

Acknowledgements . . .

The Bureau of Land Management Klamath Falls Resource Area acted as a cooperator in the development of this report and environmental assessment; their assistance was critical in its development. Much of this document was taken directly from, or based on, the Bureau of Land Management's earlier studies of the Klamath River: the Final Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study and the Draft Klamath Falls Area Resource Management Plan and Environmental Impact Statement. This assessment also borrowed heavily from the Final Environmental Impact Statement for the Salt Caves Hydroelectric Project prepared by the Federal Energy Regulatory Commission. These publications will be examined in considerable detail throughout the course of this text.

The art in this report was donated by Paul Chattey, Terri Taylor and Marsha Tolon with the National Park Service's Cultural Resources Division. Each drawing represents one of the seven nationally significant categories of resources found along the upper Klamath River. The cover, for example, represents Native American traditional use of the Klamath River.

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INTRODUCTION

Purpose

On April 22 of 1993, Earth Day, Oregon Governor Barbara Roberts petitioned the Secretary of the Interior to exercise his authority under section 2(a)(ii) of the National Wild and Scenic Rivers Act (NWSRA; Public Law 90-542, as amended) to designate the upper Klamath River as a national wild and scenic river. This application was forwarded to the National Park Service (NPS) and assigned to the Pacific Northwest Regional Office to evaluate and to make certain determinations as required under the NWSRA and Department of the Interior guidelines. This document is the culmination of those determinations, as well as an assessment of impacts to the environment as required by the National Environmental Policy Act (NEPA; Public Law 91-190).

For a river to qualify for the National Wild and Scenic Rivers System (System) through section 2(a)(ii) of the NWSRA, four requirements must be met.

- 1) The river must have been designated as a component of a state's wild or scenic rivers system by, or pursuant to, an act of the legislature of that state.
- 2) Management of the river must be administered by an agency or political subdivision of the state, except for those lands already administered by an agency of the federal government.
- 3) The river must meet eligibility criteria common to all national wild and scenic rivers, i.e., the river must be free-flowing as determined by standards set by the Departments of the Interior and Agriculture and possess one or more outstanding resources of significance to the region or nation.
- 4) There must be effective mechanisms and regulations in place -- local, state or federal -- to provide for the long-term protection of those resources for which the river was deemed eligible.

In addition, if designated, the river is given one of three classifications. Each classification carries with it different responsibilities in management and protection. As defined by the NWSRA, the three classes of rivers are:

- 1) *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.
- 2) *Scenic river areas* -- Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- 3) *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.

Finally, before the Secretary of the Interior can take action, a proposed wild and scenic designation must be evaluated for potential impacts to the environment as required by the NEPA, and both the proposal and the NEPA documentation must be circulated to appropriate federal agencies for review as required by both the NEPA and the NWSRA.

Report Structure

This first section presents a summary of the NWSRA, provides a description of the river segment being considered for designation, and identifies the principle assessments and documents that are referenced in this report.

The second section describes the Klamath River's status as a state-protected river and begins to examine the existing state protection mechanisms, which are more fully considered in the Resource Protection Section. This section of the report, and most sections to follow, concludes with findings on whether the requirements for designation have been met.

In the third section, the river's eligibility and classification is evaluated. The question of free flow is addressed, and natural, cultural and recreational resources are evaluated to determine their significance to the nation or region. Section four provides a summary of the protection mechanisms already in place, determines if they are sufficient to protect the river's resources in perpetuity, and considers if they provide an adequate framework for future management. Section five is the environmental assessment for this proposed action as outlined in the National Park Service's National Environmental Policy Act Compliance Guideline (NPS-12). This section also includes a detailed description of the river's resources and the setting in which the environmental assessment occurs. The final section summarizes the report and includes the National Park Service's preliminary recommendations on the state of Oregon's application for wild and scenic river designation.

Wild & Scenic Rivers Act - Criteria and Process

Enacted in 1968, the NWSRA was intended to preserve selected free-flowing rivers in their natural condition for the use and enjoyment of the public. This alternative to dam construction was intended to balance the nation's water resources development policies with river conservation and recreation goals. Designated rivers receive protection from new hydropower projects and from other federally assisted water-resource projects -- as defined through grants, licenses, permits or funding -- that would alter the river's free-flowing characteristics or have a direct and adverse effect on the river's outstanding resources.

The NWSRA established two processes by which a river could enter the National Wild and Scenic Rivers System. One is through direct congressional designation. This is frequently preceded by a congressional amendment to section 5(a) of the NWSRA which authorizes a study to assess a river's qualifications for the national system before Congress takes action to designate the river.

Rivers can also be added to the national system through an administrative action by the Secretary of the Interior (Secretary). Section 2(a)(ii) of the NWSRA allows the governor of a state to apply to the Secretary for national designation. The NPS then evaluates whether the requirements of section 2(a)(ii) have been met and advises the Secretary of its findings. If the Secretary determines that the application meets the requirements, the National Park Service publishes a notice of administrative designation in the *Federal Register* and notifies the Federal Energy Regulatory Commission (FERC) and other affected federal agencies of the proposed action. Following a 90-day comment period for federal agencies and 45 days for the public, the Secretary takes final action on designation.

Rivers designated under section 2(a)(ii) receive the same protection afforded all rivers in the System. Rivers designated through this process are managed by the state, or political subdivision of the state, rather than the federal government, except for those lands owned by the federal government. Section 2(a)(ii) is ideally suited to rivers where there is a strong tradition of state or local management and protection of the river.

When a river is added through section 2(a)(ii), it is done with the condition that it be administered without cost to the federal government. This means that there can be no condemnation or other acquisition of lands or water rights by the federal government related to wild and scenic river designation. This prohibition does

not extend to state and local governments. It is also important to recognize that this restriction does not apply to federal actions that could reasonably be pursued regardless of designation. This is particularly important when considering a river such as the Klamath which flows through federal lands and where the Bureau of Land Management (BLM) is actively involved in resource management which may involve acquisition from willing sellers.

Klamath River Segment Proposed For Designation

The Klamath River begins in Lake Ewauna, just south of the city of Klamath Falls, Oregon. It flows to the southwest into California and on to the coast, where it empties into the Pacific Ocean in Redwood National Park. From its start to Copco Lake in California, a man-made lake formed by Copco Dam, the river is known as the upper Klamath. Downstream of Copco Dam, the river is considered the lower Klamath. This report deals with an 11-mile portion of the upper Klamath River beginning immediately downstream of the John C. Boyle (J.C. Boyle) Hydroelectric Powerhouse (river mile 220.3) and flowing to the Oregon-California border (river mile 209.3). The J.C. Boyle Powerhouse, as well as Copco Dam in California, are owned by Pacific Power and Light Company (PP&L) and operated to produce electricity for sale through the northwest power grid.

Existing Assessments and Reports

The section of the Klamath River proposed for designation is one of the most studied, most analyzed rivers in the west. In 1980, the river's nationally outstanding resources were noted in the NPS's *Nationwide Rivers Inventory* (NRI). Within the last five years, three separate documents have been released addressing its future use. Much of this report and environmental assessment was taken from, or based on, earlier studies of the Klamath River: the *Final Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study* by the BLM's Klamath Falls Resource Area; the FERC's *Final Environmental Impact Statement for the Salt Caves Hydroelectric Project*; and the BLM's *Draft Klamath Falls Area Resource Management Plan and Environmental Impact Statement*. Following is a brief description of these reports.

Nationwide Rivers Inventory

When the NWSRA was passed in 1968, it included a provision to identify possible additions to the National Wild and Scenic Rivers System. Section 5(d) states:

The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all federal agencies as potential alternative uses of the water and related land resources involved.

In 1980, the NPS released the NRI. In it, the Klamath River was identified as a possible future addition to the national system. The significant resources noted by the NRI included the river's excellent wild trout fishery and the outstanding whitewater. The NRI called the Klamath "[a]mong the best whitewater rivers in the West; with long, sustained rapids of class IV and V difficulty."

Congressional Wild and Scenic River Study

The Omnibus Oregon Wild and Scenic Rivers Act of 1988 (Public Law 100-557) authorized the Secretary of the Interior to study the upper Klamath River for potential designation. In March of 1990, the BLM released the *Final Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study*.

The BLM study considered three segments of the river. The first reach extended from the J.C. Boyle Dam downstream 4.2 miles to the J.C. Boyle Powerhouse. The second segment ran from the powerhouse to the Oregon-California border, coinciding with the segment under consideration here. The third segment extended from the state border 5.3 miles downstream to the backwaters created by Copco Dam. The BLM found the uppermost segment ineligible for wild and scenic designation. The two downstream segments were found both eligible and suitable for national designation, and both segments qualified for a scenic classification.

Application for Federal Energy Regulatory Commission License

The first hydroelectric project for the Salt Caves¹ was proposed in 1980 by PP&L, which shortly abandoned the project as uneconomical. Since 1985, the city of Klamath Falls has applied for permits to construct several different versions of the Salt Caves Hydroelectric Project. The city has pursued these widely varying plans simultaneously before the FERC and three Oregon state agencies with jurisdiction over the upper Klamath River. These agencies are the Water Resources Commission (WRC), the Energy Facilities Siting Council (EFSC), and the Department of Environmental Quality (DEQ).

In January 1985, Klamath Falls applied for a license from the FERC to develop a facility known as the "High Dam" proposal and issued a \$250 million bond to finance construction. In October 1985, after criticism by several Oregon state agencies -- including the Oregon Fish and Wildlife Commission citing unacceptable risks to fish and wildlife -- the city withdrew its original application and submitted a revised application to the Oregon Water Resources Department proposing a dam with a smaller reservoir and a longer power conduit. This amended version is known as the "Low Dam" proposal. In November 1986, the city filed a new application for the "Low Dam" project with the FERC.

In July 1989, the FERC released the *Draft Environmental Impact Statement for the Salt Caves Hydroelectric Project* (DEIS). This document evaluated the "Low Dam" proposal with mitigation, a "No Dam" hydroelectric alternative, and the "No Action" alternative. The "No Dam" project would consist of a diversion facility at the tailrace of the existing J.C. Boyle Powerhouse, a series of conduits leading to a channeling forebay, and a new powerhouse near the Oregon-California border. This proposal, developed by staff at the FERC, would eliminate the need for a new diversion dam and associated reservoir. The DEIS concluded that the city's "Low Dam" proposal would have significant adverse environmental impacts, and that the "No Dam" alternative would have its own adverse impacts. Nonetheless, the DEIS concluded that the "No Dam" alternative would be the preferred means of developing hydroelectric power.

The FERC sought clarification on the city's position regarding the feasibility of the "No Dam" alternative; the city's intent was to pursue the project. However, Klamath Falls has not filed an application with the FERC to construct or operate the "No Dam" proposal and has not withdrawn its application for the "Low Dam."

Concurrent with its applications to the FERC, Klamath Falls filed applications with the Oregon state agencies responsible for water quantity, water quality, and power. In 1985, the city filed with the WRC for a water use permit, the EFSC for a siting permit, and the DEQ for a 401 certification. In 1986, the city sent new applications to all three agencies for its revised "Low Dam." This application is referenced as Salt Caves II by state agencies.

¹ The Salt Caves is an unusual geologic formation located along the Salt Caves Reach of the upper Klamath River. The name is a result of area salt deposits, exposed along the cliffs, which were used by earlier settlers. Technically, the Salt Caves are exposed upper Miocene-age tuff (consolidated volcanic ash flow) exhibiting varying degrees of welding. The Salt Caves anticline occurs in this tuff, which is unusual as folding is rarely noted in welded tuff.

In August 1987, the DEQ denied the Salt Caves II 401 certification² primarily because the project would cause an increase in the river's temperature during the summer and violate the state's anti-degradation policy. Klamath Falls submitted a third application, known as Salt Caves III, to the DEQ. This version proposed a white-water rafting release program, higher minimum flows, and other measures. This time, the 401 certification was granted with conditions.

On November 8, 1988, the upper Klamath River was added to the Oregon State Scenic Waterways System. This program, among other restrictions, prohibits dams on designated rivers. Three months later, both the WRC and the EFSC denied the city's November 1986 applications for Salt Caves II based on inconsistency with state scenic waterways designation.

In June 1989, Klamath Falls filed another water rights application with the WRC for the "No Dam" alternative (Salt Caves IV). The reason cited for filing this application was to preserve the city's water priority if the city adopted this alternative. In July, the Water Resources Department, acting for the WRC, rejected the new application based on the opinion of the Oregon Attorney General that the project was barred by the Oregon Scenic Waterways Act (OSWA) and was not exempt from the state's energy facility siting law.

Earlier, in August of 1988, conservation groups had appealed the DEQ decision granting 401 certification to Salt Caves III and been granted a hearing. In September 1989, less than a month before the hearing, the city moved for an indefinite stay of the proceedings due to indecision over whether to pursue Salt Caves III or IV and their desire to study the "No Dam" alternative. The hearing was postponed. Klamath Falls subsequently abandoned its conditional certification for Salt Caves III. In September 1989, the DEQ notified the city that it must submit a new 401 certification application if it intended to pursue the "No Dam" alternative. On November 5, 1991, the DEQ revoked the certification for Salt Caves III.

In June 1990, the FERC published the *Final Environmental Impact Statement for the Salt Caves Hydroelectric Project* (FEIS). Again, the FERC recommended the "No Dam" alternative for licensing, concluding that it would be the least environmentally damaging method to develop the hydroelectric resource of the Klamath River. However, the FEIS acknowledged that there were still adverse environmental impacts on wildlife, vegetation, soils, archaeological and cultural resources, the quality and extent of whitewater boating and other recreational opportunities, and the canyon's scenic and aesthetic values. The FEIS claimed that the "No Dam" alternative would enhance aquatic habitat and the wild trout populations in the upper Klamath River; this has been questioned by state agencies.

The same month the FEIS was released, Klamath Falls applied to the DEQ for a 401 certification for the "No Dam" (Salt Caves IV) alternative. In February 1991, the DEQ denied the request. In October, the city made an administrative appeal, but the denial was upheld. In December of 1991, the city appealed to the Oregon Court of Appeals and filed a separate lawsuit in Klamath County Circuit Court. The Klamath County case was dismissed because the Court of Appeals case was pending. In April 1993, the Court of Appeals issued a decision upholding the denial for certification. Klamath Falls sought a *writ of certiorari* before the Oregon Supreme Court, which was granted. A decision is pending review by the court in the summer of 1994.

Bureau of Land Management Resource Management Plan

In August of 1992, as part of the normal BLM planning process, the agency released the *Draft Klamath Falls Resource Area Resource Management Plan (DRMP) and Environmental Impact Statement*. When adopted, this plan will establish guidelines for the management of 212,000 acres of public land around and adjacent

A 401 certification is required by section 401 of the Clean Water Act, Public Law 92-500. The act requires that an applicant for a federal license or permit for an activity which may result in discharge into navigable waters obtain a water quality certification from the state in which the discharge originates.

to the upper Klamath River. The public comment period for the DRMP has been completed. Finalization of the resource management plan (RMP) and associated environmental impact statement is pending.

The DRMP is comprehensive in dealing with the management of cultural and natural resources along the upper Klamath River. Management issues addressed include: watershed and riparian protection, water quality, timber production practices (including old growth forests), fish and wildlife habitat (including diversity and threatened and endangered species), special use areas described later), visual resources, recreation, cultural and historic resources, mineral and energy resources, and wild and scenic rivers. A more detailed analysis can be found in the Resource Protection Section of this report.

STATE DESIGNATION AND MANAGEMENT FRAMEWORK

There are two requirements relating to state policy and management which must be met before the Secretary of the Interior can take action to designate a river under section 2(a)(ii) of the NWSRA. The first is that the river must be designated as a component of a state wild, scenic, or recreational river system by, or pursuant to, an act of the state legislature. The second requirement is that the river be administered by an agency or political subdivision of the state at no cost to the federal government, except for those lands already in federal ownership. This requires that the state has an adequate framework in place through which to manage the river and has the legal and administrative resources with which to accomplish these goals. The purpose of this section is to determine whether the state of Oregon's application meets the above two requirements.

