



Walking the shore at Diablo Lake. Photo Courtesy of David Snyder.

WELCOME

***Y**ou are now in the Appendices. Here are the topics you can read about:*

Appendix A: Legislation

Appendix B: Analysis of Boundary Adjustment and Land Protection

Appendix C: Pertinent Laws, Policies, and Procedures

Appendix D: Skagit Wild and Scenic River Studies

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Glossary

Selected Bibliography

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APPENDICES

APPENDIX A: LEGISLATION

Enabling Legislation- PL 90-544, 2 October 1968

Washington Park Wilderness Act 1988 PL 100-668, 16 November 1988

926

PUBLIC LAW 90-544—OCT. 2, 1968

[82 STAT.

Cooperation of
Federal agencies.

(b) The Department of Defense, the Department of Transportation, the Interstate Commerce Commission, the Federal Communications Commission, the Federal Power Commission, and other Federal agencies having jurisdiction or control over or information concerning the use, abandonment, or disposition of roadways, utility rights-of-way, or other properties which may be suitable for the purpose of improving or expanding the national trails system shall cooperate with the Secretary of the Interior and the Secretary of Agriculture in order to assure, to the extent practicable, that any such properties having values suitable for trail purposes may be made available for such use.

AUTHORIZATION OF APPROPRIATIONS

SEC. 10. There are hereby authorized to be appropriated for the acquisition of lands or interests in lands not more than \$5,000,000 for the Appalachian National Scenic Trail and not more than \$500,000 for the Pacific Crest National Scenic Trail.

Approved October 2, 1968.

Public Law 90-544

AN ACT

October 2, 1968
[S. 1321]

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.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

State of Wash-
ington.
Certain recrea-
tion areas.

TITLE I—NORTH CASCADES NATIONAL PARK

Establishment.

SEC. 101. In order 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 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 NP-CAS-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.

Establishment.

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 rec-

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.

41 Stat. 437;
60 Stat. 950.

61 Stat. 913.

(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 affected by the elimination of lands from such national forests by the enactment of this Act.

58 Stat. 737;
64 Stat. 87.

SEC. 502. Where any Federal lands included in the park or recreation areas are legally occupied 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.

49 Stat. 863.
Appropriation.

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

Pasayten Wil-
derness.
Designation.
78 Stat. 890.
16 USC 1131
note.

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.

Glacier Peak
Wilderness,
boundary exten-
sion.

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.

Map and legal
description, filing
with congress-
sional committees.

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.

Area review;
report to the
President.

Approved October 2, 1968.

Public Law 90-545

AN ACT

To establish a Redwood National Park in the State of California, and for other purposes.

October 2, 1968
(S. 2515)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to preserve significant examples of the primeval coastal redwood (*Sequoia sempervirens*) forests and the streams and seashores with which they are associated for purposes of public inspiration, enjoyment, and scientific study, there is hereby established a Redwood National Park in Del Norte and Humboldt Counties, California.

Redwood National
Park, Calif.
Establishment.

SEC. 2. (a) The area to be included within the Redwood National Park is that generally depicted on the maps entitled "Redwood National Park," numbered NPS-RED-7114-A and NPS-RED-7114-B, and dated September 1968, copies of which maps shall be kept available for public inspection in the offices of the National Park Service, Department of the Interior, and shall be filed with appropriate officers of Del Norte and Humboldt Counties. The Secretary of the Interior (hereinafter referred to as the "Secretary") may from time to time, with a view to carrying out the purpose of this Act and with particular attention to minimizing siltation of the streams, damage to the timber, and assuring the preservation of the scenery within the boundaries of the national park as depicted on said maps, modify said boundaries, giving notice of any changes involved therein by publication of a revised drawing or boundary description in the Federal Register and by filing said revision with the officers with whom the original maps were filed, but the acreage within said park shall at no time exceed fifty-eight thousand acres, exclusive of submerged lands.

Boundaries.

(b) The Secretary is authorized to acquire by donation only all or part of existing publicly owned highways and roads within the boundaries of the park as he may deem necessary for park purposes. Until such highways and roads have been acquired, the Secretary may cooperate with appropriate State and local officials in patrolling and maintaining such roads and highways.

Publication in
Federal Register.

SEC. 3. (a) The Secretary is authorized to acquire lands and interests in land within the boundaries of the Redwood National Park and, in addition thereto, not more than ten acres outside of those boundaries for an administrative site or sites. Such acquisition may be by donation, purchase with appropriated or donated funds, exchange, or otherwise, but lands and interests in land owned by the State of California may be acquired only by donation.

(b) (1) Effective on the date of enactment of this Act, there is hereby vested in the United States all right, title, and interest in, and the right

Public Law 100-668
100th Congress

An Act

To designate wilderness within Olympic National Park, Mount Rainier National Park, and North Cascades National Park Service Complex in the State of Washington, and for other purposes.

Nov. 16, 1988

[S. 2165]

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".

Washington
Park Wilderness
Act of 1988.
16 USC 90 note.

TITLE I—OLYMPIC NATIONAL PARK WILDERNESS

SEC. 101. 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 Olympic National Park, Washington, which—

16 USC 1132
note.

(1) comprise approximately eight hundred and seventy-six thousand six hundred and sixty-nine acres of wilderness, and approximately three hundred and seventy-eight acres of potential wilderness additions, and

(2) are depicted on a map entitled "Wilderness Boundary, Olympic National Park, Washington", numbered 149/60,051A 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 Olympic Wilderness.

SEC. 102. WOLF CREEK POWERLINE.

The Secretary is authorized to upgrade, maintain and replace, as necessary, the Wolf Creek underground powerline to Hurricane Ridge: *Provided*, That to the extent practicable, such maintenance and operation shall be conducted in such a manner as to remain consistent with wilderness management.

SEC. 103. PAYMENT TO CLALLAM COUNTY.

There is hereby authorized to be appropriated not to exceed \$155,000 to the Secretary of the Interior to make a payment to the Clallam County Historical Society and Museum of Port Angeles, Washington, to compensate the Society for its possessory interest in the National Park Service Visitor Center, Pioneer Memorial Museum, Olympic National Park, Washington. Upon relinquishment by the Clallam County Historical Society of all interests and use in the facility, the Secretary of the Interior shall make payment to the Clallam County Historical Society and acceptance of payment shall be considered full and just compensation for the Society's participation in the construction of the Pioneer Memorial Museum.

Appropriation
authorization.

SEC. 104. GENERAL PROVISIONS.

16 USC 256b. (a) MISDEMEANOR PENALTIES.—Section 3 of the Act of March 6, 1942 (56 Stat. 136; 16 U.S.C. 256(b)) is revised by deleting all after the phrase “or situated therein,” and inserting the following: “shall be deemed guilty of a class B misdemeanor in accordance with provisions of title 18 of the United States Code.”

(b) FORFEITURE OF PROPERTY.—Section 4 of the Act of March 6, 1942 (56 Stat. 135; 16 U.S.C. 256c) is hereby revised to read as follows:

“SEC. 4. All guns, bows, traps, nets, seines, fishing tackle, clothing, teams, horses, machinery, logging equipment, motor vehicles, aircraft, boats, or means of transportation of every nature or description used by any person or persons or organizations within the limits of the park when engaged in or attempting to engage in killing, trapping, ensnaring, taking or capturing such wild birds, fish or animals, or taking, destroying or damaging such trees, plants, or mineral deposits contrary to the provisions of this Act or the rules and regulations promulgated by the Secretary of the Interior shall be forfeited to the United States and may be seized by the officers in the park and held pending prosecution of any person or persons or organization arrested under or charged with violating the provisions of this Act, and upon conviction under this Act of such persons or organizations using said guns, bows, traps, nets, seines, fishing tackle, clothing, teams, horses, machinery, logging equipment, motor vehicles, aircraft, boats, or other means of transportation of every nature and description used by any person or persons or organization, such forfeiture shall be adjudicated as a penalty in addition to the other punishment prescribed in this Act. Such forfeited property shall be disposed of and accounted for by and under the authority of the Secretary of the Interior: *Provided*, That the forfeiture of teams, horses, machinery, logging equipment, motor vehicles, aircraft, boats, or other means of transportation shall be in the discretion of the Court.”

(c) TECHNICAL CORRECTIONS TO BOUNDARIES.—The Act of November 7, 1986 (Public Law 99-635; 100 Stat. 3527) revising the boundaries of Olympic National Park is hereby amended as follows:

16 USC 251n. (1) In section 1(a)(2) after “48 degrees 23 minutes north and 47 degrees” strike “38” and insert in lieu thereof “34”.

Fish and fishing. (2) In section 1(a)(2) after “all surveyed and unsurveyed islands”, insert “, above the point of lowest low tide,”; and at the end of the paragraph, strike “north;” and insert “north: *Provided*, That such lands as are identified in this paragraph shall continue to be open to fishing and to the taking of shellfish in conformity with the laws and regulations of the State of Washington;”.

16 USC 251n note. (3) In section 1(b) after “numbered 149/60,030A, sheets 1 through” strike “10” and insert in lieu thereof “9”;

(4) In section 2(a) after “within section 15, township”, strike “15” and insert in lieu thereof “24”;

(5) In section 2(a) after “*Provided, however*, That the Secretary of Agriculture shall” strike “not”; and

16 USC 251n note. (6) Section 4 is renumbered as section 5 and a new section 4 is inserted as follows:

“SEC. 4. Effective upon acceptance thereof by the State of Washington, the jurisdiction which the United States acquired over

those lands excluded from the boundaries of Olympic National Park by this Act is hereby retroceded to the State.”.

SEC. 105. KALALOCH VISITOR CENTER.

The Secretary is directed to complete a study for the location of a year round visitor center in the Kalaloch area of Olympic National Park. Such study shall include the location, size and cost estimates for the design, planning and construction of the visitor center and support facilities. The study shall be submitted to the Committee on Interior and Insular Affairs of the United States House of Representatives and to the Committee on Energy and Natural Resources of the United States Senate by March 1, 1989. The Secretary is authorized to construct such visitor center subject to the appropriation of funds.

TITLE II—NORTH CASCADES NATIONAL PARK SERVICE 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—

16 USC 1132
note.

(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 National Park Service 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 ACQUISITION 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 National Park Service 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.

16 USC 90c-1. Section 402(b) of the Act of October 2, 1968 (82 Stat. 928; 16 U.S.C. 90c-1b) 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.”

TITLE III—MOUNT RAINIER NATIONAL PARK WILDERNESS

SEC. 301. DESIGNATION.

16 USC 1132
note.

(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 Mount Rainier National Park, Washington, which—

(1) comprise approximately two hundred and sixteen thousand eight hundred and fifty-five acres of wilderness, and

(2) are depicted on a map entitled “Wilderness Boundary, Mount Rainier National Park, Washington”, numbered 105-20,014A and dated July 1988,

are hereby designated as wilderness and therefore as components of the National Wilderness Preservation System. Such lands shall be known as the Mount Rainier Wilderness.

SEC. 302. BOUNDARY ADJUSTMENTS.

16 USC 110c.

(a) **PARK BOUNDARY ADJUSTMENTS.**—The boundaries of the Mount Rainier National Park as established in the Act of March 2, 1899 (30 Stat. 993), as amended; (16 U.S.C. 91-110b), are further revised to add to the Park approximately two hundred and forty acres, and to exclude from the park approximately thirty-one and one-half acres, as generally depicted on the map entitled “Mount Rainier National Park Proposed 1987 Boundary Adjustments”, numbered 105-80,010B and dated January 1987, which shall be on file and available for public inspection in the Washington office of the National Park Service, United States Department of the Interior and at Mount Rainier National Park.

Public
information.

(b) **FOREST BOUNDARY ADJUSTMENT.**—The boundaries of the Snoqualmie National Forest and of the Gifford Pinchot National Forest, are hereby revised to include in the Snoqualmie National Forest approximately thirty-one and one-half acres, to exclude from the Snoqualmie National Forest approximately thirty acres, and to exclude from the Gifford Pinchot National Forest approximately two hundred and ten acres, as generally depicted on a map entitled “Mount Rainier National Park Proposed 1987 Boundary Adjustments”, numbered 105-80,010B, and dated January 1987, which shall be on file and available for public inspection in the Washington, District of Columbia office of the Forest Service, United States Department of Agriculture and at the Snoqualmie and Gifford Pinchot National Forests.

Public
information.
District of
Columbia.

(c) **ADMINISTRATION OF PARK LAND.**—(1) Federal lands, and interests therein formerly within the boundary of the Snoqualmie National Forest and the Gifford Pinchot National Forest, which are included within the boundary of the Mount Rainier National Park pursuant to this Act are, subject to valid existing rights, hereby transferred to the administrative jurisdiction of the Secretary of the Interior for administration as part of the Park, and shall be subject to all the laws and regulations of the Park.

(2) The Secretary of the Interior is authorized to accept either concurrent or exclusive jurisdiction over lands and waters included within Mount Rainier National Park by this Act. The Secretary shall notify in writing the Governor of the State of Washington of the acceptance of any such jurisdiction ceded to the United States by the State. The existing exclusive Federal jurisdiction, where it exists

in the Park, shall remain in effect until such time as the Secretary and the Governor shall agree upon the terms and conditions of concurrent legislative jurisdiction for said Park pursuant to section 320(i) of the Act of October 21, 1976 (90 Stat. 2741).

Gifts and
property.

(3) **AUTHORIZATION OF LAND ACQUISITION.**—The Secretary of the Interior is authorized to acquire from willing sellers by donation, purchase with donated or appropriated funds, exchange, bequest, or otherwise all non-Federal lands, waters, and interests therein included within the boundary of the Mount Rainier National Park pursuant to this Act.

(d) **ADMINISTRATION OF FOREST LAND.**—(1) Federal lands, and interests therein formerly within the boundary of the Mount Rainier National Park, which are excluded therefrom and are included within the boundaries of the Snoqualmie National Forest pursuant to this Act are, subject to valid existing rights, hereby transferred to the administrative jurisdiction of the Secretary of Agriculture for administration as part of the Forest, and shall be subject to all the laws and regulations applicable to the National Forest System.

(2) For the purposes of section 7 of the Land and Water Conservation Fund Act of 1965 (78 Stat. 903, as amended; 16 U.S.C. 4601-9), the boundaries of the Snoqualmie National Forest and the Gifford Pinchot National Forest, as modified pursuant to this Act, shall be treated as if they were the boundaries of those national forests on January 1, 1965.

(3) Effective upon acceptance thereof by the State of Washington, the jurisdiction which the United States acquired over those lands excluded from the boundaries of the Mount Rainier National Park by this Act is hereby retroceded to the State.

SEC. 303. PARADISE POWERLINE.

The Secretary is authorized to upgrade, maintain and replace as necessary, the Paradise powerline from Longmire to Paradise: *Provided*, That to the extent practicable, such maintenance and operation shall be conducted in such a manner as to protect scenic viewsheds.

TITLE IV—GENERAL ADMINISTRATIVE PROVISIONS

(a) **ADMINISTRATION.**—(1) Subject to valid existing rights, the wilderness areas designated under titles I, II, and III of this Act shall be administered by the Secretary of the Interior in accordance with the provisions of the Wilderness Act governing areas designated as wilderness, except that reference to the Secretary of Agriculture shall be deemed, where appropriate, to be a reference to the Secretary of the Interior, and any reference to the effective date of the Wilderness Act shall be deemed, where appropriate, to be a reference to the effective date of this Act.

(2) Lands designated as potential wilderness additions shall be administered by the Secretary of the Interior insofar as practicable as wilderness until such time as said lands are designated as wilderness. 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

Federal
Register,
publication.

have been acquired, shall thereby be designated as wilderness and managed accordingly.

(3) Congress does not intend that wilderness areas designated under this Act lead to the creation of protective perimeters or buffer zones around such wilderness areas. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

(b) MAP AND DESCRIPTION.—(1) As soon as practicable after the effective date of this Act, the Secretary of the Interior shall file maps of the wilderness areas and legal descriptions of its boundaries with the Committee on Energy and Natural Resources of the United States Senate, and the Committee on Interior and Insular Affairs of the United States House of Representatives. Such maps and legal descriptions shall have the same force and effect as if included in this Act, except that correction of clerical and typographical errors in the maps and legal descriptions may be made. Such maps and legal descriptions of the boundaries shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the office of the appropriate Superintendent.

Public
information.

(2) Boundaries adjacent to paved and unpaved roads shall be drawn as narrowly as is practicable to allow for necessary maintenance and repairs to existing roads. Such boundaries should not, in general, exceed two hundred feet from the centerline of paved roads and one hundred feet from the centerline of unpaved roads: *Provided, however,* That larger boundaries may be drawn only as the Secretary deems necessary to exclude from the wilderness existing developments, improvements, and structures adjacent to existing roads, as well as areas needed to maintain and repair existing roads: *Provided further,* That to the extent practicable, undeveloped areas adjacent to all roads shall be managed as if designated as wilderness.

TITLE V—MISCELLANEOUS PROVISIONS

SEC. 501. WILD AND SCENIC RIVERS.

Section 3(a), paragraph (60), of the Wild and Scenic Rivers Act, which designates the Klickitat River in the State of Washington as a component of the National Wild and Scenic Rivers System, is amended to add the following sentence at the end of the paragraph:

16 USC 1274.

“The boundaries of the designated portions of the Klickitat River shall be as generally depicted on a map dated November, 1987, and entitled ‘Klickitat National Recreation River, River Management Area: Final Boundary’, which is on file in the office of the Chief, Forest Service, Washington, District of Columbia.”

District of
Columbia.
16 USC 1274.

SEC. 502. RESERVATION OF WATER RIGHTS.

Subject to valid existing rights, within the areas designated as wilderness by this Act, Congress hereby expressly reserves such water rights as necessary, for the purposes for which such areas are so designated. The priority date of such rights shall be the date of enactment of this Act.

Approved November 16, 1988.

LEGISLATIVE HISTORY—S. 2165 (H.R. 4146):

HOUSE REPORTS: No. 100-961 accompanying H.R. 4146 (Comm. on Interior and Insular Affairs).

SENATE REPORTS: No. 100-512 (Comm. on Energy and Natural Resources).

CONGRESSIONAL RECORD, Vol. 134 (1988):

Sept. 26, H.R. 4146 considered and passed House.

Oct. 18, considered and passed Senate, amended. S. 2165 considered and passed Senate.

Oct. 19, S. 2165 considered and passed House.



APPENDIX B: ANALYSIS OF BOUNDARY ADJUSTMENT AND LAND PROTECTION

The 1978 National Parks and Recreation Act (16 USC 1a-7(b)), and NPS Management Policies 2006, mandate consideration of potential modifications to the external boundaries of National Park Service units when developing or updating general management plans. Therefore, as part of the planning process for the Ross Lake NRA General Management Plan, the planning team cast a broad look at lands adjacent to Ross Lake NRA, and within the boundaries of the NRA but presently owned and managed by Seattle City Light.

In accordance with NPS Management Policies 2006, the NPS considered whether any boundary adjustments would be necessary to:

- protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes; or
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads; or
- otherwise protect park resources that are critical to fulfilling park purposes.

All recommendations for boundary changes must also meet the following two criteria:

- the added lands will be feasible to administer considering their size, configuration, and ownership; costs; the views of and impacts on local communities and surrounding jurisdictions; and other factors such as the presence of hazardous substances or exotic species.
- other alternatives for management and resource protection are not adequate.

Proposed Additions to the Park Boundary and Other Adjustments

Using these criteria, the NPS concluded that under present circumstances, the Diablo Townsite is the only area that could be recommended for a possible boundary adjustment. If Seattle City Light determines that Hollywood is no longer necessary for hydropower operations in the future, the NPS would work to acquire that land. 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 would be developed to determine its future use. At the request of SCL, the NPS could propose a land exchange or purchase by which the NPS would acquire the “Hollywood” area (approximately 44 acres) of Diablo Townsite in exchange for disposing of the “Reflector Bar” (approximately 25 acres) area or granting an interest or giving greater control therein to Seattle City Light.

Land control within Diablo presently runs counter to the NPS and Seattle City Light’s management and operational needs. Hollywood is owned by Seattle City Light, and the land within the Reflector Bar area is owned by the National Park Service (most of the improvements are owned by Seattle City Light). To reconcile this control disparity, and complement the operation needs of both NPS and Seattle City Light, the NPS proposes to exchange the federal land at Reflector Bar or grant an interest or give greater control therein for Seattle City Light land at Hollywood. The end result would enable Seattle City Light to consolidate their operations at Reflector Bar (where their powerhouse, maintenance facility, sewer treatment plant, warehouse, housing and other administrative facilities are presently located), and authorize the NPS to acquire Hollywood and potentially reconfigure the area to improve and enhance recreational opportunities and visitor services.

The land acquisition authority provided by the enabling legislation for Ross Lake NRA clearly states that lands of the State of Washington and its political subdivisions “may be acquired only by donation ” (The North Cascades Act, Public Law 90-544, Section 301). Seattle City Light is a division of the City of Seattle, a municipal corporation of the State of Washington. A plain reading of the statute presently precludes the possibility of a direct land exchange with an equalization payment or purchase between NPS and Seattle City Light. Legislation authorizing the acquisition of exchange or disposal of

Reflector Bar (or an interest therein) for Hollywood would be needed.

The following sections include a description of Diablo Townsite and analysis of boundary adjustments using the above criteria. This review is included as supporting documentation for the management alternatives presented in Chapter 4 of this general management plan, which include a recommendation for boundary adjustment contingent upon SCL's interest in a sale or exchange of Hollywood. This general management plan does not address the legislative requirement to provide a cost estimate for the boundary adjustment, nor does it include the relative priority for acquisition. However, the legislative proposal for the boundary adjustment and accompanying support materials would meet both of these requirements.

Description of Diablo Townsite

Diablo Townsite is located along the upper reach of Gorge Lake, near the confluence of Stetattle Creek and the Skagit River (now Gorge reservoir). Diablo is one of two "company towns" originally built by Seattle City Light during construction of the Skagit River Hydroelectric Project. The area was remote and isolated, with access only by trail and railway, and the towns provided the lodging and services needed to support large construction crews. Today the towns continue to provide housing, as well as the maintenance, and administrative facilities needed to support operation of the Project.

Diablo Townsite presently consists of two distinct areas that are operated and managed by Seattle City Light: a housing area, informally known as "Hollywood," and a hub of hydroelectric operations known as "Reflector Bar," which includes Diablo Powerhouse and an array of support facilities, as well as a few houses. Diablo Townsite also serves as a trailhead for the popular Sourdough Mountain trail, and the Stetattle Creek trail. Gorge Campground, a small campground on the shores of Diablo Lake, is also located immediately adjacent to Diablo Townsite on a spit of land adjacent to Stetattle Creek.

Hollywood

The Hollywood housing area encompasses approximately 12 acres of land, including 25 houses and additional outbuildings. The Hollywood housing area is part of a 43.56-acre parcel of land owned in fee by Seattle City Light (See Figure 4.7). Prior to complete acquisition by Seattle City Light in 1929,

the Hollywood area was known as "Cedar Bar" or "Cedar Flat." It was flat and fertile, and strategically located along the Skagit River Trail or "Goat Trail," a notoriously treacherous trade route through the Skagit River Gorge that was historically used for mining activity in the Thunder Creek and Ruby Creek drainages (Luxenberg, 1986).

Cedar Bar was settled in 1898 by Lucinda Davis and her children. The 43-acre parcel was patented in 1918 under the Homestead Act of 1862. They built and operated a small farm and popular roadhouse known as the Davis Ranch which catered to miners and tourists visiting the region. In 1927, Seattle City Light acquired by condemnation a portion of the 43-acre parcel. Seattle City Light acquired the rest of the parcel by condemnation in 1929 for \$15,000 to enable further expansion of the Skagit River Hydroelectric Project.

Following acquisition, Seattle City Light used the various structures associated with the Davis Ranch to house employees and guests. Over time, the original Davis Ranch structures fell into disrepair and were torn down. In 1937, Seattle City Light began development and expansion of housing in the area. Twenty houses were planned, but only five houses were actually constructed. The Hollywood area remained as a partially built housing area primarily for Seattle City Light employees until 1952, when a number of new houses were built and the original street plan was modified. The present development configuration in Hollywood largely reflects this early 1950's development.

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 newer houses in Hollywood are now more than 50 years old, which is one criterion for potential listing on the National Register of Historic Places. Seattle City Light is presently evaluating whether or not these houses are eligible for listing. Only one of the five Hollywood houses from the 1930's remains today, and it is listed on the National Register (NPS, 1996). All that remains of the Davis ranch today is the old Davis Powerhouse, a small

wooden structure that provided hydroelectric power to the Davis Ranch and served as the first hydroelectric plant on the Skagit River (Luxenberg, 1986). The Davis Powerhouse has been relocated from its original location on Cedar Bar, and there is some uncertainty as to whether it is the original structure or a reconstruction. Nonetheless, it too is more than 50 years old and although it lacks historic setting, feeling, and association (Luxenberg, 1986), it may now be eligible for listing as a historical icon (Luxenberg, pers. comm. July 17, 2009). Another structure that may also be eligible for listing is the Stetattle Creek Bridge, a single-span Pratt truss steel bridge that may be associated with the 1930's, but a determination requires further documentation (Jesse Kennedy, NPS Cultural Resources Specialist, pers. comm.).

Reflector Bar

The Reflector Bar area lies east of and just upstream from Hollywood along the shoreline of the Skagit River and just downstream from Diablo Dam. The approximately 25-acre area includes several notable historic structures, including a prominent 50,000-gallon water tower constructed in 1934, and the historic Diablo Powerhouse. There are also several residences dating back to 1952 (constructed in conjunction with the Hollywood housing of that era), a school building that now serves as a cookhouse, museum, and administrative office; a waiting area for the incline lift; and maintenance buildings.

In contrast to Hollywood, within which the land and structures are owned by the City of Seattle, the land surrounding and including Reflector Bar has always remained within the federal domain, although Seattle City Light owns most of the structures. Today the land is presently under the jurisdiction of the National Park Service as part of Ross Lake NRA. The land is also within the boundary of the Skagit River Hydroelectric Project, and subject to the jurisdiction of the Federal Energy Regulatory Commission for power production purposes.

Over the years, Seattle City Light has increasingly automated its operation on the Skagit River Hydroelectric Project. Increased automation has resulted in a reduced need on the part of Seattle City Light for employee housing, and a desire to divest itself of the Hollywood area and consolidate facilities onto Reflector Bar and the Newhalem Townsite. The National Park Service, in turn, has a need for relatively level, geologically stable, and motor vehicle-accessible land that has been previously disturbed

by development to accommodate future recreational needs and to facilitate better access to existing trails. The current configuration of Hollywood is confusing for visitors, presents limitations for access, and raises certain aesthetic concerns. Acquisition of the Hollywood area would help the National Park Service address these concerns, and respond to public demand for more recreational opportunities.

