUBSTITUTE FOR FIELD SURVEY.

visibility from the North Cascades Highway. Any future infrastructure changes in support of hydropower operations in Reflector Bar should be compatible with the mountainous scenery and its location in a unit of the national park system. Although vehicular access to Reflector Bar will be restricted due to security concerns, the NPS will coordinate with Seattle City Light to provide pedestrian access to trails and resources in Reflector Bar within safety and security constraints.

If Seattle City Light determines that Hollywood is no longer necessary for hydropower operations in the future, the NPS will work to acquire that land (approximately 44 acres), which is contingent on Seattle City Light’s interest and agreement on acquisition. The NPS interest in Hollywood is to ensure the long-term protection of resources within the legislated boundary of Ross Lake NRA, prohibit inappropriate or incompatible development within Ross Lake NRA, and provide future opportunities for adaptive reuse of the site including future administrative and potential public use. If the land is acquired, a site plan with additional analysis will be developed to determine its future use.

Under this plan, Diablo Townsite is located in the Hydroelectric Zone. If the Hollywood area were to be managed or owned by the NPS, the Hollywood area of Diablo Townsite will be included in the Frontcountry Zone.

Additional information about boundary modifications and considerations can be found in Appendix B of the *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement*.

Staffing

This plan will be implemented with the current staffing level (133) plus 22 full-time equivalent staff (FTEs). (One FTE is one person working 40 hours per week for one year, or the equivalent). It is important to note that these staffing figures are for the North Cascades NP Complex as a whole, as staff work on all three units of the complex. The total number of FTEs is the number of staff required to maintain the assets of Ross Lake NRA at a good level, provide ac-

ceptable visitor services, protect resources, and generally support Ross Lake NRA’s operations. The FTE number indicates base-funded, term, and seasonal staff only, not volunteer positions or positions funded by partners. FTE salaries and benefits are included in the annual operating costs.

New positions will include maintenance workers, education and outreach specialists, ecologists, natural and cultural resource specialists, rangers, and administrative technicians.

Table 3.2 Staffing

| | |
|---|------------|
| Management and Administration | 18 + 3 new |
| Maintenance | 44 + 5 new |
| Interpretation/Education | 13 + 3 new |
| Resource Management | 43 + 8 new |
| Visitor Protection | 15 + 3 new |
| Total Staff | 155 |
| <p><i>The total number of FTEs is the number of person-years of staff required to maintain the assets of the park at a good level, provide acceptable visitor services, protect resources, and generally support the park’s operations. The FTE number indicates ONPS-funded NPS staff, term and seasonal positions. It does not include volunteer positions or positions funded by partners. FTE salaries and benefits are included in the annual operating costs.</i></p> | |

Estimated Costs

Cost estimates for this plan are intended only to provide an estimate of the relative costs of this plan in comparison to the other alternatives that were considered during the planning process. NPS and industry cost estimating guidelines were used to develop the costs (in 2010 dollars) to the extent possible, but the estimates should not be used for budgeting purposes. Specific costs will be determined in subsequent, more detailed planning and design exercises and will consider the design of facilities, identification of detailed resource protection needs, and changing visitor expectations. Actual costs to the NPS will vary depending on if, and when, the actions are implemented, and on contributions by partners and volunteers. Note that these costs do not include the costs for any additional plans or studies.

It is assumed that meeting the long-range financial needs of Ross Lake NRA will not just rely upon federal appropriated funds. A variety of other public and private sector funding sources could be sought by the NPS to assist in implementation efforts. Other NPS units have successfully found partners to help with funding major projects, and some of the costs associated with actions in the plan may prove to be less expensive when donated materials, labor, and other support are forthcoming. Cost estimates for the plan are identified below.

One time facility costs to implement this plan will be approximately \$11,206,000 over the next 15-20 years. One-time facility costs include those for the design, construction, rehabilitation and adaptive reuse of facilities, such as visitor facilities, roads, parking, and park operations and maintenance facilities. The one-time costs for this plan include such items as \$1,745,000 for the Ross Dam Trailhead parking lot and improvements along the North Cascades Highway, \$860,000 for the Thornton Lakes Road removal and trail, and \$1,080,000 for new trails. The cost estimates also include the replacement of the Hozomeen ranger station, improvements to Ross Lake Resort, and changes to existing camping facilities.

These costs are based upon general “class C” estimates for site development and construction. Prior to submitting funding requests for the design and construction phases, “class B” estimates are required, based upon detailed site and facility designs.

Table 3.3 Estimated Costs

| | |
|------------------------|--------------|
| Annual Operating Costs | \$8,542,000 |
| Staffing (FTE) | 155 |
| Total One-Time Costs | \$13,616,000 |
| • Facility Costs | \$11,206,000 |
| • Non-Facility Costs | \$2,410,000 |

Annual operating costs are the total costs per year for maintenance and operations, including utilities, supplies, staff salaries and benefits, leasing, and other materials. Cost and staffing estimates assume that the plan is fully implemented as described in the narrative.

USER CAPACITY

The National Park Service defines user capacity as the type and level of visitor use that can be accommodated while sustaining the quality of resources and visitor opportunities consistent with the purposes of a National Park System unit. It is not necessarily a set of numbers or limits, but instead a process involving monitoring, evaluation, actions (managing visitor use), and adjustments to ensure a unit’s values are protected.



Hiker on Sourdough Mountain Trail. Photo by Katie Crowley.

With any use on public lands comes some level of impact that must be accepted. Therefore, it is the responsibility of the National Park Service to decide what level of impact is acceptable and what actions are needed to keep impacts within acceptable limits. Instead of just tracking and controlling user numbers, the NPS park superintendent and staff manage the levels, types, behaviors, and patterns of visitor use and other public uses as needed to protect the condition of the resources and quality of the visitor experience. The monitoring component of this user capacity process helps test the effectiveness of management actions and provides a basis for informed adaptive management of public use.

The user capacity process for national parks typically involves the following steps:

1. identify desired conditions for resources and visitors
2. identify indicators (things to monitor to determine whether desired conditions are being met)
3. identify standards (limits of acceptable change) for the indicators
4. monitor indicators
5. take management actions to ensure that standards are met
6. evaluate and make adjustments based on new information and lessons learned

General management plans provide a broad approach to addressing user capacity, identifying desired conditions for resources and visitors and focusing more specific monitoring and management on areas where action is most likely needed to achieve conditions. Implementation-level plans, such as a future wilderness management plan, will provide more specific direction for addressing user capacity.

The last steps of user capacity decision making, which continue indefinitely, are monitoring the indicators and standards and taking management actions to minimize impacts when needed. NPS staff will monitor indicators to determine if standards were being exceeded using techniques

that could include non-systematic monitoring of visible impacts to trails or resources as part of regular and volunteer patrols, establishing systematic trail and resource assessments, reviewing special permit requests, and reviewing general information collected with respect to visitor trends, parking problems, vandalism, accidents and visitor complaints.

User capacity decision making is a continuous process; decisions are adjusted based on monitoring the indicators and standards. Management actions are taken to minimize impacts when needed. The indicators and standards included in this management plan will generally not change in the future. However, as monitoring of Ross Lake NRA's conditions continues, managers may decide to modify, add, or delete indicators if better ways are found to measure important changes in resource and social conditions. The results of Ross Lake NRA's monitoring efforts, related visitor use management actions, and any changes to Ross Lake NRA's indicators and standards will be available for public review.

Indicators and Standards

This general management plan includes identification of user capacity indicators and standards. Table 3.4 includes the indicators, standards, related monitoring, and potential future management strategies allocated by management zone that will be implemented as a part of this plan. These indicators and standards help translate the broader qualitative descriptions of desired conditions into measurable conditions.

Measurable indicators have been selected for monitoring key aspects of visitor experiences and resources within Ross Lake NRA. Standards that represent the points where visitor experience and resource conditions become unacceptable in each zone were then assigned based on desired conditions. The indicators will be monitored in each zone, and when necessary, management actions will be taken to ensure that visitor use and resource impacts remain within the established standards.

Table 3.4 Indicators and Standards

| Zone | Indicator | Standard | Monitoring | Potential Management Actions |
|---|--|--|---|--|
| Indicator 1: Natural Resources- Social Trails | | | | |
| Wilderness, Backcountry, Frontcountry, Hydroelectric | Social trails per mile of official trail (A social trail is a stretch of trampled vegetation or bare ground that is not part of the official trail system, which diverges significantly from the official trail, and is created and/or maintained by visitor traffic.) | The average number of social trails per mile of official trail would not exceed current conditions(2010) | Resource management monitoring projects and/or ranger patrols | Visitor information, signage, rehabilitating social trails, place natural barriers, create additional trails |
| Indicator 2: Natural Resources- Vegetation Impacts | | | | |
| Wilderness, Backcountry, Frontcountry | Condition class assessment (or comparable categorical metric) of campsites/camps/ facilities | All camps/facilities should have a condition rating of fair or above | Resource management monitoring projects and/or ranger patrols | Visitor information, signage, trail delineation, additional hardening, reduction of party size, reduction of number of sites, selective closures |
| Indicator 3: Natural Resources- Invasive, Non-native Species | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River, Hydroelectric | Infestations of invasive, non-native plant species | No new infestation of high priority species beyond baseline(2007) | Resource management monitoring projects and/or ranger patrols | Visitor information, signage, regulations, selective closures, removal of invasive, non-native species |
| Indicator 4: Natural Resources- Food Conditioned Wildlife | | | | |
| Wilderness, Backcountry, Frontcountry, Hydroelectric | Incidents in which black bears obtain human food and/ or attractants (such as toothpaste, deodorant, etc.) | Black bears should never obtain human food or attractants | Staff observations, visitor reports or accounts of incidents | Visitor information, signage, bear-safe food storage requirements, selective closures, on-site capture and release of animals, relocation of problem animals |

Table 3.4 Indicators and Standards

| Zone | Indicator | Standard | Monitoring | Potential Management Actions |
|--|---|--|--|---|
| Indicator 5: Natural Resources- Food Conditioned Wildlife | | | | |
| Frontcountry | Instances of wildlife begging for and/or obtaining human food | Individual animals would not repeatedly beg for and/or obtain human food | Staff observations, visitor reports or accounts of incidents | Education, signage, increase staff presence in key areas at peak times, implement regulations preventing visitors from leaving food or feeding animals, on-site capture and release of animals, relocation of problem animals |
| Indicator 6: Cultural Resources- Archeological Resources | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River | Archeological sites identified in the Archeological Sites Management Information System that have been found eligible or have not been evaluated for the National Register of Historic Places | Condition of sites does not drop below benchmark conditions 2010 | Annual monitoring | Visitor education, signage, engineered protection or site hardening, limited access, selective closures |
| Indicator 7: Cultural Resources- Ethnographic Resources | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River | Ethnographic sites identified in the Archeological Sites Management Information System that have been found eligible or have not been evaluated for the National Register of Historic Places | Condition of sites does not drop below benchmark conditions 2010 | Annual monitoring | Visitor education, signage, engineered protection, limited access, selective closures |

Table 3.4 Indicators and Standards

| Zone | Indicator | Standard | Monitoring | Potential Management Actions |
|--|---|---|---|---|
| Indicator 8: Cultural Resources- Historic Structures | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River | Historic structures identified in the List of Classified Structures that have been found eligible or have not been evaluated for the National Register of Historic Places | Condition of structures does not drop below benchmark conditions 2010 | Annual monitoring | Visitor education, signage, engineered protection, limited access, selective closures |
| Indicator 9: Visitor Experience- Solitude | | | | |
| Wilderness, Backcountry | Encounters with other visitor parties | Visitors would not encounter more than 10 other parties of visitors per day | Ranger patrols, visitor self-reporting surveys | Visitor education, voluntary registration, mandatory reservations or permit systems |
| Indicator 10: Visitor Experience- Camping Availability | | | | |
| Wilderness, Backcountry | Nights when a campsite is not available at designated camping area | On 95 percent of visitor nights, parties with valid permits would find an available campsite at their designated camping area | Ranger patrols, visitor reports or accounts of incidents | Permit enforcement, increase locations where permit can be obtained, issue fewer permit |
| Indicator 11: Visitor Experience- Access to Information or Assistance | | | | |
| Frontcountry, Hydroelectric | Visitor comments/ complaints reporting lack of access to information or assistance | No more than 6 comments/ complaints per year | Visitor reports or accounts of incidents received per year (calendar or fiscal) about lack of opportunity to obtain information or assistance | Visitor information, increase staff at high use locations |
| Indicator 12: Visitor Experience- Access to Wilderness Information | | | | |
| Frontcountry | Visitor wait times at the Wilderness Information Center | Wait times to talk with staff would not exceed 15 minutes during peak times | Staff monitoring during peak times | Visitor information, increase staff, add locations for wilderness information |

Table 3.4 Indicators and Standards

| Zone | Indicator | Standard | Monitoring | Potential Management Actions |
|---|---|--|---|--|
| Indicator 13: Visitor Experience- Contact with Uniformed Staff | | | | |
| Frontcountry | Visitor comments/ complaints reporting lack of opportunity to interact with uniformed staff | No more than 6 comments/ complaints received per year (calendar or fiscal) about lack of opportunity interact with uniformed staff | Visitor reports or accounts of incidents | Visitor information, increase uniformed staff at high use locations |
| Indicator 14: Visitor Experience- Access to Diablo Lake Overlook | | | | |
| Frontcountry | Parking search times at Diablo Lake overlook | During peak use periods at Diablo Lake overlook the time that it takes visitors to find a space to park their vehicles would be less than 1 minute | Staff monitoring and/ or ranger patrols | Visitor information, increase staff, parking regulations |
| Indicator 15: Visitor Experience-Aesthetics | | | | |
| Skagit River | Visible human waste | Toilet paper and human waste would not be visible | Ranger patrols | Visitor information, additional facilities |
| Indicator 16: Visitor Experience- Rafting Party Encounters | | | | |
| Skagit River | Rafting party encounters with other vessels | No more rafting encounters than baseline of current (2010) peak conditions in August and September | Ranger patrols, commercial users questionnaires | Visitor information, voluntary registration, registration/permit/ scheduling systems |
| Indicator 17: Soundscapes- Ambient Sound Levels | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River, Hydroelectric | Maximum ambient sound levels | Maximum sound levels never exceed 65 dB during day and 35 - 45 dB during night, depending on location | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |

Table 3.4 Indicators and Standards

| Zone | Indicator | Standard | Monitoring | Potential Management Actions |
|---|---|--|-------------------------------|--|
| Indicator 18: Soundscapes- Change in Sound Exposure | | | | |
| Wilderness, Backcountry, Frontcountry, Skagit River, Hydroelectric | Hourly change in sound exposure | Hourly change in exposure doesn't exceed 3 dB 65 percent of the day and 85 percent of the night | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |
| Indicator 19: Soundscapes- Audible Visitor- Generated Sounds | | | | |
| Wilderness, Backcountry, Skagit River, Hydroelectric | Percentage of time when visitor generated sounds are audible | Visitor generated sounds are audible less than 25 percent of the time during day and 20 percent of the time during night | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |
| Indicator 20: Soundscapes- Audible Watercraft Sounds | | | | |
| Backcountry | Percentage of time when watercraft sounds are audible | Watercraft sounds are audible less than 15 percent of daytime hours and 10 percent of nighttime hours | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |
| Indicator 21: Soundscapes- Campground Tranquility | | | | |
| Frontcountry | Percentage of time that sound levels are above dB standard in campgrounds | Sound levels do not exceed 60 dB for more than 5 percent of daytime hours and 35 dB for more than 5 percent of nighttime hours | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |
| Indicator 22: Soundscapes- Sounds during Interpretive Programs | | | | |
| Frontcountry | Percentage of time that sound levels are above dB standard during interpretive programs | Sound levels do not exceed 52 dB for more than 5 percent of time during interpretive programs | Automated acoustic monitoring | Analysis of data regarding sources of noise; visitor education; enforcement; area closures |

MITIGATION MEASURES

Mitigation measures are the practicable and appropriate methods that will be used to avoid and/or minimize harm to natural and cultural resources, wilderness, visitors and the visitor experience, and socioeconomic resources when no other management alternative exists (such as avoidance). These mitigation measures have been developed using existing laws and regulations, best management practices, conservation measures, and other known techniques from past and present work in and around Ross Lake NRA.

The general management plan provides a management framework for Ross Lake NRA. Within this broad context, the GMP includes the following measures that may be used to minimize potential impacts from the implementation of this plan. These measures will be implemented as a part of this plan, subject to funding and staffing levels. Additional mitigation will be identified as part of implementation planning and for individual projects to further minimize resource impacts.