State Scenic River Designation

The Oregon Scenic Waterways Act (ORS 390.805 to 390.925) is a statewide law for river conservation established by popular vote in 1969. It is administered under the authority of the Oregon State Parks and Recreation Department (OPRD). The overall purpose of the state program is to recognize certain waterbodies that possess outstanding scenic, fish, wildlife, geologic, botanical, historic, archaeological, and outdoor recreation values. Its intent is to preserve and protect the natural setting, water quality, and free-flowing condition of these waters. Dams, reservoirs, impoundments and placer mining are prohibited in state-designated scenic waterways. The OSWA does not restrict the use of existing water rights, allow public use of private property without consent of the landowner, or require existing developments or private property uses to be removed.

Initially, six rivers (Rogue, Illinois, Owyhee, Minam, John Day, Deschutes) were designated into the Oregon Scenic Waterways System. These rivers were subsequently added to the National Wild and Scenic Rivers System. In November 1988, Oregon's voters approved Ballot Measure 7, adding several more rivers to the Oregon Scenic Waterways System. Included was the 11-mile stretch along the upper Klamath River from the J.C. Boyle Powerhouse to the Oregon-California state line under consideration here.

State and Local River Management Framework

State resource and land management agency actions regarding the Klamath River are governed by several laws and regulations. The Klamath River Basin Compact, the Oregon Comprehensive Waterway Management Plan, and the OSWA are the three most significant. Others will be discussed in the Resource Protection Section.

Klamath River Basin Compact

Concern over future uses of the upper Klamath Basin waters initiated formation of the Oregon and California Klamath River Commissions in 1953 by the respective state legislatures. In 1957, the commissions negotiated the Klamath River Basin Compact (Compact). The Compact addresses the need to have an agreed upon priority system for the distribution and use of water during water shortages to prevent critical needs, such as irrigation, from going unfulfilled. Article III B of the Compact calls for a priority of water uses and ranks six water uses. In descending priority, these are: domestic, irrigation, recreation (including fish and wildlife), industry, power generation, and other uses. Each state gives preference to applications for a higher use over applications for a lower use.

Oregon Comprehensive Waterway Management Plan

The Oregon Comprehensive Waterway Management Plan (1988) was implemented to improve, develop and conserve Oregon's waterways. This plan addresses the needs and uses of all Oregon rivers and reflects a balancing of the competing uses of Oregon waterways. It consists of a broad range of elements including statutes, administrative rules, and planning or management documents that may be applicable statewide or to a specific basin, stream reach, or waterway use. The plan's most relevant aspect is the Oregon Scenic Waterways Program, under the OSWA, which is discussed below.

Oregon Scenic Waterways Act

Management of the Oregon Scenic Waterways System is principally the responsibility of three state agencies -- the OPRD, the Water Resources Department, and the Division of State Lands -- in accordance with an adopted river management plan. Jurisdictional boundaries for a scenic waterway include the river and its shoreline and all the land and tributaries within 1/4 mile of its banks. Under the OSWA, changes in existing land use activities on non-federal lands within 1/4 mile of each river bank must be reviewed by the appropriate state managing agency. State rules for land management can be found in the Oregon Administrative Rules.

The upper Klamath River does not have an adopted river management plan. Until a specific river management plan is completed by the state of Oregon, management and regulatory decisions on the river are guided by interim management rules and guidelines. According to the OPRD, final preparation of a management plan has been on hold until a final decision on federal wild and scenic designation is made. In the interim, the Klamath has been classified as an Accessible Natural River Area. An Accessible Natural River Area is undeveloped, and its condition is generally pristine or near pristine. It can usually be reached by road. Under this classification, the river is managed to preserve the natural appearance of the area. Only low-impact activities are allowed. Structures and facilities must be screened from the river or to blend into the natural setting. The OPRD is required to ensure that new activities will not "substantially impair the natural beauty" of the scenic waterway. A project on non-federal lands may be denied if its approval would result in changing the potential river classification. This requirement is in effect regardless of whether or not a final management plan is adopted.

The OPRD administers the Klamath Scenic Waterway in cooperation with the BLM. The state of Oregon has sovereign ownership of the bed and banks of the Klamath River from Keno to the California border. State and local governments administer regulations on state and private lands within the river corridor. The Oregon Land Use Act of 1973 requires that local comprehensive plans be consistent with the 19 statewide goals adopted by the State Land Conservation and Development Commission. Goal 5, "Open Spaces, Scenic and Historic Areas and Natural Resources," provides for protection of a variety of natural and cultural resources, including "potential and approved federal wild and scenic rivers and state scenic waterways." The BLM administers federal lands in the river corridor in cooperation with appropriate state and local agencies to protect the outstandingly remarkable values of the state scenic waterway.

The implications of these state management responsibilities, and their ability to protect the river's resources, are addressed under the Resource Protection Section.

Conclusions

Based on the designation of the upper Klamath River as a state scenic waterway in accordance with the OSWA, the first section 2(a)(ii) criterion has been satisfied. Further, a state management framework for the protection of the upper Klamath River has been established; the second section 2(a)(ii) criterion has been fulfilled.

EVALUATION OF ELIGIBILITY & CLASSIFICATION

Eligibility Findings

The NWSRA requires that, to be eligible for inclusion in the national system, a river or river segment must be free-flowing and, with its immediate environment, must possess one or more outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.

Free-Flowing Condition

Free-flowing, as defined in section 16(b) of the NWSRA, is applied to "any river or *section of a river*," and means "existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway." [Emphasis added] Free-flowing should not be confused with naturally flowing which is flowing without any upstream manipulation except by nature. As established by the Departments of the Interior and Agriculture, the fact that a river segment may flow between large impoundments does not preclude its designation. Such segments may qualify if conditions within the segment meet the criteria for wild and scenic rivers.

The upper Klamath River meets the definition of 'free-flowing.' The original volume of water diverted at the J.C. Boyle Dam is returned to the river bed at the powerhouse, keeping the overall volume consistent with that of the river above the dam. Although flows fluctuate in accordance with releases from the dam, the segment itself is free from impoundments and other significant modifications. Diversions are minor and do not disrupt the free-flowing character of the river.

Outstandingly Remarkable Values

The second criterion that a river must meet to be eligible for inclusion in the System is that it must possess one or more outstandingly remarkable values. The term "outstandingly remarkable" is not precisely defined in the NWSRA. As directed by 1982 interagency guidelines, the determination of whether or not a river area contains outstandingly remarkable values is based on the professional judgement of the interdisciplinary study team.

The BLM has developed a set of criteria to assess outstandingly remarkable values (BLM Manual 8351). These values, which must be directly river-related, are considered outstandingly remarkable if they are unique or exemplary compared to similar values on other river areas in the region. The outstandingly remarkable features should also be at least regionally significant. For the purposes of clarification and comparison, Southwestern Region 9 in the State Comprehensive Outdoor Recreation Plan (SCORP) was used to define the region. The upper Klamath River flows through Region 9, which includes Jackson, Josephine, Klamath and most of Douglas Counties in Oregon.

As mentioned earlier, the upper Klamath River has been the subject of numerous resource studies. Based on values identified in those studies, comparison of similar resource values in the region, public comment analysis, coordination with other agencies, and on-the-ground surveys, the BLM has determined that the upper Klamath does possess outstandingly remarkable values. Specifically, these values are recreation, wildlife, fish, prehistoric, historic and scenic resources, and Native American traditional use. In addition to the presence of each individual outstandingly remarkable value, the fact that all the values coexist in the Klamath River Canyon is particularly noteworthy. These values are described in detail below.

Recreation Resources

Whitewater boating is exceptional due to the quality and variety of year-round boating opportunities provided. Rafting opportunities can be divided by class of rapid, based on the international whitewater rating scale (Appendix B). The upper Klamath River provides the only year-round class IV-V run in the region (the lower Klamath and Rogue Rivers offer year-round class III-IV rapids). This attracts visitors from outside the region who are willing to travel long distances to experience the technically challenging whitewater run and associated recreational experiences.

There are more rapids (52) in this stretch of the river, ranging from class I to class V, than in most other rivers in the western United States. The first half, from RM (river mile) 220.1 to 214.3, offers less technical class I-III opportunities. The lower half, from RM 214.3 to 209.3, offers highly technical whitewater boating with 10 class I-II rapids and 18 class III-V rapids. This relatively short distance (five river miles), combined with the quantity and difficulty of rapids, provides an experience not found on other rivers in Oregon and northern California.

The upper Klamath is also the only river in the region to offer one-day trips with year-round class III-V rapids, attracting both private and commercial boaters. Most of the private boaters (rafters, canoeists and kayakers) are from within the region, whereas most of the commercial rafting outfitters and their clients are from outside the region, primarily from the San Francisco Bay area and northern California (based on BLM records).

Fishing is also considered to be an outstanding recreational value. The river provides an exceptional trout fishery and is reputed to be one of the better fly fishing rivers in Oregon. The upper Klamath River provides a fishery for wild rainbow trout with an excellent rate of catch that is rivaled in Oregon only by the Deschutes River. Relatively calm water flows through the upper portion of the segment, providing several prime fishing spots. Nearly the entire river has public access. Currently, the upper Klamath River is one of two major rivers in the region that is open to trout angling year-round. The river has a reputation for producing large wild rainbow trout, which draws anglers from outside the region.

Wildlife

The combination of numerous wildlife populations and diverse habitats found in the river corridor is singular within the region and qualifies as an outstandingly remarkable resource. Wildlife populations meet the criteria due to the large number of state and federal listed threatened and endangered (T&E) and/or state sensitive species that inhabit this segment (T&E table next page).

The rich diversity of T&E and other wildlife species found within this relatively small, confined area is unique within the region. There are three federally listed threatened or endangered species and four candidate species. There are nine state-listed threatened, endangered, or sensitive species, and two Oregon Natural Heritage Database listed species known to occur. An additional eleven federal candidate species potentially occur within this part of the study area. Noteworthy wildlife includes:

- A high diversity and number of raptors in the river canyon. Particularly noteworthy is the presence of nesting prairie falcons, including five known nest sites.
- Peregrine falcons. Falcons have increased their use of the area which improves the potential for reoccupation of historic nest sites. The Oregon Department of Fish and Wildlife (ODFW), in cooperation with the BLM, plans on reintroducing peregrines into the study area either through hacking or cross fostering with prairie falcons.
- Bald eagles which nest in and migrate through the area.
- Golden eagles that forage in and nest near this river segment.

- A maternity colony of Townsend's big-eared bats, one of only five known colonies in the region.
- Wintering non-game birds found in the canyon in large numbers. They provide an important avian prey base to resident and migrating raptors.
- Ringtail cats which are a regionally significant feature. The study area is the easternmost limit of the ringtail cat's range in Oregon.

The Klamath River Canyon bisects the Cascade Range and cuts through a variety of plant communities, thereby creating a wide diversity of habitats. All five major plant communities found in the area are present in this segment. The following habitat features are particularly noteworthy.

- The riverine habitat is important to a wide variety of birds and mammals including bald eagles, osprey, ringtail cats, and river otters.
- The canyon is a natural migration corridor for a variety of raptors.
- The extensive rimrock is important raptor nesting habitat.
- Large live and dead conifers provide nesting and roosting habitat for bald eagles and osprey.
- Caves provide important nursery and roosting habitat for several species of bats.
- The extensive oak forest and grasslands are critical habitat to large numbers of wintering non-game birds.

Fish

The population of native wild rainbow trout that inhabit this segment qualifies as an outstandingly remarkable resource. The Klamath River is one of three rivers in the region, and one of only six in Oregon, that is designated and managed by the ODFW as a wild rainbow trout fishery. This population is highly productive, both in terms of high catch rates (of fish up to 20 inches) and reproduction. Additionally, this naturally spawning trout population is genetically unique and has a natural resistance to high pH values. The trouts' resistance to a lethal parasite and high summer water temperatures may also be a genetic trait. These are characteristics that are inherent to the Klamath River and have been lethal to non-native trout introduced into the river in the past. The Northwest Power Planning Council recognized the significance of the Klamath's wild trout population by designating the upper river as a Protected Area (see the Resource Protection Section).

Other notable species include the Lost River and shortnose suckers, two federal and state endangered species, that potentially inhabit this segment. The Klamath largescale sucker and the slender sculpin, federal candidate (Category 2) and Oregon state-sensitive species, also potentially occur.

Threatened, Endangered and State-Sensitive Fish, Wildlife and Plant Species

Species	Status			Type Of Use	Source
	Oregon	California	Federal		
Birds					
Northern Spotted Owl*	T		T	R	BLM
Bald Eagle	T	E	T	N	BLM
Peregrine Falcon	E	E	E	M,P	ODFW
Northern Goshawk	SS			S,P	ODFW
Northern Pygmy Owl	SS			R	ODFW
Acorn Woodpecker	SS			R	ODFW
Lewis' Woodpecker	SS		FS	R	ODFW
Pileated Woodpecker	SS			ID,P	BLM
Western Bluebird	SS			N	KF
Western Yellow-billed Cuckoo*	SS	E	3B	ID	Littlefield
Mountain Quail			C2	R	BLM
Harlequin Duck*			C2	S	USFWS
Loggerhead Shrike*			C2	R,P	USFWS
Mammals					
Pacific Fisher	SS			R	KF
Ringtail	SS			R	KF
Townsend's Big-eared Bat	SS		C2	S	BLM
California Wolverine*	T	T	C2	R	ODFW
North American Lynx*			C2	R	USFWS
Pacific Western Big-eared Bat*			C2	S	USFWS
Herptiles					
California Mountain Kingsnake	SS			R	St. John
Western Pond Turtle	SS		C2	R	St. John
Tailed Frog**	SS			R	St. John
Spotted Frog**	SS			R	St. John
Northern Red-legged Frog*			C2	R	USFWS
Short-horned Lizard**	SS			R	St. John
Sharptail Snake**	SS			R	St. John
Fish					
Lost River Sucker	E	E	E	R	KF
Shortnose Sucker	E	E	E	R	KF
Klamath Largescale Sucker**	SS		C2	R	KF
Slender Sculpin*			C2	R	BLM
Plants					
Pygmy Monkey Flower*	SS		C2	R	BLM
Bellinger's Meadowfoam*	SS		C2	R	USFWS

Abbreviations Used In This Table

T = Threatened

E = Endangered

SS = State Sensitive Species

C2 = Federal Candidate Species, Category 2

N = Nester

P = Potential Nester

S = Seasonal

M = Migrant

R = Resident

ID = Insufficient Data

3B = Taxa which do not meet Endangered Species Act's legal definition of species; future investigation could lead to reevaluation of the listing qualifications.

KF = City of Klamath Falls, 1986 FS = U.S. Fish and Wildlife Service Sensitive Bird Species

USFWS = U.S. Fish & Wildlife Service

* Species potentially within or near the study area.

Prehistoric Resources

Prehistoric resources found along the river banks have been determined to be nationally significant due to the abundance of sites and their regional interpretive value. A high density of prehistoric sites (40) occur in the canyon. This demonstrates intense use of the river corridor by Native Americans, and additional research at these sites could further define the prehistory of the river corridor and of this region.

Sites include examples of most of the site types found in the region: villages (fishing, hunting and gathering camps); a quarry site; and burial grounds. These sites provide the opportunity to more thoroughly reconstruct prehistoric year-round use of the canyon. A wide array of animal and plant resources have been recovered from some of these sites. This information, combined with the diversity of site types, shows that the canyon was used year-round. This is an exception in this region where the wide geographical distribution of plant and animal resources necessitated extensive seasonal movement of people from place to place.

A wide range of artifacts from sites has shown that the river corridor was not the exclusive territory of one tribe, but was used at various times, possibly concurrently, by the Shasta, Modoc, Klamath and perhaps the Takelma Tribes. Tribal boundaries appear to have fluctuated within the upper Klamath River Canyon over the last 2,000 years. These findings raise interesting research questions concerning the timing of these boundary fluctuations, trade relationships between the tribes, and early use of the canyon. The ability to gain additional archaeological data from these sites about prehistoric use of the upper Klamath River Canyon make all of the sites eligible for nomination to the National Register of Historic Places as an Archaeological District.

Historic Resources

Historic sites are primarily associated with Topsy Road, an historic stagecoach/freight road that extends along 5.1 miles of the canyon. This road, completed in 1890, is an outstanding example of an early stagecoach and freight road in its original form. Bisecting the Cascade Range, Topsy Road was the only road into the Klamath Basin that was used on a year-round basis. From 1875 until the early 1900's, this road was traveled, even during inclement weather, to bring mail, freight, agricultural goods, and travelers to the Klamath Basin. Most of the original integrity of Topsy Road remains. One exceptional engineering feature, Topsy Grade, is a portion of the road that cuts into a vertical basalt face as the road ascends the rim of the canyon.