Seattle City Light would continue to use Reflector Bar as a base of operations for Diablo Dam, and for broader functions that support the whole Skagit River Hydroelectric complex. The NPS would use Hollywood to support and possibly enhance various visitor services for Ross Lake NRA, including overnight accommodations.

Boundary Adjustment Criteria

The following section addresses several criteria that must be considered for boundary adjustments in accordance with §3.5 of NPS Management Policies 2006.

1. Significant Resources or Opportunities for Public Enjoyment Related to the Purpose of Ross Lake National Recreation Area

Hollywood

The Hollywood area provides significant opportunities for public enjoyment in light of its readily accessible location along the North Cascades Highway Corridor. The Hollywood area presently provides several recreational facilities and amenities including (1) the Sourdough Mountain trailhead; (2) the Stetattle Creek trailhead; (3) a portion of the Gorge Campground and boat launch; and (4) access to Diablo Dam trail (which enables a loop hike of Sourdough Mountain). The Hollywood area is flat and relatively stable geologically because it has been filled in and protected from flooding by a levee along the right bank of Stetattle Creek.

The Hollywood area is readily accessible from the North Cascades Highway, and a primary point of departure for the Sourdough Mountain Trail and Stetattle Creek Trail. The Hollywood area also provides immediate access to the shoreline of Gorge Reservoir, and lies adjacent to the small but popular Gorge Campground and boat launch for Gorge Lake. Hollywood's sunny, southern exposure provides spectacular views of the South Unit of North Cascades National Park, including the prominent

massifs of Colonial Peak, Pyramid Peak and Ruby Peak. While there are other similar areas within the NRA with favorable topographic characteristics (such as alluvial terraces such as in the vicinity of the Visitor Center), they are generally characterized by mature or old-growth forest, are relatively if not completely undisturbed by previous development, and not as readily accessible to the North Cascades Highway Corridor.

Reflector Bar

Reflector Bar is used almost exclusively by Seattle City Light for administrative and operation of the Skagit River Hydroelectric Project. The only exception to this is public use of Diablo Dam trail; use of this trail would continue regardless of ownership. The Reflector Bar area is essentially a light industrial complex of hydroelectric facilities. The NPS does not lightly consider divesting itself of property, particularly property that has always been in the public domain, such as Reflector Bar. The NPS would divest itself of Reflector Bar only if necessary as part of acquiring Hollywood, since this area has greater existing and future recreational opportunities.

2. Operational and Management Issues Related to Access and Boundary Identification or Other Natural Features

Hollywood

The Hollywood area presently provides access to the popular Sourdough Mountain trail and the low elevation Stetattle Creek trail—one of only a few trails within Ross Lake NRA that provides year round hiking opportunities. Both trailheads suffer from adverse access-related issues. The Sourdough Mountain Trailhead provides access to the very popular Sourdough Mountain Lookout, one of three National Register-listed historic lookouts within North Cascades NPS Complex. The trailhead is presently difficult to find, parking is limited and not clearly delineated or distinct from the Hollywood residential area, and there are no other basic trailhead amenities such as a picnic area or restroom for visitors. Conditions surrounding the Stetattle Creek trailhead are similar. Although the trailhead is slightly less difficult to find and parking is more clearly identified, the first leg of the trail follows a constructed levee that separates and protects the Hollywood housing development from flooding. Traversing this section of trail imparts a sense of walking through a series of backyards in a suburban

development. This approach feels incongruous compared to the other popular front country trails within Ross Lake NRA. The NPS is working with Fee-acquisition of Hollywood from Seattle City Light would provide the NPS with a significant opportunity to improve parking, access and circulation, upgrade visitor amenities and enhance the aesthetics of the trailhead areas.

However, single agency management and jurisdiction of the area could be more efficient for long-term maintenance and operations.

Reflector Bar

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 keeping visitors away from the hydroelectric industrial zone. The most efficient and enduring means of meeting these goals would be for the NPS to either divest itself of Reflector Bar to enable fee-simple ownership by Seattle City Light, grant an easement over Reflector Bar, or use a different mechanism to provide Seattle City Light with greater, near-exclusive control.

3. Protection of Park Resources and Fulfillment of Park Purpose

Hollywood

Ross Lake NRA was established “. . .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. . .” The Hollywood area is strategically suited for enabling recreational use of the lands and waters within Ross Lake NRA given its close proximity to Gorge and Diablo reservoirs and to low- and high elevation hiking opportunities.

NPS acquisition of the Hollywood Area would further fulfill the purpose of Ross Lake NRA by providing options to enhance frontcountry visitor services and amenities in support of recreation. For example, the area could be used to construct an additional campground to respond to increases in camping demand. It could also help to offset loss of campground capacity in other areas should severe weather events, such as flooding, require abandonment of other campgrounds such as Colonial Creek Campground. The specter of climate change, including the potential for increased storm frequency and severity (University of Washington Climate Impacts Group, 2009), renders the Hollywood area disproportionately significant for future sustainable development because it is relatively stable geologically and protected from flooding. In fact, the record flood of October 2003 had no impact on the area, but caused substantial damage to other important recreational use sites, including Goodell Creek Campground and Colonial Creek Campground—the most popular campground in the NRA. Relocating or expanding camping, picnicking and related frontcountry development in Hollywood would also help to protect the natural resources of Ross Lake NRA because the area has been previously disturbed by development and does not contain notable natural resources such as old-growth forest.

Acquisition of the Hollywood Area would also help to protect, preserve and interpret the historic and cultural significance of the area's association with homesteaders, such as the Davis family who first settled the area when it was called Cedar Bar. Similarly, acquisition of the Hollywood area would also contribute to visitor understanding and appreciation of the role the housing area provided during construction of Diablo and Ross Dams and subsequent operation of the Skagit River Hydroelectric Project. The sole remaining house from the 1930's era (referred to as H-6 or "Resource #34") housing development in Hollywood is listed on the National Register of Historic Places. The Hollywood housing area was not considered eligible for listing as a historic district in the mid-1990's but may be eligible today as all the houses are now more than 50 years old. Seattle City Light is presently pursuing a determination of National Register eligibility. Should the present Hollywood development be deemed eligible, then this finding would add another layer of historical significance to the site. Acquisition of Hollywood by the National Park Service would help to contribute further to preserving and interpreting the historic resources that are significant to Ross Lake NRA.

Finally, comments received during public scoping presented a common theme of requesting limited if any new development in Ross Lake NRA. Most commenters suggested they would like to see development remain at or near current levels to protect the natural resources of the area and to prevent over-use. Acquisition of Hollywood and some form of adaptive use of the area would fulfill the spirit and intent of these requests because the area is already developed; it could be put to some form of adaptive use without harming other areas in Ross Lake NRA that have not been previously disturbed.

Reflector Bar

The enabling legislation for Ross Lake NRA specifically identifies Ross, Diablo and Gorge Lakes as fundamental resources for outdoor recreational use and enjoyment. To protect these resources, and to promote their recreational use and enjoyment, safe and secure administration of the Reflector Bar area is needed. This goal could be achieved by transferring ownership of or granting an easement over the area to Seattle City Light, or using a different vehicle for giving Seattle City Light almost exclusive, complete control of this area.

4. Feasibility to Administer the Lands Added through Boundary Adjustment

Acquisition of Hollywood would enable easier administration of the area for several reasons. The NPS is presently constrained by the current patterns of development, access, and use of the Hollywood area because it is owned by Seattle City Light and managed primarily for the purposes of supporting hydropower production. The Skagit Creek and Sourdough Mountain trails have been poorly situated among these existing uses (as previously described in response to criterion #2). As a result, the present trailhead conditions are challenging to administer. These challenges are increasing as security concerns have recently prompted Seattle City Light to install a gate along the entrance road leading to Diablo Powerhouse. The gate blocks access to the closest parking for the Sourdough Mountain trailhead, and will undoubtedly add further confusion to visitors seeking to find the trail. The entire area lies within the Federal Energy Regulatory Commission (FERC) boundary for the Skagit Hydroelectric Project, so in addition to being owned by Seattle City Light, FERC retains jurisdiction over the area and their oversight adds another layer of administrative complexity. Should Seattle City Light and FERC

agree to NPS acquisition, then the whole area would be substantially easier for the NPS to manage for recreational purposes.

The NPS is concerned about the life cycle costs associated with the existing housing and the utility systems. If an acquisition exchange were authorized, the NPS would request that Seattle City Light continue to provide utilities (power, water, and sewer). The existing buildings in Hollywood would need to be evaluated to assess their condition, including their potential historic significance. It is possible that over the long-term, the most financially viable action would be to remove some or all of the houses in Hollywood, and reconfigure the area for camping and/or as a possible location for concession lodging. Other options would be to use the area to expand the park-based environmental educational programs or to support science and research. Future needs for the educational programming may be for staff housing, participant lodging, classrooms and other support facilities. Regardless of the various options, the general vision would hold that this previously disturbed area, with its existing utilities, would be used to provide various visitor services. A condition assessment of the property and facilities would be completed prior to completing a land acquisition exchange of the Hollywood area with Seattle City Light.

5. Protection Alternatives Considered

Options for protection of the area include accepting the limitations and maintaining the status quo, exchanging the Hollywood Area for Reflector Bar, or entering into additional agreements with Seattle City Light to better enable recreational access, use and administration of Diablo Townsite. The NPS and Seattle City Light presently prefer the concept of a land exchange or purchase of Hollywood; and providing greater control to Seattle City Light of Reflector Bar through disposal, easement, or other means, to reconcile the somewhat incompatible demands of hydropower production and recreation.

Other Geographic Areas Considered but Rejected for Boundary Adjustment

North Cascades National Park

The NPS dismissed from consideration changing the designation of Ross Lake NRA to North Cascades National Park. Ross Lake NRA was created as a separate unit primarily to accommodate Seattle

City Light's existing and proposed hydroelectric developments. These hydroelectric facilities (three large dams and reservoirs) have dramatically altered the natural landscape and hydrologic systems of the Skagit River and its tributaries. Congress also 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. Neither activity is creating a notable resource management or public safety concern.

The "National Park" name is generally associated with large areas with a variety of resources where natural resources are largely unaltered or in their natural state. "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. When North Cascades NP and Ross Lake NRA were designated in 1968, areas with reservoirs were generally named "National Recreation Areas," such as Bighorn Canyon NRA (1966) and Whiskeytown-Shasta-Trinity NRA (1972). Congress chose to designate the area a "National Recreation Area" based on its significant resources, existing hydroelectric facilities, and range of superlative recreational opportunities.

The NPS dismissed consideration to expand 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.

Northeastern Skagit River Watershed

The vast majority of lands immediately adjacent and external to Ross Lake NRA largely include lands within North Cascades National Park (to the north and south) and USDA Forest Service lands to the east in the Okanogan-Wenatchee National Forest. The geographic scope of lands considered to the east of Ross Lake NRA included the North Cascades Highway corridor up to and including Washington Pass, and adjacent U.S. Forest Service lands that comprise the watershed for the Skagit River. The overall area considered included approximately 208,390 acres.

The specific rationale for focusing on these geographic 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 for access as an eastern gateway to the NRA; and (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. Another element that influenced this evaluation was the administrative history of the establishment of the North Cascades NPS Complex, including the North Cascades Study Report and the joint recommendations from the Secretaries of Agriculture and Interior (December 29, 1965, Statement of Secretary of Agriculture and Secretary of Interior).

The North Cascades Highway corridor to the east of Ross Lake NRA traverses a non-wilderness corridor administered by the U.S. Forest Service primarily for recreational purposes. Although this area is not designated as wilderness, recreational activities similar to those that occur within Ross Lake NRA are the primary form of use. In certain areas, however, more resource-intensive and/or exploitative activities, such as mining, continue to occur. The past adverse impacts of mining in particular still linger. For example, one past mining site, the Azurite Mine located approximately 7 miles east of Ross Lake NRA in headwaters of the Ruby Creek watershed, is now a Superfund site due to heavy metal contamination (MFG, Inc., 2008). The impacts of mining pose both present and reasonably foreseeable future threats to the resources and values of Ross Lake NRA, especially with respect to water quality and wilderness values.

In contrast to mining, the predominant recreational uses in this area involve various generally benign recreational activities such as hiking, horseback riding and mountaineering that are compatible with purposes of Ross Lake NRA. In addition, the U.S. Forest Service operates and maintains a seasonal facility at Washington Pass with various visitor services, including restrooms and interpretive information that complement and enhance public use and enjoyment of Ross Lake NRA. There are, however, other more intrusive recreational activities such as off-road snowmobile use (such as illegal use in wilderness) that are contrary to purposes and values of Ross Lake NRA. Nonetheless, on

the balance the NPS has preliminarily concluded that given (a) the paucity of potential threats from ongoing or emerging land uses (notwithstanding mining); (b) the broader protections afforded by the Pasayten Wilderness; and (c) the U.S. Forest Service's track record for administering the area primarily for conservation purposes, renders consideration of a boundary expansion to the east of Ross Lake NRA unnecessary at this time.

Lower Bacon Creek Watershed

The landscape contiguous to the west of Ross Lake NRA primarily includes U.S. Forest Service lands within the lower Bacon Creek watershed. The Bacon Creek drainage is an ecologically significant area for many reasons in light of its proximity to the North Cascades Complex and the adjacent Diobsud Creek Wilderness. 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. Past land uses such as logging and road construction have substantially modified the area, and future adverse uses such as further logging and road construction and maintenance could cumulatively and adversely affect the ecological integrity of the area. Moreover, the lower Bacon Creek watershed has been specifically identified as an ecologically significant yet unprotected area within the Puget Sound basin that needs additional protection in light of its importance as habitat for various anadromous species of fish such as salmon (Lombard, 2007).

In addition to the lower Bacon Creek watershed there is also a smaller amount of private land and land owned by the City of Seattle along the Skagit River to the south of Ross Lake NRA. The Wild and Scenic River corridor along the Skagit River affords adequate and compatible protections to some of these lands, although these protections are constrained geographically to within ¼ mile of the Skagit River and generally do not apply to private land. Outside the Wild and Scenic River corridor, the adjacent landscape is generally less protected than the lands within Ross Lake NRA. In spite of these gaps in protection, the NPS believes that a boundary expansion to increase protection of the ecologically significant Bacon Creek watershed or adjacent lands along the Skagit River is not justified because other alternatives for management and resource protection presently exist. Specifically, the U.S. Forest Service will be revising in 2012 the forest plan for Mount Baker Snoqualmie National Forest, including the

lands within the lower Bacon Creek watershed. This pending planning effort will provide an opportunity for the U.S. Forest Service to address present concerns in accordance with the spirit and intent of ecosystem management.

The NPS recognizes that 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. The GMP alternatives address this concern by calling for increased collaboration and cooperation with the U.S. Forest Service and Canadian agencies for interagency and transboundary ecosystem management.

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 in the following table.

Federal Laws Applicable to the National Park System

Abandoned Shipwreck Act of 1987	Estuary Protection Act
Acid Precipitation Act of 1980	Farmland Protection Policy Act
Act amending the act of October 2, 1968 (commonly called the Redwoods Act)	Federal Advisory Committee Act
Act of August 8, 1953	Federal Aviation Act of 1958
Act of February 21, 1925	Federal Cave Resources Protection Act of 1988
Act of June 30, 1864	Federal Coal Leasing Amendments Act of 1976
Act of June 5, 1920	Federal Insecticide, Fungicide, and Rodenticide Act
Act of March 1, 1872	Federal Land Policy and Management Act
Act of May 26, 1930	Federal Power Act of 1920
Administrative Dispute Resolution Act	Federal Water Pollution Control Act (commonly referred to as Clean Water Act)
Administrative Procedures Act	Federal Water Power Act
Airport and Airway Development Act of 1970	Federal Water Project Recreation Act
Airports In or Near National Parks Act	Fish and Wildlife Coordination Act
Alaska National Interest Lands Conservation Act of 1980	Flood Disaster Protection Act of 1973
Alternative Dispute Resolution Act	Food Security Act of 1985 (Sodbuster Law)
American Battlefield Protection Act of 1996	Forest and Rangeland Renewable Resources Planning Act of 1974
American Folklife Preservation Act of 1976	Freedom of Information Act
American Indian Religious Freedom Act	General Authorities Act, October 7, 1976
Americans with Disabilities Act of 1990	General Mining Act of 1872
Antiquities Act of 1906	Geothermal Steam Act Amendments
Archeological and Historic Preservation Act of 1974	Geothermal Steam Act of 1970
Archeological Resources Protection Act of 1979	Grand Canyon National Park Enlargement Act
Architectural Barriers Act of 1968	Historic Sites Act of 1935
Arizona Desert Wilderness Act (contains NPS boundary study provisions)	Intergovernmental Cooperation Act of 1968
Bald and Golden Eagles Protection Act	Lacey Act of 1900
Clean Air Act	Land and Water Conservation Fund Act of 1965
Coastal Barrier Resources Act	Magnuson-Stevens Fishery Conservation and Management Act
Coastal Zone Management Act of 1972	Management of Museum Properties Act of 1955
Comprehensive Environmental Response Compensation and Liability Act (commonly referred to as CERCLA or the Superfund Act)	Marine Mammal Protection Act of 1972
Department of Transportation Act of 1966	Marine Protection, Research, and Sanctuaries Act of 1972 (commonly known as Ocean Dumping Act)
Disposal of Materials on Public Lands (Material Act of 1947)	Migratory Bird Conservation Act
Emergency Planning and Community Right-to-Know Act of 1986	Migratory Bird Treaty Act
Endangered Species Act of 1973	Mineral Leasing Act for Acquired Lands
Endangered Species Conservation Act of 1969	Mineral Leasing Act of 1920 (commonly referred to as Mineral Leasing Act or Mineral Lands Leasing Act)
Energy Independence and Security Act of 2007	Mining in the Parks Act
Energy Supply and Environmental Coordination Act of 1974	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

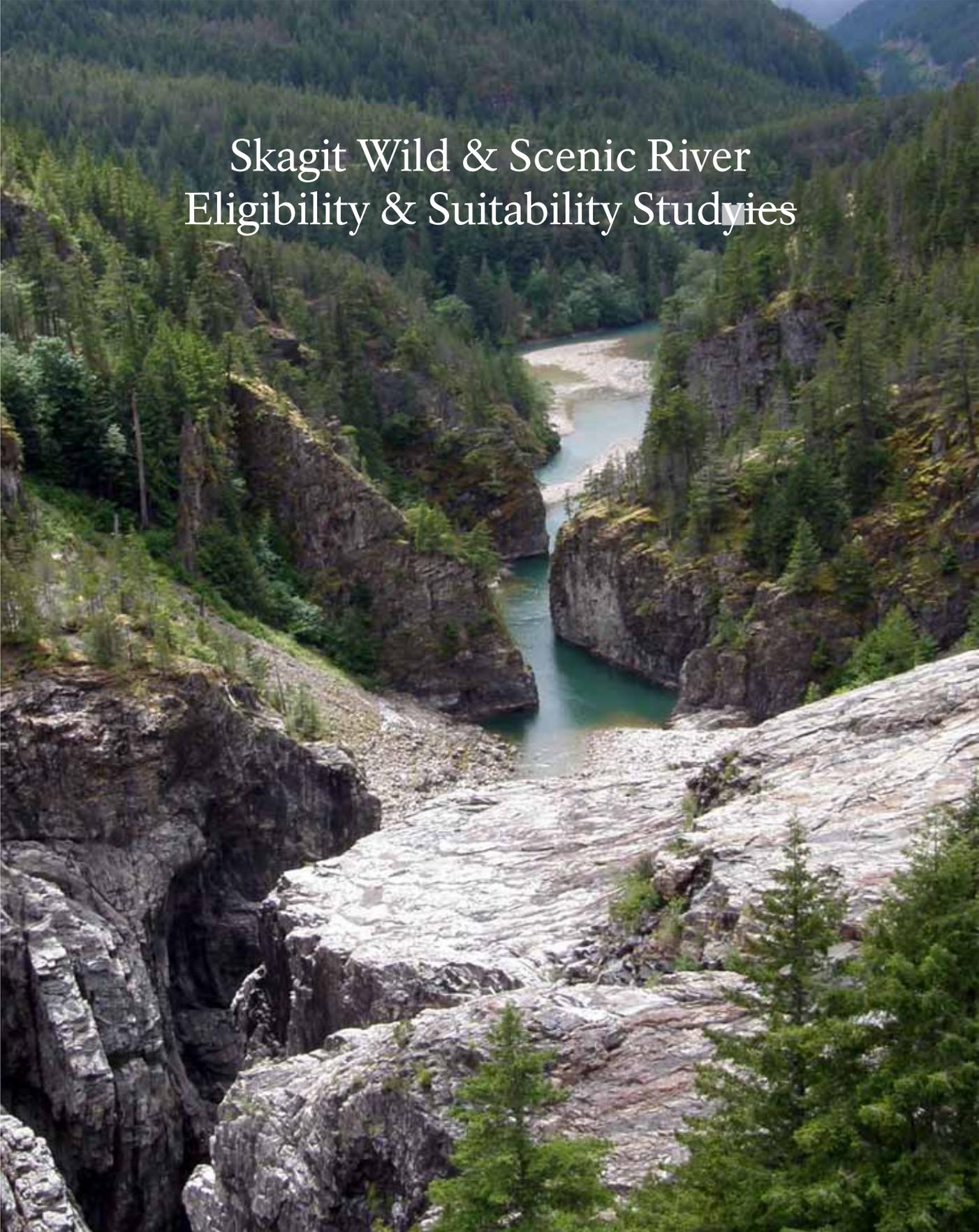
Executive Orders Applicable to the National Park System

Executive Order 11514: Protection and Enhancement of Environmental Quality

Executive Order 11593: Protection and Enhancement of the Cultural Environment
 Executive Order 11644
 Executive Order 11987: Exotic Organisms, 42 FR 26949, Revoked by Executive Order 13112
 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



Skagit Wild & Scenic River
Eligibility & Suitability Studies

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EXECUTIVE SUMMARY

This study report 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 report 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 is being 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 agencies 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 possess 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 would be decided through a Congressional Act.

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. While 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 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 is found indicating 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.

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 hydropower 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.

INTRODUCTION

Purpose and Scope

This report includes the ~~draft~~ final Wild and Scenic River (WSR) Eligibility and Suitability Study findings for the Skagit River and its tributaries from below Gorge Dam to the Ross Lake National Recreation Area (NRA) boundary just upstream of Bacon Creek. In a previous eligibility study conducted by the National Park Service (NPS) in 1989, the entire segment of the Skagit River within the Ross Lake NRA was found eligible for inclusion in the National WSR System based on fishery and wildlife outstandingly remarkable values (ORVs). As a result of this initial study, the Skagit River within Ross Lake NRA is located on the Nationwide Rivers Inventory¹ list. The first purpose of this report is to update these eligibility findings based on new information and changes that have occurred since 1989 and new guidance and criteria that have been developed and adopted by the Interagency Wild and Scenic River Coordinating Council. The second purpose is to conduct a suitability analysis to determine whether or not the eligible river segments should be recommended for designation.

This WSR study area includes the Skagit River below Gorge Dam to the Ross Lake NRA boundary and the tributaries flowing into this reach. The evaluated tributaries are identified by name or by an identifying number from the Washington State Stream Catalog System. Starting upstream and moving downstream, the north tributaries are listed below:

- #1965
- Afternoon Creek
- Falls Creek
- Goodell Creek
- #1865
- Babcock Creek
- Thornton Creek
- Sky Creek
- Damnation Creek
- #1826

The south tributaries are:

- #1966
- Ladder Creek
- Newhalem Creek
- #1860
- Martin Creek
- #1857
- #1854
- #1853
- #1851

Table 1: Summary of Outstandingly Remarkable Values

Skagit River from Gorge Powerhouse to the Ross Lake NRA Boundary

Resource	Characteristics
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

Resource	Characteristics
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.

Newhalem Creek

Resource	Characteristics
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 NPS Complex and rated as one of the top 100 northwest waterfalls.

- #1849
- #1843
- Alma Creek
- Copper Creek

Staff and financial resources were not available to conduct WSR analysis for all Skagit River tributaries within the North Cascades NPS Complex. The Skagit tributaries above the dams were not evaluated during this study. Bacon Creek was also not evaluated since it is outside the boundary of the Ross Lake NRA. Previous findings for these river segments are incorporated into the GMP and the GMP also directs NPS to work in cooperation with the U.S. Forest Service to update the WSR analysis for these tributaries sometime over the life of the GMP (see the GMP Alternatives Section).

The National Park Service focused on the main-stem Skagit River below the dams and the tributaries in this reach for the following reasons:

- This study was conducted as part of the General Management Plan (GMP) for Ross Lake NRA. The main-stem Skagit River segment is the only river segment entirely within the Ross Lake NRA. All the tributaries begin either in U.S. Forest Service lands or the North Cascades National Park, and then enter Ross Lake NRA before flowing into the Skagit River.
- The Skagit River downstream of the Ross Lake NRA boundary is already designated as a WSR. Inclusion of this 11-mile main-

stem segment would complete designation from the downstream end of the Skagit Hydroelectric Project to the town of Sedro-Woolley.

- The dams and the Newhalem Gorge create a fish barrier and a distinctive watershed break for the upper Skagit River System. The selected study area allows a focus on salmon and other anadromous fish resources.

Skagit River Watershed

The headwaters of the Skagit River lie in British Columbia, Canada, in the North Cascades Mountains. Skagit River then flows approximately 150 miles before it empties into Puget Sound. Abundant glaciers in the surrounding jagged peaks provide stable flows that help make it the only Puget Sound tributary to host all native species of anadromous fish and attracts one of the highest concentrations of wintering bald eagles in the lower 48 states. It is the largest river draining into the Puget Sound and the third largest river on the west coast of the contiguous states. The entire Skagit River Watershed Basin covers 3100 square miles; it provides 20 percent of the flows into Puget Sound.

Wild and Scenic Rivers Act – Criteria & Process

The Wild and Scenic Rivers Act, enacted in 1968, established a system to permanently protect selected

free-flowing rivers in their natural condition for the present and future generations' enjoyment of the river. It was intended to balance the water resource development policies with river conservation and recreation goals. Rivers that are designated or included in the National WSR System receive protection from water resource projects that would have adverse effects on the river and its resources. A river can be designated as wild, scenic, or recreational. The WSR Act originally designated eight river segments and specified how others rivers were to be added. Rivers can be considered for addition into the WSR system if Congress authorizes a specific river segment studied, and Section 5(d)(1) of the WSR Act also directs federal agencies to evaluate rivers conjunction with their land management planning processes.