Management and Protection of Natural Resources

Potential mitigation measures identified as effective in addressing specific impacts of management decisions on natural resources are listed below:

Air Quality

- implement a dust abatement program including the following potential actions: water or otherwise stabilize soils, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate with native species
- minimize NPS vehicle emissions by using the best available technology whenever possible
- encourage the public and commercial tour companies to employ methods that reduce emissions
- employ sustainable designs that reduce energy demands, thus reducing pollutant production

Natural Soundscapes

- implement standard noise abatement measures during NPS operations, including: scheduling to minimize impacts in noise-sensitive areas, using the best available noise control techniques wherever feasible, using hydraulically or electrically powered impact tools when feasible, and locating stationary noise sources as far from sensitive areas as possible
- site and design facilities to minimize objectionable noise
- minimize idling of motors when power tools, equipment, and vehicles are not in use
- muffle above ambient noise whenever possible to reduce noise impacts

Lightscaapes and Night Skies

- replace existing outdoor lighting with fixtures that do not contribute to nighttime light pollution
- install energy-efficient lights equipped with timers and/or motion detectors so that light will only be provided when it is needed to move safely between locations
- use low-impact lighting, such as diffused light bulbs, and techniques such as down-lighting in outdoor fixtures, to prevent light spill and preserve the natural lightscape and avoid light pollution

Hydrologic Systems including Wetlands

- time projects adjacent to or in waterways to occur during the dry season (late summer) or during reservoir drawdown (early spring)
- use bioengineering, engineered log jams and other techniques instead of rip-rap
- implement erosion control measures, minimize discharge to water bodies, and regularly inspect construction equipment for leaks of petroleum and other chemicals to prevent water pollution; minimize the use of heavy equipment in a waterway; wash heavy equipment prior to use in or near water bodies
- use bio-lubricants (such as biodiesel and hydraulic fluid)
- develop and implement a spill plan and acquire supporting equipment

- integrate runoff control systems into the designs of larger parking areas near water resources to minimize water pollution
- develop sediment control and prevention plans for projects that could impact water quality
- delineate wetlands and apply protection measures during projects; perform project activities near wetlands in a cautious manner to prevent damage caused by equipment, or increase erosion, siltation, etc.
- consult with Washington Department of Fish and Wildlife for work below the ordinary high water mark of state owned waters

Soils

- build new facilities on soils suitable for development
- minimize soil erosion at construction sites by limiting the time that soil is left exposed and by applying other erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies
- revegetate construction areas with appropriate native plants in a timely manner
- work with the Natural Resource Conservation Service to complete the soil survey of Ross Lake NRA to provide some of the information needed for sustainable soil management
- conserve native topsoil in construction projects
- consult with U.S. Army Corps of Engineers

Vegetation

- monitor areas used by visitors (such as trails and campsites) for signs of native vegetation disturbance and use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from erosion or social trails
- designate river and stream access/crossing points, and use barriers and closures to prevent trampling and loss of riparian vegetation
- develop revegetation plans for disturbed areas and require the use of genetically ap-

propriate native species (revegetation plans should specify species to be used, seed/plant source, seed/plant mixes, site-specific restoration conditions, soil preparation, erosion control, ongoing maintenance and monitoring requirements, etc.; salvaged vegetation should be used to the extent possible)

- survey for rare plants prior to any ground-disturbing activities; disturbance to rare or unique vegetation will be avoided to the greatest extent possible
- implement an invasive, non-native plant management program (standard measures could include the following elements: use only weed-free materials for road and trail construction, repair, and maintenance; ensure equipment arrives on-site free of mud or seed-bearing material; certify that stabilization materials (rice straw) are weed-free; identify areas of noxious weeds pre-project; treat noxious weeds or noxious weed topsoil before construction (such as, topsoil segregation, storage, herbicide treatment); soil or gravel should be covered with weed cloth to prevent weed seed introduction when the material is staged prior to using, when depositing ditch spoils along the roads, limit the movement of material to as close as possible to the excavation site; scrupulously and regularly clean areas that serve as introduction points for invasive, non-native plants (campgrounds, staging areas, maintenance areas, and corrals); revegetate with genetically appropriate native species; inspect rock and gravel sources to ensure these areas are free of noxious weed species; and monitor locations of ground-disturbing operations for at least five years following the completion of projects)

Fish and Wildlife

- employ techniques to reduce impacts on fish and wildlife, including visitor education programs, restrictions on visitor and NPS activities, and law enforcement patrols
- implement a wildlife protection program (standard measures will include project scheduling [season and/or time of day], project monitoring, erosion and sediment control, fencing or other means to protect sensitive resources adjacent to project areas,

- disposing of all food-related items or rubbish, salvaging topsoil, and revegetating)
- consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries for projects within essential fish habitat
- consult with U.S. Fish and Wildlife Service for projects where listed species and their habitats occur

Special Status Species

Mitigation actions will occur during normal NPS operations as well as before, during, and after projects to minimize immediate and long-term impacts on rare, threatened, and endangered species. These actions may vary by project area, and additional mitigation measures may be added depending on the action and location. Many of the measures listed for vegetation, wildlife, and water resources will also benefit rare, threatened, and endangered species by helping to preserve habitat. Further mitigation efforts the NPS will perform include the following:

- conduct surveys for rare, threatened, and endangered species as warranted
- locate and design facilities/actions/operations to avoid or minimize the removal of rare, threatened, and endangered species habitat; if avoidance is infeasible, minimize and compensate for adverse effects as appropriate and in consultation with the appropriate resource agencies
- plan work in areas in or near suitable threatened and endangered bird habitat as late as possible in the summer/fall
- conduct work outside of critical periods for the specific species when possible
- develop and implement restoration and/or monitoring plans as warranted; plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques
- for projects in or near streams, employ appropriate best management practices
- implement measures to reduce adverse effects of non-native plants and wildlife on rare, threatened, and endangered species
- protect and preserve critical habitat features, such as nest trees, whenever possible

Management and Protection of Cultural Resources

The protection of Ross Lake NRA's cultural resources is essential for understanding the past, present, and future relationship of people with the North Cascades ecosystem and the expressions of our cultural heritage. The NPS will pursue strategies to protect its cultural resources, including museum collections and archeological, historic, ethnographic, and archival resources, while encouraging visitors and employees to recognize and understand their value. The strategies will allow the integrity of Ross Lake NRA's cultural resources to be preserved unimpaired. They will also ensure that Ross Lake NRA is recognized and valued as an outstanding example of resource stewardship, conservation education and research, and public use.

Some of Ross Lake NRA's cultural resources are within designated wilderness. The Wilderness Act specifies that the designation of any areas of the park system as wilderness "shall in no manner lower the standards evolved for the use and preservation of" such unit of the park system under the various laws applicable to that unit. Thus, the laws pertaining to historic preservation also remain applicable within wilderness. In accordance with NPS management policies, cultural resources that have been included in wilderness will be protected and maintained according to the pertinent laws and policies governing cultural resources, using management methods that are consistent with the preservation of wilderness character and values. These laws include the Organic Act, National Historic Preservation Act, the Archeological Resources Protection Act, the American Indian Religious Freedom Act, the Native American Graves Protection and Repatriation Act, and Executive Order 13007 that addresses government-to-government consultation.

Adverse impacts on historic properties listed in, determined eligible for listing in, or not yet assessed for eligibility to the National Register of Historic Places will be avoided, if possible. If adverse impacts could not be avoided, an assessment of effect and a treatment plan, if necessary, will be developed through a consultation

process with all interested parties. In accordance with NPS management policies, proposed adverse effects will be assessed to determine whether the proposed actions constitute impairment of significant fundamental cultural resources.

Archeological Resources

Archeological surveys will precede ground-disturbance required for new construction or removal of eligible historic properties. Known archeological resources will be avoided to the greatest extent possible. If National Register listed, eligible or unassessed archeological resources could not be avoided, an appropriate treatment plan will be developed in consultation with the Washington State Historic Preservation Officer, National Advisory Council and associated American Indian tribes.

Until 2025, Ross Lake archeological resources will continue to be managed in compliance with the *Archeological Resources Mitigation and Management Plan*, established pursuant to City of Seattle and NPS settlement agreements as a condition of the FERC No. 553 license issued to the City.

If previously unknown archeological resources are discovered during project work, NPS cultural resources staff will be immediately informed, work in the immediate vicinity of the discovery will be halted and the location secured until the resources are identified, evaluated, and documented and an appropriate treatment plan is developed, if necessary, in consultation with the Washington State Historic Preservation Office and associated American Indian tribes.

Historic Buildings and Structures

All project work relating to historic structures/buildings will be conducted in accordance with Director's Order 28 and the guidelines and recommendations of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Typical mitigation measures for historic structures/buildings include measures to avoid adverse impacts, such as rehabilitation and



Student of First Bloom. Photo by Andrew Pringle.



View of Ross Lake from Pierce Mountain.



Desolation Fire Lookout. Photo by Basil Tsimoyianis.

adaptive reuse, designing new development to be compatible with surrounding historic properties, and screening new development from surrounding historic resources to minimize impacts on viewsheds, cultural landscapes and ethnographic resources.

Historic structures will be maintained or stabilized until appropriate preservation maintenance could be undertaken. Benign neglect will not be considered an appropriate management strategy. No National Register listed or eligible structure will be removed or allowed to decay naturally without prior review by park and region cultural resource specialists, including approval by the NPS regional director and consultation with the Washington State Historic Preservation Officer. Before a National Register listed or eligible structure is removed, appropriate documentation recording the structure will be prepared in accordance with Section 110(b) of the National Historic Preservation Act, and the documentation will be submitted to the Historic American Buildings Survey (HABS)/ Historic American Engineering Record (HAER) or Historic American Landscape Survey (HALS) program, if deemed appropriate.

Historic structures that are within designated wilderness areas will be protected and maintained according to the pertinent laws and policies governing cultural resources using management methods that are consistent with the preservation of wilderness character and values. Laws pertaining to historic preservation remain applicable within wilderness but must generally be administered to preserve the area's wilderness character. Consultation of treatment will include appropriate consideration of the application of the provisions of the Wilderness Act in analyses and decision-making concerning cultural resources.

Cultural Landscapes

All project work relating to cultural landscapes will be conducted in accordance with Director's Order 28 and the guidelines and recommendations of the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Typical mitigation measures for cultural

landscapes include measures to avoid adverse impacts, such as designing new development to be compatible with surrounding historic properties and screening new development from surrounding cultural landscapes to minimize impacts on those landscapes and viewsheds.

Ethnographic Resources

The National Park Service will continue to consult with federally recognized Native American tribes with treaty resources in Ross Lake NRA on a government-to-government basis to identify ethnographic resources and develop appropriate strategies to mitigate impacts on these resources. Such strategies could include continuing to provide access to traditional use or spiritual areas and screening new development from traditional use areas to minimize impacts on ethnographic resources. Consultations with American Indians linked by ties of kinship, culture, or history to park lands will address the inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, and all provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 will be followed.

Museum Collections

Mitigation measures related to museum collections consist of conservation of a collection through proper storage, handling, and exhibit of objects as specified in the *NPS Museum Handbook* and NPS Director's Order No. 24, NPS Museum Collections Management.

Management and Protection of Wilderness Values

A new wilderness management plan will be developed for the entire North Cascades NP Complex, which will include Ross Lake NRA, more specific desired conditions will be developed for wilderness resources, visitor experiences, and management protocols.

In a broad sense, the NPS will manage the Stephen Mather Wilderness to preserve wilderness character and will work to establish a monitoring program that measures wilderness charac-

ter within this wilderness. Recent interagency efforts (Landres et al, 2008) have defined the four primary elements of wilderness character that link directly to the statutory language of the 1964 Wilderness Act, as follows:

- untrammeled quality: wilderness is essentially unhindered and free from modern human control or manipulation
- natural quality: wilderness ecological systems are substantially free from the effects of modern civilization
- undeveloped quality: wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation
- solitude or primitive and unconfined quality: wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation

Minimum Requirement Process

The Wilderness Act directs that agencies administer wilderness to preserve wilderness character. The purpose of the minimum requirement process is to ensure that managers follow the direction of both the Wilderness Act and agency policy, and to reduce the effects of management on wilderness character and values. It provides a method for developing, evaluating, and selecting the actions that will be the least intrusive on wilderness character and values, while allowing the administration of the wilderness. The concept is applied to all management actions, programs, and activities within Ross Lake NRA that might affect wilderness and potential wilderness.

The minimum requirement concept is applied as a two-step process. The first step determines whether a proposed management action is appropriate and necessary for the administration of the area as wilderness and does not cause a significant impact to wilderness resources and character, in accordance with the Wilderness Act. The second step determines the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized. If the project is found to be appropriate and necessary, then the management method (tool or technique) is selected that will

result in the least amount of impact to the wilderness resources and character.

The minimum requirement process provides a formalized method for developing alternative ways to address an issue, and to evaluate each alternative's effects on wilderness character and wilderness resources. The minimum requirement process assists NPS managers in determining the appropriate environmental compliance.

Scenic Resources

Mitigation measures are designed to minimize human-made visual intrusions. These include the following:

- use facilities such as boardwalks and fences to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints
- design, locate, and construct facilities in ways that minimize adverse effects on scenic views
- provide vegetative screening to mask unwanted visual intrusion of facilities or infrastructure

Socioeconomic Environment

During future planning and implementation of the approved general management plan for Ross Lake NRA, the National Park Service will pursue partnerships with tribes, local communities, and county governments to further identify potential impacts and mitigating measures that will best serve the interests and concerns of both the National Park Service and the local communities.

Sustainable Design and Aesthetics

Sustainable practices will be used in the selection of building materials and sources and building location and siting. Projects will use sustainable practices and resources whenever practicable by recycling and reusing materials, by minimizing materials, by minimizing energy consumption during the project, and by minimizing energy consumption throughout the lifespan of the facility produced.





The sun rises over a backcountry camper in Ross Lake NRA.

APPENDIX A:

RECORD OF DECISION

US Department of the Interior

National Park Service

RECORD OF DECISION

Final Environmental Impact Statement/General Management Plan

Ross Lake National Recreation Area

Skagit and Whatcom Counties, Washington

INTRODUCTION

The Department of the Interior, National Park Service, has prepared this Record of Decision (ROD) for the *Final General Management Plan and Environmental Impact Statement* for Ross Lake National Recreation Area (NRA) in Washington State. This ROD includes a statement of the decision made, synopses of other alternatives considered, the basis for the decision, a description of the environmentally preferred alternative, a listing of measures to minimize environmental harm, and an overview of public involvement in the decision-making process. A determination of non-impairment of cultural and natural resources or park values is attached.

DECISION (SELECTED ACTION)

The National Park Service (NPS) will implement the preferred alternative (Alternative B) as described in the *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement* released in December 2011. There are no changes nor modifications incorporated herein. The selected action focuses on managing Ross Lake NRA as a gateway to millions of acres of wilderness, providing enhanced visitor opportunities along the North Cascades Highway, and making better use of facilities along that corridor while ensuring the long-term stewardship of natural resources, cultural resources, and wilderness.

The selected alternative applies five management zones to the NRA as a framework for management of the area. The management zones include Frontcountry, Backcountry, Wilderness, Skagit River, and Hydroelectric Zones. These zones are identified and applied based on desired natural or cultural resource conditions or character, visitor opportunities, and appropriate facilities.

The North Cascades Highway corridor will be managed to provide a variety of day-use and overnight recreational opportunities for visitors with a range of abilities and interests. Recreation in Ross Lake NRA will be enhanced along the North Cascades Highway corridor through the addition of limited new facilities, including day-hiking trails, reconfigured parking areas (such as the Ross Dam Trailhead Parking Lot), and the modest expansion of overnight facilities and concessions (such as a ten percent capacity increase at the Ross Lake Resort). The NPS will also recommend nomination and designation of the North Cascades Highway as a National Scenic Byway to reflect its nationally significant resources.

Interpretation and education will be a key component of the selected action, emphasizing hands-on experiential learning and stewardship programs delivered by both the NPS and its partners.

Management of wilderness and backcountry areas, including Ross Lake, will focus on ecosystem preservation while ensuring compatible recreational activities. The 3,559 acres of the Thunder Creek Potential Wilderness Area will be administratively designated a part of the Stephen Mather Wilderness now that Seattle City Light has formally abandoned plans for hydroelectric development. Management of recreation use in these areas will focus on providing visitors with opportunities for solitude and connections with the natural world. Self-propelled and non-mechanized recreation will be encouraged throughout Ross Lake NRA. Regulations for motorized water recreation on the reservoirs will work to minimize noise, maintain the character and experience on the lakes and the Skagit River, and promote cleaner motor technologies. The NPS will develop an online permit system option for backcountry and wilderness visitors that would allow for advance trip planning and a streamlined permitting process.

In response to anticipated changes in climate, including projected increases in extreme precipitation, facilities may be substantially damaged or destroyed over the lifespan of the plan. In the event of a catastrophic event and the destruction of visitor facilities, the NPS will adapt and may relocate facilities to reduce risk, and strive as feasible to offer similar visitor facilities in the vicinity of current facilities in order to limit net loss of visitor opportunities (the statement of findings for floodplains is published in Appendix E in the Final EIS/GMP).