A livery station associated with stage and freight travel, known as the Way Station, provided year-round services to travelers on the Topsy Road. The two-story log cabin used at this stopover is in good condition and is visible from the road. The presence of this historic site, as well as other sites (Way Cemetery, Kerwin Ranch, Frain Ranch, and Topsy School) along the road, serve to enhance the historical value of Topsy Road. Portions of Topsy Road are eligible for nomination to the National Register of Historic Places.

Scenic Resources

The upper Klamath River Canyon has been classified by the BLM as Scenic Quality A, the highest scenic classification on BLM-managed lands. Scenic Quality A areas meet the standards for outstandingly remarkable resources. The scenic value is due to a combination of unique landform, diverse vegetation, water, and lack of negative cultural modifications. The canyon represents a transition from a mountainous to desert landscape as it crosses the Cascade Range, creating the unusual, varied scenery.

The steep-walled, layered basalt canyon is the predominant visual element in the region, as it rises up to 1,000 feet above the river. It cuts across the southeastern corner of the surrounding plateau, exhibiting considerably more landform variety than the plateau. Its steep canyon slopes with large rock outcroppings form vertical basalt cliffs, talus slopes, and rock slides. The Klamath River itself enhances the visual variety

in the canyon; as it flows through the deep canyon, it changes from slack, slow-flowing water in the wider areas, to a rushing torrent of cascading whitewater. This variety of flow greatly enhances the Klamath River's scenic value.

Vegetation is predominantly ponderosa pine with some oak. However, plant diversity is greater in the canyon than the surrounding plateau due to the variety of elevations, aspects and slopes. The canyon also provides exceptional opportunities to view wildlife and wildflowers.

Negative cultural modifications, such as roads, powerlines and developments, are not seen by the casual observer along the river. The strong sense of cultural heritage, predominantly from historic Native American use in the area, combined with the scenic beauty of the canyon draws visitors from outside the region.

The area's remoteness and steep topography provides visitors with uncrowded and natural aesthetic experiences and a strong sense of enclosure, not usually available at the more popular and famous national parks, monuments and rivers in the region. The scenery compares with the Rogue River's wild and scenic designated sections, although some rating factors, such as landform variety compared to immediate surrounding areas, vegetative diversity, and seasonal color variations, even exceed those on the Rogue.

Native American Traditional Use

Native American traditional use is an outstandingly remarkable value. This determination is based on statements by the Klamath Tribe and the Shasta Nation and supporting archaeological and ethnographic evidence that the canyon is sacred and of immeasurable spiritual significance. The spiritual importance of the canyon is associated with the river and canyon's physical environment, as well as ancestral and current use by tribal members. Encompassed within the canyon are six other outstandingly remarkable resources which form its physical environment: fish, wildlife, recreational fishing, and scenic, prehistoric, and historic values. Because spiritual power is invested in the environment, the preservation of these resources as a whole is vital to Native American religion.

With minor fluctuations in territorial boundaries, the canyon has had continuous Native American use for spiritual, cultural and other activities for at least 7,000 years. The canyon currently is used by members of two very distinct groups, the Klamath Tribe and the Shasta Nation, for such spiritual activities as vision quests, curing ceremonies, and spiritual preparation; and for cultural activities including fishing, hunting, gathering and education. The canyon was also used by ancestors of both groups for burial sites. These burial sites contribute to the spiritual significance of the canyon as they are places where spiritual leaders or individuals can prepare for specific religious and medicinal ceremonies or communicate with the Great Creator (Hall 1985). Artifacts recovered from prehistoric sites indicate that ancestral members of the Shasta, Modoc and Klamath were among the earliest users of the canyon. There are significant opportunities for future scientific study of the prehistoric values in the river corridor.

Other Exceptional Values

Apart from the values detailed above, the Klamath River supports or contains three other resource classes that were considered as possibly being outstandingly remarkable. Based on the information available when this report was developed, it was decided that special status plant species, vegetative communities, and geology did not quite qualify as outstandingly remarkable. Consideration of new information could lead to these resources being added to the list of outstandingly remarkable resources. This is especially true in the case of special status plant species, where listing as federal or state threatened and endangered would cause these plants to be of national or regional significance.

Outstandingly Remarkable Values Of The Klamath River, Oregon	
Resource	Characteristics
Recreation	Offers a variety of year-round whitewater boating opportunities for rafters, canoeists and kayakers; provides the only year-round Class III-V run in Oregon and northern California, attracting visitors from outside the region who are willing to travel long distances to experience the quality whitewater run; contains more rapids (52) in this segment, ranging from Class I-V, than in most other rivers in the western United States; offers an excellent fishery for wild rainbow trout with a size and catch rate among the highest in the state; nearly unlimited shoreline access; year-round fishing season attracts anglers from outside the region.
Wildlife	High degree of diversity of wildlife and threatened and endangered species; high habitat diversity; five known prairie falcon nest sites; historic peregrine falcon nest eyrie; ODFW and BLM plans for reintroducing peregrine falcons; bald eagle nesting territory; primary area of use by the listed threatened and endangered species; maternity colony of Townsend's big-eared bat.
Fish	Inhabited by a highly productive, genetically unique wild rainbow trout population, one of six designated wild rainbow trout rivers in the state; potentially inhabited by Lost River and Shortnose suckers (Federal and State endangered) and by the Klamath largescale sucker (Federal candidate and State sensitive).
Prehistoric	High density of sites (40), including villages sites, hunting, fishing, and gathering camps, and burial sites; regional interpretive value provides opportunities for scientific study; all sites are eligible for nomination to the National Register of Historic Places as an Archaeological District.
Historic	Historic Topsy Road, a stagecoach and freight road in its original form, parallels the east side of the river; includes an excellent example of a livery station associated with stage and freight travel; portions of Topsy Road are eligible for nomination to the National Register.
Scenic	Classified as Scenic Quality A, due to unique landform, diverse vegetation, water, and lack of negative cultural modifications; pronounced canyon is the predominant visual element in the region; scenic beauty combined with cultural heritage draws visitors from outside the region.
Native American Traditional Use	The canyon is considered by two distinct Native American groups to be sacred and of immeasurable spiritual significance; the other outstandingly remarkable resources in this segment play a significant role in traditional use; the canyon has had continuous use by Native Americans for the last 7,000 years.

Special Status Plant Species

Two plant species that are federal candidates (C2) for listing as threatened or endangered occur on BLM-managed lands adjacent to the Klamath River Canyon. These two species, Bellinger's meadow foam (*Limnanthes floccosa* ssp. *bellingermaniana*) and pygmy monkey flower (*Mimulus pygmaeus*), are also state of Oregon candidates for listing as threatened or endangered. Currently, they are on List 1 (taxa threatened or endangered throughout range) of the Oregon Natural Heritage Data Base. Documented sites for both species are in relatively level, seasonally wet, rocky meadows. Similar habitats on benches within the rim of the

canyon have a high potential to support populations of these two special status plant species. If these plants are listed as state or federal threatened or endangered, and are subsequently found within the Klamath River Canyon, they would constitute an eighth outstandingly remarkable resource.

Vegetative Communities

The Klamath River Canyon supports a wide diversity of plant communities due to variations in topography, aspect, elevation, soil type, and microclimate provided by the canyon. The canyon bisects the Cascade Range, thus traversing several distinct vegetation zones. Plant community types range from montane conifer forest to high desert communities, from oak savannah to riparian communities. This diversity of plant communities was a major contributing factor in finding both the wildlife and visual resource values in the canyon to be outstandingly remarkable.

The Klamath River is one of only two rivers to bisect the Cascade Range in southern Oregon/ northern California (the Pit River in California is the other one), and the diversity of plant communities is not duplicated elsewhere. The Columbia also flows across the Cascades; however, it crosses a different group of vegetative zones and thus does not duplicate the diversity of species, communities and habitats found in the Klamath River Canyon.

For this analysis, vegetative communities was considered to be a contributing factor in the finding of other resources to be remarkable. Further consideration and information could lead to vegetation being considered an outstandingly remarkable value by itself.

Geology

Spectacular high basalt and andesite cliffs with columnar jointing, the Salt Caves, localized outcrops of white diatomaceous earth, and landslide features are visible from the river. These features are unusual and add significantly to the scenic and recreational aspects of the Klamath River Canyon. However, compared to similar values in the region, these geologic features fall slightly short of qualifying as outstandingly remarkable.

Classification

After determining a river's eligibility for inclusion in the National Wild and Scenic Rivers System, it must be classified according to the category -- wild, scenic or recreational -- that best fits each eligible segment. Classification is based on the degree of naturalness and extent of development of the river and its adjacent lands as they exist at the time of the study.

As mentioned at the onset, there are three classification categories for designated rivers as defined in section 2(b) of the NWSRA.

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.

A wild river would be an undeveloped river with limited access by trail. The existence of a few inconspicuous roads leading to the boundary of the river area at the time of study would not necessarily bar wild river classification. To qualify for scenic classification, the river segment should not show substantial evidence of human activity. The portion of the watershed within the boundary of a scenic river may have some discernible existing development. A recreational classification would be appropriate in developed areas, such as where a river runs parallel to roads or railroads, with adjacent lands that have agricultural, forestry, commercial, or other developments -- provided that the waterway remains generally natural and riverine in appearance.

Water resource development, shoreline development, accessibility, and water quality are the criteria that are considered when determining classification. Each criterion is important, but their collective intent is more important. Although each classification permits existing development, the criteria do not imply that additional inconsistent development is permitted in the future. Developments that are compatible with designation would be allowed, provided they are carried out in an environmentally sound manner.

Water Resource Developments

Minor rock irrigation diversions (low rock walls that stretch from the shoreline to the center of the river channel and in some instances across the river) are the only water resource developments present in this segment. Water flows freely across these rock walls, even at low flow, and they do not contrast negatively with the surrounding landscape. No other water resource developments are present.

Shoreline Development

A raft launch area, semi-primitive campsite, several primitive campsites, and remnants of historic activities are visible, but not obvious, from the river. The only buildings visible from the river are three duplexes and an electric power substation adjacent to the powerhouse at the very upstream end of the segment under consideration, and an aesthetically appealing historic log cabin, which is partially screened from view. A United States Geological Survey (USGS) gaging station, composed of a cable strung across the river, a cable car, and a small building that houses the measuring equipment, is visible along a short reach of the river.

A wood pole powerline that is mostly screened from view by vegetation and topography parallels the upper portion of this segment. A small substation, situated above the immediate river environment, is visible for a short reach of the river in the lower part of the segment. Limited livestock grazing occurs on the floodplain next to the river.

Accessibility

The river is accessible in places by road, but these roads do not cross the river and are essentially inconspicuous and well-screened from view. Where the roads are visible from the river, they are limited to short stretches that are, for the most part, away from the immediate river environment. The roads are largely improved trails that are difficult to traverse, seldom used, and when used, are not part of a state or local transportation route. Primary use of these roads is for recreational activities and access by land owners.

Water Quality

This portion of the upper Klamath River is relatively unpolluted, but federally approved state water quality standards, set by the DEQ for water in the Klamath River, are occasionally not met. This is especially apparent during periods of low summer flow, when water quality upstream also does not meet federal standards. However, water quality is only in assessing a river for a wild classification. For scenic and recreational classifications, water quality must be sufficient to support the outstanding resources. This is

not to say that improvements in quality are not sought. These, improvements, however, are left to the provisions of the Clean Water Act.

Conclusions

The river exceeds all of the eligibility requirements for designation into the National Wild and Scenic Rivers System. It is free-flowing as defined by Department of the Interior guidelines and possesses at least one outstandingly remarkable value; in fact, the Klamath River possesses seven classes of resources found to be remarkable.

With regard to classification, the river segment does not meet all of the criteria for a wild classification. Shorelines are not entirely primitive and the river is also accessible by road in several places. The Klamath River does meet the criteria for a scenic classification. The upstream 0.1-mile portion of the reach barely meets the scenic classification criteria for shoreline development; however, the remainder meets or exceeds this criteria. Interagency guidelines discourage excessive segmentation for the purposes of classification. This segment is free of impoundments, the shoreline is still largely primitive and undeveloped, no substantial evidence of human activity is present, and it is accessible in places by dirt roads. Water quality is sufficient to support the river corridor's outstandingly remarkable values. The river is recommended for designation as a national scenic river.

EVALUATION OF RESOURCE PROTECTION & MANAGEMENT

One of the requirements under section 2(a)(ii) is that there are adequate mechanisms in place to protect the outstandingly remarkable resources that cause the river to be eligible for the System. These mechanisms may be federal or state laws and regulations, special designations, local zoning, or any other land use and resource protection overlay. Various protection mechanisms are in effect for the Klamath River Canyon. These include federal and state laws and regulations, BLM management guidance from the *Draft Klamath Falls Area Resource Management Plan and Environmental Impact Statement*, BLM and non-BLM allocations and classifications, and agreements with other landowners.

Federal Laws and Regulations

Legal guidance for planning and management of BLM-administered lands in the Klamath Falls Resource Area, including the Klamath Canyon, is derived from numerous statutes and executive orders. Most of these statutes apply to all lands of the United States; however, several are specific to federally managed lands.

Statutes and Regulations Common to All Lands

American Indian Religious Freedom Act	Northwest Power Act
Antiquities Act	Oregon Omnibus Wild and Scenic Rivers Act
Archaeological Resource Protection Act	Sikes Act
Clean Water Act	Soil and Water Resources Conservation Act
Clean Air Act	Taylor Grazing Act
Electric Consumers Protection Act	
Endangered Species Act	
Federal Power Act	
Fish and Wildlife Coordination Act	
Geothermal Steam Act	
Historic Sites Act	
Historic Preservation Act	
Land and Water Conservation Fund Act	
Migratory Bird Treaty Act	
Migratory Bird Conservation Act	
Mineral Leasing Act	
Mining Law	
Mining and Minerals Policy Act	
National Environmental Policy Act	
National Wild and Scenic Rivers Act	

Statutes and Regulations Specific to Federal Lands

Executive Order 11514 -- Protection and Enhancement of Environmental Quality
Executive Order 11593 -- Protection and Enhancement of the Cultural Environment
Executive Order 11644 -- Use of Off-Road Vehicles on the Public Lands (1972)
Executive Order 11988 -- Protection of Floodplains
Executive Order 11990 -- Protection of Wetlands
Federal Land Policy and Management Act
Oregon and California Sustained Yield Act

State and Local Laws and Regulations

There are several state and local laws and regulations that apply directly to private lands in the Klamath River Canyon. The most relevant are the Oregon Land Use Act (requiring county comprehensive planning), OSWA, and Oregon Forest Practices Act.

Oregon Land Use Act

The Oregon Land Use Act requires that local comprehensive plans be consistent with the 19 statewide goals adopted by the State Land Conservation and Development Commission. In the Klamath County's Comprehensive Plan (1984), the following goals are applicable to the upper Klamath River Canyon: Goal 1 (Citizen Involvement), Goal 2 (Land Use Planning), Goal 4 (Forest Lands), Goal 5 (Open Spaces, Scenic and Historic Areas, and Natural Resources), Goal 6 (Air, Water and Land Resources Quality), Goal 8 (Recreational Needs), Goal 9 (Economy), and Goal 13 (Energy Conservation). Goal 5 provides for the protection of a variety of natural and cultural resources, including "potential and approved federal wild and scenic rivers and state scenic waterways." This is to be accomplished through plan inventories and local regulations to prevent conflicting land uses to the extent possible. The Klamath County plan identified hydroelectric energy, state scenic waterways, fish and wildlife habitat (specifically riparian, deer winter range, and bald eagle nests), and known cultural resources (prehistoric and historic) as significant resource categories in the Klamath River Canyon. Goal 5 is being updated to reflect new inventory data.

The initial work conducted on Goal 5 resources in Klamath County was completed in June of 1984 with acknowledgement of the comprehensive plan by the Oregon Land Conservation and Development Commission. In February 1988, the county amended the comprehensive plan designation for a variety of resources within the Klamath River Canyon in response to the city of Klamath Falls' Salt Caves hydroelectric proposal. This plan amendment was appealed to the Oregon Land Use Board of Appeals by a citizen's public interest group and two state agencies and was subsequently remanded to the county for further assessment (Oulman 1990, personal communication).