The three main steps involved in a WSR study are eligibility, classification, and suitability analysis. The eligibility analysis is a resource inventory and evaluation to determine if the river is free-flowing and possess one or more outstandingly remarkable value (ORV) such as fishery, wildlife, scenery, recreation, geology, or cultural resources. An ORV is defined as a river-related value that is unique, rare or exemplary within a national or regional context. Rivers that are found eligible are also classified as wild, scenic, or recreational primarily based on the level of human impact along the river and its water quality. The last step in the WSR study process is a suitability analysis which assesses whether or not eligible segments should be included in the WSR System. Suitability determination is based on an assessment of 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 wild and scenic river designation with other potential uses of the river segments; and public support and involvement. Designation of eligible and suitable river segments into the National WSR System on NPS lands would be decided through a Congressional Act.

Previous WSR Studies in the North Cascades NPS Complex

WSR eligibility studies for the North Cascades NPS Complex were completed in both 1989 and 2002. The draft 1989 eligibility report evaluated a number of river segments in the Skagit River watershed within the North Cascades NPS Complex as well as other watersheds in the North Cascades NPS Complex.

The following river segments were found eligible:

- Agnes Creek/Bridge Creek
- Baker River
- Big Beaver Creek
- Chilliwack River
- North Fork Nooksack River
- Ruby Creek/Granite Creek/Canyon Creek
- Skagit River (Gorge Dam to park boundary)
- Stehekin River
- Thunder Creek/Fisher Creek

In 2002 a detailed eligibility report determined that the entire Stehekin River watershed was eligible for WSR designation.

Skagit River Management

Skagit River Hydroelectric Project & Seattle City Light Management

The Skagit River Hydroelectric Project, managed by Seattle City Light (SCL) includes three hydroelectric dams: Ross, Diablo, and Gorge Dam. The largest lake, Ross, extends 22 miles within the U.S. and its headwaters are located just across the border in Canada. The project produces 690 megawatts of power and has been in operation since 1927 under the Federal Energy Regulatory Commission's (FERC) jurisdiction; it received a 30 year relicense in 1995. The three dams are located above a natural fish barrier at Newhalem Gorge and because of this, fish passage was not required as part of their FERC license. This license was largely based on a multiparty settlement agreement and was one of the first projects in the country to successfully negotiate an agreement on river management that included protecting resources and generating hydropower. SCL received the 1998 Public Service Award from the Nature Conservancy of Washington for its environmental stewardship of the Skagit River basin. The Skagit River below the Gorge Powerhouse is managed to protect fishery resources, primarily for federally listed threatened and endangered salmon species. The hydropower accounts for a significant portion of the City of Seattle's electric power, providing 25 percent of Seattle's electrical needs.

SCL also owns property along the Skagit River to help them manage the hydropower project, Newhalem & Diablo town sites, and associated facilities. In the Skagit River study segment within a one-quarter of a mile on either side of the high water mark, SCL owns approximately 21 percent of the land.

Washington State Department of Natural Resources

The State of Washington asserts jurisdiction and ownership over approximately 480 acres of the bed of the Skagit River below the ordinary high water mark.

Skagit River Downstream & United States Forest Service Management

In 1978, Congress designated 158.5 miles of the Skagit River and its tributaries, the Sauk, Suiattle, and Cascade rivers, as wild and scenic rivers. This system is managed by the Mt. Baker-Snoqualmie National Forest and includes a mixture of public and private lands with 50 percent of the land in private ownership. The ORVs are: fish, wildlife, and scenery. The main-stem Skagit River reach begins at the Ross Lake NRA boundary and extends down to Sedro-Woolley and is designated as a recreational river. This reach is known for its salmon resources, bald eagles, and scenic boating opportunities.

National Park Service Management

The North Cascades National Park Service Complex was created in 1968 and consists of the North Cascades National Park, Ross Lake NRA, and Lake Chelan NRA. In 1988, 93 percent of the lands in the Complex were included in the Stephen Mather Wilderness. Ross Lake NRA contains the three hydroelectric dams, three reservoirs, as well as the free-flowing section of the Skagit River. The wilderness boundary is within approximately one-quarter of a mile to two miles from banks of the Skagit River. The south-side of the river below Newhalem Creek is road-less and only accessible by boat.

ELIGIBILITY EVALUATION

The WSR Act has two requirements for eligibility; the river segment must be free-flowing and possess one or more outstandingly remarkable value in fish, wildlife, geological, recreational, scenic, historic, cultural, or other similar value. This section evaluates the eligibility of the Skagit River from Gorge Dam to the Ross Lake NRA boundary and the tributaries in this reach.

Free-Flowing Condition

“Free-flowing” is defined in section 16(b) of the Act as:

...existing or flowing in natural condition without impoundment, diversion, straightening, riprapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures... shall not automatically bar its consideration for inclusion: Provided, that this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the National Wild and Scenic Rivers System.

Hydrology of the Skagit Watershed

The Skagit River watershed is surrounded by dramatic glacier-covered peaks which feed meltwater to the river. It begins in British Columbia, winding through forests and flowing through steep canyons, before flattening out into a broad valley as it reaches Puget Sound. High flows occur when mountain snow melts in the spring and during fall/winter rain and rain-on-snow events. Melting glaciers deliver 15 to 30 percent of summer flows, providing stable base flows during summer drought.

The Skagit River is heavily influenced by the Skagit Hydroelectric Project. The project consists of three dams and associated facilities (Ross, Diablo, and Gorge) operated together for a combined capacity of 690 megawatts (MW). The dams are all located above a natural fish barrier at Newhalem Gorge. Water is diverted at Gorge Dam, located furthest downstream, through penstocks or large pipes and this creates a two and one-half mile long bypass reach of the Skagit River. There is no minimum flow requirement in this bypass reach and it remains dry or with limited water throughout the year. Tributaries and occasional spills from the dams provide flows for this reach. The project below is operated in “peaking mode”, meaning water is stored in the reservoirs and released in accordance with energy needs; the flows fluctuate on a daily and seasonal basis. The project is also managed to protect fishery resources with different flow requirements for different life stages of anadromous fish species. The flow regime is a complex, model-based arrangement with minimum and maximum flows as well as ramping rates designed to meet the needs for fishery resources while also maximizing

hydroelectric power operations. While the flows are managed for hydropower generation and to protect fishery resources, they do not mimic the natural hydrography. The Settlement Agreement for relicensing this hydroelectric project was considered a national model for river conservation and outlined several key environmental and recreational improvements including:

- Releasing flows to meet the important life stage needs of salmon and steelhead trout
- Reducing daylight downramping rates to reduce stranding of salmon fry

- Funding habitat acquisition and restoration of estuary areas to help restore Chinook salmon and bull trout
- Acquiring lands for important wildlife habitats
- Providing annual funding for environmental research, studies, and monitoring
- Providing funding for cultural resource mitigation
- Funding the development of the Environmental Learning Center on Diablo Lake
- Rehabilitating recreation facilities

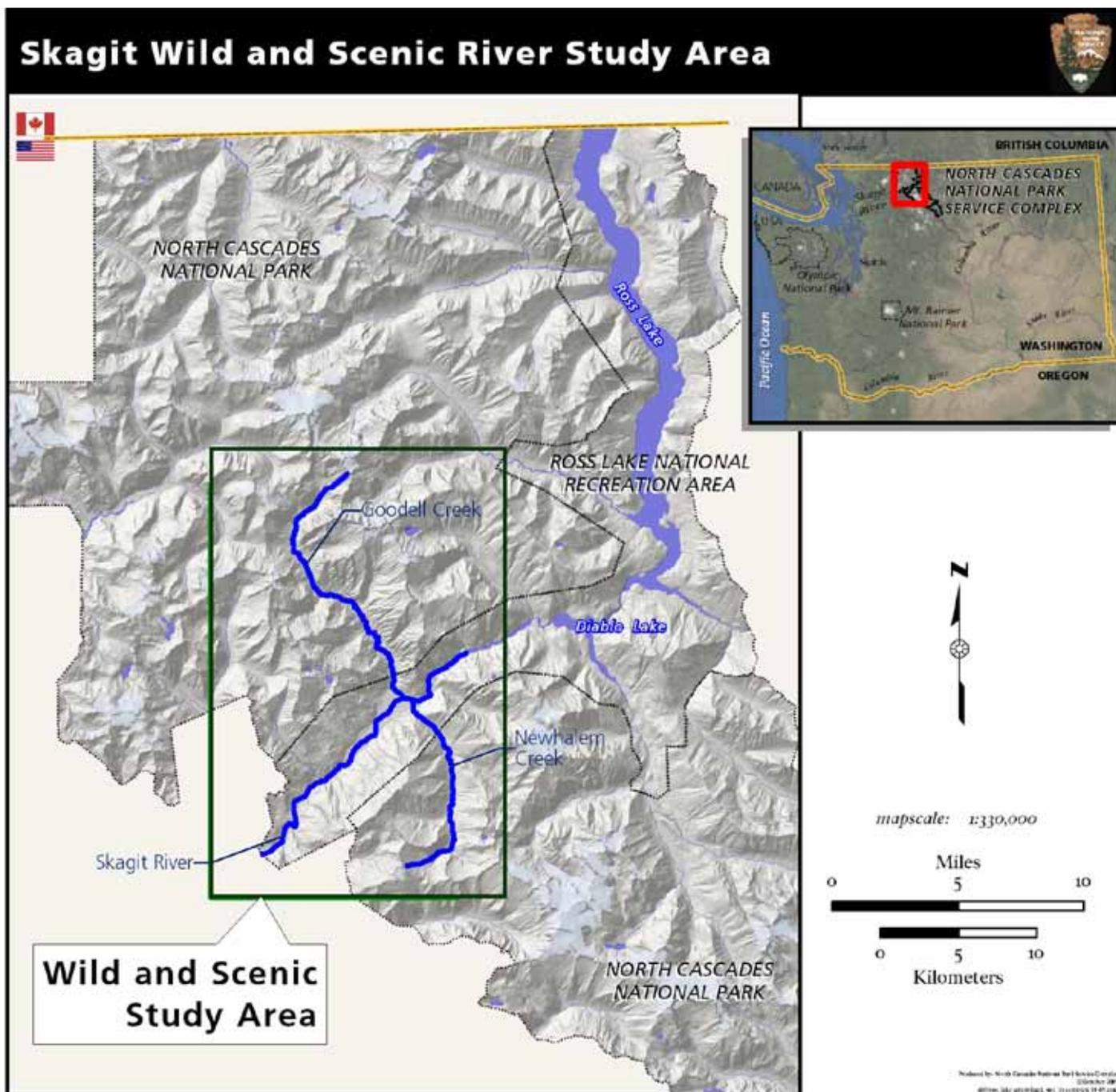


Figure 1. Skagit Wild and Scenic River Study Area

SCL also owns and operates a small hydroelectric project on Newhalem Creek. This project consists of a ten foot high diversion dam, penstocks, and a powerhouse. This 2.3 MW hydroelectric project diverts water from Newhalem Creek, which then is used for generation and returned to the Skagit River via a man-made channel. The project has been in place since 1921 and was originally built to provide power to Newhalem town site while the construction of the Skagit River hydropower projects was underway. The project was relicensed in February 1997. Minimum flows vary by different times of the year to protect the fishery resources. Ramping rates also limit flow fluctuations. Salmon are prevented from going up the tailrace channel by a concrete barrier put in place as a requirement of the last license.

River Bank Alteration and Shoreline Development

The North Cascades Scenic Highway parallels the Skagit River through the study area. Efforts to protect the road include riprap in several short

segments constructed during the State Department of Transportation's maintenance operations. In the segment below the powerhouse to Ross Lake NRA boundary approximately three miles or 15 percent of the shoreline contains some kind of modification. This includes rip-rap located on the north-side of the river. There are four bridges spanning the Skagit River:

- a vehicle bridge right below the powerhouse (RM 94.2)
- a pedestrian bridge directly below the powerhouse (RM 94.12)
- a pedestrian bridge in Newhalem (RM 93.75)
- a vehicle bridge to the NPS Visitor Center (RM 93)

There is also an old bridge abutment at RM 86. In addition, there are two powerlines in the study area vicinity. The highway also crosses the Skagit River tributaries on the north side including Goodell, Babcock, Thornton, Damnation, and other unnamed creeks.



The Skagit River is often referred to as the 'Emerald Skagit' due to its clear blue green water.

Flow Conditions of Specific River Segments

Segment 1. Gorge Dam to Gorge Powerhouse (RM 96.63 to RM 94.18)

There is no minimum flow in this 2.5 mile reach and it remains dry or with limited water much of the year. Water from Gorge Dam is piped through penstocks to generate hydroelectric power and released below the Gorge Powerhouse. Tributaries including Afternoon, Falls, and other unnamed creeks, as well as occasional spills, feed this reach. The flow regime does not support flow-dependent ORVs or water quality requirements; therefore this reach does not meet the definition of free-flowing.

Segment 2. Gorge Powerhouse to Ross Lake NRA Boundary (RM 94.18 to RM 83.1)

The flows are returned to the river at the Gorge Powerhouse, and the Skagit again becomes a powerful river. As mentioned in the Skagit River hydrology section above, the river flows are managed by the hydropower dams. While the flow regime is not natural, they are managed to protect and enhance significant fishery resources. Once reservoirs fill in spring, summer runoff in the river becomes more natural. This reach meets the free-flowing requirements of the WSR Act.

Tributaries

The headwaters of the tributaries of the Skagit River in this reach are located in the North Cascades National Park; their river segments enter Ross Lake NRA in their lower stretches and then drain into the Skagit River. The tributaries are fed by glaciers and contain primarily natural banks. There is one low-head dam and hydropower facility on Newhalem Creek which is not operated in the dry summer months to allow for protection of natural resources. The presence of a low-head dam does not automatically bar a river segment from inclusion in the WSR system. This diversion was found to not significantly impact the free-flow character of the river system. The other tributaries are free of dams and have limited human made features such as rip-rap and bridge crossings. Therefore, all of the tributaries of the Skagit within the study area were found to meet the free-flowing requirement of the WSR Act.

Outstandingly Remarkable Values

The second criteria that a river must meet to be eligible for inclusion in the WSR System is that it must possess one or more Outstandingly Remarkable Values (ORVs). The Interagency Wild and Scenic Council's technical report, "The Wild and Scenic River Study Process", provides guidance on evaluating eligibility and identifying ORVs. This is the current guidance used by all four agencies that make up the council – the NPS, Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS), and USFS; this report adheres to this guidance as well.

An ORV is defined as a river-dependent feature that is unique, rare, or exemplary at a comparable regional or national level. Typically, a "region" is defined on the scale of an administrative unit, a portion of a state, or an appropriately scaled physiographic or hydrologic unit. To be considered river-dependent, a value must be located in the river or on its immediate shorelands and contribute substantially to the functioning of the river ecosystem or owe its location or existence to the presence of the river. A determination of whether or not a river area contains ORVs is based on the professional judgment of the interdisciplinary study team utilizing criteria set forth in the WSR Interagency Council's technical paper.

Fish

The Interagency WSR Council's guidance for outstandingly remarkable fish resources are:

- Fish values may be judged on the relative merits of either fish populations or habitat – or a combination of these river-related conditions.
- Populations: The river is nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed or candidate threatened endangered or sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.
- Habitat: The river provides exceptionally high quality habitat for fish species indigenous to the region of comparison. Of particular significance is habitat for wild stocks and/or federal or state listed or candidate threatened endangered or sensitive species. Diversity of habitats is an important consideration and

could, in itself lead to a determination of outstandingly remarkable.

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, and several racial sub-groups or stocks. These include six Chinook stocks (spring, summer, and fall), pink salmon, coho salmon, chum salmon, and sockeye salmon; summer and winter run steelhead; sea run cutthroat trout; and Dolly Varden and bull trout. Of these stocks, all season-specific Chinook, sockeye, coho, and steelhead species are under review by state and federal agencies for potential listing under the Endangered Species Act. The Skagit is also one of the few rivers, in the lower 48 states, supporting a natural fishery. The system's fishery produces an average of 2,210,000 anadromous fish each year. Of this number, about 500,000 return to spawn; the balance is harvested by commercial and sport fishermen or by natural predators in the Pacific Ocean. These numbers of fish represent a significant percentage of the Puget Sound anadromous fish harvest (approximately between 20 percent and 30 percent).

The study reach of the Skagit River provides some of the most important salmon and steelhead spawning habitat in the Skagit River basin. This section is highly conducive to the migration, spawning and rearing of both anadromous and resident fish. Factors contributing to the high-quality water in the Skagit include high dissolved oxygen content, relatively low nutrient level, low bacterial content and relatively cool temperatures.

Endangered Species Act Listed Species

Three species of fish are listed under the federal Endangered Species Act in the Skagit system: Chinook salmon, bull trout, and steelhead trout.

Chinook Salmon - The Puget Sound Chinook Salmon Evolutionarily Significant Unit was listed as a threatened species on March 24, 1999 by the National Marine Fisheries Service under the federal Endangered Species Act. Chinook salmon stocks originating from the Skagit River have been in a long-term decline. Chinook catches in the Skagit terminal area have declined since at least 1935; ranging from 40,000 to 50,000 in the 1930s, dwindling down to annual catches of a few thousand or even hundreds during the 1990s. Return/spawner rates have been below average since brood year 1983. Since about 1984, upper Skagit summer Chinook have made up

an increasing percentage of the total escapement. Prior to 1984, approximately 60 percent of the summer and fall production unit escapement was comprised of upper Skagit summer Chinook, yet, since that time, upper Skagit summer Chinook have averaged about 75 percent of the total summer and fall production unit escapement.

This section of the Skagit River primarily supports all fresh water life history stages (egg, fry, juvenile rearing, and adult spawning) of one of the six separate Skagit Chinook populations (upper Skagit summer Chinook). Upper Skagit River summer Chinook spawn in the Skagit main-stem and its tributaries upstream of the Sauk River, primarily from September through early October. Genetic analyses have shown that upper Skagit summer Chinook is significantly differentiated from other Skagit Basin Chinook populations. Along with the main-stem Skagit, Goodell Creek provides critical habitat for Chinook salmon.

Bull Trout - The Coastal Puget Sound Distinct Population Segment of bull trout was listed as a threatened species under the Endangered Species Act on November 1, 1999 by the U.S. Fish and Wildlife Service. The Puget Sound Management Unit consists of eight core areas, each supporting one or more local populations of bull trout and their habitat. The Coastal-Puget Sound Distinct Population Segment of bull trout occurs in a unique ecological setting because it supports the only known anadromous forms of bull trout in the contiguous United States.

This section of the Skagit River is part of the Lower Skagit core area and supports bull trout that exhibit anadromous, fluvial and resident life history patterns. Three local populations (Bacon Creek, Goodell Creek and Newhalem Creek) spend a portion of their lives in this section of river. The population trend of the lower Skagit bull trout is stable to increasing. In addition to the main-stem, Goodell Creek and the lower portions of Alma and Newhalem Creek provide critical habitat for bull-trout.

Steelhead Trout - The Puget Sound Distinct Population Segment of steelhead was listed as a threatened species under the federal Endangered Species Act on May 11, 2007 by the National Marine Fisheries Service.

This section of the Skagit River supports all fresh water life history stages (egg, fry, juvenile rearing, and adult spawning) of both summer and winter

steelhead. In 2002 the Main-stem Skagit/tributaries winter steelhead was rated as depressed due to a long-term negative trend in escapements since 1992 and a short-term severe decline in 2000 and 2001.

Conclusion

This section of the Skagit River drainage is one of the few remaining river systems in the contiguous states which support significant numbers of all five species of salmon, two species of trout, and two species of char. It is one of the most important river systems in Washington for salmon. The three federally listed species: Chinook salmon, steelhead trout, and bull trout use this section for spawning and rearing. In addition to the main-stem, Goodell Creek is important for salmon and bull trout. The quality of the habitat, abundance and variety of wild anadromous and resident fish, and the presence of three federally listed species in this section of the Skagit River and Goodell Creek contribute to the determination of ORV with regard to “fish”.

The fishery habitat and use is limited in the other tributaries due to the steep terrain and barriers present, therefore “fish” was not found to be an ORV for the remaining tributaries.

Wildlife

The Interagency WSR Council’s guidance for outstandingly remarkable wildlife is:

Wildlife values shall be judged on the relative merits of either terrestrial or aquatic wildlife populations or habitat - or a combination of these conditions.

- Populations: The river or area within the river corridor contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species

considered to be unique, and/or populations of federal or state listed or candidate threatened, endangered and sensitive species. Diversity of species is an important consideration and could in itself lead to a determination of outstandingly remarkable.

- Habitat: The river or area within the river corridor provides exceptionally high quality habitat for wildlife of national or regional significance, or may provide unique habitat or a critical link in habitat conditions for federal or state listed or candidate threatened, endangered and sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Surrounded by several million acres of designated wilderness, the Skagit River corridor provides essential habitat for a diverse array of wildlife species. Over 60 species of mammals, 125 bird species, 12 amphibians, and four reptile species inhabit the study segment and corridor. These lands are home to animals that require large tracks of land to survive, such as grizzly bears and gray wolves.

The Skagit River corridor, with its abundance of spawning anadromous fish and mild climate, hosts the largest concentration of over-wintering bald eagles in Washington.

With its broad hardwood floodplain of black cottonwood, red alder, big leaf maple and several species of willow, the Skagit River supports bird species rare elsewhere in western Washington such as veerys, Nashville warblers, American redstarts, and lazuli buntings.



The Skagit River watershed is an important basin for salmon. Pink salmon swimming in Goodell Creek.



Kids get a close look at sockeye salmon.

Endangered Species Act Listed Species:

Within the Skagit River corridor, two mammal species are listed under the federal Endangered Species Act. These include the “endangered” gray wolf (*Canis lupus*) and the “threatened” grizzly bear (*Ursus arctos*). Two bird species, marbled murrelet (*Brachyramphus marmoratus marmoratus*) and northern spotted owl (*Strix occidentalis caurina*), are both listed as “threatened”. There is also one ‘Candidate’ species, the fisher (*Martes pennanti*). Additionally, two ‘monitor’ species, both recently delisted, include bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*). Harlequin ducks are also listed as a State Species of Concern.

Gray Wolf and Grizzly Bear - These two species were listed on March 11, 1967; the gray wolf was listed as ‘endangered’ and the grizzly bear as ‘threatened’. Both species required large tracks of undisturbed land to meet their ecological needs. Small numbers of gray wolves persist within the North Cascades, as evidenced by annual observations. The Skagit River corridor is within the North Cascades Grizzly Bear Recovery Zone and provides important spring foraging habitat for this species. The current grizzly population estimate for the North Cascades is believed to be less than 35 individuals.

Marbled Murrelet - The U.S. Fish and Wildlife Service listed the murrelet as a ‘threatened’ species on October 1, 1992. USFS surveys, conducted in the early 1990s, documented murrelets nesting in suitable habitat within the Skagit River watershed. Baseline surveys are currently being conducted in the Skagit River and preliminary results suggest murrelets are using the area.

Northern Spotted Owl - Listed as ‘threatened’ on June 26, 1990, the Northern Spotted Owl occupies mature/old-growth Douglas-fir / western hemlock forests that have multi-layered, multi-species canopies with moderate to high canopy closure. Surveys completed in 1996 by National Park Service staff documented five owl activity sites within the upper Skagit River reach. Newhalem Creek is home to two of these sites.

Bald Eagle - This species was delisted in July 2007. Occupied nests are now being monitored by federal and state agencies to ensure that the post-delisting monitoring plan goals are met and the species continues on its recovery path.

The Skagit River has one of the largest wintering bald eagle concentrations in the contiguous states. Eagles arrive in November to take advantage of the numerous spawning salmon using the Skagit. The bald eagles feed on the carcasses of salmon which die after spawning. Mild winter weather enables these eagles to continue using this area throughout the winter. They depart the Skagit River for the breeding grounds in early March.

Servheen (1975) documented the Skagit River as the most important wintering habitat for bald eagles in the continental United States. The Nature Conservancy and the NPS have monitored eagle use of the upper Skagit River since 1978. Eagle use of the river peaked in the early 1990s and has been stable since that time. The upper Skagit River continues to be an important wintering resource for this species. In addition to the main-stem, bald eagles also use the tributaries where salmon are present to forage and for night roost habitat.

Peregrine Falcon - Bjorklund (1984) surveyed suitable habitat within the Skagit River watershed. While he surveyed many highly suitable areas of breeding habitat, he did not observe any peregrines during the breeding season. Peregrines have recovered dramatically over the past two decades and were removed from Endangered Species Act protection on August 25, 1999. Washington Department of Fish and Wildlife biologists, conducting surveys of breeding habitat over the last several years, have documented four active eyries along the upper Skagit River.

Other Species of Interest

Harlequin Duck - The harlequin duck is a medium size duck who breeds on fast-flowing streams and winters along rocky coastlines in the crashing surf. It is federally listed as a species of concern and is found in the tributaries of the Skagit River watershed, including Goodell and Newhalem in this reach of the river.

American Dipper - The American dipper is North America’s only truly aquatic songbird. It catches all of its food underwater in swiftly flowing streams by swimming and walking on the stream bottom. The American dipper is found in the Skagit River Watershed and prefers the tributaries, particularly Goodell and Newhalem in this river reach.

Black Swift - The black swift is the largest of Washington’s swifts. Its nests are often located behind waterfalls or on damp cliffs, where the

environment is dark, wet, steep, and inaccessible to predators, and which provides the swifts with an unobstructed flyway to approach the nest. This highly specialized nesting habitat results in patchy distribution of Black Swifts. They eat insects and forage in the open sky over mountainous areas or cliffs. The North Cascades NPS Complex contains one of the greatest population concentrations of black swifts in the contiguous states. It is believed that one or two pairs may nest in the Big Devils waterfall on unnamed creek #1851.

Species that Breed in Skagit River System

There are also a number of species that breed in the cottonwood overstory in Skagit River system that are otherwise rare in Western Washington. This includes American Redstart, Veery, Lazuli Bunting, Nashville Warbler, and Red-eyed Vireo.

Conclusion

The upper Skagit River corridor has one of the largest concentrations of bald eagles in the contiguous states. In addition, the quality and abundance of cottonwood overstory habitat make it possible for several other species to breed in western Washington (American Redstart, Veery, Lazuli Bunting, Nashville Warbler, and Red-eyed Vireo) where they are otherwise rare or not found at all. Goodell and Newhalem Creeks are important tributaries in Western Washington for a diversity of wildlife species including the harlequin duck and American dipper. Therefore, “wildlife” is deemed to be an ORV in this segment of the Skagit River, Goodell Creek, and Newhalem Creek.



The Skagit River has one of the greatest concentrations of bald eagles in the contiguous United States. They spend winters here using the spawning salmon as a food source.

The study section of the upper Skagit River also provides essential habitat for a diverse array of wildlife including four listed and one candidate species. However grizzly bear, gray wolf, marbled murrelet, northern spotted owl, and peregrine falcon are not river-dependent; therefore are not ORVs.