The NPS will recommend wild and scenic river designation of Goodell Creek, Newhalem Creek, and the Skagit River from the Gorge Powerhouse in Newhalem to the western boundary of Ross Lake NRA, totaling 33 river miles, based on the findings of the Skagit Wild and Scenic River Eligibility and Suitability Study (published in Appendix D in Final EIS/GMP).

Finally, the NPS will recommend legislation to enable a name change for Ross Lake National Recreation Area to North Cascades National Recreation Area. This name change would enhance public awareness and foster a better understanding of the ecological continuity between the National Recreation Area and North Cascades National Park. Recreational activities authorized in the NRA but prohibited in the park, including hunting and hiking with dogs on trails, would continue.

Additional highlights of the selected alternative include:

- Maintaining existing partnership and international and interagency cooperation for resource protection, recreational opportunities, and operational efficiencies.
- Continuing to work closely with the Skagit Tribes to preserve archeological sites and continue their traditional activities within Ross Lake NRA.
- Constructing facilities, such as dormitory, staff housing, and a boathouse, on the North Cascades Environmental Learning Center (ELC) campus as outlined in the original plan and environmental assessment with funding from the North Cascades Institute. The ELC would continue to provide year-round education services, curriculum-based educational programs and learning opportunities about the North Cascades ecosystem.
- Completing a Habitat Assessment for any proposed development that might affect a Bear Management Unit within Ross Lake NRA, North Cascades National Park, or Lake

Chelan NRA in light of the 2001 North Cascades Ecosystem Grizzly Bear Habitat Assessment. This assessment would provide an analysis of impacts to grizzly bear habitat in addition to any changes to the percentage of core habitat. The NPS will strive to minimize, avoid, or mitigate impacts on high quality spring and fall grizzly bear habitat and would consult with the USFS in any circumstance where the development of potentially high use trails within the national park would affect a shared BMU that is currently below the 70 percent core area ratio or which could reduce the core area ratio below 70 percent overall for a shared BMU.

- Closing the upper one mile of Thornton Lakes Road to vehicular access at the Wilderness Boundary to correct an administrative oversight and comply with wilderness regulations.
- Continuing to allow seaplanes to land and take off on Diablo and Ross lakes except within 1,000 feet of Diablo Dam and Ross Dam, according to 36 CFR 7.69 and 36CFR 2.17. The NPS will work collaboratively with the seaplane pilot community to gather data on seaplane use, create noise abatement procedures and educate pilots about these procedures and general seaplane use on Ross Lake. The NPS will institute noise abatement procedures to minimize noise and establish a long-term acoustic monitoring program to better understand soundscape impacts.
- Authorizing sport climbing to continue in Skagit Gorge between Newhalem and Diablo. Due to the manipulative actions required to establish sport climbing routes, new sport climbing areas would be evaluated on a case by case basis, and will only be authorized by the NPS following appropriate site-specific surveys and assessments. These Climbing Management Areas (CMA's), will be identified in the Superintendent's compendium, and described on the park website along with other climbing-related information.

OTHER ALTERNATIVES CONSIDERED

Three other alternatives for managing Ross Lake National Recreation Area were evaluated in the draft and final EIS including two "action" and the comparative baseline "no action" alternative.

Alternative A:

The No Action Alternative (Alternative A) assumes that existing programming, facilities, staffing, and funding would generally continue at their current levels, and park management for Ross Lake NRA would continue to follow the actions and management zones outlined in the 1988 North Cascades NPS Complex General Management Plan. Resource preservation and protection would continue to be a high priority for the management of Ross Lake NRA, and staff would continue to work with neighboring agencies for collaborative ecosystem management. Management of visitor use and facilities would generally continue through existing levels and types of service and regulation, and additional visitor facilities, such as new buildings, structures, roads, parking areas, camping areas, and trails, would not be constructed. The park would react to catastrophic events and the destruction of visitor facilities on a case-by-case basis, which could result in a net loss of visitor facilities.

Alternative C

Alternative C would emphasize the role of Ross Lake NRA in preserving the greater North Cascades ecosystem, which includes two additional National Park System units, two national forests, and provincial parks and protected areas across the Canadian border. Management and education efforts would focus on broader ecosystem preservation and enhancement through coordinated regional and international environmental stewardship. The focus of visitor experiences would be linked to solitude, tranquility, natural soundscapes, and scenery through traditional outdoor activities. The NPS would actively work to reduce habitat fragmentation throughout Ross Lake NRA by consolidating development, eliminating certain trails, and limiting construction of new facilities in undeveloped areas. Educational and interpretive opportunities would be primarily structured, and the NPS would increasingly rely on partners to deliver educational and interpretive programs both on-site and off-site.

Alternative C would provide visitors with recreational opportunities along the North Cascades Highway. However, there would be no net increase in miles of trail in Ross Lake NRA. In the backcountry and wilderness zones, Alternative C would focus on resource preservation and enhancement while limiting and/or restricting some recreational uses. Seaplanes would not be allowed to land on lakes, and the NPS would recommend restricting commercial scenic air tours within Ross Lake NRA in order to protect and enhance soundscapes and wilderness character, experience, and values. In the event of a catastrophic weather event and the destruction of visitor facilities, natural geomorphological processes would be allowed to occur unimpeded wherever possible and affected facilities, including Colonial Creek and Goodell Creek Campgrounds, would be closed and restored to natural conditions.

Alternative D

Alternative D would focus on improving connections between visitors and the outdoors through a variety of enhanced recreation and learning opportunities. The emphasis of park management would be to diversify Ross Lake NRA's visitor base and build stewardship through more hands-on/experiential recreation and education opportunities. Interpretive and educational programs would be offered by both the NPS and partners, with expanded offerings in the backcountry and limited areas of the wilderness. Park management would continue to protect resources and minimize impacts from visitor use.

Overnight accommodations, several new trails, and additional visitor amenities would expand visitor opportunities in Ross Lake NRA, primarily along the North Cascades Highway corridor. Services provided to the public by the Wilderness Information Center would be moved to an easily accessible location on Highway 20. A wide variety of recreational activities would be allowed throughout Ross Lake NRA, and there would be fewer restrictions on recreational activities than the other action alternatives. An online permit system would allow visitors the opportunity for advance trip planning. Seaplanes would be allowed to land and take off on Diablo and Ross lakes only in the Frontcountry Zone. In the event of a catastrophic event and the destruction of visitor facilities, the NPS would close affected facilities and build new facilities on other locations to ensure no net loss of visitor opportunities.

ALTERNATIVES CONSIDERED BUT DISMISSED

The Council on Environmental Quality guidelines for implementing the National Environmental Policy Act (NEPA) requires federal agencies to analyze all “reasonable” alternatives that substantially meet the purpose and need for the proposed action. Under NEPA, an alternative may be eliminated from detailed study for the following reasons [40 CFR 1504.14 (a)]:

- “technical or economic infeasibility;” the 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; therefore would require a major change in that plan or policy to implement
- environmental impacts too great

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

Internal Boundary Modifications

The NPS dismissed from consideration recommending legislation to convert Ross Lake NRA to North Cascades National Park. Congress created Ross Lake NRA to enable enjoyment of a wider variety of recreational activities, including hunting and hiking with pets that are prohibited in North Cascades National Park. Ross Lake NRA was also created as a separate unit in recognition Seattle City Light’s existing and proposed hydroelectric developments. These hydroelectric facilities (three large dams and reservoirs) were perceived to be out of character with the national park idea because they have dramatically altered the natural landscape and hydrologic systems of the Skagit River and its tributaries. Demand for hunting is very limited, and there are no other consumptive activities occurring within the unit that are causing notable resource management or public safety concerns. Furthermore, the “National Park” name is generally associated with large areas with a wide variety and diversity of natural and cultural resources, including natural resources, functions and processes that are largely unaltered. “National Parks” that do have large-scale hydroelectric facilities were established in the early years of the national park system, such as Yosemite and Grand Teton, and before the “National Recreation Area” designation came into common naming practice. During the era when North Cascades National Park and Ross Lake NRA were designated, other NPS units with reservoirs were generally named “National Recreation Areas,” such as Bighorn Canyon NRA (1966) and Whiskeytown-Shasta-Trinity NRA (1972). Congress chose to designate Ross Lake as a “National Recreation Area” based on its existing hydroelectric facilities and range of superlative resources and recreational opportunities.

The NPS also dismissed from consideration expanding the boundary of Ross Lake NRA into either the north or south units of North Cascades National Park. Such an expansion would reduce the area of the National Park proper, detract from the purposes and significance of the National Park, and afford no additional benefits to the resources and values of Ross Lake NRA.

External Boundary Modifications

The planning team evaluated lands east of Ross Lake NRA that are managed by the U.S. Forest Service, including the North Cascades Highway corridor up to and including Washington Pass, the Pasayten Wilderness, and lands comprising the watershed for the Skagit River (approximately 208,390 acres). The team also evaluated lands west and southwest of Ross Lake NRA which primarily include lands within the lower Bacon Creek watershed, an ecologically significant area and important habitat for anadromous species of fish such as salmon. While the upper portion of the watershed is protected within the confines of North Cascades National Park, substantial portions of the lower Bacon Creek watershed are presently under U.S. Forest Service jurisdiction.

The rationale for considering these areas included:

- (a) responding to public comments that requested consideration of such an expansion of Ross Lake NRA;
- (b) consideration of U.S. Forest Service-administered lands along the highway corridor, including Washington Pass, for access as an eastern gateway to the NRA;
- (c) consideration of the Skagit River watershed as a logical geographic boundary for ecological purposes, recognizing that drawing boundaries along ecological lines such as watersheds helps to protect and conserve various ecological functions and values; and
- (d) the administrative history of the establishment of the North Cascades NPS Complex.

A conclusion was made that boundary modification is unwarranted given other options for addressing issues regarding management and resource protection presently exist. These issues can be addressed effectively through interagency coordination and ecosystem-based planning, without having to change jurisdictional boundaries. For example, when the U.S. Forest Service begins a new forest planning effort for the Mount Baker-Snoqualmie National Forest, including the lands within the lower Bacon Creek watershed, the planning effort will provide an opportunity for NPS to encourage the U.S. Forest Service to address conservation concerns such as the area's importance for salmon and other anadromous fish species.

The NPS recognizes that without these external boundary modifications, Ross Lake NRA and the North Cascades NPS Complex would continue to lack boundaries clearly aligned along ecosystem lines. This lack of an ecosystem-based boundary with a single agency administrator means conservation of the greater North Cascades ecosystem requires a commitment among multiple agency partners, including the NPS, to coordinate and cooperate in a broader conservation vision. Interagency ecosystem management can be more challenging and less efficient than single-agency administration and management, and lack of commitment or engagement of any one agency partner has the potential to inhibit conservation efforts. In spite of these challenges, the NPS believes increased collaboration and cooperation with the U.S. Forest Service and Canadian agencies is the most appropriate course of action for interagency and trans-boundary ecosystem management, and this collaboration and cooperation is integral to the new GMP.

International Park Designation

During the GMP planning process, the planning team also discussed recommending designation of an international park, similar to the model provided by the Waterton-Glacier International Peace Park, which represents the union of Waterton Lakes National Park in Canada and Glacier National Park in the United States. Such designation was considered because it could further solidify cooperation and trans-boundary management through tandem federal legislation in the United States and Canada. Trans-boundary management is beneficial, useful, and often essential for the management of ecosystem processes and functions that do not recognize human imposed boundaries on the landscape. However, this action was dismissed from further consideration because a working relationship between Canadian and U.S. land managers already exists, and cooperative management continues through joint planning, programs, and projects. The designation is not necessary for a long-term collaborative relationship.

Relocating the Public Function of the Wilderness Information Center to Newhalem

The planning team also considered relocating the public function of the Wilderness Information Center to the current North Cascades Visitor Center in Newhalem. The intent of this idea was to concentrate more visitor information functions in fewer locations for operational efficiency and reduce the confusion for visitors who have to obtain permits in what may be perceived as an obscure location. If the public function of the wilderness program was moved to Newhalem, the Marblemount Ranger Station could be converted to administrative use only. This action was dismissed from further consideration and analysis in the action alternatives for several reasons. One concern related to the operational efficiency that would be lost by separating the public wilderness information function from other program functions, such as search and rescue. Staff expressed concern that separating these functions could delay response times for emergencies as many staff work in both program areas. There was also concern expressed about the effect on visitors who use the Cascade River Road as an access point for backcountry travel. Obtaining backcountry permits in Marblemount is more convenient than Newhalem for travelers who are coming from the west side of Ross Lake NRA. While this idea is not evaluated in greater detail in this GMP, should the permit and reservation system for backcountry travel make it feasible to obtain permits remotely or other circumstances change that make this idea viable, this GMP should not preclude consideration of this idea in the future.

BASIS FOR DECISION

The Organic Act established the NPS in order to “promote and regulate the use of...national parks...” The Organic Act defined the purposes of the national parks as “to conserve the scenery and natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.” The Organic Act provides overall guidance for the management of Ross Lake National Recreation Area.

In reaching its decision to select the preferred alternative, the NPS considered the purposes for which Ross Lake National Recreation Area was established, and other laws and policies that apply to lands in Ross Lake National Recreation Area, including the Organic Act of 1916, the

Wilderness Act of 1964, the National Environmental Policy Act, the National Historic Preservation Act, and *NPS Management Policies 2006*. The NPS also conducted an initial assessment of the impacts of the alternatives as well as cost estimates for the various alternatives to guide decision-making in identification of the preferred alternative.

The NPS also sought and carefully considered the full spectrum of public comments received throughout the planning process. Comments received during the period following the release of the Draft GMP/EIS, as well as consultation with government agencies and tribes, resulted in adjustments to the final preferred alternative (incorporated in the Final EIS/GMP). Those comments, and the responses to them, are provided in Volume 2 of the Final GMP/EIS.

All of the alternatives were evaluated with a variety of criteria and considerations to determine which management alternative could provide the greatest advantages to the public and to the NPS. Alternatives were evaluated to determine how well they:

- Support the NRA's purpose, significance, and desired conditions;
- Preserve resources and promote the long-term stewardship of the greater North Cascades;
- Provide a range of quality recreational day-use and overnight experiences and access to recreational opportunities;
- Preserve wilderness character, experience, and values;
- Provide for efficient and sustainable facilities and operations; and,
- Address public concerns.

Compared to all of the alternatives considered for management of the NRA, Alternative B best balances the long-term protection of the natural and cultural resources and wilderness values that support the purpose and significance of the NRA with visitor services and access to these resources. The selected alternative also best represents broad public sentiments about the future of Ross Lake National Recreation Area.

Natural resources, including ecosystem functions and processes, air quality, soundscapes, water resources, vegetation and wildlife will be ensured long-term stewardship and preservation in the context of a functioning ecosystem and impacted areas will receive appropriate restoration to maintain the integrity of the North Cascades ecosystem. For example, goals for maintaining core area of grizzly bear habitat will help enable recovery of a viable population. Commitments to long-term ecological monitoring and expanded collaborative relationships and sustainable programs with partners will enhance understanding and management across the entire North Cascades Ecosystem.

Management of wilderness and backcountry areas will focus on the qualities of wilderness character, ecosystem preservation, and compatible recreational activities. Conversion of the Thunder Creek Potential Area to formal designation and inclusion in the Stephen Mather Wilderness would add 3,559 acres to the National Wilderness Preservation System.

Cultural resources and values, including archeology, historic and prehistoric structures, cultural landscapes, ethnohistory, and the museum collections will be ensured long-term stewardship.

Additional and improved visitor amenities along the North Cascades Highway, such as new day hiking trails, updated interpretive displays at the North Cascades Visitors Center, renovated parking areas, and new camping facilities at established campgrounds, will enhance the visitor experience to Ross Lake National Recreation Area by improving visitor safety, increasing visitor access, and creating a more tangible connection to the North Cascades ecosystem. These development improvements will also concentrate impacts to the NRA along a previously disturbed highway corridor and maximize efficient use of current facilities.

Management of Ross Lake and the other reservoirs entail recreation management strategies, such as implementing clean boating technologies and noise abatement procedures for seaplanes. These measures will also maintain and improve visitor safety, soundscapes, and water quality, while promoting visitor access and encouraging solitude and connection with the natural world.

Ultimately, the selected alternative was deemed to achieve the optimal balance between resource protection and visitor use and enjoyment for the next 15-20 years, the expected lifespan of this planning effort.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

Pursuant to the Council on Environmental Quality's guidance on the determination of the environmentally preferred alternative, such an alternative is that which will promote the national environmental policy as expressed in §101 of the National Environmental Policy Act. This section states that "...it is the continuing responsibility of the Federal Government to:

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. preserve 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. achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approaching the maximum attainable recycling of depletable resources."