Klamath County has not adopted their final comprehensive plan and is currently operating under an interim plan. This interim land management plan was adopted by the Klamath County Board of Commissioners in July of 1992. The nature and intent of this plan is to protect the custom and culture of county citizens. According to the county interim plan, "all federal and state agencies shall comply with the Klamath County Land Management Plan and coordinate with the Board of Commissioners for the purpose of planning and managing federal and state lands within the geographic boundaries of Klamath County, Oregon."

Oregon Scenic Waterways Act

The OSWA was described in detail in the State Management Section; however, several points should be emphasized. Under the OSWA, changes in existing land use activities on private lands within 1/4 mile of each river bank must be reviewed by the appropriate state managing agency. The OSWA also specifies that the free-flowing character of state scenic waterways will be maintained in quantities necessary for the highest and best uses of the river, which are recreation, fish and wildlife (ORS 390.835). State rules for land management can be found in the Oregon Administrative Rules.

Oregon Forest Practices Act

The Oregon Forest Practices Act (ORS 527.710) places restrictions on timber harvest and techniques on private and state lands near state Class I waters³. Among other requirements, landowners must retain a

Class I waters are considered important for fisheries, domestic use, and recreational values.

riparian management area along streams, protect waters flowing into Class I streams, protect wetlands, and provide for aquatic and upland habitats. Landowners and logging operators must notify the Oregon Department of Forestry at least 15 days in advance of commercial logging operations on private forests. Written plans describing logging operations must be filed when activities occur within 100 feet of a Class I stream. A complete listing of restrictions under the Oregon Forest Practices Act can be found in Oregon Department of Forestry rules adopted September 29, 1991, and August 3, 1992.

It should be noted that draft revisions of new stream rules are currently being reviewed by the Oregon Board of Forestry. New rules may be released by September of 1994. These new rules would, in all likelihood, be more restrictive, requiring a larger buffer along Class I streams.

Interstate Compacts

The Klamath River Basin Compact, effective in 1957, is an interstate compact created to govern the distribution and use of the waters of the upper Klamath River Basin in Oregon and California. It sets forth a priority system for the distribution of water during water to prevent critical needs, such as irrigation, from going unfulfilled. Each state gives preference to applications for a higher use over that of a lower one. As an example, the Compact gives recreation a higher use priority than hydropower generation.

Resource Management Plan

Status. The DRMP for the Klamath Falls Resource Area of the BLM Lakeview District was completed in August 1992. The DRMP provides management direction for 212,000 acres of BLM-administered lands in Klamath County, Oregon, including the upper Klamath River Canyon. The DRMP was published in coordination with five other RMPs for the other western Oregon BLM Districts to provide a regional ecosystem plan.

The anticipated date for publication of the Klamath Falls Resource Area's Proposed RMP (PRMP) is summer 1994, followed by a 30-day protest period and a Record of Decision. This Record of Decision will provide management direction for the BLM-administered portions of the upper Klamath River area, as well as the rest of the Klamath Falls Resource Area. Plan implementation will begin upon release of the Record of Decision.

Preferred Alternative. The DRMP analyzed seven management alternatives, including a preferred alternative. Under the preferred alternative, the following management direction applying to the Klamath River Canyon will likely be carried forward to the PRMP: The river would be found eligible for inclusion in the NWSRA as a scenic river, the area would be designated as an area of critical environmental concern (ACEC), management as a special recreation management area (SRMA) would continue, management to meet VRM Class II objectives would continue, the canyon would not be available for scheduled timber harvest (although salvage harvest could occur), protection of special status species habitat would continue, eligible parts of the canyon would be nominated to the National Register of Historic Places, protection of cultural sites and resources (including Native American traditional use areas) would continue, off-highway vehicle use would be limited to designated roads and trails, a "no surface occupancy" stipulation would remain on mineral leases, livestock grazing would continue to be allowed, and fire would be reintroduced as a natural disturbance factor through prescribed burning.

Public Comments. Most of the comments letters received on the DRMP addressed the potential designation of the upper Klamath River; in fact, most letters were concerned with only this one issue. Over 90% of those comments were in favor of designation. The reasons cited related to one or more of the outstandingly

remarkable values and the uniqueness of the area. Letters were received from all across the United States, with most of the letters coming from Oregon and California.

BLM Allocations and Resource Classifications

Allocations and/or resource classifications resulting from the resource management plan include eligible and suitable scenic river area, ACEC, SRMA and VRM Class II. Each of the classifications has associated management guidelines that the Klamath Falls Resource Area will adhere to, which are described below.

Eligible and Suitable Scenic River Area

As mentioned earlier, the BLM found the upper Klamath River both eligible and suitable for designation as a scenic river under the NWSRA in its March 1990 study report, and again as part of the resource management planning process in August 1992. According to BLM Manual section 8351.32C, when a river segment is determined eligible for the System and given a tentative classification (wild, scenic or recreational), its identified outstandingly remarkable values are afforded adequate protection, subject to valid existing rights, to maintain those resources on an interim basis. Management activities and authorized uses are not allowed to adversely affect either eligibility or the tentative classification until the eligibility determination is superseded. Public notification of this interim protective management could occur no later than publication of the DRMP; however, protective management was initiated as soon as eligibility was determined, which in this case was March 1990.

The BLM's interim protective management is in effect on all BLM-administered lands along the Klamath River Canyon. This protective zone extends from rim to rim or 1/4 mile from the normal high water mark on each side of the river, whichever is greater. The BLM's interim protective guidelines do not directly affect private lands.

In general, interim protective management of the Klamath River Canyon did not change after it was found to be eligible in 1990, although certain activities that could have adversely affected the eligibility or classification would not have been approved. To date, no action has been denied under interim protective management. An application by the city of Klamath Falls for a right-of-way permit to construct the Salt Caves Hydroelectric Project has been neither accepted nor denied until a final decision is made on federal wild and scenic designation of the river. Designation under 2(a)(ii) will result in the finalization of this BLM protective management.

Interim protective management for rivers determined to be suitable depends on the river's classification. The corridors along scenic river segments are managed under VRM Class II objectives. Timber harvest is prohibited in the riparian management area. Water quality is maintained or improved. Hydroelectric power facilities are not be permitted. Mining is permitted, subject to existing regulations. Inconspicuous roads and trails may be constructed. Agricultural practices and grazing are allowed to continue at current levels. Recreation facilities are allowed if they are screened from the river. Public use is encouraged, although public use and access can be regulated. New rights-of-way are discouraged. Motorized travel is allowed, prohibited, or restricted as necessary.

Area of Critical Environmental Concern

Under the preferred alternative in the DRMP, the Klamath River Canyon would be designated as an ACEC. An ACEC is an area within public lands where special management attention is given to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources or other natural systems or processes; or to protect life and safety from natural hazards (Section 103(a) of the Federal Land Policy and Management Act).

The ACEC is a BLM-specific allocation and is only applicable to lands managed by the BLM. The ACEC designation will be included in the final RMP. (See BLM Manual 1613 for further information.) General management guidance from this designation would include removing the area from planned timber harvest, limiting off-highway vehicle use to designated roads and trails, and applying "no surface occupancy" restrictions to mineral leases.

The ACEC boundary would be from the J.C. Boyle Powerhouse to the Oregon-California state line and from rim to rim. The ACEC would constitute approximately 6,614 acres, of which 4,960 acres (75%) is administered by the BLM.

Special Recreation Management Area

The BLM establishes these administrative units to direct recreation program priorities to areas where a commitment has been made to provide specific recreation activities and experience opportunities. These areas usually require a high level of recreation investment and/or management. The specific recreation activities provided in the Klamath River Complex SRMA are whitewater boating, fishing and camping. The experience provided in this area is a semi-primitive, motorized opportunity, in which the area is characterized by a predominantly unmodified natural environment with an opportunity to use motorized vehicles. Recreation is managed to protect the river and the recreation resources. (See the Klamath Falls Resource Area RMP/EIS for more information.)

Visual Resource Management Class II

On BLM-administered lands, VRM classes and objectives provide different levels of protection. The objective of VRM Class II management is to retain the existing character of the landscape. The level of change to that landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape. The Klamath River Canyon is managed to meet VRM Class II objectives.

BLM Site-Specific Management Plan

Site-specific management plans are developed to address the resources and uses of particular areas. Because of the significant public attention and interest, the variety of resources deserving of protection, and the substantial recreation use, the BLM will initiate a site-specific plan for the Klamath River Canyon area. The plan will be developed using a team consisting of personnel from other agencies, special interest groups, permittees, and interested individuals, in addition to the BLM. The site-specific management plan will incorporate, lend specifics to, and implement the resource protection objectives and decisions established by the RMP.

Old-Growth Forest Directives

The six western Oregon RMPs address management of old growth ecosystems and associated species, such as the northern spotted owl. Recent court rulings have prevented the sale of federal timber until an environmental impact statement (EIS) that specifically addresses those issues is completed. To seek a solution to this controversy, President Clinton held a Forest Conference in Portland, Oregon, on April 2, 1993. From this conference, the Forest Ecosystem Management Assessment Team was assembled to prepare such an EIS, called the *Draft Supplemental EIS on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (SEIS). This document was

published in July 1993 and supplements a portion of the Klamath Falls Resource Area's RMP, including the Klamath River Canyon area. A final supplemental EIS, due to be published in early 1994, will be completed and incorporated into the western Oregon RMPs; the RMPs can then be finalized.

The allocations described below (Riparian Reserve, Administratively Withdrawn Area, and District-Defined Reserve) come from the SEIS and will be carried forward in the Klamath Falls PRMP as they will appear in the Final Supplemental EIS.

Riparian Reserve

The SEIS established riparian reserves to meet objectives in the Aquatic Conservation Strategy. The Aquatic Conservation Strategy was developed to protect salmon and steelhead habitat on all public lands (Forest Service, BLM and NPS) within the range of Pacific Ocean anadromy. The riparian reserves provide a buffer along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas. Standards and guidelines for the riparian reserves are minimum land management prescriptions necessary to meet the Aquatic Conservation Strategy objectives, and can be found in Appendix B of the SEIS. These standards and guidelines would be followed on public lands within the Klamath River's Riparian Reserve, which consists of a 300-foot buffer on either side of the river.

Administratively Withdrawn Area

In the preferred alternative (Alternative 9) of the SEIS, the Klamath River Canyon was included as an administratively withdrawn area, which is an area not scheduled for timber harvest and not included in calculations of potential timber sale quantity. Administratively withdrawn areas include recreation areas, lands not technically suitable for timber production, certain visual retention and riparian areas, areas removed from timber production for the protection of local species, and others.

District-Defined Reserve

In the PRMP for the Klamath Falls Resource Area, the Klamath River Canyon from the J.C. Boyle Powerhouse to the Oregon-California state line and from rim to rim would be designated as a district-defined reserve. This BLM-specific allocation is similar to the administratively withdrawn areas described in the previous paragraph. District-defined reserves are areas set aside for protection of locally important plant and/or animal species or habitats. The exact definition is still being developed by the BLM.

Other Resource Classifications

The classifications described below (Wild Rainbow Trout Stream, Significant Resource Area, Protected Area, and Peregrine Falcon Management Unit) are designations by agencies other than the BLM. These classifications help to direct management decisions for the upper Klamath River area.

Wild Rainbow Trout Stream

This classification, from the ODFW, protects stocks of resident rainbow trout. The rainbow trout population is protected through a moratorium on fish stocking, ensuring the genetic integrity of the population. Special harvest regulations help to maintain population levels. As a planning guideline, the ODFW emphasizes habitat protection and restoration on private and public lands. As policy, the ODFW opposes the degradation of habitat quantity or quality that poses a risk to meeting natural production objectives of management plans.

Significant Resource Area

This Klamath County designation protects and preserves hydroelectric energy, the state scenic waterway, fish and wildlife, and cultural resources for present and future generation.

Northwest Power Planning Council Protected Area

The upper Klamath River has been designated a protected area by the Northwest Power Planning Council pursuant to the Northwest Power Act and the Council's Northwest Power Plan. Protected area amendments adopted by the Council in 1988 identify the region's most valuable fish and wildlife habitat. River segments meeting this standard were designated protected areas. (The upper Klamath River was recognized as a protected area because of its resident rainbow trout and blacktail deer.) The amendment stated that "no new hydroelectric developments should be allowed in protected areas" and identified actions the FERC and other federal agencies should take in support of the designation. The Council's Northwest Power Plan and Protected Areas Program has been found to constitute a comprehensive plan pursuant to the Electric Consumers Protection Act.

Peregrine Falcon Management Unit

This unit, named by the Pacific Coast American Peregrine Falcon Recovery Team, protects an historic peregrine nest site in the Oregon stretch of the Klamath River, as well as peregrine habitat in the adjacent California stretch of river. This habitat is part of a large area that has a minimum number of active breeding falcon pairs as a recovery goal.

Agreements with Other Landowners

A Memorandum of Understanding (MOU) between the BLM, PP&L, Weyerhaeuser, ODFW, and California Fish and Game for management of the Klamath River Canyon was signed in April 1991. The objectives of the MOU are to manage rangelands to maintain or improve range conditions; manage deer winter range to maintain or improve habitat; manage riparian habitats to maintain or improve fish, wildlife, and scenic resources; maintain and enhance species of special concern and their habitats; maintain a wild horse population in the Pokegama Herd Use Area; maintain and enhance recreation and scenic resource values; and protect and interpret archaeological resources and cultural values. A copy of the MOU is available at the BLM's Klamath Falls Resource Area office.

A Cooperative Agreement (CA) between the BLM, PP&L, Weyerhaeuser, and ODFW for the Klamath River Canyon was signed in August 1991. The objectives of the CA are to improve management of the Pokegama big game winter range; improve winter range habitat effectiveness for elk, deer, wild turkey, and other wildlife; reduce illegal take and harassment of wildlife during critical periods; and protect other resource values (reduce road damage, timber theft, and vandalism). A copy of the CA is available at the BLM's Klamath Falls Resource Area office.

Conclusions

At present, the upper Klamath River has sufficient mechanisms in place to almost fully protect the outstanding resources found there. The one gap in protection is from the potential negative impacts of hydroelectric development. The legal and regulatory overlays present are adequate to disallow almost all potential threats to river resources; it is not clear if they would be sufficient to stop projects proposed under the Federal Power Act. National wild and scenic river designation, in conjunction with the existing and

proposed land use and resource protection overlays, would fully protect the nationally significant resources of the upper Klamath River. In addition, all of the special classifications outlined above, including existing and proposed designations, are fully compatible and complimentary with national wild and scenic river designation.

ENVIRONMENTAL ASSESSMENT

In addition to meeting the 2(a)(ii) requirements discussed in earlier sections of this report, an application for designation must be considered from the perspective of the NEPA. The NEPA requires federal agencies to review their proposed actions to determine whether the actions could cause significant environmental impacts. The required review includes an analysis of alternatives, including measures that would reduce or mitigate adverse impacts. For actions which appear likely to cause significant impacts, an environmental impact statement, or EIS, is usually prepared by the administering agency. In those instances where significant impacts are less likely, a more concise environmental assessment (EA) is prepared. If the EA discloses major impacts to physical resources, an EIS is developed. In most instances, the NEPA evaluation of the potential impacts of federal wild and scenic river designation under section 2(a)(ii) is initiated through an EA rather than an EIS.

This section of the report evaluates the likely impacts of federal wild and scenic designation on the upper Klamath River and its environs. Included in the assessment is a description of the area, an identification of possible alternative actions, an analysis of the potential impacts of the proposed alternatives (environmental consequences), and an identification of the preferred alternative.

Some redundancy exists between the EA section and earlier portions of the report. This is to provide clarity and completeness for the EA.

Purpose and Need

Without the designation of the upper Klamath River into the System, the nationally significant resources associated with the river are at risk from federal water resource projects. Designation will preserve these resources for current and future enjoyment and use. It is in the public interest to consider wild and scenic river designation as a means to protect these nationally important resources. To do this requires the development of this EA.