Geology

The criteria used by the interagency WSR council states:

The river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, or unique to the region of comparison. The feature(s) may be in an unusually active stage of development, represent a “textbook” example, and /or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, and other geologic structures).

The North Cascades Mountains, a relatively young range, are some of the most rugged in North America. Ice age glaciers left a legacy of jagged peaks, deep valleys, and craggy skyline profiles throughout the northern Cascades. Alpine glaciers and much larger Cordilleran ice sheets took turns shaping the watershed, with local alpine glaciers having the largest effect on the landscape. The history of the Skagit River is unusual in that geologists believe the upper river once flowed north to the Fraser River, before being captured by the lower river and draining into Puget Sound. Continental glaciers flowing south out of Canada led to the elimination of a regional divide and the stream capture resulting in the Skagit River reversing its direction. This process created the spectacular Skagit River Gorge and exposed rocks formed deep beneath the surface. Further evidence of this process in the form of gravel terraces can be found downstream of Gorge Dam. The Skagit may be a classic example of how other large rivers in the region formed, including the Columbia, Okanagan, and Fraser River systems.

Several large landslides have impounded the Skagit River in the area between Damnation and Bacon Creeks. The largest of these is the Damnation Creek landslide, which blocked the river from about 8,000 to 6,000 years ago, creating Lake Ksnea. Volcanic ash from the eruption of Mt. Mazama filled the lake Ksnea basin to thickness of forty feet. The landslides represent a unique opportunity to study slope instability as related to river erosion. Macrofossils held in deposits from landslide-dammed Lake Ksnea

represent a record of environmental changes from the distant past. Shovel spur rapids (also known as The Portage) occurs where the Skagit River cuts through the dam formed by the Damnation Creek landslide.

The Skagit River drains the most glaciated watershed of its size in the lower 48 states, containing more than 300 active glaciers. The glaciers impart a unique summer color to the river, as well as drought protection during the dry summer months. Glaciers also feed waterfalls that roar all year, unlike many parts of the Cascades, Sierras and Rocky mountains without glaciers where waterfalls are silenced after reservoirs of melting alpine snow are exhausted during summer warmth. High summer flows attract river recreationists as well as fish.

The Skagit River above Bacon Creek contains outstanding examples of alpine scenery created by the activity of glaciers. Spectacular glacial horns, arêtes, cirques and hanging valleys can be found in the gneiss and granite bedrock of the upper Skagit, particularly in Goodell Creek which includes the southern Picket Range and Newhalem tributaries.

Conclusion

The Skagit River watershed contains many exceptional geologic resources that make them an ORV including:

- the most glaciated river system in the lower 48.
- examples of glacial processes including glaciers, cirques, horns, arêtes, and hanging valleys, particularly in Goodell Creek.
- notable geologic history, particularly how the river once flowed northward and the erosional processes at Damnation creek which created this segment's river rapids, also contribute to the geologic exceptional characteristics.

Prehistoric Resources

The Interagency WSR Council's criteria states:

The river or area within the river corridor contains a site(s) where there is evidence of occupation or use by Native Americans. Sites must have unique or rare characteristics or exceptional human interest value(s). Sites may have national or regional importance



Snow-capped Pinnacle Peak also known as the "Chopping Block" is part of the rugged and remote Picket Mountain Range.

for interpreting prehistory; may be rare and represent an area where a culture or cultural period was first identified and described; may have been used concurrently by two or more cultural groups; or may have been used by cultural groups for rare or sacred purposes. Many such sites are listed on the National Register of Historic Places, which is administered by the NPS.

This reach of the Skagit River possesses abundant evidence of human use spanning at least the last six millennia. The Skagit River and its tributaries were important to prehistoric people. Goodell and Newhalem Creeks in particular were important travel routes into the mountains. Twenty-two total archeological sites that have been inventoried along the river segment include nineteen pre-contact period sites and three historic period sites. At historic contact, this reach of the Skagit River was the traditional home of the Miskaiwhu band of Upper Skagits. The significance of the archeology along this reach should not be underestimated because bands like the Miskaiwhu, who dwelled up-river, in the remote interior distant from saltwater, are the most poorly documented in ethnohistoric records. Archeological investigations, however, help to correct this information void by documenting the long history of Upper Skagit bands' subsistence, settlement, and land use in the mountainous interior.

Two of the nineteen archeological sites have been formally determined to be eligible for listing on the National Register of Historic Places at local and state levels of significance. The two sites are Newhalem Rockshelter (45WH477) and Goodell Raft Launch (45WH64). Both of these sites are protected from vandalism and flooding by several hardening and armoring stabilization techniques; and both are open to public visitation and appreciation for the history they reflect and preserve.

Newhalem Rockshelter, located a short distance upstream from the mouth of Newhalem Creek, preserves evidence of hunting, butchering, and processing of animal and fish resources, particularly native mountain goats, over the last 1500 years. Currently the rockshelter remains the only excavated and evaluated rockshelter in northwest Washington State and it is one of the few archeological sites in the Northwest preserving evidence of mountain goat exploitation. The name Newhalem means 'goat-snare' because Skagit Indians drove goats off mountains and into the snares or traps located near

the creek. Newhalem Creek was a travel corridor for Native Americans who moved from Cascade Pass in the mountains to the Skagit River. The shelter was likely located here due to its proximity to the creek. Salmon remains were also found in this rockshelter.

Goodell Raft Launch, located on the banks of the Skagit River just downstream of Goodell Creek, preserves a 600 year record of Skagit Indian fishing history. This area was known for salmon and trout fishing and it was also a launching point for canoe travel. Located just downstream of Newhalem Gorge which was thought to be impassible by salmon and canoes, this site served as the head of fishing opportunities and canoe travel. The remains of several heating fires used to dry salmon, along with abundant charred salmon bones and stone tools, are stratified between Skagit River flood sands and extend to a depth of two meters below the ground surface. This site is significant for its contribution of new information about Washington State prehistory; presence of salmon remains, head parts, and teeth; and the long history and number of different time periods of use. Salmon remains have been uncovered in coastal areas, but it is unique to find remains this far up a river segment. Since salmon reach sexual maturity when they spawn and their teeth are enlarged at this time, it is very unusual to find salmon teeth. Given the quantity and quality of salmon remains, it may be possible to use the remains to distinguish among native species. This site is also unique as it represents the first site where the full manufacturing sequence of soapstone from river pebble to decorated object has been found in a single site. This site is currently used as a boat launch, continuing the long history of river-use.

It is important to note that this entire reach of the Skagit River has not been surveyed for cultural resources, particularly the roadless eastern side of this valley segment. Based on both the park's archeological predictive model and the empirical results of previous surveys, it is highly probable that more significant archeological sites remain to be found and assessed in the river corridor segment which could be eligible for the National Register of Historic Places. The NPS also intends to nominate the area of the Skagit River near the mouth of Goodell and Newhalem Creeks as a National Historic District under the National Register of Historic Places.

Conclusion

Pre-history is an ORV for the Skagit River because of the uniqueness of the Goodell Creek site which represents six hundred years of river-use and is the only river site where salmon remains from prehistoric use including teeth and head parts have been found in an interior river segment. The Newhalem rockshelter, an eligible National Register site, is also regionally unique and one of the few rockshelters that have been excavated in Washington State. Newhalem Creek was a travel corridor for Native Americans moving from Cascade Pass to the Skagit River. Salmon remains were found at the rock shelter. Therefore the Skagit River and Newhalem Creek were found to have “pre-history” as an ORV.

History

The Interagency WSR council’s criteria states:

The river or area within the river corridor contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare, unusual, or one-of-a-kind in the region. A historic site(s) and/or feature(s) in most cases is 50 years or older. Many such sites are listed on the National Register of Historic Places.

While explorers, fur traders, and surveyors were the first European Americans to view the upper Skagit River watershed, the first large non-native immigration into the valley came in 1877 on rumors of gold. Miners soon learned that finding the gold was the least of their problems. Difficulties in getting men and equipment in, and getting ore out, negated any potential profits. A few hardy settlers managed to establish simple homesteads in the narrow valleys. In the early 1900s, a second gold rush saw some extraction and processing operations, but these never proved profitable. Neither miners nor farmers could make much of a living along the Skagit.

The most profitable mining operations along the upper Skagit River were for talc or soapstone. The Rainbow Talc Mine was the earliest talc mine in the area. Located on the north side of the Skagit River, it used a number of ledges to extract talc and send it down river in barges. The Skagit Talc Mine was located on the south side of the river east of the Rainbow Talc Mine. The Skagit Talc mine provided talc for walkie-talkies used in World War II. This mine produced refractory bricks, finely ground powder used in cosmetics and fertilizers, and also single blocks, including a single block that formed a bathtub for a wealthy Seattle industrialist. The

products of the talc mines were important for the industry of the Northwest, including logging and ship building. Talc was used as fire-resistant material to make the ovens used by the logging industry and to mark steel used to build ships. Crystal quartz was also profitably mined on the north side of the river in the early 20th century. Volcanic ash was removed by box car loads in the early 20th Century from Damnation Creek.

There were at least six homesteads located on the upper Skagit River between Bacon Creek and Newhalem. Below Bacon Creek the river valley narrowed noticeably and good bottomland was virtually non-existent. Located on high ground above the Skagit River, the present-day town of Newhalem was first developed by N.E. Goodell, an entrepreneur from Portland, Oregon who set up a store for miners in 1879. As the final outpost of civilization before the mountain wilderness, the post rapidly became known as the place to obtain lodging, or to exchange gold for food and supplies. In the 1890’s, Ruby Creek had a population of 3,000 to 5,000 people, drawn by the promise of gold. Getting to the upper Skagit was very challenging and required use of a number of different methods of travel – boat, horse, and foot. Steamwheelers and canoes would travel up to the portage where the main rapids on the Skagit begin. From there, miners developed a hazardous route, the



This trail leads to an overlook of the Newhalem Rockshelter which was used by Native Americans over 1500 years ago.

Goat Trail that traveled from the portage to the mines up at Ruby Creek. The trail, which was chiseled out of granite alongside the cliff, demonstrates the harsh conditions that miners and settlers endured. The most dangerous section known as Devil's Elbow, required climbing up a 40 foot cliff on a ladder. The adventure to Ruby Creek took three days; while today the route can be driven in a half-hour. The railroad was constructed in the 1920s allowing a safer route to the upper Skagit. In 1897, much of the upper Skagit watershed lands became part of the Washington National Forest Reserve.

SCL Superintendent James Delmage Ross had seen the hydropower potential of the Skagit River as early as 1912. In 1917 SCL received a permit from the Department of Agriculture for a dam at Diablo Canyon, a six mile tunnel, and a powerhouse. Power was necessary to construct this permitted project, and Newhalem Creek was an ideal location for a small hydropower facility that could generate electricity for the larger effort. The first hydropower project to be constructed in the watershed was a small dam on Newhalem Creek that was connected by a tunnel to a powerhouse. A small Westinghouse generator was installed and in August 1921, produced power for the dam, tunnel and powerhouse construction project. A railroad was built from Rockport to Gorge Creek, a distance of 25 miles, because Ross, concerned about encroachment into the valley by private power companies, was reluctant to build a road. Between 1924 and 1952, SCL built three dams on the river; Gorge Dam was completed in 1924, Diablo Dam in 1936, and Ross Dam in 1952. Gorge Dam was later replaced with a higher dam in 1961. These dams are an important part of SCL's hydropower portfolio, producing about 25 percent of the Seattle's power needs.

Two SCL company towns were established to provide residences and communities for the hundreds of SCL employees. The company towns still exist today within the boundaries of Ross Lake NRA. The Skagit Hydroelectric and Newhalem Hydroelectric Projects are on the National Register of Historic Places as significant historic districts. The project was recognized for its innovative design and the towns Newhalem and Diablo represent rare examples of working company towns under municipal ownership. SCL has also been providing tours of the project since its inception, with thousands of people enjoying tours every year. The tours highlight the Skagit Hydroelectric Project and the Ladder Creek falls and garden. Historically, Ross collected trees and

plants from around the world and planted them here. A trail was built leading visitors through the garden and close-up view of the falls.

While the idea of a North Cascade National Park was first proposed as early as 1906, the North Cascades Complex – including North Cascades National Park, Ross Lake NRA, and Lake Chelan NRA - became part of the National Park System in 1968 after a number of compromises between interests representing recreation, conservation, hydropower, and highway development.

Exploration of a highway crossing the North Cascades was first appropriated in 1895. However, the North Cascades Highway, which runs through Ross Lake NRA crossing the Cascades and connecting into Eastern Washington, was not opened until 1972. The pass still closes every winter due to high snow levels.

In the 1960's, SCL made plans to raise Ross Dam to accommodate growth in the Seattle area. Construction of a high Ross Dam would have flooded more of Canada. While at first the idea was accepted, Canadians began to object to the loss of the upper Skagit River, internationally known for trout and fly-fishing. A compromise was reached whereby SCL agreed to drop plans to raise Ross Dam in exchange for the right to buy electric power from British Columbia. A treaty between the two governments was signed in 1984 and extends to 2066.

Conclusion

The history of the upper Skagit River valley was important for mining, hydropower development, recreation and conservation. The talc mines in particular are unique and rare to the region, but not directly river-dependent. The Skagit River and Newhalem Creek Historic Districts are river-dependent and nationally exemplary. For this section of the Skagit River and its tributaries, the town of Newhalem, Ladder Creek Falls, and the Newhalem Dam and Powerhouse are all elements of this historic district. Due to the national uniqueness of the Skagit River and Newhalem Creek Historic Districts, history was found to be an ORV for the Skagit River and Newhalem Creek. Ladder Creek Falls, located just above the Gorge Powerhouse on Ladder Creek, was an important part of the historic Skagit River tours. Given its close proximity to the main-stem and its relationship to the Skagit River Historic District, Ladder Creek Falls is considered a contributing factor in determining history to be an ORV for the

main-stem Skagit River. History was considered locally significant for the other remaining tributaries and not found to be an ORV.

Recreation

In order to be considered an ORV, the recreational resource of a river must meet one of the following:

Recreational opportunities are, or have the potential to be, unique enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the region. Visitors would be willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but not be limited to, sightseeing, wildlife observation, photography, hiking, fishing, hunting and boating.

- Interpretive opportunities may be exceptional and attract, or have the potential to attract, visitors from outside the region of comparison.
- The river may provide, or have the potential to provide, settings for national or regional usage or competitive events.

The upper Skagit River has been a long-time favorite of fishermen, rafters, and outdoor enthusiasts. With the creation of the North Cascades National Park Service Complex in 1968, that interest increased as the area became better known both regionally and nationally.

Boating

The Skagit River provides a year-round boating opportunity. The most popular times are in August and September; however, scenic winter trips to view bald eagles are also popular. The allure of the Skagit River is its gentle flows and the spectacular scenery; a perfect environment for the first-time rafter or for families with children. The Skagit River is popular with families because of the wild nature of the surroundings, but the generally calm water flow with mild rapids. The river is rated class II-III, with most of the rapids occurring in a short section along the S curves (a.k.a. The Portage). This river segment is often used as a training ground for beginners and experts including the U.S. whitewater team. The Skagit River offers a unique beginner-intermediate run in Washington State which has more opportunities for advanced boaters. The mountain scenery and abundance of waterfowl make the Skagit an attractive nature experience. The bald eagles,

present during the winter months, attract visitors seeking eagle tours. The 11-mile river run starts at Goodell Creek Campground site and concludes at the Copper Creek take-out site. Some boaters continue down the Skagit crossing into the wild and scenic stretch through Mount Baker-Snoqualmie National Forest and private land below Bacon Creek. In addition to the Goodell put-in and Copper Creek take-out sites, there is a boat-in only access site at Damnation Creek. This scenic location, along the river's edge, has been a popular stopping point for rafting parties.

The stable summer flows of the Skagit have provided a consistent opportunity for these companies to operate. As other popular white-water rivers in Washington dry-up mid-summer ending the rafting season, commercial rafters and private boaters come to the Skagit.

Fishing

The Skagit River is home to seven species of anadromous fish (five salmon species plus steelhead and cutthroat trout) and freshwater trout and char. Some fishing occurs in Ross Lake NRA, but fishing experiences in the upper Skagit River are typical of other protected areas in Washington State.

Hiking & Climbing

Several short trails offering hiking and educational opportunities are concentrated in the Newhalem area. Trails include: Sterling Munro Trail (330'), River Loop Trail (1.8 mile), "To Know a Tree" Nature Trail, (0.5 mile), Rockshelter Trail (0.75 miles), Ladder Creek Falls (0.6 mile), and "Trail of the Cedars" Nature Walk (0.3 mile). These trails follow the river or one of its tributaries and offer recreational and educational day-trip opportunities.



Rafters at the 'S' curve rapids on the Skagit River.

Longer trails/routes are found in the Goodell Creek, Newhalem Creek, and Thornton Creek watersheds. A trail along an old abandoned logging road follows Goodell Creek and its tributaries; this route is popular among mountaineers climbing the Picket Range. The lower portion of this route is also used by hikers and campers at Upper Goodell Group Campground. A view of the 2003 Goodell Creek landslide can be seen about one-mile up the river. Another trail follows an old abandoned logging road along Newhalem Creek for about four and one-half miles. This relatively flat trail ends at a backcountry campsite and is not popular or regularly maintained. The most popular trail in the study area is up the Thornton Creek drainage to Thornton Lakes. This five and two-tenths mile trail occasionally crosses Thornton Creek and provides mountain views and access to three aesthetic mountain lakes. A side route then leads to Trapper Peak, with views of the rugged Picket Range.

Camping

Newhalem Creek Campground is the largest car camping campground (130 individual sites and several group sites) in the study area and is located on the banks of the Skagit near Newhalem Creek. The campground is located near the town of Newhalem and the NPS Visitor Center, and interpretive trails provide day-trip opportunities for campers. The Goodell Creek Campground, situated in the forest on the Skagit River near the confluence with Goodell Creek, also provides car camping opportunities featuring 21 river-side campsites with scenic views. A picnic shelter and toilet are also available. Additional group campsites are found at Upper and Lower Goodell Group Campgrounds. Backcountry camping opportunities are provided at Thornton Lakes and Newhalem Creek.



Damnation Creek boat-in access site.

Sight-Seeing

Sightseeing or driving for pleasure occurs along the North Cascades Scenic State Highway 20. In 1984, the stretch of the North Cascades Highway through the mountains was designated a U.S. Forest Service National Forest Byway and Washington State Scenic Byway. Drivers stop at overlooks to view the Skagit River and surrounding scenery.

Hunting

Some hunting also occurs in this area, primarily for deer and bear.

Canyoneering

Some canyoneering, an adventure sport that involves rappelling down creek canyons, occurs in Thornton Creek and Falls Creek. Little is known about the quality of these opportunities in the upper Skagit River Watershed.

Conclusion

The Skagit River is a regional attraction for boaters and nature lovers. Gentle flows and the spectacular scenery provide a perfect environment for the first-time rafter or for families with children. The whitewater boating run provides a high quality beginner-intermediate run. This is unique to Washington State which has many high quality advance runs, but limited beginner-intermediate runs. The mountain scenery and abundance of waterfowl make the Skagit an attractive nature experience. The reliability of flows in this reach throughout the summer, while many other rivers are too low, adds to its popularity. The Skagit River also provides a unique whitewater training area. Due to all of the reasons above, whitewater boating was found to be an ORV on the Skagit River.



Trail of the Cedars Bridge.

Other recreational experiences in the upper Skagit River and its tributaries were either not directly river-related or were found to be typical of other recreational experiences in protected areas in Washington State; therefore they were not found to be ORVs.

Scenery

Under the Interagency WSR council's guidelines, the criteria for an outstandingly remarkable rating are:

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors — such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions are viewed — may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment length.

The Skagit River watershed is known for its beautiful alpine scenery. Visitors enjoy views of rugged mountains, glaciers, lush forests, spawning salmon, soaring eagles, and rushing waterfalls. The water is sparkling clear with a blue-green color caused by the abundance of glaciers feeding the river.

The lands bordering the Skagit River in this reach are surrounded by the Cascades Mountains, sometimes referred to as the “American Alps.” They are managed by NPS and SCL and largely undeveloped, providing for a scenic river float featuring views of mountain glaciers and perennial glacier-fed waterfalls, pristine water, and the only remaining old growth forest along the entire main-stem of the Skagit River.

The North Cascades Highway parallels the river for the entire stretch and can be seen from the river at times when the buffer between the two narrows. In addition, two transmission lines also parallel the river, crossing the main-stem three times and all the north-side tributaries, interrupting natural views.

Goodell Creek and Newhalem Creek are the two creeks that drain u-shaped valleys in the study area; other tributaries drain v-shaped valleys with steep gradients. Goodell Creek begins in the heart of the Picket Range; one of the most rugged, dramatic, and remote ranges in the lower 48. Glaciers from the Picket Range feed this scenic cascading stream. Abundant wildlife and fish call this creek home

contributing to its scenic value. This dynamic creek is known as the ‘salmon headwaters,’ and salmon can be spotted in its crystal clear ponds. An informal route following Goodell Creek and its tributaries is one of the approaches for climbers accessing the remote Picket Range. The roaring sound of the flowing water is enjoyed from the campsites and trail along-side the creek, contributing to the aesthetic experience. Creek modifications, due to human impacts, are limited and concentrated in the lower half mile.

A cascading aesthetic waterfall, located about three-quarters of a mile from Newhalem Creek's mouth, is rated as one of the top 100 waterfalls in the northwest by the Northwest Waterfalls website and is one of the most scenic waterfalls in North Cascades NPS Complex.

The other tributaries in the study area have a high gradient, many beginning in the mountain ranges and then draining steep valleys before reaching the Skagit River. A number of waterfalls are found in the tributaries including Big Devils Falls, Granite Gorge Falls, Thornton Falls, Ladder Creek Falls, Ladder Creek Glacier Falls, and Newhalem Creek. While very scenic, these tributaries and waterfalls are similar to numerous other waterfalls and creeks found in the North Cascades NPS Complex and surrounding area.

Conclusion

The Skagit River is a beautiful scenic river with breathtaking views of mountains, forests, fish,



Hikers along the Goodell Creek route.

wildlife, and clear water. The beautiful clear water, riparian vegetation, waterfalls, mountain views, and wildlife viewing all contribute to make scenery an ORV for the Skagit River. 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. The Newhalem Creek waterfall, one of the best waterfalls in the North Cascades NPS Complex and rated as one of the top 100 waterfalls in the northwest, was found to be regionally unique and led to scenery being an ORV for Newhalem Creek.

Other tributaries were found to possess locally scenic features such as waterfalls, but these features were not found to be nationally or regionally unique, rare, or exemplary and thus not ORVs.

Eligibility Determination

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 and possess at least one ORV.

Ineligible River Segments

The Skagit River segment from Gorge Dam to Gorge Powerhouse does not meet the free-flowing requirement and therefore is ineligible. While meeting the free-flowing requirement, the remaining



Ladder Creek Falls.

tributaries were not found to possess any ORVs. This assessment was based on available information through staff knowledge and literature research. Varying information was available for these creeks, with most creeks lacking thorough surveys of natural and cultural resources. Creeks located on the south-side of the Skagit River are very difficult to access and in most cases little information was available for these creeks. Therefore, this assessment would be updated in the future if new information is found leading to a change in the analysis. The following streams were not found to possess any ORVs, and therefore are not eligible.

- Afternoon Creek
- Alma Creek
- Babcock Creek
- Copper Creek
- Damnation Creek
- Falls Creek
- Martin Creek
- Thornton Creek
- Sky Creek

and unnamed creeks

- #1826
- #1843
- #1849
- #1851
- #1853
- #1854
- #1857
- #1860
- #1865
- #1965
- #1966

Ladder Creek was also not found to be eligible. This creek is free-flowing and while Ladder Creek Falls is a contributing factor in the historic district of the Skagit River Hydroelectric project, a nationally unique historic resource, the falls is located near the mouth of the Skagit and is associated with the main-stem history ORV determination.

Classification

After determining the river's eligibility for inclusion in the WSR System, the next step is classifying the river into the appropriate category – wild, scenic, or recreational. Classification is largely based on the extent of human development at the time of designation. The three classification categories are defined in Section 2(b) as:

Wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic river areas - Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely undeveloped, but accessible in places by roads.

Recreational river areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

Elements of Classification

The Interagency WSR Council's guidelines identified water resource development, shoreline development, accessibility, and water quality as the criteria used to determine classification. Classification is an important distinction because it has a direct effect on how each designated segment is administered and whether certain activities on federally owned land within the boundaries are permissible. Classification grandfathers-in existing development, unless these land use activities are degrading the river's ORVs or water quality. Each classification permits existing development. Future developments that are compatible with the classification and carried out in an environmentally sound manner are also allowed.

Water Resource Developments

There are three hydroelectric projects on the Skagit River at Ross, Diablo, and Gorge Dams. All of these are upstream of the eligible segment (Gorge Powerhouse to Bacon Creek). There is also one small diversion dam located on Newhalem Creek that feeds the Newhalem powerhouse. The Newhalem project consists of a ten foot diversion dam, penstocks, and powerhouse. Flows are diverted from Newhalem Creek to the powerhouse and then returned to the Skagit River. The project has been in place since 1921 and was relicensed in February 1997. Minimum flows and ramping rates vary by different times of the year to protect fishery resources.

Shoreline Development

North Cascades Highway parallels the Skagit River and is a dominant feature on the landscape. Outside the road corridor, the lands surrounding the river are largely undeveloped, with most of the development concentrated above Goodell Creek (See Figure 4). There is only one small town along its banks, Newhalem, with approximately a dozen homes facing the river. There is also a sewage treatment plant that services the town of Newhalem located on the rivers' bank on the west side of the town site. Two powerlines operated by SCL parallel the river, crossing the north-side tributaries and main-stem three times. There are also four bridges spanning the river:

- (1) a vehicle bridge right below the powerhouse (RM 94.2),
- (2) a pedestrian bridge directly below the powerhouse (RM 94.12),
- (3) a pedestrian bridge in Newhalem (RM 93.75), and
- (4) a vehicle bridge to the NPS Visitor Center (RM 93).

An old bridge abutment is located at RM 86. The two primary boater access sites on the main-stem are Goodell Creek Campground and the Copper Creek take-out. There is also a boat-in only access site at Damnation Creek. Trails concentrated near the town of Newhalem follow the river for short distances. Two main campgrounds are also located along the river – Goodell and Newhalem. Goodell offers 21 river-side campgrounds; while the 130 Newhalem sites are primarily located away from the edge of the Skagit River. In this segment of the Skagit approximately 15 percent (three miles) of the shoreline is modified. This includes rip-rap along the north-side of the river.