Expressed more succinctly, the environmentally preferred alternative is the course of action "that causes the least damage to the biological and physical environment" or which conversely "best protects, preserves, and enhances historic, cultural, and natural resources (46 FR 18026 – 46 FR 18038)."

As identified and analyzed in the *Ross Lake National Recreation Area Draft and Final General Management Plan and Environmental Impact Statement*, the environmentally preferable alternative was deemed to be the NPS preferred alternative (Alternative B). This alternative

would focus on the concept that Ross Lake NRA serves as a gateway to millions of acres of surrounding wilderness. The North Cascades Highway corridor serves as a “window to the wilderness” of the North Cascades, but also provides diverse recreational opportunities for visitors consistent with a traditional national park experience. In this alternative, park management would enhance efforts to protect and preserve natural and cultural resources, with an emphasis on wilderness protection, through leadership in integrated resource protection fulfilling resource preservation goals (1, 4) while also providing a range of quality recreation, interpretation, and education opportunities for visitors that are consistent and appropriate in a national park setting, fulfilling visitor experience goals (2, 3, 5). Proactive leadership and enhanced partnerships with other agencies and organizations such as the North Cascades Institute (NCI) and Seattle City Light (SCL) would enhance resource preservation efforts and opportunities for visitors. Operational and facility management strategies that include making better use of facilities along the North Cascades Highway as opposed to new construction as much as possible also provide a more sustainable future for Ross Lake NRA, fulfilling sustainability goals (3, 6). Taken as a whole, this alternative is the environmentally preferred alternative because it best meets all six goals stated in the National Environmental Policy Act.

Alternative A, the No Action Alternative, represents the continuation of current management practices. Ross Lake NRA would continue to be managed in accordance with approved plans and policies. The emphasis of this alternative would be to respond to resource impacts and visitor demands as they occur, without substantially changing staff, programs, facilities, or funding support. No comprehensive plan to address potential issues proactively would be formulated. Many traditional uses in Ross Lake NRA would continue, the wilderness areas would continue to be managed in accordance with the principles of wilderness stewardship, and roads and facilities would be maintained. Some infrastructure would be gradually replaced with more sustainable facilities and infrastructure. Resource preservation goals (1, 4) and sustainability goals (3, 6) would not be met to the same degree as in other alternatives without expanded resource preservation efforts and programs and replacement of facilities and infrastructure with those that are more sustainable and provide added resource protection. Visitor experience goals (2, 3, 5) would be achieved to a lesser degree than under other action alternatives by maintaining existing visitor services, facilities and opportunities.

Alternative C would focus on the role of Ross Lake NRA in preserving the greater North Cascades ecosystem which extends across two additional National Park System units, two national forests, as well as provincial parks and protected areas across the Canadian border. The emphasis of park management and education efforts would focus on broader ecosystem issues through coordinated regional and environmental stewardship, fulfilling resource preservation goals (1, 4). This alternative also emphasizes sustainable facilities and operations, fulfilling sustainability goals (3, 6). However, this alternative would only partially meet the visitor experience goals (2, 3, 5). This alternative provides greater limitations on visitor access and recreational experiences and opportunities through its management zoning of Ross Lake NRA. A greater percentage of Ross Lake NRA is zoned backcountry in this alternative, limiting the range of visitor experiences that are available throughout Ross Lake NRA and on the Gorge, Diablo, and Ross lakes. Therefore, this alternative would not meet visitor experience goals to the same degree as other alternatives.

Alternative D would focus on improving connections between visitors and the outdoors through a variety of techniques, including enhanced recreation and learning opportunities. The emphasis of park management would be on engaging visitors and building stewardship through more hands-on experiential recreation and educational opportunities in Ross Lake NRA. The greatest percentage of frontcountry zoning exists in this alternative, providing greater access to park resources than Alternative C, fulfilling visitor experience goals (2, 3, 5) but greater efforts would be undertaken to maintain recreation facilities in their existing locations and expand utility services, which may not best preserve natural resources.

MEASURES TO MINIMIZE ENVIRONMENTAL HARM

The NPS has investigated all practical measures to avoid or minimize environmental impacts that could result from the selected action. Mitigation measures are the practicable and appropriate methods that will be used under any alternative to avoid and/or minimize harm to natural and cultural resources, wilderness, visitors and the visitor experience, and socioeconomic resources when no other management alternative exists (such as avoidance). The following mitigation measures have been developed using existing laws and regulations, best management practices, conservation measures, and other known techniques from past and present work in and around Ross Lake NRA and are identified and incorporated into the selected action as described in the *Ross Lake National Recreational Area Final General Management Plan and Environmental Impact Statement*.

Management and Protection of Natural Resources

Potential mitigation measures identified as effective in addressing specific impacts of management decisions on natural resources, and applicable to any alternative, are listed below:

Air Quality

- Implement a dust abatement program including the following potential actions: water or otherwise stabilize soils, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate with native species.
- Minimize NPS vehicle emissions by using the best available technology whenever possible.
- Encourage the public and commercial tour companies to employ methods that reduce emissions.
- Employ sustainable designs that reduce energy demands and fossil fuel emissions.

Natural Soundscapes

- Implement standard noise abatement measures during NPS operations, including: scheduling to minimize impacts in noise-sensitive areas, using the best available noise control techniques wherever feasible, using hydraulically or electrically powered impact tools when feasible, and locating stationary noise sources as far from sensitive areas as possible.
- Site and design facilities to minimize objectionable noise.

- Minimize idling of motors when power tools, equipment, and vehicles are not in use.
- Muffle above ambient noise whenever possible to reduce noise impacts.

Lightscares and Night Skies

- Replace existing outdoor lighting with fixtures that do not contribute to nighttime light pollution.
- Install energy-efficient lights equipped with timers and/or motion detectors so that light would only be provided when it is needed to move safely between locations.
- Use low-impact lighting, such as diffused light bulbs, and techniques such as downlighting in outdoor fixtures, to prevent light spill and preserve the natural lightscape and avoid light pollution.

Hydrologic Systems including Wetlands

- Time projects adjacent to or in waterways to occur during the dry season (late summer) or during reservoir drawdown (early spring).
- Use bioengineering, engineered log jams, and other habitat-friendly erosion control techniques instead of rip-rap.
- Implement erosion control measures, minimize discharge to water bodies, and regularly inspect construction equipment for leaks of petroleum and other chemicals to prevent water pollution; minimize the use of heavy equipment in a waterway; wash heavy equipment prior to use in or near water bodies.
- Use bio-based lubricants (such as biodiesel and vegetable oil-based hydraulic fluid).
- Develop and implement a spill plan and acquire supporting equipment.
- Integrate runoff control systems into the designs of larger parking areas near water resources to minimize water pollution.
- Develop sediment control and prevention plans for projects that could impact water quality.
- Delineate wetlands and apply protection measures during projects; perform project activities near wetlands in a cautious manner to prevent damage caused by equipment, or increase erosion, siltation, etc.
- Consult with Washington Department of Fish and Wildlife for work that may affect fish or fish habitat.

Soils

- Build new facilities on soils suitable for development.
- Minimize soil erosion at construction sites by limiting the time that soil is left exposed and by applying other erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies.
- Revegetate construction areas with appropriate native plants in a timely manner.

- Work with the Natural Resource Conservation Service to complete the soil survey of Ross Lake NRA to provide some of the information needed for sustainable soil management.
- Conserve native topsoil in construction projects.
- Consult with U.S. Army Corps of Engineers.

Vegetation

- Monitor areas used by visitors (such as trails and campsites) for signs of native vegetation disturbance and use public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from erosion or social trails.
- Designate river and stream access/crossing points, and use barriers and closures to prevent trampling and loss of riparian vegetation.
- Develop revegetation plans for disturbed areas and require the use of genetically appropriate native species (revegetation plans should specify species to be used, seed/plant source, seed/plant mixes, site-specific restoration conditions, soil preparation, erosion control, ongoing maintenance and monitoring requirements, etc.; salvaged vegetation should be used to the extent possible).
- Survey for rare plants prior to any ground-disturbing activities; disturbance to rare or unique vegetation would be avoided to the greatest extent possible.
- Implement an invasive, non-native plant management program. Standard measures could include the following elements: use only weed-free materials for road and trail construction, repair, and maintenance; ensure equipment arrives on-site free of mud or seed-bearing material; certify that stabilization materials (rice straw) are weed-free; identify areas of noxious weeds pre-project; treat noxious weeds or noxious weed topsoil before construction (such as, topsoil segregation, storage, herbicide treatment); soil or gravel should be covered with weed cloth to prevent weed seed introduction when the material is staged prior to using, when depositing ditch spoils along the roads, limit the movement of material to as close as possible to the excavation site; scrupulously and regularly clean areas that serve as introduction points for invasive, non-native plants (campgrounds, staging areas, maintenance areas, and corrals); revegetate with genetically appropriate native species; inspect rock and gravel sources to ensure these areas are free of noxious weed species; and monitor locations of ground-disturbing operations for at least five years following the completion of projects.

Fish and Wildlife

- Employ techniques to reduce impacts on fish and wildlife, including visitor education programs, restrictions on visitor and NPS activities, and law enforcement patrols.
- Implement a wildlife protection program. Standard measures would include project scheduling [season and/or time of day], project monitoring, erosion and sediment control, fencing or other means to protect sensitive resources adjacent to project areas, disposing of all food-related items or rubbish, salvaging topsoil, and revegetating.

- Consult with National Oceanic and Atmospheric Administration (NOAA) Fisheries for projects within essential fish habitat.
- Consult with U.S. Fish and Wildlife Service for projects where listed species and their habitats occur.

Special Status Species

Mitigation actions would occur during normal NPS operations as well as before, during, and after projects to minimize immediate and long-term impacts on rare, threatened, and endangered species. These actions may vary by project area, and additional mitigation measures may be added depending on the action and location. Many of the measures listed for vegetation, wildlife, and water resources would also benefit rare, threatened, and endangered species by helping to preserve habitat. Further mitigation efforts the NPS would perform include the following:

- Conduct surveys for rare, threatened, and endangered species as warranted.
- Locate and design facilities/actions/operations to avoid or minimize the removal of rare, threatened, and endangered species habitat; if avoidance is infeasible, minimize and compensate for adverse effects as appropriate and in consultation with the appropriate resource agencies.
- Plan work in areas in or near suitable threatened and endangered bird habitat as late as possible in the summer/fall.
- Conduct work outside of critical periods for the specific species when possible.
- Develop and implement restoration and/or monitoring plans as warranted; plans should include methods for implementation, performance standards, monitoring criteria, and adaptive management techniques.
- For projects in or near streams, employ appropriate best management practices.
- Implement measures to reduce adverse effects of non-native plants and wildlife on rare, threatened, and endangered species.
- Protect and preserve critical habitat features, such as nest trees, whenever possible.

Management and Protection of Cultural Resources

The protection of Ross Lake NRA's cultural resources is essential for understanding the past, present, and future relationship of people with the North Cascades ecosystem and the expressions of our cultural heritage. The NPS will pursue strategies to protect its cultural resources, including museum collections and archeological, historic, ethnographic, and archival resources, while encouraging visitors and employees to recognize and understand their value. The strategies would allow the integrity of Ross Lake NRA's cultural resources to be preserved unimpaired. They would also ensure that Ross Lake NRA is recognized and valued as an out-standing example of resource stewardship, conservation education and research, and public use.

Some of Ross Lake NRA's cultural resources are within designated wilderness. The Wilderness Act specifies that the designation of any areas of the park system as wilderness "shall in no manner lower the standards evolved for the use and preservation of" such unit of the park system under the various laws applicable to that unit. Thus, the laws pertaining to historic preservation also remain applicable within wilderness. In accordance with *NPS Management Policies 2006*,

cultural resources that have been included in wilderness would be protected and maintained according to the pertinent laws and policies governing cultural resources, using management methods that are consistent with the preservation of wilderness character and values. These laws include the Organic Act, National Historic Preservation Act, the Archeological Resources Protection Act, the American Indian Religious Freedom Act, the Native American Graves Protection and Repatriation Act, and Executive Order 13007 that addresses government-to-government consultation.

Adverse impacts on historic properties listed in, determined eligible for listing in, or not yet assessed for eligibility to the National Register of Historic Places would be avoided, if possible. If adverse impacts could not be avoided, an assessment of effect and a treatment plan, if necessary, will be developed through a consultation process with all interested parties. In accordance with *NPS Management Policies 2006*, proposed adverse effects would be assessed to determine whether the proposed actions constitute impairment of significant fundamental cultural resources.

Archeological Resources

Archeological surveys will precede ground-disturbance required for new construction or removal of eligible historic properties. Known archeological resources will be avoided to the greatest extent possible. If National Register listed, eligible or unassessed archeological resources could not be avoided, an appropriate treatment plan will be developed in consultation with the Washington State Historic Preservation Officer, National Advisory Council, and associated American Indian tribes.

Until 2025, Ross Lake archeological resources will continue to be managed in compliance with the Archeological Resources Mitigation and Management Plan established pursuant to City of Seattle and NPS settlement agreements as a condition of the FERC No. 553 license issued to the City.

If previously unknown archeological resources are discovered during project work, NPS cultural resources staff will be immediately informed, work in the immediate vicinity of the discovery will be halted and the location secured until the resources are identified, evaluated, and documented and an appropriate treatment plan is developed, if necessary, in consultation with the Washington State Historic Preservation Office and associated American Indian tribes.

Historic Buildings and Structures

All project work relating to historic structures/buildings would be conducted in accordance with Director's Order 28 and the guidelines and recommendations of the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*. Typical mitigation measures for historic structures/ buildings include measures to avoid adverse impacts, such as rehabilitation and adaptive reuse, designing new development to be compatible with surrounding historic properties, and screening new development from surrounding historic resources to minimize impacts on viewsheds, cultural landscapes and ethnographic resources.

Historic structures will be maintained or stabilized until appropriate preservation maintenance could be undertaken. Benign neglect would not be considered an appropriate management strategy. No National Register listed or eligible structure would be removed or allowed to decay

through benign neglect without prior review by park and region cultural resource specialists, including approval by the NPS regional director and consultation with the Washington State Historic Preservation Officer. Before a National Register listed or eligible structure is removed, appropriate documentation recording the structure would be prepared in accordance with Section 110(b) of the National Historic Preservation Act, and the documentation would be submitted to the Historic American Buildings Survey /Historic American Engineering Record or Historic American Landscape Survey program, if deemed appropriate.

Historic structures that are within designated wilderness areas will be protected and maintained according to the pertinent laws and policies governing cultural resources using management methods that are consistent with the preservation of wilderness character and values. Laws pertaining to historic preservation remain applicable within wilderness but must generally be administered to preserve the area's wilderness character. Consultation of treatment would include appropriate measures to mitigate impacts to wilderness character.

Cultural Landscapes

All project work relating to cultural landscapes will be conducted in accordance with Director's Order 28 and the guidelines and recommendations of the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*. Typical mitigation measures for cultural landscapes include measures to avoid adverse impacts, such as designing new development to be compatible with surrounding historic properties and screening new development from surrounding cultural landscapes to minimize impacts on those landscapes and viewsheds.

Ethnographic Resources

The National Park Service would continue to consult with federally recognized Native American tribes with treaty resources in Ross Lake NRA on a government-to-government basis to identify ethnographic resources and develop appropriate strategies to mitigate impacts on these resources. Such strategies could include continuing to provide access to traditional use or spiritual areas and screening new development from traditional use areas to minimize impacts on ethnographic resources. Consultations with American Indians linked by ties of kinship, culture, or history to park lands would address the inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony, and all provisions outlined in the Native American Graves Protection and Repatriation Act of 1990 would be followed.

Museum Collections

Mitigation measures related to museum collections consist of conservation of a collection through proper storage, handling, and exhibit of objects as specified in the NPS Museum Handbook and NPS Director's Order No. 24, NPS Museum Collections Management.

Management and Protection of Wilderness Values

A new wilderness management plan will be developed for the entire North Cascades NPS Complex, which will include Ross Lake NRA, more specific desired conditions for wilderness resources, visitor experiences, and management protocols.

In a broad sense, the NPS will manage the Stephen Mather Wilderness to preserve wilderness character, and will work to establish a monitoring program that measures wilderness character within this wilderness. Recent interagency efforts have defined the four primary elements of wilderness character that link directly to the statutory language of the 1964 Wilderness Act, as follows:

- untrammeled quality: wilderness is essentially unhindered and free from modern human control or manipulation
- natural quality: wilderness ecological systems are substantially free from the effects of modern civilization
- undeveloped quality: wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation
- solitude or primitive and unconfined quality: wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation

Minimum Requirement Process

The Wilderness Act directs that agencies administer wilderness to preserve wilderness character. The purpose of the minimum requirement process is to ensure that only the minimum actions necessary for administration of the wilderness area are implemented to reduce the effects of management on wilderness character and values. These determinations will continue to be made through a Minimum Requirement analysis, which provides a consistent method for developing, evaluating, and recommending the actions that would be least intrusive on wilderness character and values, while allowing the administration of the wilderness. The concept is applied to all management actions, programs, and activities within Ross Lake NRA that might affect wilderness and potential wilderness.