Description of the Area

This section provides a detailed description of the natural and human environment surrounding the section proposed for designation. As the proposed designation could potentially impact an area greater than the designated area, the following analysis is expanded beyond the designation boundaries when appropriate. For the purposes of assessment, three separate river segments are identified: the bypass reach (from J.C. Boyle Dam to the J.C. Boyle Powerhouse; RM 224.5 to 220.3), the segment under consideration here for wild and scenic river designation (from the J.C. Boyle Powerhouse to the Oregon-California border; RM 220.3 to 209.3), and the California segment of the upper Klamath River (from the Oregon-California border to the backwaters of Copco Reservoir; RM 209.3 to 204.0).

Physiography

The Klamath River lies within the High Cascades physiographic province and borders the Basin and Range Province on the west (Franklin and Dyrness 1973). These factors enhance the biological diversity found in the Klamath River Canyon. The only rivers in Oregon and California that bisect the Cascade Range are the Klamath and Columbia in Oregon and the Pit in California. The upper Klamath River drains south-central Oregon, east of the Cascade Range. The river begins at the lower end of Lake Ewauna in the city of Klamath

Falls, Oregon, and flows southwesterly into California and west to the Pacific Ocean through Redwood National Park.

The topography in the canyon varies from flat to gently sloping along the river benches to near-vertical at the canyon walls. The reach of the upper Klamath River proposed for designation flows through a steep-walled, basalt canyon. The basalt cliffs rise to 1,000 feet above the river. The average river gradient in this segment is 27 feet per mile from RM 220.3 to 214.3, and 77 feet per mile from RM 214.3 to 209.3.

Annual precipitation, most commonly in the form of rain, ranges from 15 to 20 inches during fall, winter and spring. Summer months are hot and dry with occasional thunderstorms developing in the late afternoon. In the winter, snow falls on the rim of the canyon, but only rarely accumulates on the canyon floor. Winter temperatures in the canyon drop into the low 20's and summer temperatures climb into the high 80's or 90's.

Air quality is generally good within the canyon because it is isolated from population centers or industrialized areas.

Socioeconomics

Population. Three counties, Jackson and Klamath in Oregon and Siskiyou in California, would most likely be affected by changes in management or reallocation of resources associated with the upper Klamath River. The estimated population in this area during 1988 totalled 248,200. The major population centers are: Ashland, 16,310; Klamath Falls, 17,220; Medford, 45,000; and Yreka, 6,746. Portland State University's Center for Population Research and Census (January 1989) estimates a net migration of 4,829 people into Jackson County and net out-migration of 5,132 people from Klamath County between 1980 and 1988. A source containing similar information for Siskiyou County has not been located.

Personal Income. Total personal income in 1986, as reported by the U.S. Department of Commerce, Bureau of Economic Analysis, was \$2.82 billion for the tri-county region. County totals are as follows: Jackson, \$1.66 billion; Klamath, \$0.65 billion; Siskiyou, \$0.51 billion. Siskiyou County has the highest per capita income (\$11,918) followed by Jackson (\$11,880) and Klamath (\$11,305) counties. Agricultural uses dominate the rural areas within the region. Personal income attributed to the agricultural sector with the percent of total personal income is as follows: Jackson, \$28 million (1.7 percent); Klamath, \$21 million (3.2 percent); and Siskiyou, \$14 million (2.7 percent). An average of 6.1 percent of total farm sales in Oregon are from Jackson and Klamath counties.

Employment. The Oregon Employment Division in its 1988 annual employment report, estimated the civilian labor force in Jackson County to be 74,700 and in Klamath County to be 25,100. In Jackson County, the three largest employment sectors were trade (14,600), services (10,900), and government (9,400). Klamath County's leading sectors were trade (5,000), government (4,500), and lumber and wood products (3,700). Similar records for Siskiyou County estimated the 1988 civilian labor force to be 18,800. The three largest employment sectors were government (4,200), retail trade (2,600), and services (2,200).

Land Ownership

The major landowners within the designation area are the federal government (75%) and PP&L (15%) (see table next page). In addition, the bed and banks of the Klamath River are claimed by the state of Oregon.

Existing Rights

Rights-of-way for three power-lines and four roads totaling 27.3 miles in the area considered affect 259 acres of federal land. There are no existing mining claims. PP&L owns three water right claims and the Oregon

Department of Forestry has one water permit. Native American rights, which include access to religious sites and the freedom to worship through ceremonies and traditional rites, are protected and preserved within the study area by the American Indian Religious Freedom Act of 1978.

Regional Transportation

The upper Klamath River Canyon is readily accessible from the four major population centers in the region. West of the canyon, Interstate 5 extends north-south through Medford and Ashland, Oregon, and Yreka, California. East of the canyon, U.S. 97 runs north-south through Klamath Falls. Both

highways provide access from the major metropolitan areas of Portland, Oregon, and Sacramento and San Francisco, California. State Highway 66, one mile north of the river, provides east-west access between Klamath Falls, Ashland and Medford. Regularly scheduled commercial air service is available to Medford and Klamath Falls, and there are daily rail and bus services to Klamath Falls.

Land Ownership		
Owner	Acres	Percent
Bureau of Land Management	5,959	75
Pacific Power & Light	991	15
Weyerhaeuser	178	3
State of Oregon	120	2
Joseph & Mary Ann Laubacher	157	2
Frederick Ehlers	157	2
James C. Brown	32	<1
Thomas J. Orr	14	<1
William & Carmen Hadwick	6	<1
Total	6,614	100

Access

The main transportation route to the river is via Highway 66 (Greensprings Highway), an east-west route between U.S. 97 and Interstate 5. Physical and administrative access is provided to the river corridor by several improved and seasonal roads in the canyon. Physical public access is currently unrestricted; however, on some road segments on private land, legal public use is at the discretion of the land owner.

Approximately seven miles west of Keno, Oregon, where Highway 66 crosses the Klamath River, there are two access roads -- one leading to the Topsy Road, which parallels the east side of the river in all three segments, the other to the J.C. Boyle Powerhouse access road which parallels the west side of the river. Picard Road from Dorris, California, provides access to the Topsy Road from the southeast.

Topsy Road travels high above the river, descends to river level at RM 208 in California, and remains at river level to Copco Reservoir. Streamside access from the Topsy Road is available during much of the year at Frain Ranch. Above RM 209, the BLM raft take-out area provides easy access to the river. There are five designated fishing access points to the river on private land with parking spaces along Topsy Road in California that are provided by PP&L.

The graveled J.C. Boyle Powerhouse access road enters above the forebay of the J.C. Boyle Dam and travels along the western canyon wall. The road generally remains far above the river, descending to streamside only at the powerhouse area, the BLM campsite (approximately RM 217), and the Oregon-California border, where it ends. A graveled flume maintenance road, adjacent to the concrete flume, also travels along the western canyon wall in the bypass reach.

Access to the Klamath River from the powerhouse road is present in the bypass reach. In the segment considered for designation, river access is present at the J.C. Boyle Powerhouse (RM 220.3), the BLM raft launch area (1/4-mile downstream from the powerhouse), a BLM campsite (RM 217), Frain Ranch (RM 215), 1/4-mile downstream from Frain Ranch, and across from the Salt Caves (RM 211.8).

From Highway 66 to the J.C. Boyle Powerhouse at approximately RM 213, the powerhouse road is generally passable year-round. This access road is maintained by PP&L. Beyond the powerhouse, the unimproved access road consists of a single-lane, rocky roadbed. From RM 213 to the state line, the road is used seasonally because it is usually impassable in the winter and early spring due to snow and mud.

Other roads on the west side of the river include a seasonal dirt road that begins above the canyon rim and intersects the powerhouse access road at RM 211 and 209.5, and a seldom used jeep road that parallels the river between the powerhouse road and the river between RM 216.3 and 215.

Land Uses

Land in the Klamath River Canyon is used for energy generation and transmission, recreation, wildlife habitat, range, timber and Native American traditional use.

Energy Generation and Transmission

There is high potential for hydroelectric energy generation on the Klamath River. The study portion of the Klamath River lies between two hydroelectric projects -- J.C. Boyle in Oregon and Copco in California. Hydroelectric facilities also exist below the Link River and Irongate Dams. The J.C. Boyle 88-megawatt power generation plant is 4.6 river miles below J.C. Boyle Dam. This peaking operation has two turbine generators that provide power during high use (peak) periods. Up to 2,500 cubic feet per second (cfs) of flow can be diverted at J.C. Boyle Dam. This water passes through a 14-foot diameter pipe into an above-ground concrete flume for 2.1 miles, flows into a concrete forebay, then enters a tunnel, which passes a short distance through the canyon wall, before entering the penstocks and turbines. Additional facilities associated with the J.C. Boyle Powerhouse include a surge tank, three duplexes, substation, and storage building at the powerhouse site, and a gaging station below the powerhouse. Two of the duplexes are due to be removed in one to two years. Roads and powerlines associated with the project are also present.

Recreation

Recreational use activities within the study area include whitewater boating, fishing, hunting, camping, sightseeing, hiking, photography, picnicking, wildlife observation, driving for pleasure on existing roads, and horseback riding. The majority of recreational use occurs below the J.C. Boyle Powerhouse due to better streamside access for fishing, predictable flows suitable for whitewater boating, and the more natural and scenic values associated with the less developed area.

Wildlife Habitat

An important land use in the Klamath River Canyon is wildlife and fish habitat management. The BLM is the agency that manages public lands in the canyon for wildlife habitat, while the ODFW manages the populations.

Range

Homesteaders have grazed cattle, sheep, and horses within the Klamath River Canyon since the late 1800's. Currently, cattle are the only domestic stock that graze in the canyon. Although no figures are available on historic livestock use, grazing use has been intense as evidenced by a change from native perennial grasses to a mix of native and non-native perennial grasses and invading non-native annual grasses currently dominating the rangeland. Cattle, wildlife, and on the northwest side of the canyon, a small herd of wild horses, compete for forage. Weyerhaeuser Corporation, PP&L, and BLM-administered lands are used for grazing in and around the study area.

Existing Allotments. The first grazing lease on BLM lands in the canyon was issued in 1960. Currently there is one grazing allotment in the area proposed for wild and scenic river designation, the Edge Creek Allotment. The majority of the Edge Creek Allotment (8,860 acres of which are BLM-administered) is outside the study area, but a portion of it is located on BLM and private lands along the river. The portion along the river area extends from the rim to the river's edge and includes a total of 3,817 acres, 980 of which are private. This allotment is divided into the Ward and Edge Creek Pastures to the south and the North Pasture. PP&L and Weyerhaeuser have each issued two grazing permits in the Edge Creek Allotment. Most of PP&L's leased land is within the area proposed for designation. Leases issued by PP&L historically did not limit numbers of cattle, season of use, or quantity of forage consumed, but did set other guidelines to which lessees adhered. During the past grazing season (1993), and in future years, PP&L will be issuing leases which conform to the parameters of BLM leases, including numbers and seasons of use.

Although not within the study area, two other BLM allotments border the rim on the east side of the canyon adjacent to the bypass and proposed designation segments.

The grazing season on BLM-leased lands begins in April in an allotment in California, where early spring greenup provides the first available forage. Cattle are then moved onto the Edge Creek Allotment from May to mid-July to graze meadows and flat terrain along the river bottom, accessible benches above the river, and the Ward Pasture. Finally, the cattle are moved to the North Pasture for the remainder of the grazing season. In mid to late summer, cattle are pulled back to owned and leased private lands, although some cattle still wander onto public and leased range until October.

Range Condition. Impacts from past grazing practices have resulted in the vegetative composition of rangelands changing from perennial native grasses to a mix of native and non-native perennial and annual grasses. Riparian vegetation has also been impacted by grazing. The portions of the canyon that have retained their natural vegetative composition are primarily in steep topography that are inaccessible to livestock. Native grasses that were typical of the once dominant perennial range, but are now limited, include Idaho fescue, bluebunch wheatgrass, pine bluegrass, few-flowered wild oatgrass, melic grass, and needle grass. Cheatgrass, medusahead wildrye, two-flowered fescue, bulbous bluegrass, foxtail barley, thistle, and dandelion are presently found, indicating an annual rangeland and poor range condition. All of these annuals are poor forage for both livestock and wildlife. Factors causing this change include early spring grazing, alteration of burning patterns, natural erosion, trampling and soil compaction by livestock, and overgrazing. These conditions favor the weedy annual species that easily take over the native perennial plants and grasses.

Two studies have been done in the Klamath River Canyon in relation to vegetation and range condition, one by the Medford District BLM in 1981 and the other for the proposed Salt Caves Hydroelectric Project by the city of Klamath Falls in 1984 and 1986. Both studies determined the rangelands to be in poor condition. The BLM range study included 5,580 acres in the proposed Salt Caves Project Area, most of this within the river study boundary. It rated ecological range condition based on the seral stage present and determined 64 percent of these acres to be rated poor (early seral stage), 28 percent fair, 8 percent good, and 0 percent excellent condition (late seral stage).

Wild Horse Management Area. A portion of the Pokegama Wild Horse Management Area (WHMA) is located within the study area. The WHMA is bounded by Copco Lake and the Klamath River on the south and east, Jenny Creek on the west, and Highway 66 on the north. These natural boundaries appear to be physical barriers to movement of wild horses and therefore to habitat expansion. The horses are free-roaming and have been seen throughout the management area, although most high-use habitat is outside the canyon and study area.

Although the wild horse population has fluctuated over the years, local residents have reported wild horses in the Klamath River Canyon area since the early 1900's. In 1972, 25 horses were counted during the BLM's first inventory. Since then, the herd has been inventoried biannually and has ranged from 25 to a high of 42 in 1988, the latest count. BLM's current management framework plan recommends a population level of 25 to 50 horses and dictates the biannual inventory to determine the season of use, distribution and concentration areas, rate of reproduction, and carrying capacity.

A range EIS, prepared in 1983 by the Medford District, allocated 250 Animal Unit Months (AUMs) of forage from BLM-managed lands for the Pokegama wild horse herd within the WHMA. The DRMP proposes to allocate 150 AUMs to the herd. This is based on the needs of 50 head in consideration of the fact that private lands provide at least 75% of the herds forage. Part of the WHMA is within critical deer winter range, which was considered in allocating AUMs. Studies conducted for the original wild horse management plan showed that the horses feed primarily on grass and therefore do not appear to compete with deer for browse on critical winter range; however, there may be direct competition for grass during greenup periods when deer feed heavily on grasses and forbs.

Timber Management

Under current management direction in the BLM Jackson-Klamath Management Framework Plan, less than 200 acres of public land within the study area have been classified as high intensity timber management lands. There has been no timber sale activity on these small parcels scattered throughout the bypass or proposed designation reach in the Klamath River Canyon during the last decade. The current management direction is to allow no new roads for timber harvesting within the canyon and to manage the lands under VRM Class II standards to retain the existing character of the landscape⁴. Timber harvest to salvage fire-, insect-, or disease-killed timber is currently allowed, but only to the extent required to enhance the recreation experience. Current forest management activities in the Klamath River Canyon by both the BLM and PP&L are minimal and oriented toward recreational, scenic and wildlife values.

A new timber production classification system was completed as a preliminary inventory step in the ongoing RMP process, which will guide management of public lands and resources for the next 10 years. In the new production classification system, additional forest lands in the canyon are classified for potential high intensity timber management. These forest lands will then be analyzed in relation to other resource values to determine if they should be included in the timber production base. This evaluation will be included in the Klamath Falls Resource Area RMP through the SEIS.

PP&L owns 991 acres. Most of its property was acquired primarily for hydroelectric purposes. In the 1970's, some of PP&L's forest lands in the canyon were harvested through partial cut removals. There is very little commercial timber on PP&L lands, and they are presently managing their timber on a short-term, limited harvest schedule. PP&L is currently formulating a comprehensive plan for long-term management direction, which includes timber management.

Under Class II, the objective is to retain the existing landscape character. Levels of change should be low, and any changes that do occur must repeat the basic elements of form, line, color and texture found in the predominant natural features of the landscape. Management activities may be visible but should not attract attention of the casual observer.

Weyerhaeuser Company owns 178 acres. Most of these lands and roads, which are open to the public for recreational purposes, are above the canyon so that visual resources are not greatly affected by timber harvest.

Increases in recreation use, timber harvest, and private land developments, combined with the difficulties of ensuring an aggressive fuels reduction program, have increased fire risks and hazards in and around the canyon. Fire season in the Klamath River Canyon normally starts in June and lasts until approximately mid-October, but each year's season depends on annual weather conditions. Thunderstorms can occur throughout the spring, summer and fall, occasionally starting lightning-caused fires, the main cause of fires in the canyon.