The tributaries beginning in the rugged wilderness of the North Cascades Mountains are pristine, with limited shoreline modification concentrated in the lower portions. The North Cascades Highway does cross the north-side tributaries. Access roads also follow Newhalem Creek and Goodell Creek providing access to the lower stretches (See Maps 5 and 6). Two group campsites are located along-side Goodell Creek. Trails also follow Goodell Creek, Newhalem Creek and Thornton Creek. Shoreline modification of Goodell Creek is concentrated in the lower one-half mile. Shoreline modification of Newhalem Creek is concentrated in the lower one mile. There is also an old bridge crossing Newhalem Creek at river mile three.

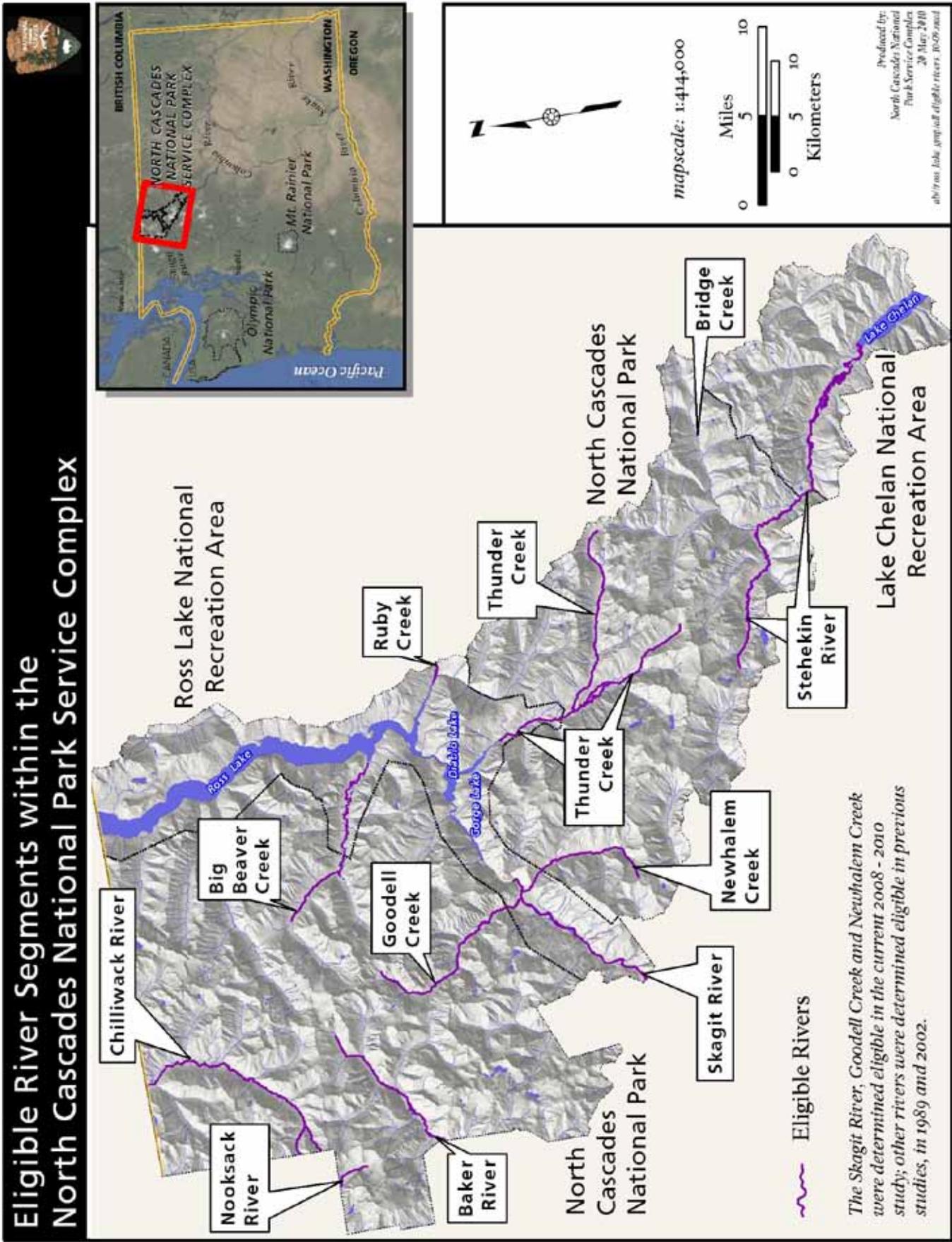


Figure 2. Eligible River Segments within the North Cascades NPS Complex

Accessibility

As mentioned above, the North Cascades Highway follows the Skagit River on its north-side and provides access to the river corridor following it the entire segment. Boat-in access is the primary way to get to the south-side of the river. The south-bank is undeveloped and represents the closest the wilderness boundary comes to the Skagit River. The main river/boating access sites are the Goodell Creek Campground put-in and the Cooper Creek take-out. The river can also be easily accessed in the Newhalem area. There are a few smaller spur roads that provide additional vehicle access to the north side of the river from the highway. In addition, one road crosses the Skagit to provide access to the Newhalem Hydroelectric project, Newhalem campground, and NPS visitor center on the south-side of the river. Established trails in the Newhalem area also provide access to the Skagit River and Newhalem Creek.

While the main-stem Skagit River can be readily accessed by vehicle, reaching its tributaries requires other means of travel. The North Cascades Highway does cross the north-side tributaries providing access to the mouth. A few spur roads and trails provide additional access to the lower portions of the tributaries. Access to south-side tributaries is limited to boat-in and walk-in, with the exception of the area around Newhalem Creek. Goodell Creek spur road provides access to two group campsites located in the lower half mile and an informal trail travels alongside the creek for approximately four and one-half miles. A trail on an old abandoned road also follows Newhalem Creek for about 4.5 miles.

Water Quality

The glacier-fed Skagit River watershed is known for its beautiful clear blue-green water and is often referred to as the “Emerald Skagit” and the “Magic Skagit.” Its tributary’s headwaters are high in the rugged mountains and glaciers of the area. In late summer these streams carry glacial rock flour that cloud the water and give it a blue-green color. The three hydroelectric dams upstream do have some impact on water quality by warming water and modifying nutrient loading processes; however, SCL manages the project and instream flow rates in a manner to meet the needs of fishery resources. In addition, SCL manages two sewage treatment plants for the towns of Diablo and Newhalem. These treatment plants are operated under the Washington Department of Ecology (DOE) “better

than secondary” standards, which represents a high water quality level. Overall, the Skagit River study segment has a relatively low nutrient level, low bacterial content, relatively cool temperatures, and high dissolved oxygen content which contribute to its high water quality.

DOE monitors the Skagit River’s water quality, with a station at Marblemount. In the DOE’s old classification system, the Skagit River was classified as AA – “extraordinary waters.” Under DOE’s new classification system, the Skagit River is protected for core summer salmonid habitat and extraordinary primary recreation contact. The core summer salmonid protection includes managing the water quality for salmon spawning, juvenile rearing, and adult-holding during the months from June 15 to September 15. The temperature is monitored to ensure the seven day average temperature does not exceed 16 degrees Celsius (60.8 degrees Fahrenheit). The extraordinary primary recreation contact is the highest standard under the DOE’s recreation standard. Under this standard fecal coliform levels must not exceed 50 colonies/100 ml.

Water quality for Goodell Creek is not monitored. The upper watershed is fed by glaciers and is considered pristine. The only impacts are from air-borne pollutants that fall as snow in the winter. Minor impacts from human features are concentrated in the lower half mile of Goodell Creek. Due to the natural condition of Goodell Creek, the water quality condition is considered to be high. The DOE listed Newhalem Creek as impaired in the 1990’s due to inadequate stream flow from the small diversion dam operated by SCL. However, upon relicensing in 1997, the operation was changed and the project is now subject to minimum instream flow requirements to protect fishery resources and is only operated about half of the year. The water quality of the creek is no longer considered impaired and the lower reach supports salmon and bull trout. Since the diversion is fairly small, water quality impacts downstream of the diversion are likely to be minor. Therefore Goodell Creek’s water quality is considered high with only minor impacts from the diversion, air-borne pollutants, and erosion from the road and trail use.

Preliminary Classification

Based on the criteria described above, the following classifications apply to the Skagit River and eligible tributaries (See Figure 3):

Skagit River

- recreational – Below the Gorge Powerhouse to Ross Lake NRA boundary

Goodell Creek

- wild – Headwaters to the north-end of the Upper Goodell Campground (river mile 0.5)
- recreational – North-end of the Upper Goodell Creek Campground (river mile 0.5) to the mouth

Newhalem Creek

- wild – Headwaters to upstream of the diversion dam (river mile one)
- recreational – Upstream end of the diversion dam (river mile one) to the mouth

SUITABILITY EVALUATION

The WSR Act defines suitability as an assessment of whether eligible river segments should be recommended for inclusion into the National WSR System. It provides the basis for an agency's recommendation to Congress. This suitability analysis utilizes guidance from the Interagency WSR Council and is primarily based on the following four 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 wild and scenic river designation with other potential uses of the river segments.
- The public's support for designation.

The report also outlines how the National Park Service intends to manage the river system.

The scope of this analysis includes the Skagit River below Gorge Powerhouse to the Ross Lake NRA boundary and its two eligible tributaries in this reach Goodell Creek and Newhalem Creek.

Characteristics that Make the River Segments Worthy of Designation

The Skagit River is a unique and exemplary river system both regionally and nationally. It was found to have a number of ORVs including: fish, wildlife, geology, pre-history, history, scenery, and recreation. In addition Goodell Creek and Newhalem Creek also are exemplary and possess a number of ORVs. Designation of this 11-mile main-stem segment and

key tributaries would extend the Skagit WSR System from the downstream end of the Skagit Hydroelectric Project to the town of Sedro-Woolley and would provide more opportunities for holistic watershed management of this river system.

Land Ownership, Uses, Zoning, and Restrictions

Land Ownership and Management

This segment of the Skagit River is located entirely within the Ross Lake NRA, which is managed by the NPS. The majority – 79 percent of the lands within the likely wild and scenic boundary – is owned by the NPS and the other 21 percent are owned by SCL. WSDOT also has a right-of-way for the North Cascades Scenic Highway. Goodell and Newhalem Creek corridors are nearly entirely owned by the NPS. The area is primarily used for recreation, natural resource protection, and hydroelectric operations.

SCL purchased their lands along the Skagit River when constructing the Skagit Hydroelectric Project and when considering development of the proposed Copper Creek Dam, which would have flooded this reach. The majority of the eligible river segments are outside of SCL's Federal Energy Regulatory Commission's (FERC) boundary. Today, SCL manages these lands primarily for wildlife and fishery management. In addition some of the lands are used for routine maintenance. SCL intends to keep these lands and continue to manage them as they are today. SCL's current management focuses on fish and wildlife resources which would be compatible with the WSR Act.

Since the Skagit River is navigable, Washington State also asserts jurisdiction and ownership over approximately 480 acres of the bed of the Skagit River below the ordinary high water mark.

County Zoning and Shoreline Management

The study area spans both Skagit and Whatcom Counties. The majority of the area in Skagit County is zoned as open space, with small sections between Copper Creek and the Ross Lake NRA boundary zoned as industrial forest or mineral resource overlay. However, mining and logging are prohibited in the Ross Lake NRA to protect its scenic character. Most of the shoreline in Whatcom County portion of the study area is zoned as conservancy land. In both

counties, any non-federal development projects within 200 feet of the shoreline need to undergo shoreline review and obtain a permit or exemption.

Opportunities and Limitations on Hydropower Development

The Federal Power Act prohibits FERC from licensing hydropower projects in National Parks or National Monuments. New hydropower projects licensed by FERC are allowed in National Recreation Areas, including Ross Lake NRA, unless adverse effects on federal lands would occur. The North Cascades NPS Complex's 1968 enabling legislation allows continued operation of the Skagit and Newhalem Hydroelectric Projects within Ross Lake NRA and any other projects authorized by FERC.

The Washington Park Wilderness Act of 1988 (Public Law 100-668) created Stephen Mather Wilderness, consisting of 642,332 acres of wilderness in the North Cascades Complex, of which 80,043 acres lie within Ross Lake NRA. This legislation also limited hydropower facilities in the Ross Lake NRA to the existing Skagit River and Newhalem Creek Hydroelectric Projects, as well as proposed Copper

Creek, High Ross, and Thunder Creek projects. Thus, all other hydroelectric projects are prohibited in the North Cascades NPS Complex.

Mining & Logging Restrictions

Currently, mining and logging are prohibited in the North Cascades NPS Complex. These prohibitions were in place to protect the scenic character of this area. These restrictions will continue to protect the proposed Skagit WSR Corridor.

Projects and Plans that are Enhanced, Curtailed, or Foreclosed Due to WSR Status

Suitability studies must assess the potential effects of WSR designation on the goals of tribes, non-governmental organizations, other local, state, and federal agencies, and the public. This determines what other potential uses of the river may occur in the foreseeable future and if WSR designation would benefit or conflict with these uses. This helps planners and managers decide which management action is best suited for the river and the public. This section discusses other relevant plans and projects and their compatibility with WSR designation.

WSR Water Resource Project Evaluation (Section 7)

The intent of the WSR Act is to preserve rivers from harmful effects of water resource projects. The WSR Act prohibits any new federally licensed hydropower dams on designated river segments. It also creates a process for evaluating/determining if other water resource projects have adverse impacts to the river and its special resources. This section describes that evaluation process, types of projects subject to this evaluation, and any known or likely projects in the foreseeable future that could be affected.

Projects that are subject to a Section 7 evaluation under the WSR Act have to be:

- federally assisted projects (undertaken, permitted, or funded by a federal agency) and
- located within the high water mark of a river bed

The baseline condition for all such analysis is the condition of the river and its resources at the time of designation. Continued operations of existing water resource projects would not trigger a Section 7 evaluation/determination. Generally, best practices involve conducting a river corridor reach analysis



Goodell Creek was found to be eligible for inclusion into the National WSR system.

to understand the channel geomorphology before implementing site-specific water resources projects. The following is a sample of the types of water resource projects that could potentially be affected by designating the Skagit River, Goodell Creek, and Newhalem Creek as wild and scenic rivers.

Dams and Hydropower Projects

In the 1970s, SCL had proposed to build a dam near Copper Creek that would flood the study reach section. These plans have since been abandoned. No other proposals of dams or hydropower facilities are known to exist in the foreseeable future. As mentioned above, the Washington Wilderness Act limited potential hydropower projects in this stretch of the upper Skagit River to include the existing Skagit River and Newhalem Creek Hydroelectric Projects as well as the proposed Copper Creek Dam. While there are no current proposals for dams in this reach, a wild and scenic river designation would prevent any new dams, hydroelectric projects, and related project facilities from being constructed in the study area in the future.

The continued operation of the existing hydroelectric projects would not trigger an evaluation/determination under the WSR act. Relicensing or amendments of these projects that involved changes to the operation or facilities would trigger this analysis. The baseline for this analysis would be the conditions of the river and its resources at the time of designation which includes the current operation of the hydroelectric projects. For projects upstream or on a tributary to a designated reach, the standard used in the evaluation is if the project would 'invade' (encroach upon or intrude) or 'unreasonably diminish' the rivers' resources. SCL is pursuing an amendment of the Skagit River Hydroelectric Project to develop a new Gorge tunnel. This project is not expected to affect the flows in the Skagit River.

Bank Stabilization

There are no known bank protection projects proposed in this reach. In designated WSR segments, federally assisted water resources projects need to be evaluated to ensure there are no adverse effects on the free-flowing character, water quality, and ORVs of the river segment. It is likely that bank stabilization projects will be proposed by the NPS, WSDOT, and/or SCL in the future to protect current infrastructure, fishery resources, recreation resources, or cultural resources. These projects would need to be evaluated to ensure no adverse impacts occur. Corridor reach

analyses that evaluate the geomorphology of the river would help inform location, size, and type of appropriate bank stabilization for the river segments. Bioengineering and natural protection methods are encouraged in WSR reaches. Guidance on important resources to protect, process for determining bank stabilization, and type of acceptable methods would be outlined in the Comprehensive River Management Plan.

Road and Bridges

The NPS proposes to replace the existing bridge over the Skagit River, near Newhalem Creek and providing access to the visitor center, with an expanded bridge that would accommodate two-way vehicle traffic, pedestrian access, and interpretive platforms. An analysis of the bridge replacement would be conducted to ensure it had no effects on the free-flowing character, water quality, and ORVs of the river. Consideration could be given to modifying the bridge without adding to the existing footing and columns in the river corridor. Any other bridge and/or road projects that are located with the high water mark of the river corridors would also need to undergo a Section 7 analysis to ensure adverse impacts do not occur.

Habitat Restoration

There are no known proposals for water resource habitat restoration projects within the proposed WSR corridors. However, potential projects could include habitat enhancement structures, such as wood or boulders in the river corridors or construction of salmon side channels. A Section 7 evaluation/determination would need to occur for these projects and this evaluation would identify any adverse effects to the free-flowing character, water quality, and ORVs of the river. The need and goals for fish habitat restoration can be identified in the Comprehensive River Management Plan which would help guide implementation of in-river habitat enhancement structures.

Waste Water Treatment Plant

SCL owns and operates waste water treatment plants for their town sites in Diablo and Newhalem. Continued operation of these plants would not need to undergo a Section 7 evaluation. If the plant undergoes construction within the bed and banks of the river, then this would trigger a Section 7 analysis. Baseline conditions would include the existing operation of these facilities. These facilities

are operated to a high standard by Washington State DOE and adverse effects are not anticipated at this time.

Other Non-Water Resource Projects

Other projects and developments that are located outside the high water mark of the river corridors do not need to undergo a Section 7 evaluation/determination. However, effects of the project should be evaluated to assure that the river values are protected. These types of projects could include transmission lines, vegetation management, and trails.

Salmon Restoration Goals

Salmon are a very important resource for the people in the Pacific Northwest and Puget Sound. The Skagit River is one of the most important river systems in Washington State for natural salmon stocks. It contains the largest and healthiest runs of wild Chinook and pink salmon in Puget Sound. Tribes; conservation organizations; recreation groups; local, state, and federal government; and utilities are all working towards shared goals for salmon recovery. The Skagit Watershed Council was created in 1997 and includes 40 diverse organizations who share the mission to “understand, protect and restore the production and productivity of healthy ecosystems in order to support sustainable fisheries.”

Many reports and plans from organizations, tribes, and government agencies have been developed to support salmon recovery. Notably, the 2005 Skagit Chinook Recovery Plan developed by Swinomish Indian Tribe, Sauk-Suiattle Indian Tribe and the Washington State Department of Fish and Wildlife, comprehensively outlines recovery goals and strategies. The plan focuses on Chinook populations, but is also anticipated to benefit other salmon species and fishery resources. This plan was widely deferred to for the Skagit River section of the 2007 Puget Sound Salmon Recovery Plan adopted by the National Marine Fishery Service and by the Skagit Watershed Council. The goal of the recovery plan is to restore Skagit Chinook to optimum levels. The studies found the Skagit River system still retains significant amount of ecological function and high quality habitat which results in healthy populations in Puget Sound. However, the populations are at 50 percent of their historic abundance. The Skagit Recovery plan identified the following factors as limiting Chinook production including: seeding levels (density of spawners and

juveniles), degraded riparian zones, poaching, current hydroelectric operations, sedimentation and mass wasting, flooding, high water temperatures, hydromodification or bank modification, water withdrawals, loss of delta habitat and connectivity, loss of pocket estuaries and connectivity, and illegal habitat degradation. For the upper Skagit reach, the plan identified restoring floodplain function and natural banks as very important since this reach has a narrow floodplain with limited opportunity for off-channel habitat. Restoring floodplain function at Bacon Creek and near the town of Newhalem were specifically mentioned. For the rest of this reach, softening existing bank modification with the use of wood and complex structures was recommended as well as protecting existing floodplain habitat free of roads and developments. Previous studies have found that salmon use natural banks five times more often than hardened banks.

The proposed WSR designation would help enhance salmon recovery goals for this reach by creation of a Comprehensive River Management Plan focusing on the river segments and its values. A WSR designation would direct protection and enhancement of salmon fishery as an ORV, prevent further loss of habitat through dam construction, and protect the free-flow character and natural banks of the river segments.

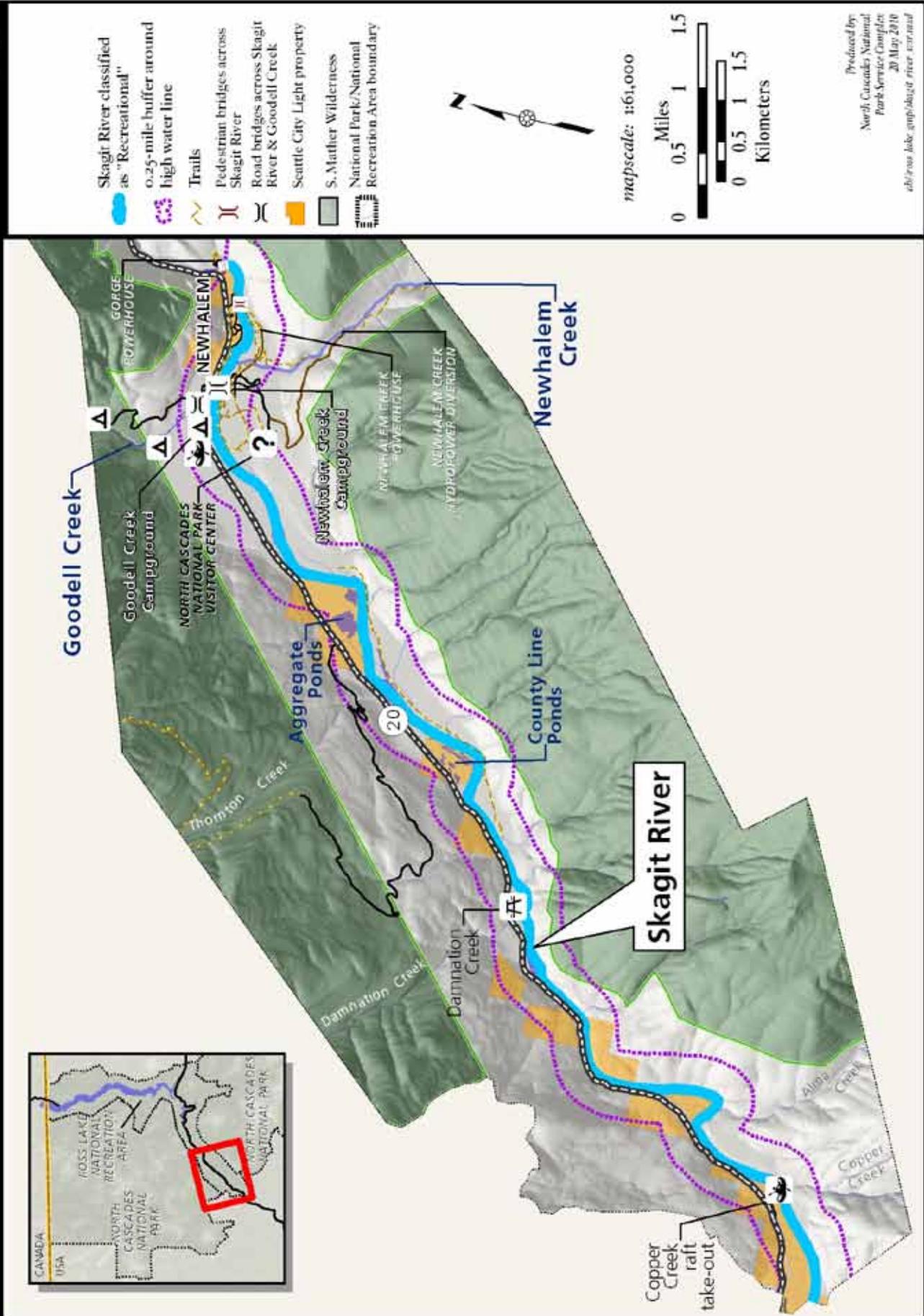
Bald Eagle Protection

The bald eagle was delisted from its threatened status under the Endangered Species Act in 2007 in the lower 48 states. Its primary legal protection is now covered under the Bald and Golden Eagle Protection Act (BGEPA). “Disturbance” of bald and golden eagles is prohibited under the BGEPA. Disturb means to agitate or bother a bald eagle to a degree that causes, or is likely to cause, injury to an eagle, a decrease in its productivity, or nest abandonment.” Specific management recommendations were developed to help prevent disturbance and protect bald eagles. In regards to recreation, two measures are recommended. The first advises managers to avoid recreational and commercial boating and fishing near critical foraging areas during peak feeding times. The second requires a 330-foot buffer during breeding season for non-motorized recreation activities (such as hiking, camping, kayaking, and hunting) that will be visible or highly audible from the nest.