The minimum requirement concept is applied as a two-step process. The first step determines whether a proposed management action is appropriate and necessary for the administration of the area as wilderness and does not cause a significant impact to wilderness resources and character, in accordance with the Wilderness Act. The second step determines the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized. If the project is found to be appropriate and necessary, then the “minimum” management method (tool or technique) is identified that would result in the least amount of impact to the wilderness resources and character.

The minimum requirement process provides a formalized method for developing alternative ways to address an issue, and to evaluate each alternative’s effects on wilderness character and wilderness resources. The minimum requirement process is typically incorporated in the appropriate environmental compliance, usually with opportunity for public review and comment.

Scenic Resources

Mitigation measures designed to minimize human-made visual intrusions include the following:

- Use facilities such as boardwalks and fences to route people away from sensitive natural and cultural resources while still permitting access to important viewpoints.
- Design, locate, and construct facilities in ways that minimize adverse effects on scenic views.
- Provide vegetative screening to mask unwanted visual intrusion of facilities or infrastructure.

Socioeconomic Environment

During implementation of the approved general management plan for Ross Lake NRA, the National Park Service will pursue partnerships with tribes, local communities, and county governments to further identify potential impacts and mitigating measures that would best serve the interests and concerns of both the National Park Service and the local communities.

Sustainable Design and Aesthetics

Sustainable practices will be used in the selection of building materials and sources and building location and siting. Projects will use sustainable practices and resources whenever practicable by recycling and reusing materials, by minimizing materials, by minimizing energy consumption during the project, and by minimizing energy consumption throughout the lifespan of the facility produced.

PUBLIC INVOLVEMENT

The conservation planning and environmental impact analysis process for the Ross Lake National Recreation Area GMP incorporated four formal rounds of public involvement: public scoping, public review of the draft alternatives, public review of the preliminary findings of the Skagit Wild and Scenic River Study, and public review of the draft GMP/EIS.

Public Scoping Process

The public scoping phase was initiated September 29, 2006 and extended through December 30, 2006. The NPS formally announced the public scoping period and invited public comment through newsletters; correspondence; press releases; public workshops; informal meetings; the NPS Planning, Environment, and Public Comment (PEPC) website; and a notice of intent in the *Federal Register* (October 30, 2006). NPS staff produced and mailed a scoping newsletter to approximately 350 individuals and entities on the park mailing list. Agencies, organizations, governmental representatives, and tribal governments were sent letters of invitation to attend the public workshops or individual meetings. Press releases were distributed to local and regional news media. The project was launched on the PEPC website <http://parkplanning.nps.gov/rola>, providing information about the Ross Lake NRA GMP and providing a method for submitting

public comments; in addition, the public was invited to submit comments by regular mail, e-mail, fax, online, and at public workshops and individual meetings.

Seven public scoping workshops were hosted in western Washington and British Columbia in October 2006 to provide the public with an opportunity to learn about the GMP project and to offer comments. Meetings were held in Concrete, Marblemount, Sedro-Woolley, Seattle, and Bellingham, Washington and in Surrey and Chilliwack, British Columbia. 63 people attended the meetings overall. During the public comment period, the NPS received a total of 19 written responses in the form of letters, e-mails, newsletter response forms, and web comments.

Public Review of the Draft Alternatives

The Draft Alternatives public process was an additional planning step to ensure that the public fully comprehended the range of draft alternatives and was able to comment effectively on these draft alternatives. The primary purpose of this planning step was to understand the public's concerns and preferences with regard to the range of draft alternatives and to assist the planning team in refining the draft alternatives and selecting a preferred alternative.

The draft alternatives public information process began in February 2008 with the mailing of the Draft Alternatives Newsletter to approximately 450 contacts on the mailing list; also the review opportunity was announced on NPS websites (<http://parkplanning.nps.gov/rola> and www.nps.gov/rola). The newsletter fully outlined the concepts and actions in the draft alternatives and proposed management zones. A planning schedule including dates, times, and locations for the public workshops invited public participation and comments on the range of draft alternatives. The newsletter also contained a business reply questionnaire that asked the public to comment on the four draft alternatives. Press releases were prepared and mailed to local media in advance of the public meetings by the North Cascades NPS Complex staff.

Four public workshops were hosted in Concrete, Sedro-Woolley, Bellingham, and Seattle during February-March 2008. Seventy people participated in the public workshops and provided oral comments, and 32 individuals, businesses, and/or agencies submitted written responses in the form of letters, e-mails, newsletter questionnaires, and comments submitted on the PEPC website.

Public Review of the Preliminary Findings of the Skagit Wild and Scenic River Study

In the fall 2008, the NPS released a summary newsletter and held two public workshops on the preliminary findings of the Skagit Wild and Scenic River Study. Several members of the general public as well as representatives from organizations such as American Rivers, American Whitewater, Blue Sky Outfitters, Downstream River Runners, League of Northwest Whitewater Racers, Washington Kayak Club, North Cascades Conservancy Council, U.S. Forest Service, The Nature Conservancy, National Park Conservations Association, The Wilderness Society, North Cascade Institute, and SCL attended these public workshops. The NPS also met independently with the Upper Skagit Tribe and the two other land managers in the river corridor, Seattle City Light and Washington State Department of Transportation.

In addition to comments received during public workshops and agency meetings, 46 individuals, businesses, government agencies and/or tribes submitted written responses in the form of letters, e-mails, newsletter questionnaires, and comments submitted on the NPS PEPC website.

While a few agencies and park neighbors expressed concerns related to possible effects of wild and scenic river designation on existing operations or potential new projects in the river corridor, most responding organizations and members of the public voiced their support of the designation, citing permanent protection of the Outstandingly Remarkable Values of these exceptional river systems, completion of the Skagit wild and scenic river designation from Sedro-Woolley to the Skagit Hydroelectric Project and opportunities for holistic watershed management, and prevention of new hydropower facilities and dams in this stretch.

It was also during this public review process that Seattle City Light submitted a letter to the NPS indicating that the agency had abandoned plans for new hydroelectric development on the Skagit River near Copper Creek and another project on Thunder Creek, and that Seattle City Light would not propose any other new hydroelectric developments on the Skagit River.

Public Review of the Draft GMP/EIS

The public review process for the *Ross Lake Draft General Management Plan and Environmental Impact Statement* began on July 1, 2010 and ended September 30, 2010. The NPS intentionally held the public review period during the peak summer visitation season in order to provide opportunities for the visiting public to learn about the NPS's preferred alternative for Ross Lake NRA and provide their comments on the draft plan. The draft plan and information regarding how to provide public comments were made available on the NPS websites (www.nps.gov/rola and <http://parkplanning.nps.gov/rola>); details of the public review process were also announced through the NPS's Notice of Availability published in the *Federal Register* on July 16, 2010 (the EPA's notice of filing was also printed in the *Federal Register* on this date).

In early July 2010, the NPS distributed approximately 160 paper and digital copies of the complete draft GMP/EIS to state congressional offices, local tribes, governmental agencies, and other interested organizations and individuals. The NPS also produced and mailed the Draft GMP/EIS Executive Summary Newsletter to over 900 contacts on the park mailing list. Press releases were prepared and mailed to local media in advance of the public open houses by the North Cascades NPS Complex staff, and a series of posters were distributed to approximately 35 locations throughout Ross Lake National Recreation Area and the region announcing the public open houses and requesting public comment.

The NPS held six public open houses in Sedro-Woolley, Marblemount, Newhalem, Seattle, Bellingham, and Winthrop in July 2010. Seventy-seven people participated in these public open houses and provided oral comments.

The NPS received approximately 1,645 total comments on the draft plan by mail, e-mail, fax, hand delivery, oral transcript, and via the PEPC website. A number of groups and individuals submitted duplicate comments by different means, and several people commented up to four times. Of the comments received, 7 were from agencies and elected officials, 5 from businesses,

and 22 from organizations. Notably the EPA endorsed the preferred alternative in their September 7, 2011 letter conveying the “LO” rating for the Draft EIS. The remaining comments were from individuals. Approximately 1,220 individuals responded by using one of two different form letters.

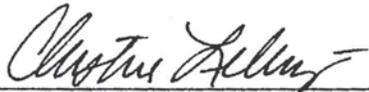
Release of the Final GMP/EIS

The no-action waiting period for *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement* was initiated by the EPA’s publishing of their notice of filing in the *Federal Register* on December 16, 2011 (the NPS’s Notice of Availability was printed in the *Federal Register* on December 29, 2011). The full document was mailed to 52 agencies, organizations, and individuals along with a cover letter and brief newsletter that summarized the major actions of the plan. Another 92 recipients received a CD version of the document with the accompanying documents, and 1,189 agencies, organizations, and individuals received the newsletter. The NPS also sent the full document and CD to 11 representatives of local tribes. In response to release of the document, the NPS received eleven comments – none of the respondents provided relevant new environmental information, and past comments already duly considered in preparing the *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement* were reiterated.

Upon approval of the *Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement*, the NPS will prepare a presentation format plan documenting the approved GMP. This final document will also contain minor text edits, such as clarification of the wilderness elements of the foundation section of the general management plan based on new NPS guidance for integrating wilderness character into park foundation documents.

CONCLUSION

Among the alternatives considered, the selected alternative (Alternative B) best protects Ross Lake National Recreation Area natural, cultural, and wilderness resources while also providing an optimal range of visitor opportunities. It meets NPS goals for managing the NRA over the next 15 to 20 years and fulfills national environmental policy goals. The official responsible for implementing the selected alternative is the Superintendent, North Cascades National Park Service Complex.

Approved:  Date: 03/21/2012
 Christine S. Lehnertz
 Regional Director, Pacific West Region

APPENDIX B:

LEGISLATION

Enabling Legislation- PL 90-544, 2 October 1968

Washington Park Wilderness Act 1988 PL 100-668, 16 November 1988

ENABLING LEGISLATION- PL 90-544, 2 OCTOBER 1968

North Cascades Complex

An Act to establish the North Cascades National Park and Ross Lake and Lake Chelan National Recreation Areas, to designate the Pasayten Wilderness and to modify the Glacier Peak Wilderness, in the State of Washington, and for other purposes. (82 Stat. 926) Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Title I - North Cascades National Park

SEC. 101. In order to preserve for the benefit, use, and inspiration of present and future generations certain majestic mountain scenery, snowfields, glaciers, alpine meadows, and other unique natural features in the North Cascade Mountains of the State of Washington, there is hereby established, subject to valid existing rights, the North Cascades National Park (hereinafter referred to in this Act as the “park”). The park shall consist of the lands, waters, and interests therein within the area designated “national park” on the map entitled “Proposed Management Units, North Cascades, Washington,” numbered NPCAS-7002, and dated October 1967. The map shall be on file and available for public inspection in the office of the Director, National Park Service, Department of the Interior, and in the office of the Chief, Forest Service, Department of Agriculture.

Title II - Ross Lake and Lake Chelan National Recreation Areas

SEC. 201. In order to provide for the public outdoor recreation use and enjoyment of portions of the Skagit River and Ross, Diablo, and Gorge Lakes, together with the surrounding lands, and for the conservation of the scenic, scientific, historic, and other values contributing to public enjoyment of such lands and waters, there is hereby established, subject to valid existing rights, the Ross Lake National Recreation Area (hereinafter referred to in this Act as the “recreation area”). The recreation area shall consist of the lands and waters within the area designated “Ross Lake National Recreation Area” on the map referred to in section 101 of this Act.

SEC. 202. In order to provide for the public outdoor recreation use and enjoyment of portions of the Stehekin River and Lake Chelan, together with the surrounding lands, and for the conservation of the scenic, scientific, historic, and other values contributing to public enjoyment of such lands and waters, there is hereby established, subject to valid existing rights, the Lake Chelan National Recreation Area (hereinafter referred to in this Act as the “recreation area”). The recreation area shall consist of the lands and waters within the area designated “Lake Chelan National Recreation Area” on the map referred to in section 101 of this Act.

Title III - Land Acquisition

SEC. 301. Within the boundaries of the park and recreation areas, the Secretary of the Interior (hereinafter referred to in this Act as the “Secretary”) may acquire lands, waters, and interests therein by donation, purchase with donated or

appropriated funds, or exchange, except that he may not acquire any such interests within the recreation areas without the consent of the owner, so long as the lands are devoted to uses compatible with the purposes of this Act. Lands owned by the State of Washington or any political subdivision thereof may be acquired only by donation. Federal property within the boundaries of the park and recreation areas is hereby transferred to the administrative jurisdiction of the Secretary for administration by him as part of the park and recreation areas. The national forest land within such boundaries is hereby eliminated from the national forests within which it was heretofore located.

SEC. 302. In exercising his authority to acquire property by exchange, the Secretary may accept title to any non-Federal property within the boundaries of the park and recreation areas and in exchange therefor he may convey to the grantor of such property any federally owned property under his jurisdiction in the State of Washington which he classifies as suitable for exchange or other disposal. The values of the properties so exchanged either shall be approximately equal, or if they are not approximately equal the values shall be equalized by the payment of cash to the grantor or to the Secretary as the circumstances require.

SEC. 303. Any owner of property acquired by the Secretary which on the date of acquisition is used for agricultural or single-family residential purposes, or for commercial purposes which he finds are compatible with the use and development of the park or the recreation areas, may, as a condition of such acquisition, retain the right of use and occupancy of the property for the same purposes for which it was used on such date, for a period ending at the death of the owner or the death of his spouse, whichever occurs later, or for a fixed term of not to exceed twenty-five years, whichever the owner may elect. Any right so retained may during its existence be transferred or assigned. Any right so retained may be terminated by the Secretary at any time after the date upon which any use of the property occurs which he finds is a use other than one which existed on the date of acquisition. In the event the Secretary terminates a right of use and occupancy under this section,

he shall pay to the owner of the right the fair market value of the portion of said right which remains unexpired on the date of termination.

Title IV - Administrative Provisions

SEC. 401. The Secretary shall administer the park in accordance with the Act, of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1-4), as amended and supplemented.

SEC. 402. (a) The Secretary shall administer the recreation areas in a manner which in his judgment will best provide for (1) public outdoor recreation benefits; (2) conservation of scenic, scientific, historic, and other values contributing to public enjoyment; and (3) such management, utilization, and disposal of renewable natural resources and the continuation of such existing uses and developments as will promote or are compatible with, or do not significantly impair, public recreation and conservation of the scenic, scientific, historic, or other values contributing to public enjoyment. In administering the recreation areas, the Secretary may utilize such statutory authorities pertaining to the administration of the national park system, and such statutory authorities otherwise available to him for the conservation and management of natural resources as he deems appropriate for recreation and preservation purposes and for resource development compatible therewith.

(b) The lands within the recreation areas, subject to valid existing rights, are hereby withdrawn from location, entry, and patent under the United States mining laws. The Secretary, under such reasonable regulations as he deems appropriate, may permit the removal of the nonleasable minerals from lands or interest in lands within the recreation areas in the manner prescribed by section 10 of the Act of August 4, 1939, as amended (53 Stat. 1196; 43 U.S.C. 387), and he may permit the removal of leasable minerals from lands or interests in lands within the recreation areas in accordance with the Mineral Leasing Act of February 25, 1920, as amended (30 U.S.C. 181 et seq.), or the Acquired Lands Mineral Leasing Act of August 7, 1947 (30 U.S.C. 351 et seq.), if he finds that such disposition

would not have significant adverse effects on the administration of the recreation areas.

(c) All receipts derived from permits and leases issued on lands or interests in lands within the recreation areas under the Mineral Leasing Act of February 25, 1920, as amended, or the Acquired Lands Mineral Leasing Act of August 7, 1947, shall be disposed of as provided in the applicable Act; and receipts from the disposition of nonleasable minerals within the recreation areas shall be disposed of in the same manner as moneys received from the sale of public lands.

(d) The Secretary shall permit hunting and fishing on lands and waters under his jurisdiction within the boundaries of the recreation areas in accordance with applicable laws of the United States and of the State of Washington, except that the Secretary may designate zones where, and establish periods when, no hunting or fishing shall be permitted for reasons of public safety, administration, fish and wildlife management, or public use and enjoyment. Except in emergencies, any regulations of the Secretary pursuant to this section shall be put into effect only after consultation with the Department of Game of the State of Washington.

(e) The Secretary shall not permit the construction or use of any road within the park which would provide vehicular access from the North Cross State Highway to the Stehekin Road. Neither shall he permit the construction or use of any permanent road which would provide vehicular access between May Creek and Hozomeen along the east side of Ross Lake.