BLM fuels-management activities in the area consist of burning slash from timber harvesting and broadcast burning timber and brush fuels. Prescribed fire has been used by the BLM to improve and protect wildlife habitat and livestock forage production.

Native American Traditional Use

Traditional use by Native Americans of the upper Klamath River Canyon began before contact with Euro-Americans and has continued into the present. Today, members of the Klamath Tribe and the Shasta Nation continue to use the canyon for spiritual purposes, hunting, fishing, gathering, and other cultural activities.

The various forms of spiritual use of an area by Native Americans do not fall within categories readily familiar to religions of western society. Religious use of a particular area encompasses a wide range of elements and observances.

Rituals can be practiced on an individual level where a person observes a particular practice as part of their daily activities. Small group observances might involve a family group with a religious specialist (shaman/"doctor") who, with esoteric knowledge has special access to supernatural power often used for curing or life crisis events. Other rituals and ceremonies involve the participation of all society's members in events considered to be vital to the society as a whole (essential resources such as fish, acorns, epos). These larger rituals renew and emphasize members' needs for, and dependence on, the total society. The rituals must be performed properly according to well established rules. A meaningful ritual involves time, place, and symbolic objects. These along with words are considered sacred and are treated with respect (Theodoratus et al. 1989).

The physical environment is a fundamental element of traditional use of the area.

The concept of spiritual/supernatural power invested throughout the environment is a basic element in all Native American religions in the study area. Each individual has access to these spirits with the shaman at the pivotal point with the ability to heal. The cultures in the study area had [have] strong development of the religious concepts through their intimate day-to-day contact with the environment (trees, rocks, springs, weather, shapes, animal life, etc.) many which potentially contained power. The spirit world was [is] embodied in myth which explains the relationships between people, the environment and power, both benign and malevolent. As a result of this emphasis on power, religious behavior has focused on the individual -- often the shaman. Spirit quests by individuals at special locations imbued with supernatural qualities were [are] important as were [are] special curing rituals aided by the shaman's use of various rituals and traditionally important herbs (Theodoratus et al. 1989).

The river and canyon are considered to be sacred by the Klamath and Shasta because of historical use by tribal ancestors and present day use by tribal members. From a spiritual perspective, the river expresses the value of life to the Klamath Tribe.

Its location and terrain have made it a locus of power for vision and crisis quests. Innumerable stone cairns throughout the canyon attest to its long and continued spiritual use. These cairns are pages in the Klamath people's history, a very real conduit to the lives and spirits of those who walked the earth in the near and distant past. Further, the land and River itself are spiritually powerful to the Klamath people. In the Native American worldview, unlike that of Euro-Americans, the land and the lives of the people who inhabit it are inextricably intertwined; to destroy the land is to unravel the fabric of life within which the people live. The upper Klamath River is one of the few parts of the region left that has been relatively untouched by development over the past one hundred and fifty years. For the Klamath and their neighboring tribes, the River and its canyon are very much a part of what makes them a people (Klamath Tribe 1989, personal communication).

A similar point of view is expressed by the Shasta. The study area includes burial grounds of the Shasta and principal ceremonial areas, which are used for spiritual and educational purposes. To the Shasta, this area represents a crucial link with the spiritual world.

For generations individual members, our spiritual leaders, and medicine persons have traveled to these burials to communicate with the Great Creator, to perform rituals, and to prepare for specific religious and medicinal ceremonies. The area contains places where our medicine people ascend, as they have throughout history, to their position. . . . the first medicine power was received there, and the first practitioners of that power were brought forth and taught there. . . . Guidance for daily life and for crises that individuals in the tribe must face comes from those sites (Hall 1985).

Native Americans also value the canyon for other important cultural activities. The river area has long been used for fishing, gathering, and hunting; as a meeting place between the area's various tribes and bands; as shared fishing villages; and as a site of inter-tribal exchange and communication. The area also contains archaeological and environmental information and material that sheds light upon the culture and history of the Klamath, their neighbors, and their ancestors (Klamath Tribe 1989, personal communication).

Description of Resources

Recreation

The major recreational activities within the area include whitewater boating, fishing, hunting and camping. Additional activities include sightseeing, hiking, photography, picnicking, wildlife observation, driving for pleasure on existing roads, and horseback riding. Most recreational use occurs below the J.C. Boyle Powerhouse. The BLM's opportunity spectrum class is for semi- primitive motorized recreation, with emphasis on floatboating, fishing, camping, and other compatible uses. In the Klamath River Recreation Area Management Plan, the carrying capacity for all recreation uses was determined to be 12,500 visitor use days (VUD) annually (BLM 1983).

Existing recreation facilities include a raft launch area, primitive and semi-primitive campsites, and a raft take-out area. The recreational values of the study area are presently recognized by a number of other agencies and organizations, including the NPS NRI, Oregon Department of Energy (Pacific Northwest Rivers Study), ODFW (direct testimony, 1985), and the OPRD (SCORP) as defined in the Resource Protection Section of this document. In addition, the upper Klamath River was designated a State Scenic Waterway by majority vote in Oregon in 1988.

Whitewater Boating. In Oregon, there are approximately 112,600 miles of rivers and streams, of which approximately 1,200 miles are currently considered suitable for recreational whitewater boating. Few of these rivers are capable of being floated year-round because of seasonal low water (Lilly 1985). There are approximately 370 miles of whitewater boating rivers in Jackson, Josephine, Curry, Klamath, Douglas and Siskiyou Counties, of which the upper Klamath River accounts for 17 miles. The remaining 353 miles of whitewater boating opportunities occur on six rivers (Rogue, Illinois, Umpqua, lower Klamath, Scott and Salmon). The upper Klamath River is the only river in Klamath County that sustains any significant whitewater boating activity.

One of the unique features of the upper Klamath River is the late-season whitewater boating opportunities provided as a result of year-round releases from the J.C. Boyle Dam/Powerhouse system. At least one generator must be operating to provide adequate flows for whitewater rafting. Even if neither generator is operating, the river can still be floated by kayak or canoe from the BLM launch site to Frain Ranch (5 miles). During typical summer operations, one generator operates daily, increasing the river flow from approximately 350 to 1,500 cfs -- the minimum raftable flow (BLM 1989). Each July, generators are shut down for two weeks to allow maintenance on the powerhouse. During winter and spring both generators operate, increasing the flows to 2,500 cfs or higher. Adequate flows for boating opportunities upstream from the powerhouse are available only when excess water is released from the dam, usually in late winter and early spring.

The upper Klamath River offers exceptional whitewater boating opportunities downstream from the J.C. Boyle Powerhouse. There are 74 rapids below the BLM raft launch area (RM 220.1). This constitutes more rapids than in comparable lengths on most other rivers in the western United States. In the lower half of the section proposed for designation, the river drops 77 feet per mile creating several long, turbulent rapids that require precise, expert maneuvering and provide challenging whitewater skills (class III-V). The quantity and classification of rapids, combined with the short run, provides an experience not found on other rivers in Oregon and northern California.

The upper Klamath, lower Klamath, and Rogue rivers are the only rivers in the region (Klamath, Jackson, Josephine, and Douglas counties in Oregon and Siskiyou County in California) that are available year-round for whitewater boating -- the upper Klamath River with class IV-V rapids and the lower Klamath and Rogue rivers with class III-IV rapids. In the remainder of Oregon and northern California, there are no other year-round class IV-V rapids available -- although the Snake River in Oregon offers year-round class III-IV rapids and the Trinity and South Fork American Rivers in northern California offer year-round class III rapids. The availability of year-round rafting is dependent on controlled flows that are provided by upstream hydroelectric power projects.

The highest percentage of boating use on the upper Klamath River occurs on weekends from mid-May through mid-September, although some boating use occurs during other months when flows are high. The unique whitewater boating opportunities on the upper Klamath River attract visitors from outside the region who are willing to travel long distances to experience a high-quality, late-season class III-V run not found on other rivers.

Most of the early-season use is from private boaters, who are predominantly from within the region. Most of the late-season use is from commercial outfitters due to the lack of comparable whitewater boating opportunities elsewhere. In 1989, 13 of the 19 commercial outfitters using the Klamath River were from outside the region, with most of their clientele originating from Oregon and California, and the rest from throughout, and occasionally from outside, the United States (Jones 1989 and Munroe 1989, personal communication).

The majority of local private boaters and commercial rafting outfitters spend one day rafting the river. Outfitters from outside the region primarily take two-day trips because the travel time involved makes it difficult to float the entire raftable stretch in one day. For one-day trips, most experienced boaters put in at the BLM launch site (RM 220.1) and take out either at an access point at RM 203.7 or at Copco Lake Store

(RM 203) in California. Occasionally, the experienced boaters will start at Frain Ranch (RM 215) for a shorter, more technical and exciting trip. Inexperienced boaters usually float either from the BLM launch site to Frain Ranch, or from the BLM take-out to Copco Lake as the rapids are less technical. The lower portion of the reach being considered for designation is very technical (difficult) with almost continuous rapids, allowing very little time to view the surroundings.

Actual VUD figures for boating have increased since 1982. The whitewater rafting use was estimated to be 5,058 VUD in 1993. Based on BLM user counts from 1983 to 1993, use has increased. This growth is due to improvements in whitewater raft technology, the growing popularity of whitewater boating, the relatively recent discovery (1980) of the upper Klamath River as an excellent whitewater resource, and the regional scarcity of comparable whitewater boating opportunities on a year-round basis. The nearest comparable alternative whitewater boating opportunity, the Rogue River, is already approaching its maximum allowable use. Particularly valued are the relatively scarce opportunities to run class IV and V rapids in middle to late summer. Most boaters (75%) indicated in a user survey that if they were unable to float the upper Klamath due to lack of sufficient flows from the J.C. Boyle Powerhouse, they would try to reschedule an upper Klamath River trip rather than float a substitute river (Oregon State University 1990).

Private boaters are not required to obtain a use permit; however, commercial outfitters must obtain annual special recreation permits from the BLM. The BLM issued 22 special recreation permits for whitewater rafting and two for related activities (video and still photography) in 1993. In previous years, there have been as many as 64 permittees, although typically not all the permittees actually used the Klamath River.

Fishing. The upper Klamath River, managed as a wild trout river, provides an excellent trout fishery and is among one of the better fly fishing rivers in Oregon. The Klamath Basin provides a wide variety of angling opportunities, but only the upper Klamath River provides virtually unlimited river access and an excellent catch rate for large wild rainbow trout on a major river. It is rivaled in Oregon only by the Deschutes River. Currently, the upper Klamath, Rogue and lower Klamath are the only major rivers in the region (Klamath, Jackson, Josephine, and Douglas Counties in Oregon and Siskiyou County in California) that are open to trout angling year-round. The Pit and Trinity Rivers, outside the region in California, also provide year-round trout angling opportunities.

Spring comes early to the Klamath River Canyon, providing the earliest angling opportunity for a river fishery in Klamath County. The majority of fishing use occurs during spring and fall. Most anglers in the canyon are residents of nearby communities who usually come to fish for one day. However, the river's reputation for producing large wild rainbow trout draws anglers from outside the region who typically fish for more than one day. A 1984 creel survey (city of Klamath Falls 1986) indicated that 87 percent of all anglers on the upper Klamath River are from Oregon; the remaining 13 percent are from California.

Hunting. Hunting occurs primarily on open benches along the river and in draws along the canyon rim. Black-tailed deer, silver-gray squirrel, mountain and valley quail, and turkey are hunted, usually on weekends during the scheduled seasons. Most hunters in the canyon are residents of nearby communities who come to hunt for one day or more. In Oregon, hunting is regulated by the ODFW, and in California, by the California Department of Fish and Game. Accurate hunter use figures are not available.

Camping. The remote Klamath River Canyon offers campers a semi-primitive experience. This experience is more primitive downstream from Frain Ranch than above. The opportunity for isolation from the sights and sounds of people is a characteristic feature of the canyon that campers enjoy. Camping typically occurs either at Frain Ranch, on BLM-designated sites, or on upland benches along the roads, usually by commercial whitewater boaters and anglers in the summer. Most boating outfitters providing two-day trips camp either at Frain Ranch or upstream on BLM-designated sites. These sites provide the last streamside access with open benches for camping before entering the long, steep, rugged and narrow section of river. Support vehicles can drive to these areas and establish camp, which contributes to a safer raft trip with less weight in the rafts. Some camping occurs in the spring and fall, primarily by those who are hunting and fishing.

Recreation Sites and Facilities. Public recreation sites and facilities are scattered throughout the study area. A BLM raft launch facility with toilets, message board, and registration drop box is at RM 220.1, approximately 1/4-mile below the J.C. Boyle Powerhouse. The raft launch facility (put-in) was improved in 1993. No overnight parking is allowed. A BLM campground located approximately three miles below the boat launch area has a toilet and three semi-primitive campsites with tables and fire pits. Additional fire-safe sites are available along the river's edge down to approximately RM 216. There are several primitive campsites and a toilet at Frain Ranch. No recreational access or facilities are provided from approximately RM 214.3 to the Oregon-California state line. A BLM raft take-out area and two toilets are provided at RM 209.1, just downstream of the state line. PP&L provides fishing access through gated entrances along Topsy Road in California with parking, toilets and message boards.

Wildlife

The diverse plant communities found in the upper Klamath River Canyon create a great variety of wildlife habitats and support a large number of wildlife species. Despite historic use, the current hydroelectric developments, and recreation activities, the canyon remains relatively remote and undisturbed. With the surrounding sparsely settled forests and rangelands, the canyon provides the habitat quality needed by the many species of wildlife found in and around the canyon. At least 98 bird, 28 mammals, and 15 reptile and amphibian (herptile) species either reside in the study area or use the canyon habitat to some extent (Appendix C).

Birds. Of the 98 known species of birds within the study area, some reside year-round and others are seasonal or migratory. There are at least 16 known species of raptors, 8 species of waterfowl, 8 upland gamebirds, and 66 non-game birds.

Because the Klamath River Canyon cuts across the Cascades, it is a natural migration corridor. The extensive rimrock, cliffs and large pines in the canyon provide an abundance of nesting sites for raptors. Osprey, bald eagle, prairie falcon, and American kestrel are known to nest in the canyon.

The fish inhabiting the Klamath River provide a good prey base for bald eagles and osprey that forage in the canyon. At least one pair of bald eagles (federal and Oregon state-listed threatened, California state-listed endangered) may be year-round residents of the canyon. This pair has nested in the canyon each year since 1979 and, except for two years, has successfully fledged young (Isaacs and Anthony 1988). The nest is located within the study area, approximately 1,500 feet from the river. Another pair nests outside the study area, 1.8 miles from the J.C. Boyle Dam, and likely forages in J.C. Boyle Reservoir and the river. This nesting pair was discovered in 1983 and has continued to nest in the vicinity. Both pairs nested in 1989. (Latest information available.) Migrating and wintering bald eagles are also found in the canyon.

Ospreys nest in the study area and generally use the tops of large snags or live trees adjacent to the river for nest and perch sites. These birds are commonly seen foraging up and down the river. At least one pair has nested in recent years at one of two known nest sites adjacent to the river within the study area.

Five known prairie falcon nest sites occur in the area and one more in the J.C. Boyle bypass reach. In the proposed designation reach, one nest site is located on a cliff ledge 35 to 45 feet directly above the river, the others are on cliffs away from the river just below the canyon rim. Surveys done in 1984 and 1985 by the city of Klamath Falls (1986) show that a maximum of four of these were occupied. Although nesting was not confirmed, field observations by BLM in 1989 showed two pairs present and exhibiting nesting behavior at two nest sites in the designation segment.

American kestrels, commonly found in summer, are known to nest in the study area. A survey by the city of Klamath Falls (1986) found at least four pairs of nesting kestrels.

Other raptors found in the study area include the red-tailed hawk, sharp-shinned hawk, Cooper's hawk, great horned owl, long-eared owl, and western screech owl. The northern goshawk (a federal candidate species) and northern pygmy owl are two Oregon state-sensitive species that exist in the study area and potentially nest in or near the canyon. Golden eagles are commonly seen foraging in the canyon and are known to nest near the study area.