The Skagit River, and to a lesser extent Goodell Creek, provide nationally significant habitat for bald eagles. This allows wildlife to be an ORV for these



Skagit River: Gorge Powerhouse to Ross Lake NRA Boundary



Produced by:
 North Cascades National
 Park Service Complex
 20 May 2010
 ab/ross lake emp/skagit river nra.nad

Figure 4. Skagit River from Gorge Powerhouse to Ross Lake NRA Boundary

Goodell Creek

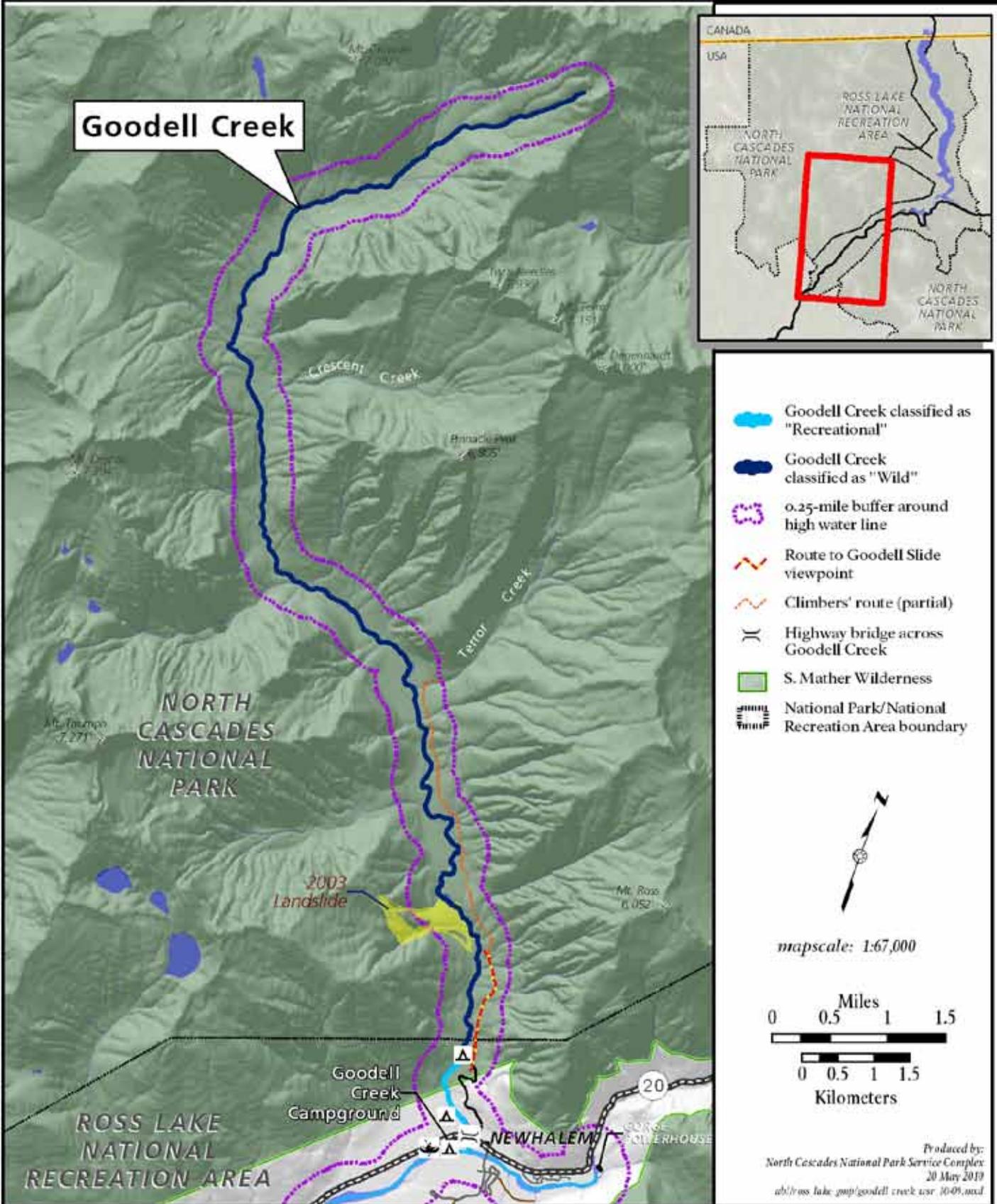


Figure 5. Goodell Creek

Newhalem Creek

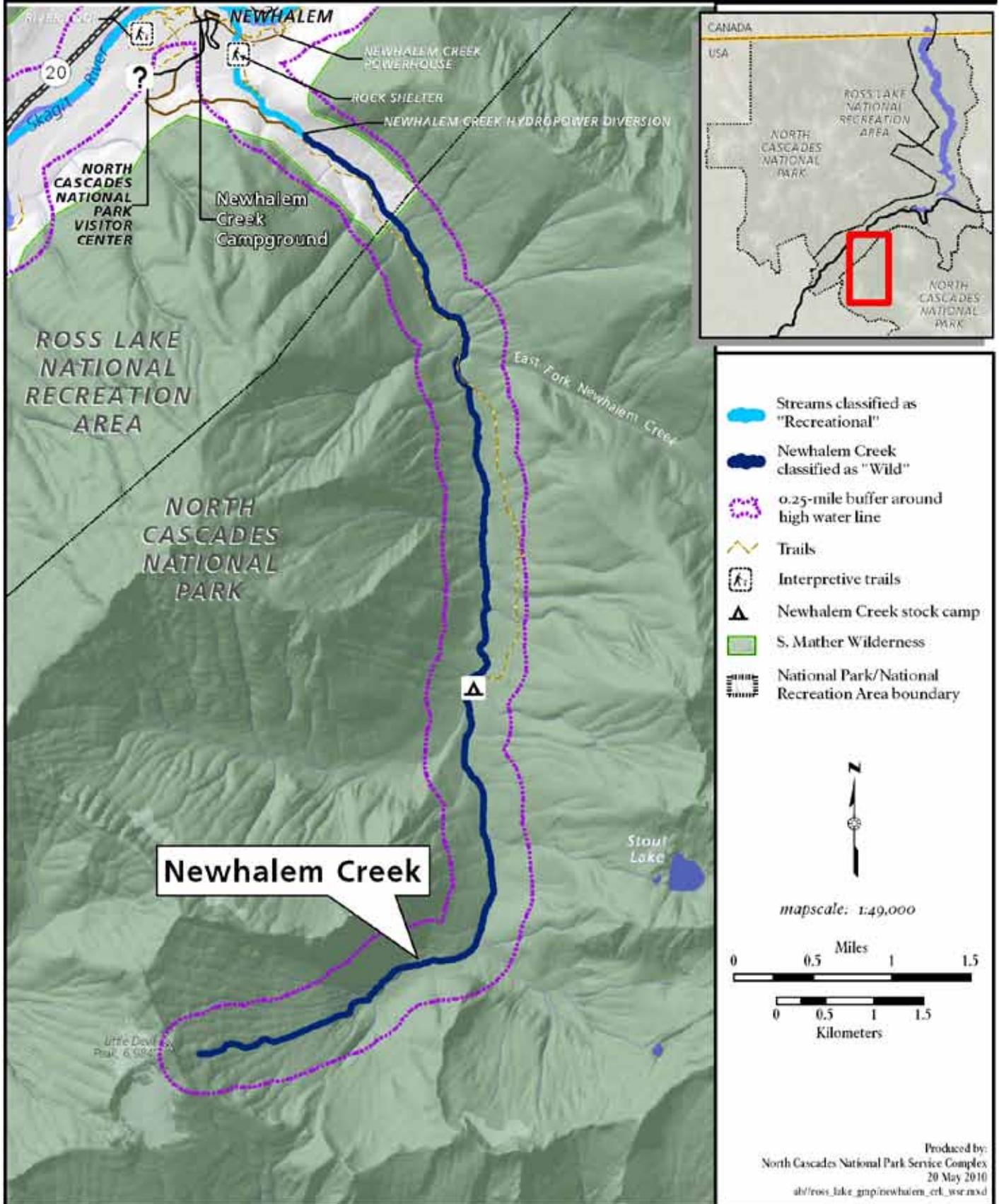


Figure 6. Newhalem Creek

segments and WSR designation would seek to protect and enhance this value. Thus, WSR designation is consistent with bald eagle protection plans and laws.

Skagit Wild and Scenic River

The Skagit River downstream of the Ross Lake NRA boundary near Bacon Creek to Sedro-Woolley is designated as a recreational river in the National WSR System; its ORVs are fish, wildlife, and scenery. Some of the main tributaries in this stretch including the Cascade, Sauk, and Suiattle are also part of the National WSR system and designated as scenic rivers. Together, these river segments make-up the Skagit WSR segment which was designated in 1978; a river management plan was completed in 1983. The Mt. Baker-Snoqualmie National Forest manages the Skagit WSR System. The ownership of the Skagit WSR System is a mix of Mt. Baker-Snoqualmie National Forest (46% percent), other public entities (4% percent), and private ownership (50% percent). Partnerships are an important component of managing this river system and the Mt. Baker-Snoqualmie National Forest outlined their management and partnership goals in their 2001 Beyond Boundaries document. Some of the key management aspects include: watershed and resource restoration, monitoring and protection; demand for recreation opportunities and community education; and intersection with other needs including floodplain management, hydropower production, and infrastructure protection. The Mt. Baker-Snoqualmie National Forest Plan also recommended that two additional Skagit tributaries be added to the National WSR System including Diobsud Creek and Illabot Creek. These creeks have not yet been designated.

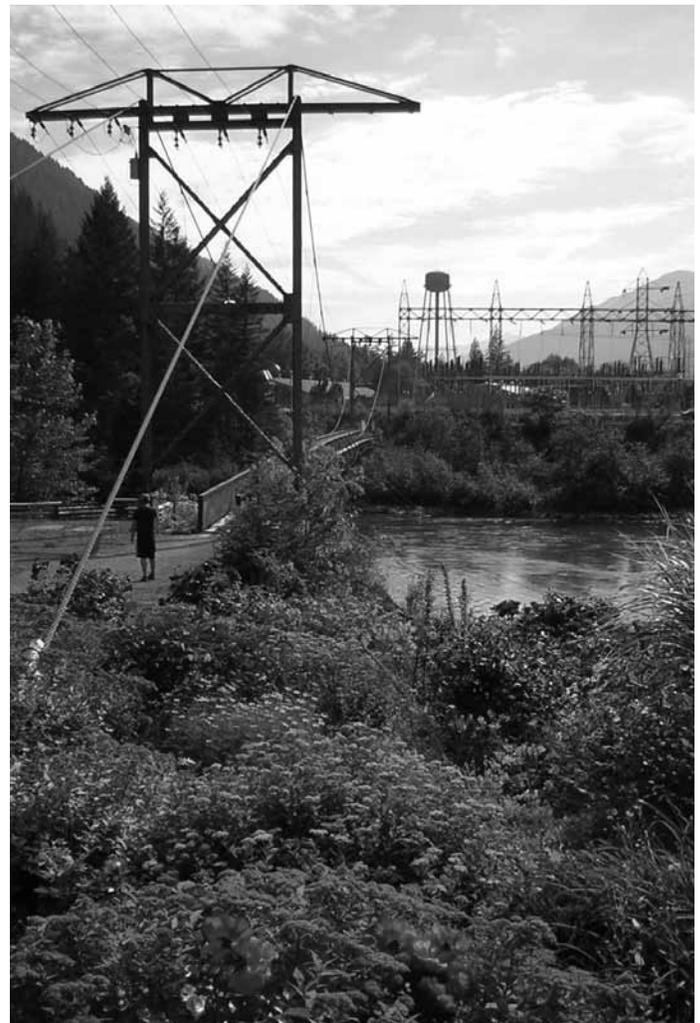
The current WSR study area ends at the Ross Lake NRA boundary near River Mile 83.1 while the existing WSR designation on the Skagit River managed by the Mt. Baker-Snoqualmie National Forest begins at the mouth of Bacon Creek, approximately 0.2 miles downstream. This study report focuses on the area within NPS jurisdiction, however, it is anticipated and recommended that any WSR designation of the Skagit River system by Congress would include a continuous stretch from below the Gorge Powerhouse to Bacon Creek.

Designation of the upper Skagit River would complete the main-stem Skagit River designation from Sedro-Woolley to the beginning of the Skagit Hydroelectric Project near the town of Newhalem. This would allow for opportunities for holistic management of the river system.

Cultural Resources

The studied waterways have a number of significant cultural resources. The Skagit and Newhalem hydroelectric projects are designated as historic districts on the National Register of Historic Places. These designations include the dams and associated facilities as well as the two company towns of Newhalem and Diablo. In addition, a number of pre-historic resources exist in the study area including the Goodell Creek and Newhalem Rockshelter sites, which are also on the National Register of Historic Places. Since the entire area has not been thoroughly surveyed, it is possible that additional regionally or nationally significant sites will be found in the future.

Pre-history, and in particular the Goodell Creek and Rockshelter sites, were identified as an ORV. History is also an ORV. NPS will continue to manage the lands to protect these resources. Since these resources were found to be ORVs, WSR designation would also seek to protect and enhance these resources.



Skagit River Hydroelectric Project.

Public Involvement

In the fall 2008, the NPS released a summary newsletter and held two public workshops on the preliminary findings of the WSR designation. Through the workshops and in written format, the majority of the public comments have expressed strong support for WSR designation. Several organizations including 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 expressed support at the public workshops and/or through written comments. In addition, several members of the general public also came to the public meetings and submitted written comments. The primary reasons why people were supportive of designation included permanent protection of the ORVs 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.

Many comments received stated that the timing was ideal for WSR designation and expressed a sense of urgency in accomplishing this. Only one public comment was received opposing designation. This citizen expressed concerns that opportunities for dam development would be limited by WSR designation.

NPS also met independently with the two other land managers in the river corridor - SCL and WSDOT. Both of these entities were generally supportive of WSR designation. SCL shared some concerns about potential effects on hydropower operations and relicensing, potential new salmon restoration projects, potential new transmission lines, and existing waste water treatment plants operations. SCL also expressed tentative support for designation and continues to manage their lands within the proposed Skagit WSR corridor for protection of fishery and wildlife resources consistent with the intent of the WSR Act. WSDOT shared concerns that WSR designation could add some compliance related work when WSDOT is pursuing road projects, but were not opposed to WSR designation. NPS also met independently with the Upper Skagit Tribe who expressed concerns that WSR designation could limit

potential future projects involving in-stream and bank manipulation to enhance salmon restoration and protect cultural resources. The majority of the concerns mentioned above are related to the effects of WSR designation on existing operations or potential new projects in the river corridor. The WSR evaluation/determination process and potential effects on new water resource projects are described in the section above. There are no known projects in the reasonably foreseeable future that would be prohibited by WSR designation.

Management Intent

This section outlines how the National Park Service currently manages the eligible river segments, changes that would occur upon implementation of the Ross Lake NRA's General Management Plan, and potential changes that would occur if the river becomes designated. It also identifies a proposed WSR boundary and additional costs associated with designation.

NPS is required by the WSR Act to manage eligible and suitable river segments in a manner that protects their free flowing character, water quality, and ORVs until such the river segments become designated as part of the National WSR System or are found unsuitable.

Current Management and Direction in the Ross Lake NRA's GMP

Regardless of WSR designation, in accordance with the WSR Act and NPS management policies, the eligible river segments would be managed by NPS to protect their free-flowing condition and ORVs. The GMP outlines the vision and management actions for the Skagit River as well as other areas of Ross Lake NRA. The vision for the Skagit River zone is continued preservation of the shoreline environment, enhancement of fisheries along the Skagit River, and preservation of high quality day-use river recreation experiences. The Skagit River, Goodell Creek, and Newhalem Creek's free-flowing character, water quality, and ORVs would be protected and preserved. All management actions will be evaluated to avoid adverse effects on the river segments and their resources.

The entire list of GMP actions can be found in the alternatives section of the GMP. The most significant GMP actions and goals affecting the river segments are summarized below:

- Develop a park-wide vegetation management plan to preserve the ecological integrity of the riparian zone. Components could include monitoring and management of exotic species, planting native vegetation, and improving bank stabilization and erosion control methods.
 - Expand monitoring of wildlife species and focus actions to protect wildlife from disease or human disturbance during critical seasons.
 - Develop a park-wide fishery management plan. Work collaboratively with SCL to protect and enhance fishery resources and flows in the Skagit River. Consider a variety of measures to protect spawning habitat on the Skagit River including maintaining side channels and minimizing impacts from the North Cascades Highway and park infrastructure.
 - Protect cultural resources and monitor sites to ensure degradation is not occurring.
 - Protect the scenic character of the river corridors.
 - Preserve the existing non-motorized whitewater boating opportunities on the Skagit River. Monitor recreation use and number of boat encounters per trip. Eliminate recreational motor boat use on the Skagit River. Administrative use of NPS, SCL, and WDFW would continue.
 - Reconfigure and formalize the parking areas at Goodell launch site, Copper Creek take-out site, and Upper Goodell Creek Campground as appropriate.
 - Consider developing new trail opportunities including Goodell Land Slide Trail, Newhalem Boardwalk Trail, Newhalem Falls Loop Trail, Skagit River portage trail at the S curves, and Newhalem Spawning Channel Trail.
 - Replace bridge over the Skagit River to the Visitor Center with an expanded bridge that can accommodate two-way traffic, pedestrian access, and interpretive platforms.
 - Work pro-actively with WSDOT to develop solutions to channel aggregation where the North Cascades Highway crosses Skagit tributaries including Goodell, Damnation, Thornton, and Rhode.
 - Locate additional sites, should Goodell Creek Campground be impacted by flooding debris flow and certain sites have to be abandoned.
 - Improve and expand interpretation opportunities as appropriate in partnership with North Cascades Institute and SCL.
- Facilities and projects that are expected to continue from other entities include:
- The Skagit and Newhalem Hydroelectric Projects and associated transmission lines would continue to be operated in a similar manner.
 - The North Cascades Scenic Highway would continue to be maintained by WSDOT and provide access to the Skagit River and Ross Lake NRA.



Much of the south-side of the Skagit River within the Ross Lake NRA is only accessible by boat. Photo is of the Skagit River downstream of Ross Lake NRA.

- The Newhalem and Diablo waste water treatment plants would continue to be operated and maintained by SCL.
- Salmon side-channels would continue to be maintained by SCL.

Any entities pursuing future federally-assisted projects that have the potential to affect the eligible river segments should consult with NPS in an attempt to avoid or mitigate adverse effects. Consultation is required according to a directive from the Council on Environmental Quality. If the river segments are designated then a water resource evaluation/determination would be required per the WSR Act as described in the Water Resources Evaluation Section above.

Comprehensive River Management Plan

If the river segments are designated as WSRs, then a comprehensive river management plan would be developed. The comprehensive river management plan would further outline goals and management actions that would be acceptable and encouraged. For example, the need for salmon restoration through in-channel enhancements and side-channels or the desire for natural bank stabilization methods could be described. As described above any future water resource projects that are federally-assisted would need to undergo an evaluation/determination to ensure adverse effects do not occur. In addition to protections and guidance offered in the WSR Act, the Act also directs the NPS to use its general statutory authorities and the Wilderness Act where appropriate to protect the ORVs, water quality, and free-flowing character of the river segments. When conflicts arise, the more protective law would be applied.

The WSR Act directs the river management plan to:

- describe the existing resource conditions including a detailed description of the ORVs
- define the goals and desired conditions for protecting river values
- address development of lands and facilities
- address user capacities
- address water quality issues and instream flow requirements
- reflect a collaborative approach, recognizing the responsibilities of, and opportunities for, partnership with all stakeholders
- identify regulatory authorities of other governmental agencies that assist in protecting river values
- include a monitoring strategy to maintain desired conditions

Boundaries

If the river segments are designated, detailed boundaries would be determined. These boundaries are limited to an average of 320 acres or less per river mile, which equates to about one-quarter of a mile on either side of the river. It is recommended that the preliminary boundaries of the Skagit River, Goodell Creek, and Newhalem Creek be one-quarter of mile from the high water mark on either side of the river segments. NPS recognizes its responsibility to use its existing authorities to protect the ORVs that are found both within and outside the preliminary WSR boundaries.

Costs

The NPS is already managing the Skagit River, Goodell Creek, and Newhalem Creek. Additional costs related to managing the river system, if designated wild and scenic, would include the cost associated with developing and implementing a comprehensive river management plan. Minimal additional compliance work is also anticipated to comply with Section 7 of the WSR Act.

CONCLUSION

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 Sedro-Woolley and create more opportunities for holistic watershed management. The public support for this designation from the general public and two other land managers, SCL and WSDOT, was overwhelming positive. Only one comment was received opposing designation. A pair of comments also expressed concerns about the potential effects of WSR designation on new water resource projects, but there are no known proposals in the reasonably foreseeable future that would be prohibited by the WSR designation. SCL is committed to managing their lands to protect fishery and wildlife resources in compliance with the WSR Act. NPS owns the majority of the lands in the study area and manages the river system in a manner consistent with the intent of the WSR Act. Existing protections are in place prohibiting logging and mining, as well as limiting hydropower development. WSR designation would add further protections from additional hydropower development and encourage

natural bank protection, thus furthering regional and national goals for recovery and protection of salmon and bald eagles. Designation would require the development of a comprehensive river management plan which would enable better stewardship of the river segments and their special resources. WSR designation would also direct further protection and enhancement of natural, geological, cultural, scenic and recreational resources.

Therefore the NPS recommends that Congress extend the Skagit WSR designation to include this 11-mile upper Skagit segment and the two largest tributaries flowing into this reach.

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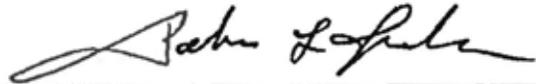
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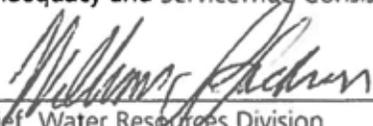
APPENDIX E: STATEMENT OF FINDINGS FOR FLOODPLAINS

Final Statement of Findings for Floodplains

Ross Lake National Recreation Area Final General Management Plan and Environmental Impact Statement

Recommended:  July 15, 2011

Superintendent, North Cascades NPS Complex Date

Certification of Technical Adequacy and Servicewide Consistency:
 8/2/2011

Chief, Water Resources Division Date

Concurrence:  8/4/2011

Regional Safety Officer Date

Approved:  8-9-2011

Pacific West Regional Director Date

Introduction

Preferred Alternative

The *Ross Lake NRA Draft Final General Management Plan and Environmental Impact Statement's* preferred alternative would generally have beneficial effects on ecosystem functions and processes, including floodplain and alluvial processes. None of the major park facilities are located in a regulatory floodplain, although three campgrounds are located on alluvial fans and debris cones, which are known for their instability.

Destruction of facilities from catastrophic and natural events is becoming more common in the region due to an increase in the magnitude and frequency of severe storms. For example, in 2003 10 days of heavy rainfall exceeding 20 inches resulted in widespread flooding, landslides, debris flows and creek channel avulsions. This event led to significant shifts in the channels of Goodell and Colonial creeks into campgrounds. Continued aggradation at these sites is expected to cause future flooding and erosion damage problems, although the campgrounds are generally closed during the late fall flood season. The management philosophy of the preferred alternative is to maintain existing camping opportunities, but to adapt and relocate facilities as dictated by the severity and consequences of future flooding. Future management actions would strive to reduce flood hazards and damage on these landforms by potentially abandoning indefensible sites and reconfiguring access.

In this plan, the NPS would strive to minimize conflicts between alluvial processes and visitor and administrative developments by siting new facilities away from eroding stream banks and out of high flood hazard areas. The NPS would also seek to minimize manipulation of floodplain ecosystems and processes where possible through collaborative efforts with Seattle City Light, and other county, state and federal regulatory agencies, including the Washington State Department of Transportation.

Site Descriptions

Colonial Creek Campground

Colonial Creek Campground was constructed in the 1960s on an alluvial fan and debris cone where Colonial and Rhode creeks meet Diablo Lake (See Figure 1). It includes a park housing unit, six comfort stations, and about 160 campsites. During

the summer season, Colonial Creek Campground is the most popular camping destination in Ross Lake NRA. The campground is regularly at capacity on summer weekends and holidays due to easy access from the North Cascades Highway, many wooded lake-front campsites, several day hikes, and access to Diablo Lake.

The entrance to both the north and south loops of Colonial Creek Campground crosses the toe of the Rhode Creek debris cone, which is an active debris torrent system. Rhode Creek, a small, straight, high gradient stream, follows the Thunder Lake fault, which provides massive quantities of rock and gravel. This material is deposited on the debris cone and on the highway and entrance road. Debris is flushed out of the narrow canyon about once every 20-25 years, with significant events in 1984 and 2006.

During campground construction in the 1960s, the U.S. Forest Service blocked a channel on the debris cone that led into the campground's south unit. The levee failed in the 2006 flood, sending floodwater into the campground. Gabion grade control structures placed in the channel on the debris cone by the NPS and removal of material from the entrance road have resulted in more frequent deposition of rock on the entrance road. This material has been eroded from the failed debris cone by the extensive widening of Rhode Creek channel in response to the check dams, which have largely failed. The NPS frequently clears out the lower portions of the constructed channel following debris flows, and less frequently reconstructs and armors the bank of the creek when channel aggradation increases the risk of avulsion. The channel of Rhode Creek is now deep and wide, and is clearly visible from the highway.

Erosion and channel aggradation on the left bank also caused damage to the access road to the water system, which includes a 5000 gallon water tank. In response to erosion caused by the 2006 flood, the NPS armored the bank of the stream and provided some relief flow for the reoccupied channel through the south unit of the campground.

The north side of the campground is constructed on the alluvial fan of Colonial Creek. Historically the NPS maintained a short, poorly constructed levee and cabled logs and rock to protect the campground along the right bank of the creek. In about 2002, the NPS constructed a series of small footbridges across tributary channels of Colonial Creek. A large foot log spanned the main channel, and was

Landforms of Colonial Creek Campground Ross Lake National Recreation Area GMP/EIS

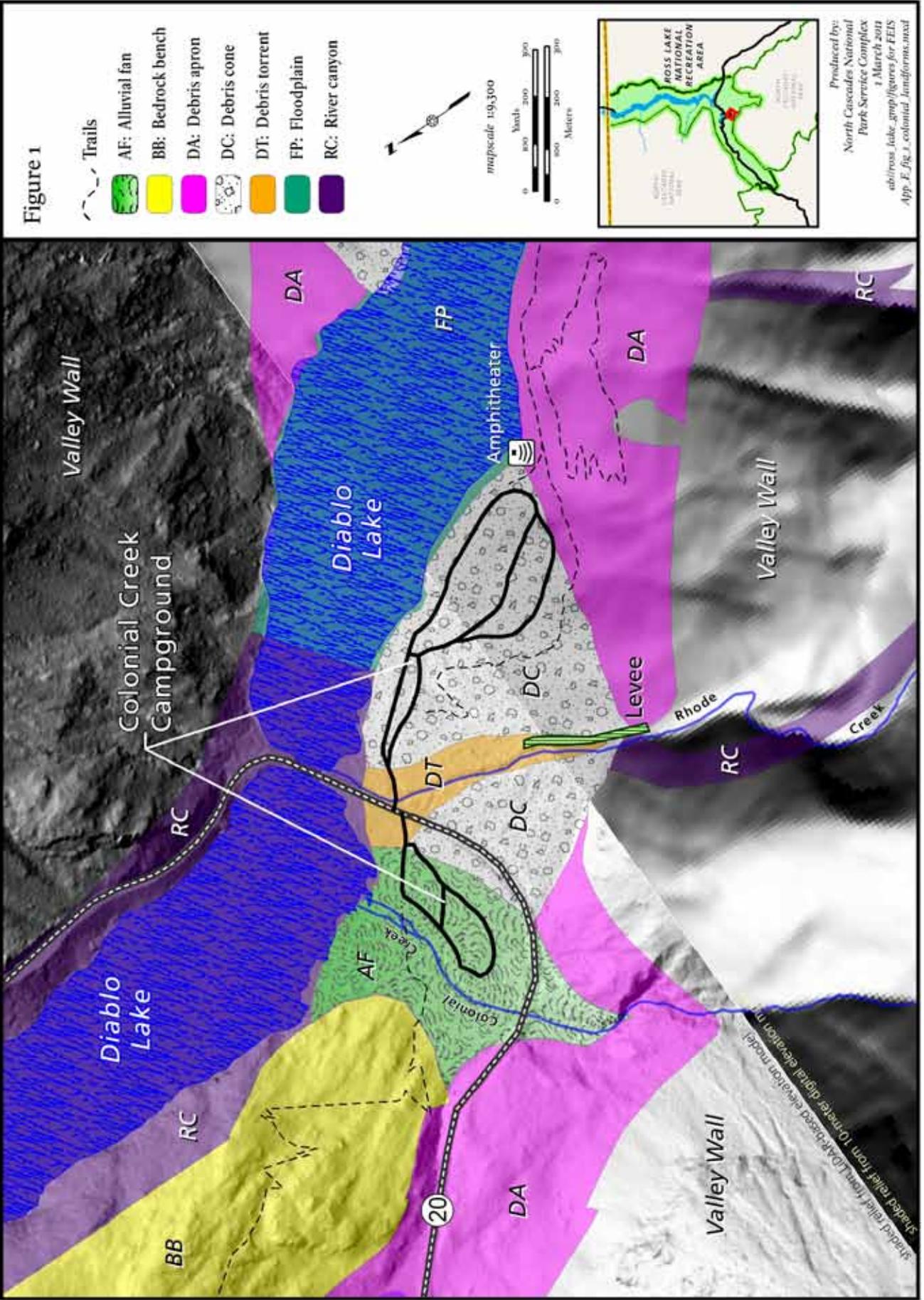


Figure 1. Landforms of Colonial Creek Campground

designed to be pulled back during flood events to provide the creek a clear path to Diablo Lake during flood season. The October flood of 2003 occurred before the foot log was removed, and appears to have triggered massive deposition of gravel in the main channel upstream of the bridge. This led the stream to jump out of its channel on the right bank upstream, and it followed one of the campground roads to Diablo Lake. In the process, it destroyed utility lines buried beneath the road, several campsites, and introduced a large amount of asphalt into the stream.