Title V - Special Provisions

SEC. 501. The distributive shares of the respective counties of receipts from the national forests from which the national park and recreation areas are created, as paid under the provisions of the Act of May 23, 1908 (35 Stat. 260), as amended (16 U.S.C. 500), shall not be effected by the elimination of lands from such national forests by the enactment of this Act.

SEC. 502. Where any Federal lands included in the park or recreation areas are legally oc-

cupied or utilized on the effective date of this Act for any purpose, pursuant to a contract, lease, permit, or license issued or authorized by any department establishment, or agency of the United States, the Secretary shall permit the persons holding such privileges to continue in the exercise thereof, subject to the terms and conditions thereof, for the remainder of the term of the contract, lease, permit, or license or for such longer period of time as the Secretary deems appropriate.

SEC. 503. Nothing in this Act shall be construed to affect adversely or to authorize any Federal agency to take any action that would affect adversely any rights or privileges of the State of Washington in property within the Ross Lake National Recreation Area which is being utilized for the North Cross State Highway.

SEC. 504. Within two years from the date of enactment of this Act, the Secretary of the Interior and the Secretary of Agriculture shall agree on the designation of areas within the park or recreation areas or within national forests adjacent to the park and recreation areas needed for public use facilities and for administrative purposes by the Secretary of Agriculture or the Secretary of the Interior, respectively. The areas so designated shall be administered in a manner that is mutually agreeable to the two Secretaries, and such public use facilities, including interpretive centers, visitor contact stations, lodges, campsites, and ski lifts, shall be constructed according to a plan agreed upon by the two Secretaries.

SEC. 505. Nothing in this Act shall be construed to supersede, repeal, modify, or impair the jurisdiction of the Federal Power Commission under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.), in the recreation areas.

SEC. 506. There are hereby authorized to be appropriated such sums as may be necessary to carry out the purposes of this Act, but not more than \$3,500,000 shall be appropriated for the acquisition of lands or interest in lands.

Title VI - Wilderness

SEC. 601. (a) In order to further the purposes of the Wilderness Act, there is hereby designated, subject to valid existing rights, the Pasayten Wilderness within and as a part of the Okanogan National Forest and the Mount Baker National Forest, comprising an area of about five hundred thousand acres lying east of Ross Lake, as generally depicted in the area designated as “Pasayten Wilderness” on the map referred to in section 101 of this Act.

(b) The previous classification of the North Cascades Primitive Area is hereby abolished.

SEC. 602. The boundaries of the Glacier Peak Wilderness, an area classified as such more than thirty days before the effective date of the Wilderness Act and being within and a part of the Wenatchee National Forest and the Mount Baker National Forest, subject to valid existing rights, are hereby extended to include portions of the Suiattle River corridor and the White Chuck River corridor on the western side thereof, comprising areas totaling about ten thousand acres, as depicted in the area designated as “Additions to Glacier Peak Wilderness” on the map referred to in section 101 of this Act.

SEC. 603. (a) As soon as practicable after this Act takes effect, the Secretary of Agriculture shall file a map and legal description of the Pasayten Wilderness and of the Glacier Peak Wilderness, as hereby modified, with the Interior and Insular Affairs Committees of the United States Senate and House of Representatives, and such descriptions shall have the same force and effect as if included in this Act: Provided, however, That correction of clerical or typographical errors in such legal descriptions and maps may be made.

(b) Upon the filing of the legal descriptions and maps as provided for in subsection (a) of this section the Pasayten Wilderness and the additions to the Glacier Peak Wilderness shall be administered by the Secretary of Agriculture in accordance with the provisions of the Wilderness Act and thereafter shall be subject to the provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, except that any reference in such provisions to

the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act.

SEC. 604. Within two years from the date of enactment of this Act, the Secretary of the Interior shall review the area within the North Cascades National Park, including the Picket Range area and the Eldorado Peaks area and shall report to the president, in accordance with subsections 3(c) and 3(d) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132 (c) and (d)), his recommendation as to the suitability or nonsuitability of any area within the park for preservation as wilderness, and any designation of any such area as a wilderness area shall be accomplished in accordance with said subsections of the Wilderness Act.

WASHINGTON PARK WILDERNESS ACT 1988 PL 100-668, 16 NOVEMBER 1988

An Act to designate wilderness within Olympic National Park, Mount Rainier National Park, and North Cascades NP Complex in the State of Washington, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the “Washington Park Wilderness Act of 1988”.

Title II—North Cascades NP Complex Wilderness

SEC. 201. Designation

(a) WILDERNESS.—In furtherance of the purposes of the Wilderness Act (16 U.S.C. 1131 et seq.; 78 Stat. 890), certain lands in the North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan National Recreation Area, Washington, which—

(1) comprise approximately six hundred and thirty-four thousand six hundred and fourteen

acres of wilderness, and approximately five thousand two hundred and twenty-six acres of potential wilderness additions, and

(2) are depicted on a map entitled “Wilderness Boundary, North Cascades NP Complex, Washington,” numbered 168-60-186 and dated August 1988, are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such lands shall be known as the Stephen Mather Wilderness.

SEC. 202. Hydroelectric Projects

Section 505 of the Act of October 2, 1968 (82 Stat. 930; 16 U.S.C. 90d-4) is amended as follows: strike “in the recreation areas,” and insert in lieu thereof “in the lands and waters within the Skagit River Hydroelectric Project, Federal Energy and Regulatory Commission Project 553, including the proposed Copper Creek, High Ross, and Thunder Creek elements of the project; and the Newhalem Project, Federal Energy and Regulatory Commission Project 2705, within the Ross Lake National Recreation Area, the lands and waters within the Lake Chelan Project, Federal Energy and Regulatory Commission Project 637; the Company Creek small hydroelectric project at Stehekin within the Lake Chelan National Recreation Area; and existing hydrologic monitoring stations necessary for the proper operation of the hydroelectric projects listed herein”.

SEC. 203. Land Acquisitions for Administrative Facilities

Section 301(a) of the Act of October 2, 1968 (82 Stat. 927; 16 U.S.C. 90b) is hereby amended to add a new subsection as follows: “(b) The Secretary is hereby authorized to acquire, with the consent of the owner, lands outside of the authorized boundaries of North Cascades NP Complex for the purpose of construction and operation of a backcountry information center not to exceed five acres. The Secretary of the Interior is further authorized to acquire with the consent of the owner, lands for the construction of a headquarters and administrative site or sites, for the North Cascades National Park, Ross Lake National Recreation Area, and Lake

Chelan National Recreation Area not to exceed ten acres. The lands so acquired shall be managed as part of the park.”.

SEC. 204. Authorization of Appropriations

There are hereby authorized to be appropriated to the Secretary of the Interior such sums as may be necessary to complete the land acquisitions authorized pursuant to section 203 of this Act.

SEC. 205. Renewable Natural Resource Use in Recreation Areas

Section 402(a) of the Act of October 2, 1968 (82 Stat. 928; 16 U.S.C. 90c-1) is hereby amended to read as follows: “The Secretary shall administer the recreation areas in a manner which in his judgment will best provide for (1) public outdoor recreation benefits and (2) conservation of scenic, scientific, historic, and other values contributing to public enjoyment. Within that portion of the Lake Chelan National Recreation Area which is not designated as wilderness, such management, utilization, and disposal of renewable natural resources and the continuation of existing uses and developments as will promote, or are compatible with, or do not significantly impair public recreation and conservation of the scenic, scientific, historic, or other values contributing to public enjoyment, are authorized. In administering the recreation areas, the Secretary may utilize such statutory authorities pertaining to the administration of the national park system, and such statutory authorities otherwise available to him for the conservation and management of natural resources as he deems appropriate for recreation and preservation purposes and for resource development compatible therewith. Within the Ross Lake National Recreation Area the removal and disposal of trees within power line rights-of-way are authorized as necessary to protect transmission lines, towers, and equipment, provided that to the extent practicable, such removal and disposal of trees shall be conducted in such a manner as to protect scenic viewsheds.”

SEC. 206. Mineral Resource Use in Recreation Areas

Section 402(b) of the Act of October 2, 1968 (82 Stat. 928; 16 U.S.C. 90c-lb) is hereby amended to read as follows: "The lands within the recreation areas, subject to valid existing rights, are hereby withdrawn from all forms of appropriation or disposal under the public land laws, including location, entry, and patent under the United States mining laws, and disposition under the United States mineral leasing laws: Provided however, That within that portion of the Lake Chelan National Recreation Area which is not designated as wilderness, sand, rock and gravel may be made available for sale to the residents of Stehekin for local use so long as such sale and disposal does not have significant adverse effects on the administration of the Lake Chelan National Recreation Area."

APPENDIX C:

PERTINENT LAWS, POLICIES, AND PROCEDURES

The federal laws, executive orders, and policies and procedures applicable to the National Park System and preparation of this general management plan are listed below.

Federal Laws Applicable to the National Park System

Abandoned Shipwreck Act of 1987
Acid Precipitation Act of 1980
Act amending the act of October 2, 1968 (commonly called the Redwoods Act)
Act of August 8, 1953
Act of February 21, 1925
Act of June 30, 1864
Act of June 5, 1920
Act of March 1, 1872
Act of May 26, 1930
Administrative Dispute Resolution Act
Administrative Procedures Act
Airport and Airway Development Act of 1970
Airports In or Near National Parks Act
Alaska National Interest Lands Conservation Act of 1980
Alternative Dispute Resolution Act
American Battlefield Protection Act of 1996
American Folklife Preservation Act of 1976
American Indian Religious Freedom Act
Americans with Disabilities Act of 1990
Antiquities Act of 1906
Archeological and Historic Preservation Act of 1974
Archeological Resources Protection Act of 1979
Architectural Barriers Act of 1968
Arizona Desert Wilderness Act (contains NPS boundary study provisions)
Bald and Golden Eagles Protection Act
Clean Air Act
Coastal Barrier Resources Act
Coastal Zone Management Act of 1972
Comprehensive Environmental Response Compensation and Liability Act (commonly referred to as CERCLA or the Superfund Act)
Department of Transportation Act of 1966
Disposal of Materials on Public Lands (Material Act of 1947)
Emergency Planning and Community Right-to-Know Act of 1986
Endangered Species Act of 1973
Endangered Species Conservation Act of 1969
Energy Independence and Security Act of 2007
Energy Supply and Environmental Coordination Act of 1974
Estuary Protection Act
Farmland Protection Policy Act
Federal Advisory Committee Act
Federal Aviation Act of 1958
Federal Cave Resources Protection Act of 1988
Federal Coal Leasing Amendments Act of 1976
Federal Insecticide, Fungicide, and Rodenticide Act
Federal Land Policy and Management Act
Federal Power Act of 1920
Federal Water Pollution Control Act (commonly referred to as Clean Water Act)
Federal Water Power Act
Federal Water Project Recreation Act
Fish and Wildlife Coordination Act
Flood Disaster Protection Act of 1973
Food Security Act of 1985 (Sodbuster Law)
Forest and Rangeland Renewable Resources Planning Act of 1974
Freedom of Information Act
General Authorities Act, October 7, 1976

General Mining Act of 1872
 Geothermal Steam Act Amendments
 Geothermal Steam Act of 1970
 Grand Canyon National Park Enlargement Act
 Historic Sites Act of 1935
 Intergovernmental Cooperation Act of 1968
 Lacey Act of 1900
 Land and Water Conservation Fund Act of 1965
 Magnuson-Stevens Fishery Conservation and Management Act
 Management of Museum Properties Act of 1955
 Marine Mammal Protection Act of 1972
 Marine Protection, Research, and Sanctuaries Act of 1972 (commonly known as Ocean Dumping Act)
 Migratory Bird Conservation Act
 Migratory Bird Treaty Act
 Mineral Leasing Act for Acquired Lands
 Mineral Leasing Act of 1920 (commonly referred to as Mineral Leasing Act or Mineral Lands Leasing Act)
 Mining in the Parks Act
 National Environmental Policy Act of 1969
 National Flood Insurance Act of 1968
 National Historic Preservation Act
 National Park Service Concession Management Improvement Act of 1998
 National Park Service Omnibus Management Act of 1998
 National Park System Concessions Policy Act
 National Park System General Authorities Act (Act to Improve the Administration of the National Park System), August 18, 1970
 National Park System New Areas Studies Act
 National Parks Air Tour Management Act of 2000
 National Parks and Recreation Act, November 10, 1978
 National Parks Overflights Act of 1987
 National Trails System Act
 National Trust Act of 1949
 National Wildlife Refuge System Administration Act of 1966
 Native American Grave Protection and Repatriation Act
 Negotiated Rulemaking Act of 1990
 Noise Control Act of 1972

NPS Organic Act
 Outdoor Recreation Coordination Act of 1963
 Outer Continental Shelf Lands Act
 Park System Resource Protection Act
 Parks, Parkways, and Recreational Programs Act
 Payment in Lieu of Taxes Act
 Public Buildings Cooperative Use Act of 1976
 Rehabilitation Act of 1973
 Reorganization Act of March 3, 1933
 Reservoir Salvage Act of 1960
 Resource Conservation and Recovery Act of 1976
 Revised Statute 2477, Right-of-Way across Public Lands
 Rivers and Harbors Appropriation Act of 1899
 Safe Drinking Water Act
 Soil and Water Resources Conservation Act of 1977
 Surface Mining Control and Reclamation Act of 1977
 Surface Resources Use Act of 1955
 Surface Transportation Assistance Act of 1982
 Tax Reform Act of 1976
 Toxic Substances Control Act
 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
 Urban Park and Recreation Recovery Act of 1978
 Water Resources Planning Act of 1965
 Watershed Protection and Flood Prevention Act
 Wild and Scenic Rivers Act
 Wilderness Act
 Wildfire Disaster Recovery Act of 1989

Executive Orders Applicable to the National Park System

Executive Order 11514: Protection and Enhancement of Environmental Quality
 Executive Order 11593: Protection and Enhancement of the Cultural Environment
 Executive Order 11644
 Executive Order 11988: Floodplain Management
 Executive Order 11990: Protection of Wetlands

- Executive Order 12003: Energy Policy and Conservation
- Executive Order 12088: Federal Compliance with Pollution Control Standards
- Executive Order 12372: Intergovernmental Review of Federal Programs
- Executive Order 12898: General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13006: Locating Federal Facilities on Historic Properties in our Nation's Central Cities
- Executive Order 13007: Indian Sacred Sites
- Executive Order 13089: Coral Reef Protection
- Executive Order 13112: Invasive Species
- Executive Order 13158: Marine Protected Areas
- Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
- Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- Executive Order 13352: Facilitation of Cooperative Conservation
- Executive Orders 11989 (42 FR 26959) and 11644 (37 FR 2877): Offroad Vehicles on Public Lands
- Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance

Policies and Procedures Applicable to the National Park System

- Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act
- Historic Preservation Certifications Pursuant to the Tax Reform Act of 1976, the Revenue Act of 1978, the Tax Treatment Extension Act of 1980, and the Economic Recovery Tax Act of 1981
- National Park Service Management Policies 2006
- Policies on Construction of Family Housing for Government Personnel
- Procedures for Interagency Consultation to Avoid or Mitigate Adverse Effects on Rivers in the Nationwide Inventory

APPENDIX D:

SUMMARY OF SKAGIT WILD & SCENIC RIVER STUDY

EXECUTIVE SUMMARY

This study evaluates the eligibility and suitability of the Skagit River, from Gorge Dam to the Ross Lake National Recreation Area (NRA) boundary, and its tributaries for inclusion in the Wild and Scenic River (WSR) System. This study also identifies preliminary classifications of eligible river segments. The result is a recommendation to extend WSR designation to the 11-mile segment of the Skagit River and two major tributaries.

This analysis was conducted in conjunction with the development of Ross Lake National Recreation Area's General Management Plan. This study meets the requirement, under Section 5(d) (1) of the Wild and Scenic Rivers Act, for agen-

cies to evaluate potential WSR rivers as part of their land management planning processes.

The Wild and Scenic Rivers Act, passed in 1968, protects the free-flowing waters of many of our nation's greatest rivers, while also recognizing the potential for appropriate use and development. It ensures the public's enjoyment of the river and its resources for present and future generations; new dams and other water resources projects that would have adverse impacts are prohibited on WSR segments.

There are three different classification types based on the existing level of human development or impact on the river –wild, scenic, and recreational. To be eligible for inclusion in this system, a river must be free-flowing and pos-



Paddling down the Skagit River in Ross Lake NRA.

sess at least one outstandingly remarkable value (ORVs) or characteristic that is river-related and unique, rare, or exemplarily compared on a regional or national scale.

If a river is found eligible, the next step is a suitability analysis which assesses whether or not eligible segments should be included in the National WSR System. The suitability study findings are based on public input and an assessment of the ability of the river segment(s) to be managed to protect the outstandingly remarkable river values. Designation of eligible and suitable river segments into the National WSR System on NPS lands requires an act of Congress.