The peregrine falcon, a federal and Oregon and California state-listed endangered species, historically nested in the canyon, but nesting has not been known to occur since the early 1970's. Peregrines are known to migrate through and winter in the canyon and sightings have increased in the last few years (Opp 1989, personal communication). The BLM sighted one at the Salt Caves in June of 1993. One historic nest site is in the reach proposed for designation and another is located a few miles south of the canyon in California. Recovery efforts in California and Oregon are increasingly successful as evidenced by an increase in eyries within a 100-mile radius of the study area. The potential exists for peregrines to reoccupy historic nest sites or establish new nest sites in the study area as the species continues to recover. Because of the abundant prey base, use of the canyon as a migration corridor, and the abundance of suitable falcon nesting habitat, the canyon is planned as a hack site for reintroducing peregrines. Because of the presence of nesting prairie falcons, cross fostering peregrines with prairie falcons is another potential strategy. A large area in southern Oregon and northern California, including the study area, was designated as a management area for the recovery of the peregrine falcon (Pacific Coast American Peregrine Falcon Recovery Team, 1982). In its current management framework plan, the BLM has designated a portion of the cliffs in the bypass reach as protected habitat for falcons.

Wet meadows adjacent to slow moving portions of the river provide feeding, resting and nesting habitat for several species of waterfowl. Canada geese, wood ducks, and common mergansers are known to nest; mallard and cinnamon teal potentially nest along the river. Tundra swans and green-wing teal also use river habitat. The many small minnow-like fish found in the river provide a food source for the double-crested cormorant, a bird that is common throughout the canyon.

Meadows, oak grasslands, and dense brush are important habitats for feeding and brood rearing of upland gamebirds such as California and mountain quail (a Category 2 candidate species), wild turkey, and chukar. The latter two were introduced into the canyon in the 1950's and 60's. Red-legged partridge, a species similar in appearance and related to chukar, were introduced into the canyon by the ODFW in the spring of 1989. Although ruffed grouse historically inhabited the area, no recent records of sighting exist. This grouse may be present in areas that contain moist, woody vegetation near springs and seeps or areas near the few aspen stands found in the canyon. This type of habitat is very limited within the canyon and likely limits the presence of ruffed grouse. The abundant oaks found in the study area are important to turkeys by providing acorns -- a crucial food source. Turkeys also prefer wooded meadows adjacent to the river. Blue grouse, mourning dove, and band-tailed pigeons are also present in the area. All of the gamebirds found in the study area are open to hunting during season and all are permanent residents, except the band-tail pigeon and mourning dove, which are migratory.

A great variety of non-game birds inhabit the study area. The diverse plant communities in the canyon provide important nesting, foraging and wintering habitat to many birds. Robins, juncos, chickadees and two Oregon state-sensitive species -- western bluebirds and acorn woodpeckers -- winter in the canyon in large numbers. Acorn woodpeckers nest in the study area; this is the only population of this species that nests east of the Cascade Range. These and other non-game birds provide a significant prey base for raptors and predatory mammals. Other state-sensitive species inhabiting the study area are Lewis' and pileated woodpeckers, northern pygmy owl (Oregon sensitive), and the bank swallow (Oregon sensitive and California threatened). Most of these species also nest within the study area. The western yellow-billed cuckoo potentially occurs in the canyon. This federally listed Subcategory 3B and Oregon state-sensitive and California state-threatened bird inhabits riparian areas found in interior valleys west of the canyon but has been sighted in the past throughout eastern Oregon and may occur in the study area, although its presence has not been documented (Littlefield 1988). Vaux's swift, listed on the 1989 Oregon Natural Heritage Database Review/Watch List, is common in the study area.

Mammals. The canyon provides high-quality habitat supporting a great variety and abundance of mammals. Silver-gray squirrels, an important game species in the canyon, are plentiful, as are other small mammals such as bats, rabbits, chipmunks, ground squirrels, deer mice, shrews and other small rodents. These provide an abundant prey base for the many mammalian and avian predators. Beaver and muskrat, two small mammals dependent on aquatic habitat, are commonly found along the river. Townsend's big-eared bat, a federal candidate (C2) and Oregon state-sensitive species, is found in the proposed designation reach. A maternity (birthing) colony of these bats was discovered by a BLM biologist in 1988 and has persisted at the site through 1993. There are only five known maternity colonies in the region.

Several species of predators in the canyon, including bobcat, raccoon, river otter, mink, long- and short-tailed weasels, fisher, and ringtails, are dependent upon riverine habitat and prey. Both the fisher and ringtail are Oregon state-sensitive species. The ringtail, a small, slender relative of the raccoon, is rare in southern Oregon and northern California; Klamath County is the eastern limit of its range in Oregon. Larger predatory mammals inhabiting the study area include coyote and gray fox. The wolverine, an Oregon and California state-threatened and federal candidate species (C2), has not been seen in the study area but has been documented nearby and probably uses the canyon as a travel corridor (Opp 1989, personal communication).

Big game mammals that occur within the study area include black-tailed deer, Roosevelt elk, black bear, and cougar. Although uncommon in the study area, black bear and cougar either reside or pass through the canyon. A migratory herd of 3,100 black-tailed deer (estimated 1988-89 population), known as the Pokegama Herd, inhabit the area around the canyon. The summer range of this herd extends from Siskiyou County in California to Crater Lake in Oregon. The majority of this herd winters in and around the study area.

A portion of the study area lies within a larger area designated by the BLM and the ODFW as critical deer winter range. This is primarily due to the low elevation, which gives rise to light to snow-free conditions during severe winters. This provides accessible forage, easier movement, good thermal cover, and early spring greenup, furnishing critically needed forage for deer coming off a hard winter. A small portion of this black-tail deer herd are year-round residents of the study area. Springs and wet areas with riparian cover are important fawning habitat for these resident deer.

The forested areas in the canyon, along with the meadows around the Frain Ranch, provide suitable habitat for elk, which are occasionally seen in these areas in the spring and early summer. The canyon is not a primary wintering area for elk, but is used in winter, particularly during severe winters. The elk herd was estimated at 50 animals in 1988-89 and is predicted to increase. The size of the herd's range, and the importance of habitat in the canyon, is expected to increase as well (Opp 1989, personal communication).

Herptiles. A variety of reptiles and amphibians are found in and around the study area; a total of 28 species potentially occur. Talus slopes and rocky hillsides provide good habitat for lizards and den sites for snakes, while amphibians inhabit moist sites around seeps and springs and along the river. Snakes found within the canyon include western rattlesnake, ringneck snake, common and western garter snake, gopher snake, and western racer. Common lizards include fence lizard, alligator lizard, sagebrush lizard, and western skink; amphibians of note include long-toed salamander, western toad, and Pacific tree frog. Two Oregon state-sensitive species found in the study area are the California mountain kingsnake and western pond turtle, the latter is also a federal candidate (C2) species. Species that potentially occur but have not been documented as present in the study area include Pacific giant salamander, roughskin newt, ensatina, black salamander (listed as a species of concern in 1989, Oregon Natural Heritage Database), Great Basin spadefoot toad, striped whipsnake, western aquatic garter snake, northwestern garter snake, and night snake; and four Oregon state-sensitive species -- tailed frog, spotted frog, sharptail snake, and short-horned lizard (St. John 1987).

Fish

The Klamath River is inhabited by a diverse assemblage of fish species; at least 15 known native and introduced species occur within the study area (Appendix C). Historically the river was a passageway for anadromous fish (chinook salmon and steelhead) as they migrated to various tributaries of the Klamath River and Upper Klamath Lake. These fish runs were halted by the construction of Copco I Dam in 1918, which permanently blocked fish passage. Subsequent to this, three more dams were built on the upper Klamath River -- Copco II and Irongate in California, and J.C. Boyle in Oregon, completed in 1925, 1938 and 1958, respectively. Although located outside the study area, two other dams affect fish migration on the Klamath River -- Keno Dam located 8.5 miles above the J.C. Boyle Dam and the Link River Dam at the outlet of Upper Klamath Lake. Boyle, Keno and Link River Dams all have fish ladders to facilitate fish migration.

Rainbow trout are the primary game fish inhabiting the study portion of the river. The Klamath River from the Keno Dam downstream to the state line was one of the first three rivers designated in 1978 as a wild rainbow trout stream by the ODFW and is one of only six rivers in Oregon managed for wild rainbow trout. No hatchery fish have been stocked in the Oregon reach of the Klamath River since 1978.

The concern and importance of this wild rainbow trout fishery has been acknowledged not only by state designation, but also by public and private concerns and by state and federal government agencies as evidenced by the following.

- The NPS, in the NRI, recognized the "excellent trout fishery" of the Klamath River.
- The Northwest Power Planning Council designated the upper Klamath River as a protected area to protect the resident rainbow trout population.
- The Pacific Northwest Rivers Study for Oregon gave their highest resource value rating based on the wild trout population.
- The ODFW chose the wild rainbow populations of the Klamath Basin, specifically those of the Klamath River, as the first of many in the state to be studied to better understand how stocks of wild trout have adapted to their particular environments.

Wild rainbow trout of the Klamath River are a highly productive, self-sustaining population that spawn naturally in the wild. Studies done by the city of Klamath Falls (1986) estimated rainbow populations (7.8 inches or larger) between the J.C. Boyle Powerhouse and the Frain Ranch (RM 214) at 890 fish per mile, and between RM 214 and 210 at 1,911 fish per mile. These population estimates are comparable to a similar river, the lower Deschutes River, managed for wild rainbow trout and noted as one of the most productive streams in Oregon where the wild rainbow trout population was estimated at 1,500 per mile (Griggs 1989, personal communication).

Although some spawning habitat is found in the bypass reach of the J.C. Boyle Hydroelectric Project, the lower reaches of the river have little or no spawning habitat for trout. Most adults migrate to either Spencer Creek or Shovel Creek to spawn. Spencer Creek, the primary spawning tributary for trout in the upper reaches of the river, empties into J.C. Boyle Reservoir. Trout migrating from below the J.C. Boyle Dam to Spencer Creek must pass over a fish ladder at the dam. Shovel Creek, three miles downstream from the state line, is the primary spawning tributary for trout in the lower reaches of the river. Klamath River rainbow trout spawn from early March through May, and juvenile fish begin to migrate into the river from spring through fall (Fortune 1989, personal communication). After the high spring flows have dropped off, the flow is relatively stable in the bypass reach from summer through winter. This reach of the river is an important rearing area for trout in their first year of life.

The Klamath River produces an immense quantity of aquatic invertebrates. The abundance of these aquatic insects -- caddisflies, mayflies, and stoneflies -- in the river provides a primary food source for trout. Crayfish are abundant and are also an important part of the trout's diet.

Klamath River wild rainbows are genetically unique in their resistance to periodically high pH values. It is likely that their resistance to a fatal protozoan parasite and high water temperatures are also unique genetic traits, but could be environmental adaptations (Buchanan 1989, 1994, personal communication). Additional research of the Klamath River rainbow population is needed to determine if these traits are environmental or genetic. Although other Oregon river systems contain native rainbow trout that are resistant to high water temperatures and the protozoan parasite, non-native strains of rainbows historically introduced into the Klamath apparently were not able to reproduce due to their susceptibility to the parasite (Buchanan 1989, personal communication). Klamath River rainbows confront other problems including low summertime flows, high summertime water temperatures and concurrent decreasing water quality, lack of spawning gravel, cyclic water fluctuations from power generation, and competition from non-native warmwater fish. Despite these problems, Klamath River rainbows have been able to reproduce and sustain a productive fishery that is popular and has high catch rates of trout up to 20 inches.

The Klamath River in Oregon is managed as a catch-and-release trout fishery from June to September and is open to a limited catch the remainder of the year. The palatability of the trout decreases as a result of poor water quality conditions that occur in late summer, primarily due to the high water temperatures and high algae content from the massive blooms in upstream impoundments.

Two federal and Oregon and California state-listed endangered species, the Lost River and shortnose suckers, are found in the river. The Lost River sucker, or "mullet," once an important food staple for local Native Americans, was at one time abundant in Klamath Basin lakes and streams, migrating by the thousands to spawn in tributaries of Upper Klamath Lake. Lost River and shortnose suckers typically inhabit lakes and migrate into tributaries to spawn. The Lost River and shortnose sucker are found in J.C. Boyle Reservoir, Copco Reservoir, and in the California reach. Although these two endangered species have not been found in the Oregon segments, it is very probable that they enter this part of the river when washed over J.C. Boyle Dam during high flows.

Other native species found in the river include Klamath smallscale sucker, blue and tui chub, marbled sculpin, and Pacific lamprey. The Klamath largescale sucker (federal candidate, C2 species) has been found in J.C. Boyle Reservoir and potentially occurs below the reservoir. The slender sculpin (federal candidate, C2 species) is found in the river upstream of the J.C. Boyle Reservoir and may occur below the dam. Several introduced minnow-type species occur in the river. Golden shiner, fathead minnow, and Sacramento perch are lake dwellers and generally are not found in swift flowing portions of the river, though they may occur in slackwater close to Copco Reservoir. Although not documented, there have been at least two reports of white sturgeon in the upper Klamath River. White sturgeon were planted in Upper Klamath Lake in the 1950's. Brown trout, planted in Copco Reservoir, inhabit and migrate through the California reach to spawn in Shovel Creek.

Cultural Resources

Cultural resources within the study area are divided into three categories: prehistoric, historic and current Native American traditional use. Prehistoric resources are associated with Native Americans and date before the time of contact with European settlers (AD 1850). Information about these resources is recovered through scientific archaeological investigations. Historic resources date after 1850 and are more than fifty years old. In the study area, they are associated with early stagecoach and freight travel, early ranching activities, logging activities, and in one case, sacred use by Native Americans. Current Native American cultural and spiritual practices within the study area were described earlier in this section.

Prehistoric. Archaeological surveys, excavations, and artifact analyses have been conducted over the last 33 years. Initial investigations by the University of Oregon in the early 1960's were prompted by the construction of the J.C. Boyle Powerhouse and Dam. More recently, as part of the proposed Salt Caves Hydroelectric Project, the city of Klamath Falls (1984-1986) surveyed land and test excavated 20 sites. In 1989, 750 acres of BLM-administered land in the study area were surveyed (Class III - Intensive Field

Inventory) by the BLM. The BLM also initiated a contract in 1989 in which information recovered from sites in the canyon was integrated and consolidated with data from the 1960's into a single, cohesive framework (Mack 1983) for planning and management purposes. Surveys, excavations and analyses have provided information about prehistoric use of the study area; however, problem-oriented research will yield more in-depth details about prehistoric activities in the canyon. Consultation with Native Americans can also yield information on the prehistory of the study area and its relation to the lives and culture of living people, and enhance the scope of our understanding of the prehistoric use of the canyon.

Forty-five prehistoric sites have been located in the upper Klamath River Canyon. These sites consist of pit house villages, stone rings, lithic scatterers, burial sites, a quarry site, and a rock shelter. The wide variety of known sites present within the river corridor demonstrates intense prehistoric use of the canyon by Native Americans. Use of the canyon by Native Americans dates back to at least 5000 BC; however, archaeological data (radiocarbon dates, time-sensitive projectile points, and pottery) indicates that most of the sites were occupied from AD 250 to AD 1800 -- Late Prehistoric Period (Mack 1989). The wide diversity of riverine-associated plants and animals, the trade and communication corridor provided by the river, and the relatively mild winter climate within the canyon are just a few of the factors which explain the concentration of prehistoric sites.

The diversity of site types in the canyon and archaeological evidence of the prehistoric diet indicate that the upper Klamath River Canyon was occupied year-round from at least AD 900 until approximately AD 1800 (Mack 1989). Present are fishing, gathering and hunting camps and pit house villages. Using ethnographic accounts (Silver 1978), the pit house villages have been interpreted as winter villages, while the lithic scatterers (concentrations of flaked stone debris and tools) are viewed as relating to fishing, gathering, or hunting camps -- depending on location -- used in the spring, summer and fall. It is apparent that the large diversity of plant and animal resources in the canyon allowed year-round use of the canyon, rather than only seasonal use as is common for most of the riverine areas of the region. The desirability to occupy a river corridor on a year-round basis was an uncommon occurrence in this region, where the distribution of plant and animal resources is usually over a wide area, necessitating the seasonal movement of people from place to place. Archaeological analysis has shown that the prehistoric diet included the use of fish, acorns, large and small mammals, turtles, birds and various plants.