In response to this damage, an engineered logjam was installed just below the highway bridge to block a side channel that, if occupied, would threaten a major part of the north loop. The NPS also constructed a new campground loop road along the new creek channel. Unfortunately, in an attempt to save access to 11 campsites, the new road was constructed too close to the new channel, and the 2006 flood claimed another campsite and threatened the new road.

The north unit of Colonial Creek Campground remains on an active alluvial fan surface, while parts of the south loop are on the Rhode Creek debris cone. Relic flood channels cross both units and indicate that over time additional portions of the campground remain at risk to future flooding.

As a result of gravel, sand and silt deposited by Rhode Creek, the boat launch at Colonial Creek Campground has experienced shoaling since its construction. In response, the NPS has on more than one occasion dredged the boat ramp area. The boat ramp also is periodically unusable when Diablo Lake reservoir is drawn down by hydropower operations. In some instances, boaters who entered the lake during high water cannot retrieve their boats and have been stranded.

Diablo Lake just south of the boat ramp is also threatened by growth of the Thunder Creek delta. As part of the relicensing of the Skagit 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 and erosion control plans for the Skagit Project. Should maintaining the boat ramp become impossible, then the NPS consider several options.

1) ~~R~~would relocate the boat launch to the north side of the highway in the vicinity of the Diablo Lake boathouse, as recommended via previous assessments. Parking would 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) Maintain the launch in its current location by periodically dredging a channel from the launch to deeper water. This action would be done in coordination with Seattle City Light so dredging could be done at low water levels to minimize impacts to water quality. Should such dredging require the dredging of lacustrine wetlands, a Wetland Statement of Findings would be considered at that time. 3) If dredging is not feasible due to accelerated sedimentation rates, then the NPS would no longer attempt to maintain a boat launch in the vicinity of Colonial Campground. The NPS would either seek to establish a launch elsewhere on the reservoir, or abandon providing a boat launch on Diablo Lake. Boating would still be encouraged, but the loss of a boat launch would limit boating to paddlecraft, such as canoes and kayaks, or small motorboats, such as Jon boats, that could be launched without a ramp.

Goodell Campgrounds

The Goodell Creek Campground consists of 21 sites located along the confluence of Goodell Creek and the Skagit River (See Figure 2). It is located on low river terraces and the distal edge of the Goodell Creek alluvial fan, which is marked by a series of old flood channels that have been largely obstructed by Highway 20 and campground roads. There are also two group camping units along Goodell Creek, including a left bank group camp about 1 mile above Highway 20, and two group camps just above the highway on the right bank. The upper group campground is located on a terrace above the creek. The lower group campground and parts of the main campground are threatened by flooding from Goodell Creek. There are a series of small levees that were constructed to protect an old bridge abutment and other developments in the area. On the opposite bank from the lower group camp, Seattle City Light constructed a half-mile long levee to keep floodwater from spreading toward the town of Newhalem.

The flood risk has increased in the last few years due to channel changes on lower Goodell Creek induced by a massive 2003 landslide about one mile above the Skagit River. The landslide deposited approximately 2.9 million cubic meters of debris and completely blocked Goodell Creek and created a 2-acre lake that is approximately 10 meters deep. Since then, debris from the landslide has been working its way downstream, causing channel aggradation and channel instability from Lower Goodell Group Camp to the Skagit River. This process has led to the loss of

Landforms of the Goodell and Newhalem Campgrounds Ross Lake National Recreation Area GMP/EIS

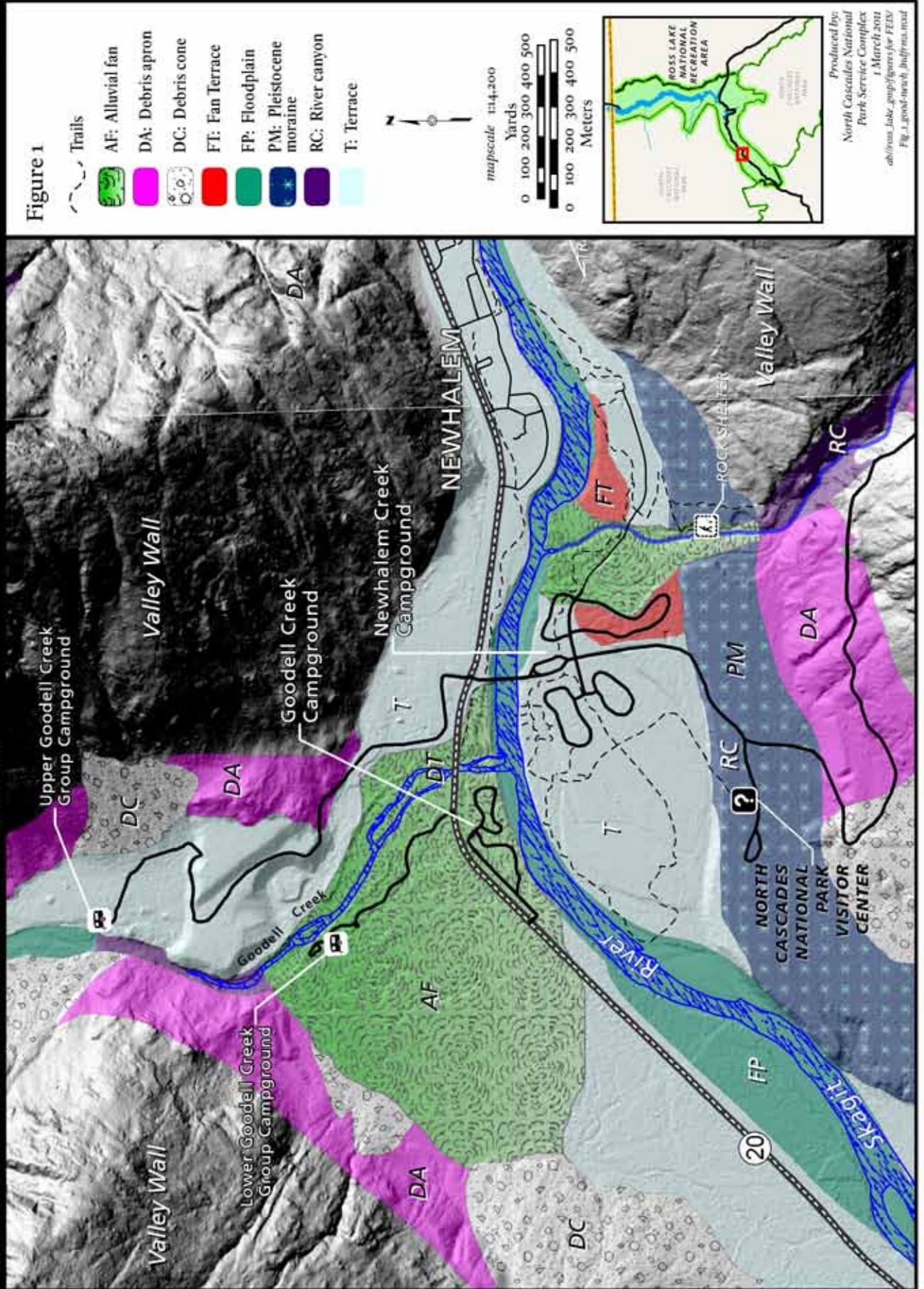


Figure 2. Landforms of the Goodell and Newhalem Campgrounds

two sites at the camp and threatens the access road off Highway 20.

Sites at the east end of the main Goodell Creek Campground also flooded, although flood damage has been limited to scouring of abandoned overflow channels scattered between campsites. Further problems are anticipated at both these campground locations given the continued aggradation of the riverbed and the fact the campground is situated on an alluvial fan.

General characterization of floodplain values and of the nature of flooding and associated floodplain processes in the area

Major flooding in the North Cascades generally occurs during fall rain-on-snow events as a result of heavy precipitation that can exceed several inches a day for a week or more. These events are triggered by a strong and persistent flow of tropical moisture from the equatorial Pacific Ocean, and area known as “pineapple expresses.” They generally occur from mid October through December. Floodwaters from these events generally rise and fall rapidly, with flood peaks often occurring in a day or less. This type of flooding dominates lower elevation west-side streams, including the Skagit and its tributaries. In the last 15 years, events in 1989, 1990, 1995, 2003 and 2006 have triggered major changes on streams in the area.

Flooding also occurs in May and June due to rapid melt of heavy winter snowpack. Larger spring floods occur later in spring and can extend over several weeks into early summer. Peak flows for spring floods are typically lower than fall rain-on-snow events. At higher elevations above the rain-on-snow zone, and in colder east tributaries such as Ruby and Devil’s creeks, spring flooding is generally dominant.

Occasionally, summer floods occur on small streams as a result of intense, localized convection associated with thunderstorm activity. The intensity and magnitude of these floods is greater in smaller first and second order watersheds.

Within Ross Lake NRA, most flooding problems are associated with tributary streams. One of the major effects of the three large hydroelectric dams on the Skagit River is decrease peak flood flows. While causing major impacts to ecosystem function and floodplain values, the dams provide protection to facilities along the Skagit River west of Newhalem, where the Skagit River regains its unregulated nature.

Justification for Use of the Floodplain

Description of why the proposed action must be located in the floodplain

The mountains of the North Cascades, including Ross Lake NRA, are often referred to as “the American Alps” because they include the steepest and most rugged topography in the contiguous United States. The precipitous topography provides little in the way of relatively flat, stable ground favorable for visitor service facilities and transportation infrastructure. In addition, approximately 94% percent of the North Cascades NPS Complex is designated as wilderness. Wilderness designation precludes permanent development of roads and facilities, and substantially constrains the amount of land available to provide visitor services and amenities commonly found in national parks. Simply put, there is little flat, defensible ground available, so floodplains, debris cones and alluvial terraces have become the default landforms of choice for establishing roads, campgrounds and associated facilities.

Congress established the lands and waters of Ross Lake NRA by transferring jurisdiction of the area from the U.S. Forest Service to the National Park Service. All the major campgrounds, roads and associated facilities that exist today were constructed by the U.S. Forest Service many decades ago. Developmental decisions at that time generally did not consider concepts such a geologic hazards, sustainability, adaptation to climate change, and deference to natural processes. This relatively static view of natural processes was also influenced by the perception that risks from natural processes such as flooding could be controlled through engineered solutions. Moreover, the natural human tendency to gravitate toward shorelines along lakes, creek and rivers resulted in the establishment of the most popular campgrounds and associated facilities in Ross Lake NRA on alluvial fans (North Unit of Colonial Creek Campground and the lower group camp and main campground at Goodell Creek), and debris cones (south unit of Colonial Campground).

Today these areas remain the most popular locations for frontcountry camping, and there is a high degree of public expectation to maintain camping opportunities in these areas. Demand for maintaining these camping experiences, coupled with a paucity of alternative camping locations that provide similar aesthetic conditions, places the NPS in the difficult

position of balancing the merits of maintaining camping opportunities in these areas against the risk of severe damage from future flooding.

The management philosophy of the preferred alternative is to maintain existing camping opportunities, but to adapt and relocate facilities as dictated by the severity and consequences of future flooding. The goal is to limit net loss of camping opportunities, but to relocate facilities to more geologically stable and less flood prone locations. For Colonial Creek and Goodell Creek Campgrounds, the preferred alternative would enable continued camping in all present areas, but campsites would be closed and relocated should reconstruction following severe flood damage not be feasible or sustainable.

Investigation of alternative sites

Alternative locations exist for relocating campgrounds in response to future flooding.

Hollywood

If Seattle City Light determines that Hollywood is no longer necessary for hydropower operations in the future, the NPS would work to acquire that land.

The NPS is presently working with Seattle City Light to acquire either through fee acquisition or land exchange an area known as “Hollywood” in the company town of Diablo (See Figure 3). Hollywood is located on a flat alluvial terrace and alluvial fan where Stetattle Creek meets the Skagit River. It is protected by a levee on the left bank of Stetattle Creek, and by flood storage from Diablo and Ross Dams. It therefore has a relatively low risk of future flooding. Hollywood is not located within a regulatory floodplain. The area has never flooded since Seattle City Light established the levee and built the dams. The area is not considered likely to flood in the future because the levee is very well constructed, stabilized by mature trees along its length, and of sufficient height and strength to withstand the hydraulic scouring forces and flood elevations of Stetattle Creek. There is the possibility that a major landslide upstream could lead to stream aggradation on lower Stetattle Creek and threaten future development. However, there are sites at the east end of Hollywood that are relatively safe from Stetattle Creek.

Newhalem Creek Campground

The two main loops of Newhalem Creek campground were constructed on an alluvial terrace

adjacent to the Skagit River, but the eastern two loops are on the alluvial fan of Newhalem Creek. Several campground loops were planned but never constructed, so there is ample opportunity for further expansion if necessary to offset the loss of camping elsewhere in the NRA.

Description of Site-Specific Flood Risk

Recurrence interval of flooding

Colonial Creek Campground

Colonial and Rhode creeks are steep, unregulated mountain streams that are prone to major channel avulsions in response to extreme rainfall events and associated channel aggradation. There is no long-term stream flow data available for Rhode Creek or Colonial Creek to quantify flood recurrence. Based on regression equations, the 100 year discharge for Colonial Creek is estimated at 650 cubic feet per second.

A review of administrative records indicates that floods of a 25 year or greater recurrence interval cause debris flows on Rhode Creek and major channel changes on lower Colonial Creek. This conclusion is supported by damage assessments from the early 1960s and 1984, along with the 2003 event.

Flood damage of the campgrounds at these sites has been exacerbated by management actions that placed facilities such as campground roads in old flood channels and attempted to constrict streams with levees and gabion structures. As a result of the manipulation of Rhode Creek, failure of the channel on the debris cone and damage to the campground entrance occurs every 2 to 5 years in response to 5 year rainfall events. Most of the southern unit of the campground is safe from flooding, although the 2006 flood forced Rhode Creek to occupy a system of old flood channels.

Colonial Creek has caused less damage than Rhode Creek in part because it has not been as heavily manipulated, but also because the watershed is more stable than fault-controlled Rhode Creek. The most recent damage to the north unit was a result of a large event and management actions that failed to clear the bridge from the main channel. Aggradation above the old footbridge since then has led to campground flooding again in 2006. It is anticipated that future floods of 25 year or greater magnitude will cause further damage and necessitate a management response.

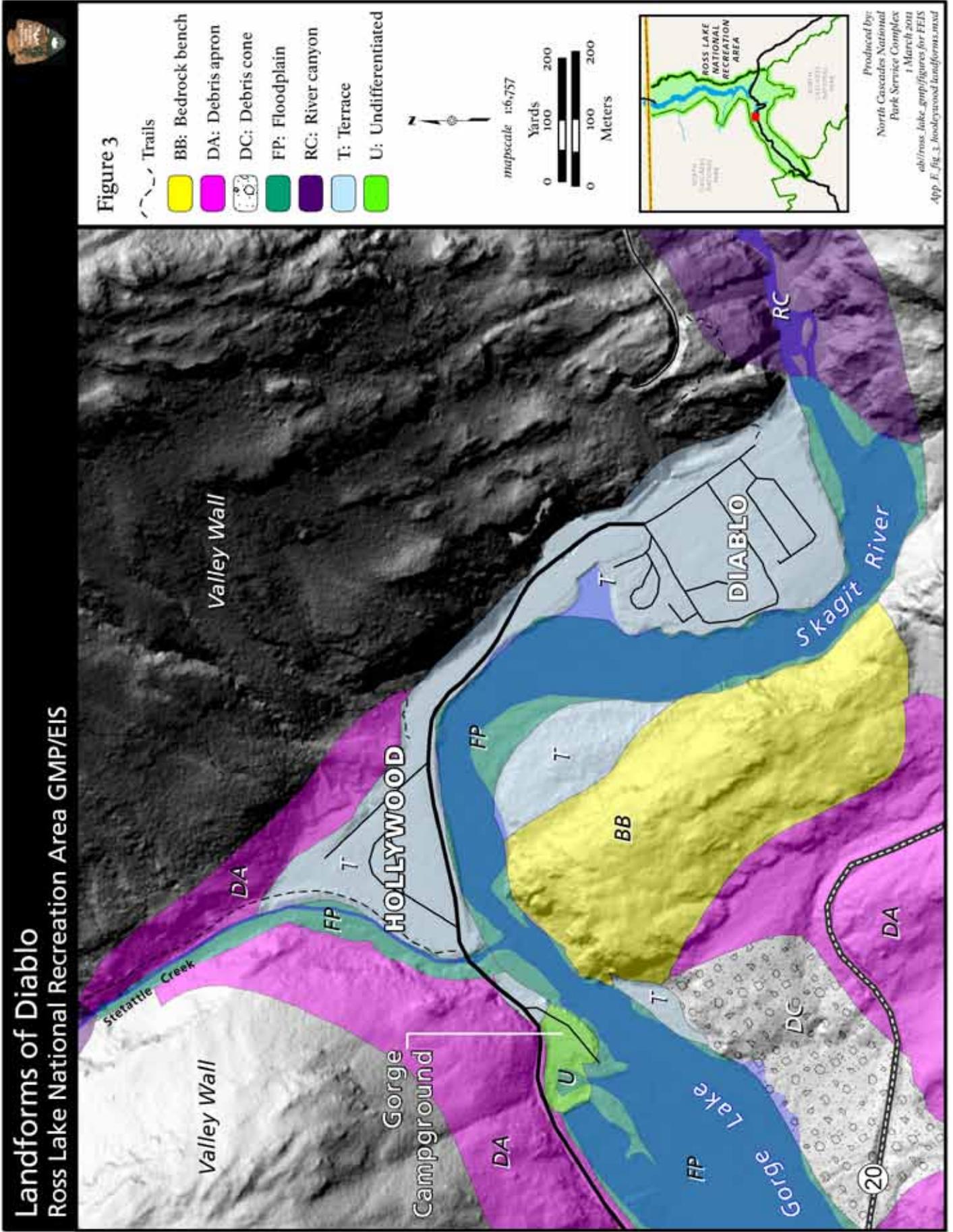


Figure 3. Landforms of Diablo

Goodell Creek Campground

Like many rivers in the region, Goodell Creek does not have streamflow records. While Lower Goodell Group Camp has history of flood damage judging by the levees, gravel from the 2003 landslide has now made parts of the campground prone to flooding during smaller annual events, including the spring 2008 and 2009 floods. Flooding of the main Goodell Creek Campground across Highway 20 has also become more frequent due to channel aggradation associated with the landslide and the recent passage of several large floods. In response, in 2008 the NPS installed larger culverts to move water through the campground. However, flooding is expected to worsen over time based on long term trends that show movement of Goodell Creek to the west.

Hydraulics of flooding at the site (depths and velocities)

Colonial and Rhode Creeks

Both Colonial and Rhode creeks drain steep mountain watersheds and are prone to rapid rise of floodwater during both fall and spring flood seasons. Flood waters from Colonial Creek, when it spills over banks and into the campground, are typically a foot or less deep in parts of the campground but can reach depths of 3 to 6 feet or more in side channels. Main channel velocities are on the order of 10 to 12 feet per second with overbank flows on the order of 1 to 3 feet per second.

Unlike Colonial Creek, Rhode Creek is also likely to carry debris flows due to its straight, narrow, steep channel in the Thunder Lake Fault. Within the canyon above the debris cone, flows can reach depths of 10 feet or more and velocities in excess of 30 miles per hour. At these depths and velocities, Rhode Creek is capable of transporting boulders in excess of 3 feet diameter and depositing them on the entrance road.

Goodell Creek

Goodell Creek drains an area of steep, rocky terrain that covers 25,523 acres. Floodwaters in this basin rise quickly due to rapid runoff from extensive bare rock slopes. Floodwaters from Goodell Creek are channelized by the right and left bank levees, as well as the Highway 20 bridge. As a result, floodwater depth and velocity in lower Goodell Creek are deeper and faster than unregulated streams of comparable size. Based

on regional regression equations and comparison with nearby watersheds of similar size, the 100 year discharge for Goodell Creek is about 7,900 cubic feet per second. Stream flow velocity in the main channel is likely on the order of 10 to 12 feet per second, with overbank depths less than 3 feet. Observed overbank flow velocities along the Lower Goodell Group Camp access road are 3 to 4 feet per second.

Rhode and Colonial Creeks, when they spill over banks and into the campground, are typically a foot or less, but velocities are on the order of 10 to 12 feet per second. Where channelized into over bank side channels, flows can reach 5 to 10 feet depths.

Time required for flooding to occur (amount of warning time possible)

Colonial Creek Campground

Rhode Creek has a very small and extremely steep watershed, so severe rainfall over a period of several hours could trigger flooding with relatively little advance notice. Floodwaters could rise at three times a year, including in fall rain-on-snow, spring snowmelt, and summer thunderstorm events. The potential for summer flood activity is of particular concern because it coincides with the main visitor use season. Most debris torrents on Rhode Creek could be reasonably assumed to occur, as they have in the past, during rain-on-snow events in late fall or early winter, during a time of low visitor use.

The watershed feeding Colonial Creek is larger and has a lower gradient than Rhode Creek, and as a result floodwaters rise more slowly. Given the size of Colonial Creek watershed, it is also unlikely that a summer thunderstorm could trigger flooding. It is anticipated that it would take several days or more of sustained rainfall before flooding of the north loop of the campground would commence. Flooding would be highly unlikely to occur during the high visitor use season. Several hours to days of advance notice would most likely be available, and there would be little if any use of the campground at this time.

Goodell Creek Campground

Goodell Creek watershed covers a 25,523 acre area, and because of the size of the watershed it would take several days to a week or more of sustained heavy precipitation for flooding to occur on lower Goodell Creek. Therefore, warning times for fall rain-on-snow or spring snowmelt floods would be a day or more.

The occurrence of several large landslides in the Goodell Creek watershed create the potential for sudden large discharges of water on lower Goodell Creek from sudden failure of the a debris dam. Indeed, the 2003 Goodell landslide and debris dam were not discovered until a day after the event occurred. Given that this event was triggered by heavy precipitation, there could be many hours to a day or more warning time for visitors at the campgrounds. However, should a landslide be triggered by an earthquake, it could take only hours for a lake to fill and dam to fail.

Opportunity for evacuation of the site in the event of flooding

Colonial Creek Campground

A debris flow on Rhode Creek would block the campground road and prevent evacuation by motor vehicles. Clearing could take several days to a week depending upon flow volume. Past events have deposited more than 30,000 cubic yards as deep as 6 feet. Other portions of the campground could be evacuated by motor vehicle in all but the most extreme precipitation events. Most visitors would be unlikely to remain in the campground under these extreme conditions. In the south unit of Colonial Campground, evacuation away from flood waters could be relatively easily accomplished on foot by moving to the south end of the campground or up the Thunder Creek Trail. In the north unit, evacuation would be to the south via Highway 20.

Goodell Creek Campground

Floodwaters could block the present entrance road to the Lower Goodell Group Camp and specific sites in the main Goodell Creek Campground. These conditions could prevent evacuation by motor vehicle for a day or more depending upon the severity of road damage. In all instances, evacuation by foot would most likely be possible.

Geomorphic considerations (erosion, sediment deposition, and channel adjustments)

The north unit at Colonial Creek Campground, Lower Goodell Group Camp, and the east end of the main Goodell Creek Campground are located on active parts of alluvial fans. These sites are expected to have frequent deposition of gravel and channel instability. If large amounts of sediment are introduced into the system, such as the Goodell

landslide, bank erosion and channel instability can be expected to increase downstream.

The south unit of Colonial Creek Campground, including the main entrance road and part of Highway 20, are built on a debris cone deposited by Rhode Creek. This debris cone is constructed by massive deposits of rock and gravel as well as by alluvial deposits. Stream channels and the debris cones themselves are known to be unstable features.

Description and Explanation of Flood Mitigation Plans, Including:

A. Measures to reduce hazards to human life and property to the regulatory floodplain level, while minimizing the impact to the natural resources of the floodplain, including the use of non-structural measures as much as practicable;

No detailed floodplain mapping exists for this area. None of the actions included in the preferred alternative are located within regulatory floodplains. However, the campgrounds and entrance roads previously described above are located on alluvial fans and debris cones. These landforms, which have floodplains that are inherently flood prone and unstable, so reasonable measures to reduce hazards to human life and property are needed.

The development of the south unit of Colonial Creek Campground is in a floodprone high flood-hazard area on the Rhode Creek debris cone. The most probable risk of flooding in this area is in fall, winter and early spring during severe rain on snow events. The risk to human life and property during these synoptic scale events is very low because the campground is closed, there is little administrative use, and there is usually several days advanced warning of flooding.

Flooding is also possible in the summer following intense convective thunderstorms. These small scale events are often triggered by passage of a cold front or convective instability. When these events occur, the risk to human life and property is somewhat greater because (a) the campground is open and often at full capacity; and (b) the lead time for the risk of flooding is reduced due to uncertainty of the event location and intensity.

A reasonably foreseeable flooding scenario in the summer season would involve several hours of lead time for a debris torrent event. Potential impacts

would include the possibility of partial or complete loss of vehicle access to the campground and flooding of some campsites due to a channel shift at the head of the debris cone. These conditions could also trigger old-growth tree fall (e.g. from flood-scoured tree roots or from severe wind). It is during these summertime events that reasonable mitigation measures would be needed to reduce risk to life and property.