The Skagit River from Gorge Powerhouse to the Ross Lake NRA boundary, Goodell Creek, and Newhalem Creek were found to be eligible. They all are free-flowing. The Skagit River was found to have ORVs in the fish, wildlife, geology, history, pre-history, recreation and scenery resources. Goodell Creek was found to have ORVs in the fish, wildlife, geology, and scenery resources. Newhalem Creek was found to possess ORVs in the wildlife, geology, history, pre-history, and scenery resources. The water quality of all eligible river segments was determined to be high quality. Table D-1 summarizes the ORVs.

The Skagit River segment from below Gorge Dam to Gorge Powerhouse does not meet the free-flowing requirement of the WSR Act and therefore was found to be ineligible. In addition, the remaining 21 tributaries flowing into the study reach, though free-flowing, were not found to possess any ORVs, and therefore are not eligible. This assessment was based on available information through staff knowledge and literature research. Varying amounts of information were available for these creeks, with most creeks lacking thorough surveys of natural and cultural resources. Therefore, this assessment will be updated in the future if new information indicates the potential for a river segment to possess an ORV.

Eligible rivers or river segments were classified as recreational or wild, as listed below:

The Skagit River was classified as:

- **recreational** - due to the hydropower dams upstream and presence of the North Cascades Highway paralleling the river for this entire segment.

Goodell Creek was classified as:

- **wild** – headwaters to river mile one-half
- **recreational** – river mile one-half to its confluence with the Skagit River

Newhalem Creek was classified as:

- **wild** – headwaters to upstream of the diversion dam (river mile one)
- **recreational** – upstream of the diversion dam (river mile one) to its confluence with the Skagit River

The suitability analysis was primarily based on the following factors:

- The characteristics that make the river segments worthy of designation.
- The ability of NPS and its non-Federal partners to manage the river segments to protect their ORVs, water-quality, and free-flow.
- The compatibility of WSR designation with other potential uses of the river segments.
- The public's support for designation.

The upper Skagit River and the two eligible tributaries in this reach – Goodell and Newhalem creeks - were found to be suitable for WSR designation. The addition of this 11-mile upper Skagit River segment and its key tributaries would complete the Skagit WSR system from the downstream end of the Skagit Hydroelectric Project to the town of Sedro-Woolley and create more opportunities for holistic watershed management.

The support for this designation from the general public and two other land management agencies, Seattle City Light and the Washington State Department of Transportation, was overwhelming positive. Only one comment was received opposing designation. Two more comments also expressed concerns about the potential effects of WSR designation on new water resource projects, but no known proposals in the foreseeable future would be prohibited by the WSR designation.

Table D-1 Summary of Outstandingly Remarkable Values

| Resource | Characteristics |
|---|---|
| Skagit River from Gorge Powerhouse to the Ross Lake NRA Boundary | |
| Fish | The Skagit River system is one of the few remaining systems in the contiguous states which supports significant numbers of five native salmon species, two species of trout, and two species of char. It provides essential habitat for three federally listed species (Chinook salmon, bull trout, and steelhead) that spend a portion or all of their lives in Skagit River. It is one of the most important rivers for natural fishery stocks in Washington. |
| Wildlife | The Skagit River watershed has one of the greatest concentrations of bald eagles of any river in the lower 48 states. The quality and abundance of cottonwood overstory habitat make it possible for several other species (American Redstart, Verry, Lazuli Bunting, Nashville Warbler, and Red-eyed Vireo) to breed in western Washington where they are otherwise rare or not found at all. |
| Geology | The Skagit River watershed is the most glaciated river system in the lower 48 states, with over 300 active glaciers. Several examples of glacial processes including glaciers, cirques, horns, arêtes, and hanging valleys are found particularly in the Goodell & Newhalem tributaries. The geologic formation history, including how the river once flowed northward and the Damnation Creek erosional landslides processes which created the main-stem river rapids, contribute to the exceptional geologic characteristics. |
| History | The Skagit River and Newhalem Creek Hydroelectric Projects Historic Districts are river-dependent and nationally unique. For this section of the Skagit River, the town of Newhalem and Ladder Creek Falls are elements of this historic district. |
| Pre-history | Pre-history is an ORV because the uniqueness of the Goodell Creek site which represents six hundred years of river use and is the only site where salmon remains from prehistoric human use including teeth and head parts have been found near a river segment. |
| Recreation | The Skagit River offers a unique beginner-intermediate whitewater opportunity in the Northwest providing a chance for boaters of all age groups and experience levels to enjoy the river. This river segment is used by families and expert boaters alike and is an important training ground. Wildlife viewing opportunities of salmon and bald eagles contribute to the outstanding recreation experience. The river is also unique in the region because it provides boatable flows year-around when other rivers are dry. |
| Scenery | The Skagit River is a breathtaking scenic river with beautiful clear water, waterfalls, mountain views, and exemplary wildlife viewing opportunities. |
| Goodell Creek | |
| Fish | Goodell Creek, known as the 'salmon headquarters', provides regionally exemplary spawning and rearing habitat for salmon. |
| Wildlife | Goodell Creek provides regionally unique habitat for a diversity of wildlife species including bald eagles, harlequin duck, and the American dipper. |
| Geology | The Skagit River watershed is the most glaciated river system in the lower 48 states, with over 300 active glaciers. Goodell Creek drains the Picket Range, one of the most rugged mountain ranges in the contiguous states. Several examples of glacial processes including glaciers, cirques, horns, arêtes, and hanging valleys are found in Goodell Creek. |
| Scenery | Goodell Creek begins on the vertical steps of the wilderness Picket mountain range, one of the most rugged, scenic and remote massifs in the lower 48 states. The mountain views, numerous cascades, wildlife and fishery resources, and limited human-made features make scenery an ORV for Goodell Creek. |

Table D-1 Summary of Outstandingly Remarkable Values

| Resource | Characteristics |
|--------------------|--|
| Newhalem Creek | |
| Wildlife | Newhalem Creek provides regionally unique habitat for a diversity of wildlife species including harlequin duck and the American dipper. |
| Geology | The Skagit River watershed is the most glaciated river system in the lower 48 states, with over 300 active glaciers. Newhalem Creek showcases examples of glacial processes including glaciers, cirques, horns, arêtes, and hanging valleys. |
| History | The Skagit River and Newhalem Creek Hydroelectric Projects Historic Districts are river-dependent and nationally significant. Newhalem Creek Dam and Powerhouse was the first hydroelectric project constructed in the upper watershed and is an important contributing factor to the nationally unique historic district. |
| Pre-history | The Newhalem rockshelter, an eligible National Register site, is regionally unique and one of only a few rockshelters that have been excavated in Washington State. The rockshelter was likely created because of its proximity to the creek which was a travel corridor for Native Americans moving from Cascade Pass to the Skagit River. Remains from here included salmon and goats with some dating 1500 years old. |
| Scenery | The Newhalem Creek waterfall is one of the most scenic waterfalls in the North Cascades NP Complex and rated as one of the top 100 northwest waterfalls. |

Seattle City Light is committed to managing their lands to protect fishery and wildlife resources generally consistent with the intent of the WSR Act. The National Park Service manages the majority of the lands in the study area and manages the river system to protect the outstandingly remarkable values, water quality, and free-flowing character of the river segments.

Existing protections are in place prohibiting logging and mining, as well as limiting hydro-power development. WSR designation would add additional protections from hydropower facilities and encourage natural bank protection, thus furthering regional and national goals for recovery and protection of salmon and bald eagle populations.

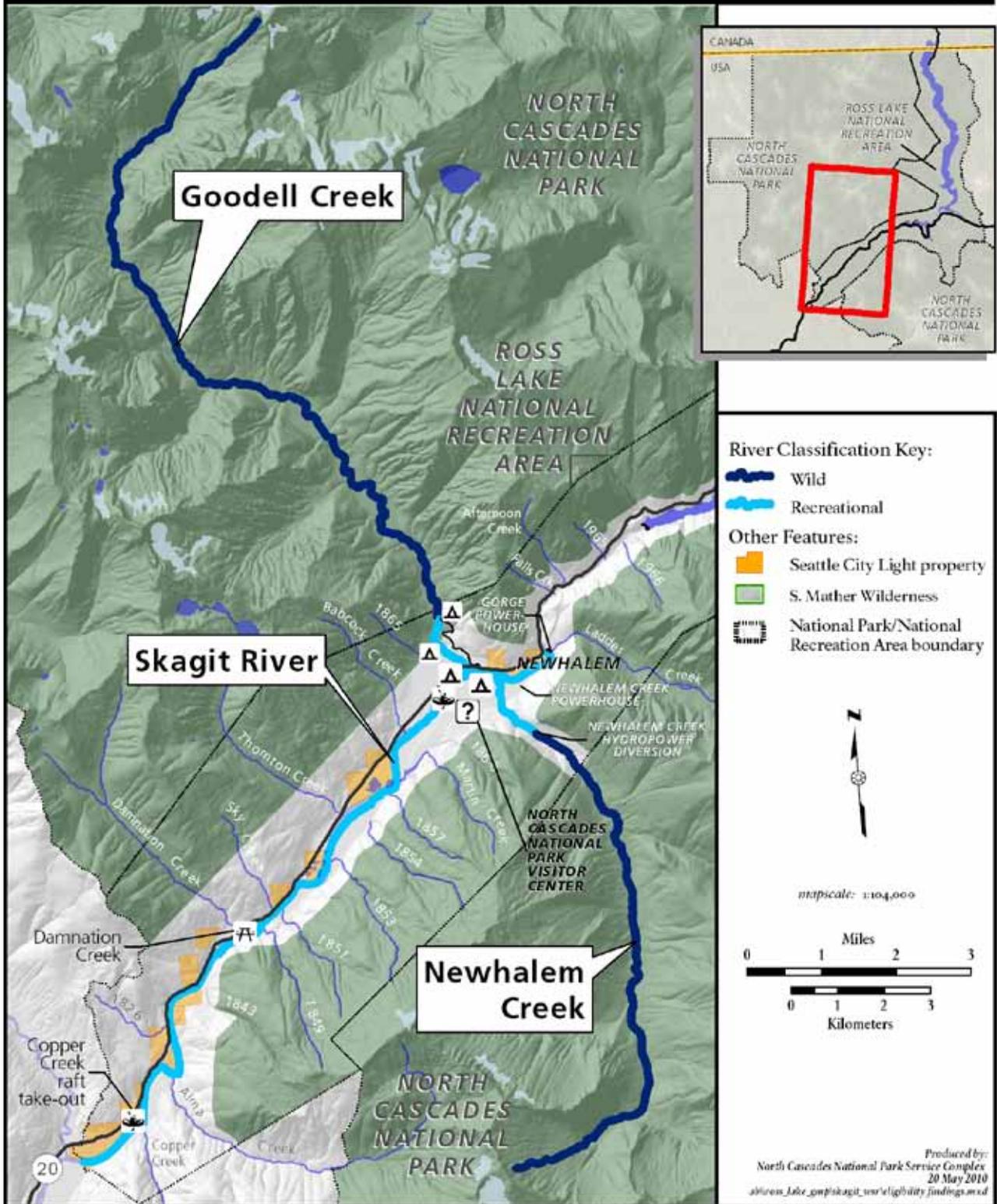
River segments found eligible and suitable will be managed by the National Park Service in a manner that protects their free flowing character, water quality, and ORVs as required under the WSR Act.

Designation would require the development of a comprehensive river management plan which would allow focus on the river segments and their special resources. WSR designation would

also direct further protection and enhancement of natural, geological, cultural, scenic and recreation resources.

Therefore the National Park Service recommends that Congress extend the Skagit WSR designation to include this 11-mile upper Skagit segment and the two largest tributaries flowing into it.

Eligibility Findings and River Classifications







Fishermen in early morning mist on Diablo Lake. Photo by David Snyder.

CITED SOURCES

- Aune, K., and W. Kasworm
1989 East Front grizzly bear study; final report. Montana Dept. Fish, Wildlife and Parks. Helena. 332 pp.
- Ebasco Environmental
1990 "Interoffice Correspondence Memorandum re: Diablo Lake Site Evaluations (Colonial Creek Campground Boat Launch)." Cited from Appendix D in Settlement Agreement on Recreation and Aesthetics.
- Interagency Grizzly Bear Committee
1986 Interagency Grizzly Bear Guidelines. USDI – Fish and Wildlife Service, Denver, Colorado. 96 pp.
- 1998 "Interagency Grizzly Bear Committee Taskforce Report: Grizzly Bear/ Motorized Access Management." Approved 1994; revision approved by IGBC 29 July, 1998. USDI – Fish and Wildlife Service, Denver, Colorado. 7 pp.
- Landres, P.
2008 Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System. Prepared by P. Landres, C. Barns, J.G. Dennis, T. Devine, P. Geissler, C.S. McCasland, L. Merigliano, J. Seastrand, and R. Swain. General Technical Report RMRS-GTR-212. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Kasworm, W.F. and T. Manley
1990 "Road and trail influences on grizzly bears and black bears in northwest Montana." In International Conference on Bear Research and Management 8: 79-84.
- Mace, R.D., and J. Waller
1996 Grizzly bear distribution and human conflicts in Jewel Basin Hiking Area, Swan Mountains, Montana. Wildlife Society Bulletin 24 (3): 461-67.
- Mace, R.D., J. Waller, T.L. Manley, L.J. Lyon, and H. Zuring
1996 Relations among grizzly bears, roads, and habitat in the Swan Mountains, Montana. Journal of Applied Ecology 33: 1395-1404.
- Mattson, D.J., R.R. Knight, and B.M. Blanchard
1987 The effects of developments and primary roads on grizzly bear habitat use in Yellowstone National Park, Wyoming. International Conference on Bear Research and Management 7: 259-73.
- McLellan, B.N., and D.M. Shackleton
1988 Grizzly bears and resource-extraction industries: effects of roads on behavior, habitat use, and demography. Journal of Applied Ecology 25: 451-60.
- National Park Service, U.S. Department of the Interior
1963 Wildlife Management in the National Parks: The Leopold Report. Appointed by Secretary of the Interior Udall. A. S. Leopold (Chairman), S. A. Cain, C. M. Cottam, I. N. Gabrielson, T. L. Kimball.
- NCE Grizzly Bear Management Subcommittee/Technical Team
2001 "Grizzly Bear Habitat Assessment" (unpublished report).
- U.S. Fish and Wildlife Service
1993 Grizzly Bear Recovery Plan. Missoula, Montana. 181 pp.