To mitigate risks to human life and property, Given the sudden and catastrophic nature of flooding on the Rhode Creek debris cone and the potential for this on lower Goodell Creek by landslides, the NPS will enact the following mitigation measures for Colonial Creek Campground:

1. Install warning signs to notify visitors of the potential risks. The signs would be posted at the Camptender kiosk, boat launch, and other prominent areas. consider signing of the area near the mouth of the Rhode Creek and at lower Goodell Creek camps to the creek to warn visitors about the sudden and somewhat unpredictable flood hazard.
2. Develop a flood warning and campground evacuation plan. This concise plan would specify roles and responsibilities for response actions by park staff including measures for public notification and evacuation.
3. Identify and implement proactive steps to mitigate flood risk. To maintain camping opportunities at Colonial Creek Campground, the General Management Plan states the NPS would 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 would attempt reconstruction in the same area. If reconstruction of campground infrastructure following severe flooding is not feasible (or too impactful), the damaged areas would be abandoned and rehabilitated and new camping opportunities would be provided elsewhere in more sustainable locations.

B. Acknowledgement 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 Part 60).

The camp-tender housing and comfort stations at Colonial Creek Campground are not currently flooding, but several are located on active landforms where future changes could change conditions overnight. There are no other facilities in the

preferred alternative that are within regulatory floodplains.

Summary

The Skagit River is the main stream in Ross Lake NRA, but it is not the main source of flooding since flood flows are regulated by three large hydroelectric projects. The preferred alternative does not propose any new administrative and visitor use facilities in regulatory floodplains. Several existing facilities would, however, remain in flood prone areas on alluvial fans and debris cones. These include the major park campground at Colonial Creek, as well as smaller campgrounds along Goodell Creek. Flooding at these sites has been exacerbated by occurrence of slope instability within watersheds and the occurrence of several large floods in the past 20 years. While flood conditions are not particularly severe at three of the four sites and warning times of several days are likely, Rhode Creek presents a special flood hazard due to the possibility of debris flows triggered by thunderstorms during the main visitor use season.

GLOSSARY

accessibility: The provision of NPS programs, facilities, and services in ways that include individuals with disabilities, or makes available to those individuals the same benefits available to persons without disabilities.

accretion: The addition to land bordering water caused by the gradual deposition of sediment and debris.

acquisition: The act or process of acquiring fee title, or interest other than fee title, of real property including acquisition of development rights or remainder interest.

adaptive management: Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.

Advisory Council on Historic Preservation: The Advisory Council on Historic Preservation (ACHP) is an independent federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources. As directed by the National Historic Preservation Act of 1966 as amended, the council serves as the primary federal policy advisor to the president and Congress; recommends administrative and legislative improvements for protecting our nation's heritage; advocates full consideration of historic values in federal decision-making; and reviews federal programs and policies to promote effectiveness, coordination, and consistency with national preservation policies.

aggradation: A decrease in channel capacity due to the raising of the streambed elevation and an increase in width/depth ratio. The cause of aggradation is often an increase in upstream sediment load and/or size of sediment exceeding the transport capacity of the channel, or may be the result of channel instability and a decrease in stream power and shear stress. Adverse consequences associated with aggradation include channel-accelerated bank erosion or avulsion.

air quality designations: Designated under the Clean Air Act, Class I areas are those areas that are afforded the highest level of protection from air pollutants and generally consist of wilderness areas, national parks, and wildlife refuges. Class II areas are all areas not designated Class I where additional air pollutant inputs may be permitted up to certain levels.

archeology: The scientific study, interpretation, and reconstruction of past human cultures from an anthropological perspective based on the investigation of the surviving physical evidence of human activity and the reconstruction of related past environments. Historic archeology uses historic documents as additional sources of information.

archeological resource: Any material remains or physical evidence of past human life or activities that are of archeological interest, including the record of effects of human activities on the environment. An archeological resource is capable of revealing scientific or humanistic information through archeological research.

alternatives: Sets of management elements that represent a range of options for how or whether to proceed with a proposed action.

appropriate use: A use that is suitable, proper, or fitting for a particular park, or to a particular location within a park.

aquifer: A saturated, permeable sediment or rock that can store or transmit significant quantities of water.

asset: A physical structure or grouping of structures, land features, or other tangible property which has a specific service or function.

asset management: A systematic process of maintaining, upgrading, and operating assets cost-effectively by combining engineering principles with sound business practices and economic theory.

avulsion: A sudden loss or addition to land caused by the erosive or depositional action of water creating a new channel or filling in an existing channel.

backcountry: Remote, roadless, and less intensely used areas where the majority of use is by overnight campers who hike or ride stock.

bank barbs: Low-profile, angular rock structures that protrude into a river channel at an angle pointed upstream. They are used as an instream flow redirection technique designed to redirect the fastest, deepest part of the channel away from the eroding bank and to create eddies along the bank where velocity and erosion are reduced.

bioengineering: The use of live plant materials to provide erosion control, slope and stream bank stabilization, landscape restoration, and wildlife habitat. These techniques are used alone or in conjunction with conventional engineering techniques.

candidate species: Species not currently protected under the Endangered Species Act but under consideration by the U.S. Fish and Wildlife Service for addition to the list of federally threatened or endangered species.

channel migration zone: The geographic area susceptible to channel erosion and/or channel occupation. Because alluvial channels are rarely static through time, rivers and streams naturally migrate within their valleys. Channels respond with horizontal movement (lateral migration, avulsion, channel widening, channel narrowing) and vertical movement (incision and aggradation) depending on site-specific circumstances and watershed conditions. Human landscape disturbance can exaggerate or constrain channel migration by affecting local and watershed-wide processes of flooding, erosion, and deposition. The CMZ can extend beyond areas of flood inundation and can advance into landscape features above the 100-year flood water surface elevation.

clasts: An individual constituent, grain, or fragment of a detrital sediment or sedimentary rock, produced by the physical disintegration of a larger rock mass.

climate change: A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (UN Framework Convention on Climate Change 1992).

Code of Federal Regulations (CFR): A publication that codifies the general and permanent rules or regulations published in the *Federal Register* by the executive branch departments and agencies of the federal government and which carry the force of law. The citation “36 CFR 1.1 ” refers to part 1, section 1, of title 36.

commercial service: Any visitor-related service, activity, or facility for which compensation, monetary or otherwise, is exchanged. By law, all commercial services in parks must be authorized by the superintendent. Commercial services can originate within the park or outside.

conserve: To protect from loss or harm; preserve. Historically, the terms conserve, protect, and preserve have come collectively to embody the fundamental purpose of the NPS—preserving, protecting and conserving the resources contained within the National Park System.

consultation: A discussion, conference, or forum in which advice or information is sought or given, or information or ideas are exchanged.

cultural landscape: A geographic area, including both the cultural and natural resources and the wildlife or domestic animals therein, associated with an historic event, activity, or person, or exhibiting culture or aesthetic values. Cultural landscapes are investigated and defined in a way that emphasizes the interaction between human beings and nature over time. There are four overlapping types of cultural landscapes: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

cultural resource: An aspect of a cultural system that is valued by or significantly representative of a culture, or that contains significant information about a culture. A cultural resource may be a tangible entity or a cultural

practice. For NPS management purposes, tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, or as archeological resources, cultural landscapes, structures, museum objects, and ethnographic resources.

cumulative impact: The effect on the environment that would result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts can result from similar projects or actions, as well as from projects or actions that have similar impacts (40 CFR 1508.7).

decision maker: The managerial level employee who has been delegated authority to make decisions or to otherwise take an action that would affect park resources or values. Most often it refers to the park superintendent or regional director, but may at times include, for example, a resource manager, facility manager, or chief ranger to whom authority has been redelegated.

desired future conditions: The future condition of resources needed to meet a management objective. Desired future conditions are based on ecological, social, and economic considerations during the land and resource management planning process.

developed area: An area managed to provide and maintain facilities (such as roads, campgrounds, and housing) that serve park staff and visitors. It includes areas where park development or intensive use may have substantially altered the natural environment or the setting for culturally significant resources.

draft environmental impact statement (DEIS): A draft version of an environmental impact statement. The draft is available to the public for comment for a minimum of 60 days.

easement: A right or privilege one may have on another's land. For example, an easement may

allow a utility company to build and maintain electrical transmission lines through another landowner's property, but take no other actions beyond those defined in the easement.

ecosystem: A functioning system composed of a community of living organisms and their interactions with the physical and chemical environment. This term usually describes these systems at a regional or broad physiographic scale.

effect: The result of actions on natural and cultural resources, aesthetics, economic, social or human health and safety. Effects can be direct, indirect, or cumulative. This term is used interchangeably with "impact."

endangered species: Any animal or plant species in danger of extinction throughout all or a significant portion of its range. These species are listed as threatened or endangered by the U.S. Fish and Wildlife Service under provisions of the Endangered Species Act.

environmental impact statement (EIS): A detailed analysis document mandated by the National Environmental Policy Act (NEPA) when a proposed action or alternative has the potential for significant impact on the human environment.

environmentally preferred alternative: The alternative that would best promote the policies set forth in NEPA section 101 from among all action alternatives analyzed as part of the planning process. The Council for Environmental Quality encourages agencies to identify an environmentally preferable alternative in the draft environmental impact statement or environmental assessment, but only requires that it be named in the record of decision. It is usually selected by the planning team.

erosion: The wearing away of land surface either by natural chemical or physical processes (including water, wind, or ice) or human or animal activities.

ethnographic resource: A site, structure, object, landscape, or natural resource feature assigned traditional, legendary, religious, or

other significance in the cultural system of a group traditionally associated with it.

executive orders, memoranda, or proclamations: Regulations having the force of law issued by the President of the United States to the executive branch of the federal government.

exotic species: An organism that occurs outside its natural geographic distribution due to deliberate or accidental human action.

eyrie: The nest of a bird of prey, such as a hawk or eagle, in an elevated place.

fauna: The animal life of an area.

Federal Register: A daily publication of the National Archives and Records Administration that updates the Code of Federal Regulations, in which the public may review the regulations and legal notices issued by federal agencies. Source citations for the regulations are referred to by the volume and page numbers of the *Federal Register* and the date of publication. For example, volume 65, page 2,984 might be cited as “65 FR 2984, January 19, 2000.”

final environmental impact statement (FEIS): The document that responds to public comments on the draft environmental impact statement and may include corrections and revisions as a result of public comment.

fire management plan: An implementation plan that details how natural fire regimes and prescribed fires will be managed in a park or other area.

fire suppression: All work and activities associated with fire extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

floodplain: Level streamside land that may be subject to flooding..

flora: The plant life of an area.

flow regime: A condition of stream flow defined by the mode of sediment transport, bed form, and flow resistance.

foundation statement: A statement that begins a national park unit’s planning process and sets the stage for all future planning and decision-making by identifying the unit’s mission, purpose, significance, special mandates and broad mission goals. It is incorporated into a unit’s GMP, but may also be produced as a standalone document for a unit.

frontcountry: Areas of a park that are easily accessible to visitors (as opposed to backcountry) and are more frequently used, often by single-day visitors. The frontcountry contains developed areas and is generally along or accessed by transportation corridors.

fundamental resources and values: Those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management because they are critical to achieving the park’s purpose and maintaining its significance. A fundamental value, unlike a tangible resource, refers to a process, force, story or experience, such as such as an ancestral homeland, wilderness values, or oral histories.

gateway community: A community adjacent to a national park unit that may serve as a point of entry for visitors to the unit. Gateway communities often have significant socioeconomic and cultural ties to the unit.

general management plan (GMP): A plan that clearly defines direction for resource preservation and visitor use in a park, and serves as the basic foundation for decision-making. GMPs are developed with broad public involvement and usually guide parks for 15 to 20 years. GMPs are accompanied by a draft and final environmental impact statement.

geologic resources: Any natural resource or process of a geologic nature or pertaining to the physical history of the earth. Examples include mineral resources, rock strata, fossil remains, or landscape features produced by processes such as exfoliation, erosion and sedimentation, glaciation, karst or shoreline processes, fossilization, or seismic, volcanic, and tectonic activities.

geographic information system (GIS): Both a database designed to store geographic data and a set of computer operations that can be used to analyze the data.

grizzly bear core area: areas more than 0.3 miles (500 meters) from a road or high use trail that are free of motorized traffic and high levels of human use.

groundwater: Water below the ground surface filling voids in soil or rock layers. The source of groundwater is precipitation (rain, snow, or glacial melt) that has percolated downward from the surface.

habitat: The natural abode of an organism, including all biotic, climatic, and all factors affecting its life.

heptachlor: an organic compound that was used as an insecticide, considered a persistent organic pollutant (POP)

herbaceous: Pertaining to, or characteristic of, an herb (fleshy-stemmed plant), as distinguished from the woody tissue of shrubs and trees.

hydrology: The study of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.

impact: see effect.

impact topic: A specific category of analysis for impacts, such as wildlife, vegetation, or historic structures. Impact topics are identified through public scoping and a determination of what aspects of the human environment would be affected if an action was implemented. Analysis of impacts for a specific topic may be required as a result of a public law or an executive order.

impairment: An impact so severe that, in the professional judgment of a responsible NPS manager, it would harm the integrity of park resources or values and violate the 1916 NPS Organic Act.

implementation plan: A plan that follows guidance from, but provides greater detail than, the general management plan and that specifies how one or more of the desired

resources conditions, visitor experiences, or proposed actions will be accomplished. An implementation plan may direct a specific project or an ongoing activity.

indicator: A component or attribute of an ecosystem that can be observed and/or measured. An indicator provides evidence of the function, productivity, health, and/or condition of the ecosystem.

indigenous (species): Any species of organism native to a given land or water area by natural occurrence.

infrastructure: A general term describing public and quasi-public utilities and facilities such as roads, bridges, sewers, sewer plants, water lines, storm drainage, power lines, parks and recreation facilities, public libraries, and fire stations. Infrastructure can also be considered permanent installations such as lighting, sidewalks, buildings, and water systems.

integrity: The authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period.

invasive non-native species: A non-native species (with respect to a particular ecosystem) whose introduction causes or would likely cause harm to the economy, environment, or human health.

irretrievable: One of the categories of impacts mentioned in the National Environmental Policy Act to be included in environmental impact statements. An irretrievable effect applies to a loss of production or a commitment of renewable natural resources.

irreversible: A category of impacts mentioned in the environmental impact statement that applies to non-renewable resources, such as minerals and archeological sites. Irreversible effects can also refer to effects of actions that can be renewed only after a long period of time, such as the loss of soil productivity.

issue: Some point of debate that needs to be resolved. For GMP planning purposes, issues can be divided into "major questions to be answered by the GMP" (also referred to as the "decision points of the GMP") and "NEPA

issues” (usually environmental problems related to one or more of the planning alternatives).

kiosk: A stall or other structure set up in a public place where one can obtain information.

landscape: A collection of similar ecosystems, distributed over a large geographical area, that share underlying biological, physical or human-made characteristics. See also cultural landscape.

lateral water infiltration: lateral movement of water into a soil or rock surface

life cycle costing: An accounting method that analyzes the total costs of a product or service, including construction, maintenance, manufacturing, marketing, distribution, useful life, salvage, and disposal.

management concept: A brief statement of the kind of place the park should be (also referred to as a “vision statement”).

management direction (also desired condition or management prescription): A planning term referring to statements about desired resource conditions and visitor experiences, along with appropriate kinds and levels of management, use, and development for each park area.

management prescriptions: See management direction.

management zone: A geographical area for which management directions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities, development, and park operations. Each zone has a unique combination of resource and social conditions and a consistent management direction. Different actions are taken by the NPS in different zones.

management zoning: The application of management zones to a park unit. The application of different type of zones and/or size of zones are likely to vary in different alternatives.

Memorandum of Agreement or Memorandum of Understanding: Short written statements outlining the terms of an agreement, transaction, or contract between two or more parties.

minority: Defined by the U.S. Census as individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic.

mitigation: Modification of a proposed action to lessen the intensity of its impact on a particular resource; compensation for an impact.

National Ambient Air Quality Standards:

Allowable concentrations of air pollutants in the ambient (public door) air as specified in 40 CFR 50.NAAQS and based on air quality criteria. These are divided into primary and secondary standards which allow for adequate margins of safety to protect the public health and welfare.

National Environmental Policy Act (NEPA)

process: The objective analysis of a proposed action to determine the degree of its environmental impact on the human (natural and cultural) environment, alternatives to the proposed action, mitigation to reduce or compensate for the impact, and the full and candid presentation of the analysis to, and involvement of, the interested and affected public. This process is required of all federal agencies by the National Environmental Policy Act of 1969.

National Park System: The sum total of the land and water now or hereafter administered by the Secretary of the Interior through the National Park Service as park, monument, historic site, parkway, recreational area, or other purposes.

National Register of Historic Places: The federal listing of nationally, regionally, and locally significant buildings, structures, sites, objects or districts. Sites listed in the National Register must be considered when making management decisions if an action could affect that site. Parks are required to assess properties over 50 years old to determine their eligibility for nomination to the National Register.

Native Americans: “Of, or relating to, a tribe, people, or culture that is indigenous to the United States,” according to the Native American Graves Protection and Repatriation Act. Typically, the general term is applied to American Indian tribes, Alaska Natives, Native Hawaiians and other Pacific islanders. Federally recognized American Indian tribes and Alaska Natives have a unique status as “eligible for the special programs and services provided by the United States to Indians because of their status as Indians.”

Native American consultation: Consultation required by various laws, regulations, executive orders and policies relative to indigenous peoples who may have traditional or contemporary interests in the lands now occupied by parks. Consultation done in compliance with legal requirements is considered to be government-to-government consultation when federally recognized American Indian tribes and Alaska Natives are involved.

native species: Plants, animals, or other living organisms indigenous to an area.

natural quiet: Refers to the state of having only natural sources of sound; wind, rustling leaves, water, and animal calls are examples.

night sky: A sky free of artificial light sources and light pollution.

non-native species: Plants or animals that are not indigenous to the area (see also exotic species).

notice of availability: A notice in the *Federal Register* of the availability to the public of either a draft or final environmental impact statement or a record of decision on an action.

notice of intent: A notice in the *Federal Register* of the intent to prepare an environmental impact statement on a proposed action.

paleoecological : Pertaining to the study of ancient or prehistoric ecosystems.

park: Any one of the nearly 400 areas of land and water administered as units of the National Park System. The term is used interchangeably with “unit.”

paulustrine: Pertaining to material growing or deposited in a marsh, wetland or paludal environment.

peak season: High-use times, usually from Memorial Day to Labor Day, when most park visitation occurs.

pedon: The smallest unit or volume of soil that contains all the soil horizons of a particular soil type, usually having a surface area of 10.76 square feet or approximately 1 square meter and extending from the ground surface down to bedrock.

persistent organic pollutant (POP): an organic compound that is resistant to environmental degradation through chemical, biological, and photolytic processes. POPs have been observed to persist in the environment, to be capable of long-range transport, to bioaccumulate in human and animal tissue, to biomagnify in food chains, and to have potential significant impacts on human health and the environment.

Planning, Environment, and Public Comment (PEPC) System: An online database designed to facilitate the project management process in conservation planning and environmental impact analysis. It assists NPS employees in making informed decisions with regard to a number of compliance issues throughout the planning, design, and construction process.

prescribed fires: Fires ignited by park managers to achieve resource management and fuel treatment objectives.

preservation: The act or process of applying measures to sustain the existing form, integrity, and material of a historic structure, landscape, or object. Work might include preliminary measures to protect and stabilize the property, but generally focuses on the ongoing preservation, maintenance, and repair of historic materials and features rather than extensive replacement and new work (NPS DO-28).

primary interpretive themes: The most important ideas or concepts to be communicated to the public about a park.

professional judgment: A decision or opinion that is shaped by study, analysis, and full consideration of all the relevant facts, and that takes into account:

- the decision maker's education, training, and experience
- advice or insights offered by subject matter experts and others who have relevant knowledge and experience
- good science and scholarship and, whenever appropriate,
- the results of civic engagement and public involvement activities relating to the decision.

public involvement: Public input and participation sought in the planning for public lands and required under the National Environmental Policy Act. Comment is sought at the initial scoping (information gathering) and draft stages for an EIS or during initial scoping and upon publication of an EA.

reconstruction: The act or process of depicting, by means of new construction, the form, features, and detailing of a nonsurviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

record of decision (ROD): The document that states which alternative analyzed in an environmental impact statement has been selected for implementation and explains the basis for the decision. The decision is published in the *Federal Register*.

rehabilitation: The act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical or cultural values.

repatriation: To send back to place of origin. In the case of repatriated structures, these structures would be brought back to their original location.

restoration: The act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive

upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

regulations: Rules or orders prescribed by federal agencies to regulate conduct, and published in the Code of Federal Regulations.

reservoir: An artificial lake where water is collected and kept in quantity for use.

revegetation: The reestablishment and development of a plant cover either by natural means or by artificial means such as reseeding.

right-of-way: A permit or an easement that authorizes the use of public land for certain specified purposes, commonly for pipelines, roads, telephone lines, electric lines, and reservoirs. It is also the reference to the land covered by such an easement or permit. See also easement.

rip-rap: Hard, durable, angular rock that is free of organic material and resistant to weathering and erosion. Rip-rap is commonly used to stabilize drainage channels.

sackung: "Sackungen" is a German term that describes gravitational spreading or deep seated gravitational slope deformation at or near ridge tops in mountainous terrain. The process occurs when over-steepened, or undercut valley slopes create a gravitational spreading or slope deformation away from a ridge top.

sacred sites: Certain natural and cultural resources treated by American Indian tribes and Alaska Natives, and Native Hawaiians as sacred places having established religious meaning and as locales of private ceremonial activities.

scoping: Includes both internal and external scoping. Internal scoping is NPS decision making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the interested and affected public.

section 106 consultation or the 36 CFR 800

process: Discussions between a federal agency officials and the state historic preservation officer, and when necessary, the Advisory Council on Historic Preservation, and other interested parties concerning historic properties that could be affected by a specific undertaking. Section 106 is the part of the National Historic Preservation Act that outlines the procedure. The procedure is codified in 36 CFR 800.

section 7 consultation: The requirement of section 7 of the Endangered Species Act that federal agencies consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

sensitive species: A plant or animal species not yet officially listed, but which is undergoing status review for listing on the U.S. Fish and Wildlife Service's official threatened and endangered list. These include species whose populations are small and widely dispersed or restricted to a few localities and species whose numbers are declining so rapidly that official listing may be necessary.

servicewide: An action, regulation, or description that relates to all units of the National Park System.

significance statements: Explanations of why, within a national, regional, and systemwide context, a park's resources and values are important enough to warrant national park designation.

socioeconomic analysis: The task of assessing the impact of a plan or project on a community's or region's social structure, on a community's fiscal health, or a region's economic basis.

soundscape (natural): The aggregate of all the natural and nonhuman-caused sounds that occur in parks, together with the physical capacity for transmitting natural sounds.

special mandates: Legal mandates specific to a park that expand upon or contradict a park's legislated purpose

stabilization: According to NPS management policies, archeological resources, buildings, structures, and objects subject to erosion, slumping, subsidence, or other natural deterioration will be stabilized using the least intrusive and destructive methods. The methods used will protect natural resources and processes to the maximum extent feasible. Stabilization will occur only after sufficient research demonstrates the likely success of the proposed stabilizing action, and after exiting conditions are documented.

stakeholder: An individual, group, or other entity that has a strong interest in decisions concerning park resources and values. Stakeholders may include recreational user groups, people with a historic affiliation to the park, permittees, and concessioners. In the broadest sense, all Americans are stakeholders in the national parks.

state historic preservation officer or office: An official in each state appointed by the governor to administer the state historic preservation program and carry out certain responsibilities relating to federal undertakings in the state.

stewardship: The cultural and natural resource protection ethic of employing the most effective concepts, techniques, equipment, and technology to prevent, avoid, or mitigate impacts that would compromise the integrity of park resources.

stock: Animals such as horses, mules, or llamas that can be ridden or used to carry supplies.

strategic plan: A servicewide five-year plan required by the Government Performance and Results Act in which the NPS states how it plans to accomplish its mission during that time, and the value it expects to produce for the tax dollars expended. Similarly, each park, program, or central office has its own strategic plan, which considers the servicewide mission and its own particular mission.

streambed: The channel bottom of a stream, river or creek; the physical confine of the normal water flow.

stream reach: A classification term used in hydrology to refer to relatively similar section of stream or river based on factors such as stream gradient and valley width.

superintendent: The senior NPS official in a park; used interchangeably with “park superintendent” or “unit manager.”

sustainable: The yield of a natural resource that can be produced continually at a given intensity of production or extraction.

sustainability: The ability of an ecosystem to maintain ecological processes and functions, biological diversity, and productivity over time.

threatened and endangered species: As defined in the Endangered Species Act of 1973 as amended (Public Law 93-205; 87 Stat. 884), “endangered species” is “any species which is in danger of extinction throughout all or a significant portion of its range” and a “threatened species” is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” Whether a species is threatened or endangered is determined by the following factors: (1) present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, sporting, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms, or (5) other natural or human-made factors.

understory: The trees and woody shrubs growing beneath the tallest trees or other vegetation in an area.

unit: See park.

universal design: The design of products and environments to be usable by all people to the greatest extent possible, without the need for adaptation or specialized design.

user capacity: The type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions in a park without degradation. Management prescriptions in the general management plan.

visitor: Anyone who uses a park’s interpretive, recreational, and educational services, regardless of where such use occurs (such as through Internet access, libraries, or other methods).

visitor experience: The perceptions, feelings, and reactions a person has while visiting a park. Examples of visitor experiences include: a sense of being immersed in a natural landscape; a feeling of being crowded; a feeling of being in an area where the sights and sounds of people and vehicles are predominant; having a sense of challenge and adventure; or a perception of solitude and privacy.

visitor use: Passive or active recreational activity on public land.

visual resource: A part of the landscape important for its scenic quality. It may include a composite of terrain, geologic features, or vegetation.

watershed: An area that collects and discharges runoff to a given point. It is often used synonymously with drainage basin or catchment area.

wetland: Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and which under normal circumstances will support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Typical wetlands include marshes, shallow swamps, sloughs, lakeshores, bogs, wet meadows, river overflows, mud flats, and riparian areas.

wilderness (designated): Federal land that has been designated by Congress as a component of the National Wilderness Preservation System. See also wilderness (eligible, study, proposed and recommended) and wilderness (potential).

wilderness (eligible, study, proposed and recommended): Federal lands that have been found to possess wilderness character based on the criteria specified in the Wilderness Act. The four categories reflect different stages of the wilderness review process, and all are managed to preserve the wilderness resources and values that make them eligible for

wilderness designation. See also wilderness (designated) and wilderness (potential).

wilderness (potential): Federal lands that are surrounded by, or adjacent to, lands proposed for wilderness designation but that do not themselves qualify for designation due to temporary, nonconforming uses or incompatible conditions. Potential wilderness is a subset of the other wilderness categories. See also wilderness (designated) and wilderness (eligible, study, proposed and recommended).

wildfire: An unwanted wildland fire, regardless of ignition source, which is unplanned, has escaped control, or does not meet management objectives and therefore requires a suppression response.

zone: See management zone.

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