U.S. Forest Service

1990 CEM – a Model for assessing effects on
grizzly bears. 24 pp.

PREPARERS AND CONSULTANTS

PLANNING TEAM COMPOSITION AND FUNCTION

Charles Beall

Chief of Interpretation, North Cascades NP Complex, Sedro-Woolley, WA
Education and interpretation, public information

Tom Belcher

Former Chief of Facility Management, North Cascades NP Complex, Sedro-Woolley, WA
Facilities management

Mignonne Bivin

Plant Ecologist, North Cascades NP Complex, Marblemount, WA
Vegetation management

Elizabeth Boerke

Environmental Protection Specialist, North Cascades NP Complex, Marblemount, WA
Public involvement, public comment analysis, final GMP/EIS layout and design

Anne Braaten

GIS Specialist and Wildlife Biologist, North Cascades NP Complex, Sedro-Woolley, WA
Cartography and bear management

Kelly Bush

Wilderness District Park Ranger, North Cascades NP Complex, Marblemount, WA
Wilderness management

Gerry Cook

Former Engineering Equipment Operations Supervisor, North Cascades NP Complex, Marblemount, WA
Facilities management and visitor experience

Cheryl Farmer

Former Skagit District Ranger, North Cascades NP Complex, Marblemount, WA
Recreation management

Susan Glesne

Chief of Administration, North Cascades NP Complex, Sedro-Woolley, WA
Administration and concessions management

Palmer “Chip” Jenkins

Superintendent, North Cascades NP Complex, Sedro-Woolley, WA
Park management and policy analysis

Amanda Kaplan

Environmental Planner, NPS Pacific West Region, Seattle, WA
NEPA and other legislative compliance issues, public involvement, public comment analysis, environmental consequences

Jesse Kennedy

Branch Chief of Cultural Resources, North Cascades NP Complex, Marblemount, WA
Cultural resource management and NHPA 106 compliance

Gretchen Luxenberg

Historian, NPS Pacific West Region, Seattle, WA
Cultural resource management

Bob Mierendorf

Archeologist, North Cascades NP Complex, Marblemount, WA
Archeological management, NHPA compliance, and tribal consultation

Jack Oelfke

Chief of Resource Management, North Cascades NP Complex, Sedro-Woolley, WA
GMP liaison and natural resources management

Jon Riedel

Geomorphologist, North Cascades NP Complex, Marblemount, WA
Geology

Amanda Schramm

Outdoor Recreation Planner, NPS Pacific West Region, Seattle, WA
Public comment analysis, climate change issues, newsletter production, and draft GMP/EIS layout and design

Rosemary Seifried

Park Ranger, North Cascades NP Complex, Marblemount, WA
Wilderness, visitor experience, and recreation management

Kinsey Shilling

Chief Ranger, North Cascades NP Complex, Sedro-Woolley, WA
Visitor experience, recreation, and risk management

Paul Slinde

Chief of Maintenance, North Cascades NP Complex, Sedro-Woolley, WA
Facilities management

Dennis Stanchfield

Former Maintenance Mechanic Supervisor, North Cascades NP Complex, Marblemount, WA
Facilities, maintenance, and operations management

Tammra Sterling

Concessions Management Assistant, North Cascades NP Complex, Sedro-Woolley, WA
Concessions management

Anna Tamura

Landscape Architect, NPS Pacific West Region, Seattle, WA
Project manager, overall project organization and coordination, public involvement, and draft and final GMP/EIS writing and production

Cathi Winings

Former Natural Resource Specialist, North Cascades NP Complex, Marblemount, WA
Natural resource and soundscape management, NEPA compliance, affected environment, and environmental consequences

Roy Zipp

Environmental Protection Specialist, North Cascades NP Complex, Sedro-Woolley, WA
Natural resource and lands management, NEPA compliance, and environmental consequences

OTHER CONTRIBUTORS AND CONSULTANTS

Margie Allen

Former Chief of Administrative Services and Business Practices, North Cascades NP Complex, Sedro-Woolley, WA
Concessions management

Ann Barstow

Budget Technician, NPS Pacific West Region, Seattle, WA
Administrative and budgeting support

Sarah Bodo

Community Planner, NPS Denver Service Center, Denver, CO
Cost estimating, socioeconomic information and analysis

Kerri Cook

Facility Operations Specialist, North Cascades NP Complex, Sedro-Woolley, WA
Utilities monitoring

Keith Dunbar

Former Chief of Park Planning and Compliance, NPS Pacific West Region, Seattle, WA
Project oversight

Erin Flanagan

Community Planner, NPS Denver Service Center, Denver, CO
Workshop facilitator

Reed Glesne

Ecologist, North Cascades NP Complex, Sedro-Woolley, WA
Fisheries and aquatic resource management

Jan Harris

Planning Branch Chief, NPS Denver Service Center, Denver, CO
Workshop facilitator

Cliff Hawkes

Former Planning Branch Chief, NPS Denver Service Center, Denver, CO
Workshop facilitator

Shelley Kluz

Management Assistant, North Cascades NP Complex, Sedro-Woolley, WA
Administrative support

Robert Kuntz

Wildlife Biologist, North Cascades NP Complex, Sedro-Woolley, WA
Wildlife management

Hoa Lam

Civil Engineer, NPS Pacific West Region, Seattle, WA
Utilities management

Tim Manns

Former Chief of Interpretation and Education, North Cascades NP Complex, Sedro-Woolley, WA
Education and interpretation

Stephan Nofield

Outdoor Recreation Planner, NPS Denver Service Center, Denver, CO
Workshop facilitator

Bill Paleck

Former Superintendent, North Cascades NP Complex, Sedro-Woolley, WA
Park management and policy analysis

Ashley Rawhouser

Aquatic Ecologist, North Cascades NP Complex, Sedro-Woolley, WA
Fisheries and aquatic resource management

Matt Rose

Environmental Specialist, NPS Pacific West Region, Seattle, WA
Climate change issues

Susan Rosebrough

Recreational Planner and Hydropower Coordinator, NPS Pacific West Region, Seattle, WA
Project manager for Skagit Wild and Scenic River studies

Cheryl Teague

Landscape Architect, NPS Pacific West Region, Seattle, WA
Recreation management, public documents and draft GMP/EIS review

Mark Vande Kamp, PhD

Research Associate, Protected Area Social Resources Unit, College of Forest Resources, University of Washington, Seattle, WA
User capacity analysis

Rick Wagner

Chief of Land Resources, NPS Pacific West Region, Seattle, WA
Lands and boundary management

Stan Zyskowski

Former Biological Science Technician, North Cascades NP Complex, Sedro-Woolley, WA
Fisheries and aquatic resource management

INDEX

A

Access 56, 67, 70, 71, 72, 74, 75, 76, 77, 83, 88, 92, 93, 94, 95, 98, 104, 105, 109, 112, 113, 153
Accessibility 66, 67
Adaptive management 96, 102, 110
Air quality 77, 79
Airshed 79
American Indian 110, 111, 143
Archeological resources 88, 111

B

Backcountry permits 92
Backcountry Permit System 90
Backcountry Zone 56, 62, 90
Bears (see also Grizzly Bears) 103
Bicycling 66, 97
Birds 145
BMU iv
Boating 66, 67, 71, 86, 87, 97
Boat launches 74, 86
Boats 76, 86, 87, 93
Boundary 56, 63, 78, 80, 85, 95, 100, 149
Boundary modifications 100
Bridges 68
Buster Brown 75

C

Campgrounds 71, 72, 94, 107, 109
Camping 66, 67, 71, 75, 76, 77, 80, 86, 105
Canada 80
Climbing (see also Sport Climbing) 66, 69, 86, 88
Collections 82, 110, 112
Colonial Creek 56, 71, 72, 74, 75, 95, 153
Colonial Creek Campground 56, 71, 72, 74, 75, 95, 153
Concessioners 92, 97
Core Area 80, 81
CUA iv, 93
Cultural Landscapes 112
Cultural Resources 64, 65, 104, 105, 110, 155

D

Design Standards 95
Desired conditions 56, 102, 112

Diablo Dam 74, 98
Diablo Lake 56, 71, 74, 75, 76, 91, 92, 106, 153
Diablo Powerhouse 98
Diablo Townsite 76, 98, 100
Driving 66

E

Ecology 153
Ecosystem 78, 81
Ecosystem Functions 78
Ecosystem management 63
Education 66, 67, 79, 80, 84, 86, 90, 91, 92, 93, 96, 100, 104, 105, 106, 107, 109, 110, 155, 157
Educational programs 67, 74, 90, 92, 96
ELC iv, 74, 75, 92
Employee housing 69, 77
Endangered species 110
Endangered Species Act 31, 42, 143
Entrance (see also Park entrances) 93, 95
Environmental Learning Center 56, 66, 74, 91, 92
Erosion 75, 80, 108, 109
Ethnographic resources 65, 112

F

Federal Energy Regulatory Commission 98
Fees 90
Fire 64, 65, 78
Fire management 64
Fish 88, 109, 110, 143, 149, 153
Fisheries 110, 157
Fishing 88
Frontcountry 56, 62, 90, 100, 103, 104, 105, 106, 107
Frontcountry Zone 62, 90, 100

G

Gateway communities 95
Geology 149, 150, 156
Glaciers 74, 79, 96
Goodell Creek 56, 63, 72, 85, 93, 95, 148, 149
Gorge Dam 85, 147, 148
Gorge Lake 56, 72, 94, 98
Grizzly Bear 81, 153

H

Habitat 63, 80, 96, 110
High Ross Dam 70
Hiking 66, 67, 71, 76, 97, 153
Historic District 77
Historic preservation 110, 112

Historic Preservation 31, 42, 43, 44, 45, 46, 47, 48, 143, 144, 145
Historic Structures 105
Hollywood 98, 100
Hozomeen 56, 76, 77, 92
Hozomeen Campground 77
Hunting 88
Hydroelectric Zone 56, 63, 100
Hydrologic Systems 108
Hydropower 85, 157

I

Impairment 111
Indicators and standards 102
Informal Education 91
Interpretation 90, 91, 92, 100, 155, 157
Interpretive Programs 107
Invasive species 80
Inventory and monitoring 77, 80

K

Kiosk 93

L

Lands 56, 70, 71, 79, 81, 84, 85, 102, 112, 143, 144, 145, 157
Landslides 72, 78, 79
Lightscapes 79, 108
List of Classified Structures 105

M

Maintenance 69, 77, 78, 79, 93, 94, 96, 98, 100, 101, 109, 112, 156
Management Zones 56, 62, 63
Marblemount 77, 155, 156
Marblemount Ranger Station 77
Minimum requirement 113
Mitigation 108, 110, 111, 112, 113
Museum Collections 83, 112

N

National Environmental Policy Act (NEPA) 144, 145, 155, 156
National Historic Preservation Act 110, 112, 144
National Register of Historic Places 104, 105, 110
National Scenic Byway 93
Native American 110, 112, 144
Native plants 93, 109, 110
Native species 80, 103, 108, 109
Newhalem 56, 63, 71, 72, 74, 75, 79, 85, 91, 93, 94, 95, 148, 149, 150
Newhalem Creek 56, 71, 72, 75, 85, 148, 149, 150

Newhalem Creek Campground 56, 71, 72, 75, 85
Night sky 64, 65, 79
NOAA 110
Non-native plants 109, 110
Non-native species 80, 103
North Cascades Highway 55, 56, 62, 63, 64, 70, 71, 72, 74, 75, 76, 79, 82, 85, 86, 93, 94, 96, 101, 148
North Cascades Institute 75, 82, 86, 92, 96
North Cascades Visitor Center 56, 66, 72, 74, 95
NPS Management Policies 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 51, 52, 53

O

Operations 63, 65, 66, 67, 68, 69, 70, 71, 77, 84, 92, 93, 95, 96, 97, 98, 100, 101, 108, 109, 110, 155, 156
Orientation 91
Outreach 80, 90, 92, 100
Overflights 90, 144

P

Paleoecological 83
Parking 68, 76
Partnerships 92, 96
Picnicking 66, 67, 86
Pollutants 79
Prescribed fire 64

R

Rafting 67, 87, 106
Rafts 87
Recreation 62, 63, 66, 67, 68, 69, 71, 74, 76, 83, 85, 86, 87, 91, 97, 113, 143, 144, 147, 149, 153, 155, 156, 157
Research 63, 65, 69, 71, 144, 153, 157
Research Natural Areas 63, 65, 69, 71
Riparian 56, 63, 96, 109
Ross Dam 70, 72, 76, 94, 101
Ross Dam Trailhead 72, 94, 101
Ross Lake NRA 18, 55, 56, 62, 63, 70, 71, 72, 75, 77, 79, 81, 83, 84, 85, 86, 87, 88, 90, 91, 93, 94, 95, 96, 97, 100, 101, 102, 108, 109, 110, 112, 113, 148, 149
Ross Lake Resort 74

S

Scenic Resources 113
Science 157
Seaplanes 88
Seattle City Light 56, 76, 79, 84, 86, 92, 93, 94, 95, 96, 98, 148, 150
Security 98, 143
Skagit Environmental Endowment Commission 96
Skagit General Store 72, 74, 93
Skagit Hydroelectric Project 85, 148
Skagit River 56, 63, 67, 70, 72, 74, 76, 85, 86, 87, 93, 98, 103, 104, 105, 106, 107, 147, 148, 149, 150

Skagit River Zone 56, 63
Skagit Watershed 96
Socioeconomic 108
Soils 109
Solitude 66, 67, 84, 113
Soundscapes 79, 106, 107, 108
Sport Climbing 88
Stewardship 55, 71, 77, 82, 86, 90, 91, 92, 110
Sustainability 96

T

Thornton Lakes 56, 95, 101
Thunder Creek 76, 84, 85, 86
Trails 68, 69, 71, 72, 74, 75, 76, 77, 79, 88, 90, 91, 101, 102, 103, 109, 144
Transportation 56, 68, 79, 80, 86, 93, 94, 143, 144, 148
Treaty 70, 144
Tribes 83

U

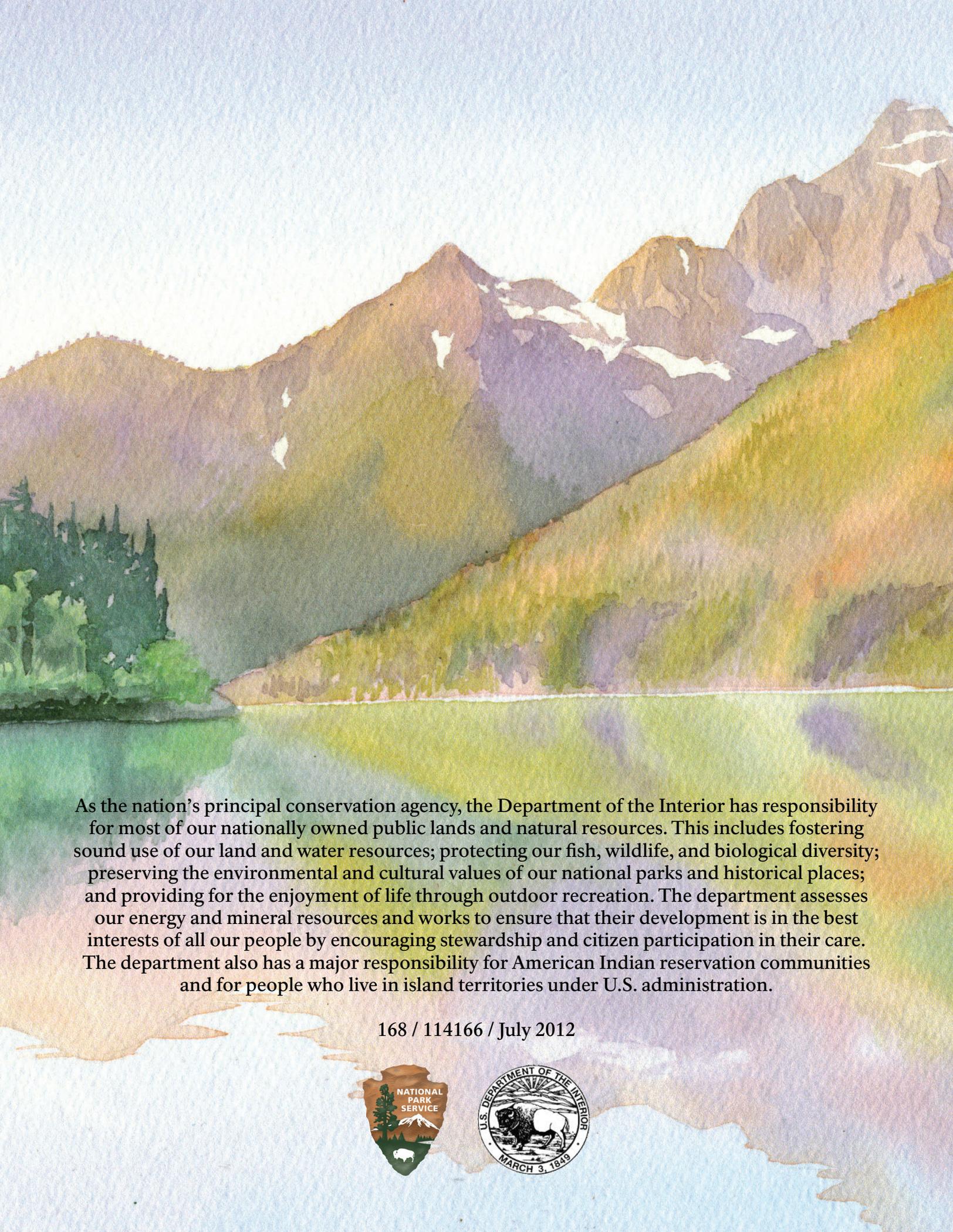
User capacity 98, 157
U.S. Fish and Wildlife Service 110

V

Vegetation 63, 77, 80, 88, 103, 108, 109, 110, 155
Viewsheds 70, 112
Visitation 74, 90
Visitor Center 56, 66, 72, 74, 95
Visitor experience 63, 87, 90, 102, 108, 156
Visitor use 62, 68, 87, 96, 101, 102
Volunteers 77, 82, 91, 92, 100

W

Washington State Department of Transportation 56, 79, 80, 94, 148
Water quality 79, 86, 109
Water Resources 79, 144
Watershed 85, 144
Wetlands 108, 109, 144
Wild and Scenic River 56, 85, 147, 157
Wilderness 56, 63, 76, 77, 84, 85, 90, 95, 103, 105, 110, 112, 113, 137, 140, 143, 144, 153, 155, 156
Wilderness Information Center 77, 105
Wilderness Zone 56, 63, 90
Wildlife 66, 67, 77, 80, 85, 93, 96, 104, 109, 110, 143, 144, 149, 150, 153, 155, 157
Wildlife habitat 96



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.

168 / 114166 / July 2012





National Park Service
U.S. Department of the Interior

Ross Lake National Recreation Area
c/o North Cascades National Park Complex
810 State Route 20
Sedro-Woolley, WA 98284-1239

Prepared by:
National Park Service
Pacific West Region-Seattle Office
Park Planning and Environmental Compliance
909 1st Avenue
Seattle, WA 98104