Due to the biological diversity of the canyon, resources were readily available during different seasons of the year -- anadromous fish in the spring and late summer; turtles in the spring, summer and fall; acorns in the fall; and large game being taken primarily in the fall (Mack 1983). In addition to the sites found within the canyon, sites that are easily accessible from the canyon have been found in areas where roots, seeds and berries are available. These sites show that resource areas adjacent to the canyon were also used prehistorically as a way to increase and supplement the Native American subsistence base.

Ethnographic accounts (Silver 1978, Spier 1930, Kroeber 1925) and artifacts recovered from sites indicate the area was used by a variety of cultural groups at different times. These groups have been identified as the Shasta Indians of northern California, the Modoc and Klamath Tribes of the Klamath Basin, the Takelma of the upper Rogue River, and possibly the Pit River Indians of northeastern California. Common to all of these tribes was the use of winter pit house villages, hunting and fishing camps, and a subsistence pattern in which anadromous fish, acorns (where available), large and small mammals, and various plants were major parts of their diet.

Cultural differences between these tribes are largely attributed to their geographic position and the influences of tribes from outside of the region. These cultural differences resulted in the use of distinctive artifact forms, including projectile points, groundstone and pottery, by each tribe. Pottery recovered at one site suggests that it was occupied by the Takelma, prior to its use by the Shasta. Burials and flaked stone tools show that some of the sites within the southern portion of the canyon were used by the Shasta. Projectile point types also indicate that the Modoc, Klamath and possibly the Pit River Indians used sites within the canyon. The wide range of artifacts from sites in the study area shows that use of the canyon by different tribes changed over the last 2,000 years. This is important because it shows that territorial boundaries between the different tribes using the canyon did not remain the same through time (an assumption often

made about the boundaries of prehistoric culture areas), but changed as each group expanded or decreased its tribal area.

Archaeological investigations over the last three decades in the upper Klamath River Canyon have provided information about prehistoric use of the canyon, as well as the region. Excavations at ten of the pit house village sites have yielded information about prehistoric diet, burial practices, architectural features, and aspects of tool manufacturing and use. Several of these sites are very large and, with problem-oriented research, should provide more detailed information about prehistoric use of the canyon than is available at present. Tribal boundary fluctuations, trade of raw material and finished products, and a greater understanding of the early use of the canyon are just a few of the research questions that could be pursued by additional research in the canyon. The archaeological data from sites within the canyon make all sites eligible for nomination to the National Register of Historic Places as an Archaeological District. Sites are eligible for nomination to the National Register if they have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4d).

Historic. After the 1850's, Native Americans continued to use the canyon for hunting, fishing, gathering, spiritual purposes, trade, and intertribal communications; but due to encroachment by Euro-Americans, their activities were not as prevalent as in prehistoric times. Ethnographic and Euro-American historic accounts (Theodoratus et al. 1989) present only a generalized level of information concerning historic use by Native Americans. Consultations with Native Americans yield a different perspective on historic use of the area. This perspective reflects a continuous link between prehistoric and historic cultural and spiritual uses -- a linkage that has continued into the present; tying the lives of members of the Klamath Tribe and Shasta Nation with those of their ancestors who once inhabited the canyon.

Ethnographic investigations in association with archaeological research (city of Klamath Falls 1985) have identified use of a prehistoric village site for religious ceremonies associated with the 1870 Ghost Dance, a Native American religious cult which first developed in the early 1870's on the Great Plains and then spread to tribes in the west. Ceremonies were conducted so the deceased would return to the earth and help the living Native Americans regain control of their destiny. This religious doctrine was apparently transmitted from the Klamath Tribe, down the Klamath River, to the northern California tribes (Spier 1927). This Ghost Dance site was probably part of the southward spread of the religion.

The upper Klamath River Canyon has been used extensively by Europeans since the 1850's. The terraces and floodplains along the river and several meadow areas above the river were excellent locations for agricultural and ranching activities. These areas were the focus of European settlers in the canyon; however, the river itself was used to transport logs to mills downstream.

The earliest European explorers in the vicinity of the study area were members of Peter Skene Ogden's Hudson Bay Company expedition of 1826-27. In their search for fur-bearing animals in southern Oregon, Ogden's party traveled along the western canyon rim. Unable to access the river because of the steep canyon wall, the explorers left the canyon rim near RM 222.5. Traveling southwest across the Pokegama plateau (the area north of the river), the party again reached the river near Copco Reservoir and continued westward through the Cascade Range (LaLande 1983). Thirty years later, Mart Frain, a noteworthy local figure, followed the river northward from the mining town of Yreka, California, to the Klamath Basin. Upon reaching the Klamath Basin, Frain began the first trade with local Native Americans. While exploring the southern Cascade Range in the summer of 1888, a prominent regional preservationist, Judge John B. Waldo, and his party travelled through the study area. Journeying northward from Mt. Shasta, the expedition party stayed overnight at the Beswick Resort and Klamath Hot Springs before continuing up the river to Keno, Oregon (LaLande 1989).

A prominent historic landmark of the study area is a stagecoach/freight road known as the Topsy Road, which parallels the river for 11.4 miles, including 5.1 miles in the proposed designation reach, on the south and east side of the river. Bisecting the Cascade Range, this road was officially opened for wagon and stage travel between Yreka, to the southwest, and the Klamath Basin, to the northeast, in 1875. However, as early

as 1865, freight for Fort Klamath was carried up the river canyon along a route closely approximating Topsy Road. From 1875 to the early 1900's, when the road to Ashland, Oregon, was improved and the railroad reached Klamath Falls, Topsy Road provided the only year-round access to Klamath Falls and to towns east of the Klamath Basin.

Topsy Road underwent three construction periods -- initial construction from 1874 to 1875; a second construction period in 1887, when the steepness of the grade was lessened; and the final period of construction in 1890 when Topsy Road and Topsy Grade (where the road cuts into a vertical basalt face) acquired their existing locations. Providing reliable access during inclement weather between towns west of the Cascade Range and towns on the east side, mail was first carried along this route in 1876. In 1887, all mail to Klamath Falls and towns to the east was routed along Topsy Road. Freight wagons came from Ager, California, supplying goods to the Klamath Basin, Fort Klamath, the Klamath Indian Agency, and merchants in Klamath Falls. Stagecoach travel along Topsy Road occurred daily with an overnight stop at the Beswick Hotel and Klamath Hot Springs in California, and livery stops at the Way Station Ranch (1/2-mile north of the state line in the proposed designation reach) and Overton Station, which is above Topsy Grade. Even with the construction of a reliable road from Ashland, Oregon, and access by railroad, traffic continued on Topsy Road after the early 1900's.

Way Station, a livery stable and log cabin, associated with travel on Topsy Road is still standing. The location of Overton Station, another livery stop, is marked by several poplar trees above Topsy Grade.

Two additional historic ranch sites found along Topsy Road are the Kerwin Ranch, where the foundations and apple orchard are still visible, and the Frain Ranch, purchased by Mart Frain in 1888 and deeded to his three sons in 1893. The Frain Ranch contains the visible remains of a log cabin, root cellar, barn and garage. The orchard, pasture lands, and the log cabin are visible from the river. A pioneer cemetery, the Way Cemetery, is located off Topsy Road and contains the graves of Mart Frain and members of the Way, Ward, Overton and Hoover families (all early ranching families). Topsy School, located at the foot of Topsy Grade, was attended by children of the nearby ranches and logging camps. All located within the reach proposed for designation, these historic sites have had historical markers containing brief, descriptive accounts placed near them by the local historical society. Two other historic ranches within the proposed designation segment, the Hoover and Butler ranches, are on the west side of the river.

Scenic

The visual quality of a landscape is based on several factors. The stronger the influence of form, line, color and texture, the more interesting the landscape; the more visual variety in a landscape, the more aesthetically pleasing it is. An assessment of landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications is used to classify the scenic quality of the area. Using a BLM assessment technique, a VRM Class rating is then made to manage the quality of the visual environment and to reduce the visual impact of development activities (BLM Handbook H-8410-1).

The upper Klamath River Canyon was evaluated by the BLM in 1977 and 1981. All three segments received a Scenic Quality Class A evaluation -- the highest scenic quality classification. Based on this classification, the area was then classified as VRM Class II. The Class II management objective is to retain the existing character of the landscape. Management activities in VRM Class II areas should not attract the attention of the casual observer. The upper Klamath River, from the J.C. Boyle Powerhouse to the Oregon-California state line, was designated the Klamath Scenic Waterway by majority vote in 1988, in part because of the valued scenic resources.

Landscape Characteristics. The upper Klamath River Canyon is the predominant visual element in the region, exhibiting considerably more landform variety than the surrounding plateau. The high desert canyon, classified by the BLM (1978) as part of the Rolling Plateau within the Recent-age High Cascades Physiographic Province, cuts across the southeastern corner of the surrounding plateau. This extensive

plateau is characterized by regular, rolling topography; whereas, the canyon exhibits considerably more landform variety with cliffs, steep slopes, upland benches, alluvial terraces, and a meandering river channel, which can all be encompassed in a single view. The portion of the canyon in Oregon is characterized by steep, layered basalt canyon walls, rising as high as 1,000 feet above the river, providing a strong sense of enclosure. Rock is exposed in approximately 35 percent of the canyon as vertical rock cliffs, bedrock outcrops, talus slopes, and rock slides. The canyon opens up in California, with rolling hills in the foreground and steep basalt cliffs and cinder cones in the background; this enhances the visual diversity, compared to the views upstream where the canyon is narrow and closer to the river.

From the river to the canyon rim, the visual quality is strongly influenced by the texture of the landscape. When viewed from a distance, the landscape appears as a mosaic of steep cliffs, talus slopes, conifer and deciduous stands, and rolling grassland areas. Viewed more closely, the rock outcrops combined with the vegetative diversity produces a strong visual impression.

Vegetation in the canyon is diverse due to elevation differences, aspect, slope and soil diversity. Forests in the canyon are primarily ponderosa pine, but a wide variety of conifers, juniper, deciduous trees, shrubs, and grasses also occur throughout. Colors within the canyon, influenced heavily by the vegetation, are medium-to-dark greens, grays, browns and tans.

The prominence of colors is most obvious in the fall when the leaves of deciduous trees (primarily oaks) change color, adding reds and yellows to the landscape. During spring and early summer, flowering brush and wildflowers enhance the color contrasts with the background of greens and browns. Winter snow adds additional diversity.

The Klamath River itself further increases the visual variety in the canyon, flowing through diverse topography, dropping steadily to form a series of pools and rapids. As it flows through the canyon, it changes from slack, slow-flowing water in the wider areas to a rushing torrent of cascading whitewater through narrow rocky walls and back to slack water through the rolling, grassy hills in California.

Cultural Modifications. Negative cultural modifications, such as the dirt roads and facilities associated with the J.C. Boyle Hydroelectric Project in Oregon, are disharmonious with the existing scenery. Below the J.C. Boyle Powerhouse, the landscape is not dominated by visible logging, irrigated agriculture, hydroelectric facilities, or other developments common elsewhere in the region. Dirt roads and wood pole powerlines in the bottom segments do not add favorably to visual variety, but are rarely seen by the casual observer and are not considered to be significant scenic quality detractors. The strong sense of cultural heritage and famous sites, combined with the scenic beauty of the canyon, draws visitors from outside the region.

Aesthetic Experiences. The Klamath River Canyon provides excellent opportunities to view wildlife and wildflowers and experience solitude. The chances of spotting a soaring eagle, grazing deer, swimming river otter, or an osprey diving for fish are high. The canyon's unique scenery enhances the recreation experience and thus has been described in rafting and other recreation brochures. Wildflowers are plentiful in the spring and summer and can be viewed in many places throughout the area. Downstream from the J.C. Boyle Powerhouse, the canyon's remoteness and steep topography provides visitors uncrowded and natural aesthetic experiences, not usually available at the more popular and famous national parks, monuments, and rivers in or out of the region. The Klamath River Canyon's scenery compares with the Rogue River's wild and scenic designated portions in terms of landform, vegetation, color, scarcity, and cultural modifications. Some factors even exceed those on the Rogue, such as landform variety compared to immediate surrounding areas, vegetation diversity, and seasonal color variations.

Vegetation

The upper Klamath River Canyon exhibits a unique and diverse collection of plant communities, due in part to the varied topography, aspect, elevation, soil type, and micro-climates within the canyon. Bisecting the Cascade Range, the canyon cuts through distinct vegetative zones, adding to the diversity. In addition to the montane vegetation typical of the Cascade region, the canyon exhibits plant communities found in the interior valleys to the west and the high desert to the east. A mosaic of pine, oak and mixed conifer communities dominate the make-up of the canyon. Ponderosa pine and Oregon white oak are the dominant tree species found throughout the canyon. The species discussed in the following community descriptions are representative, not all-inclusive. These community descriptions were modified from city of Klamath Falls (1986) data.

The elevation of the canyon rim in the upper 10 miles of the study area (between RM 224.5 and 214), referred to as the "upper canyon" for discussion of vegetation, ranges from 4,400 feet to 3,400 feet, averaging 1,000 feet above the river. In the lower 11 miles (downstream from RM 214), or "lower canyon" for this discussion, the rim elevation goes from 3,900 feet down to 3,400 feet in northern California. The upper canyon is more moist and densely forested than the lower canyon where the topography and forest opens up and becomes drier.

The major plant communities found in the area are mixed conifer forest, pine/juniper, pine/oak forest, oak forest, and oak/shrub. Meadows and riparian areas occur, but are small and limited to specific sites and conditions. Limited areas of oak grasslands occur on slopes and benches and are composed of grasses and oaks found in meadow and oak communities.

The mixed conifer forest is found on the rim, in the canyon bottom, and on north-facing slopes of the upper canyon. Predominant overstory species in this community include ponderosa pine, Douglas-fir, and Oregon white oak. Incense-cedar, California black oak, sugar pine, golden chinquapin, and white fir occur less frequently in these stands. Predominate shrub species are snowberry, western serviceberry, mountain-mahogany, deerbrush, and Oregon grape. More common forbs include wild strawberry and lupine; western fescue, pine bluegrass, blue wildrye, and medusahead wildrye are common grasses.

The pine/juniper community is found on drier, more exposed slopes in the upper canyon. The dominant overstory species are ponderosa pine and western juniper. Oregon white oak is sparse, but does occur. Understory shrub species include deerbrush, rabbitbrush, mountain-mahogany, and occasionally gooseberry. Common forbs are buckwheat, common buttercup, pussytoes, Nuttall's gayophytum, and Puget balsamroot. Cheatgrass, hairy brome, medusahead wildrye, needlegrass, and pine bluegrass are common grasses.

The pine/oak forest is found primarily in the lower canyon. Predominant overstory species are ponderosa pine and Oregon white oak, with incense-cedar, Douglas-fir and California black oak in the moister sites. Understory varies, with the drier sites made up of primarily wedgeleaf ceanothus and bitterbrush; deerbrush, poison oak, snowberry, western serviceberry, and rabbitbrush are found on moister sites.

The oak forest community occurs throughout the area on dry slopes and in the river bottom. Oregon white oak -- usually associated with ponderosa pine, western juniper, and California black oak -- is the dominant tree. The understory varies according to aspect and stand density. Dominant shrubs include mountain-mahogany, snowberry, wedgeleaf ceanothus, bitterbrush, rabbitbrush, deerbrush, and western serviceberry; Puget balsamroot, Idaho fescue, bluebunch wheatgrass, cheatgrass, bottlebrush squirreltail, junegrass, needlegrass, and medusahead wildrye are common forbs and grasses.

The oak/shrub community is found throughout the study area on slopes and benchlands. Oregon white oak is dominant and can occur as a small, shrubby tree. Associated trees are ponderosa pine, western juniper, Douglas-fir, and sugar pine. Understory vegetation varies with site location, but common shrubs include mountain-mahogany, wedgeleaf ceanothus, manzanita, poison oak, deerbrush, snowberry, and rabbitbrush. Forbs and grasses are well developed in open areas and include Puget balsamroot, mountain dandelion, yarrow, Solomon plume, large-flowered collomia, wooly sunflower, buckwheat, and tarweed. Common

grasses are cheatgrass, bluebunch wheatgrass, needlegrass, hairy brome, two-flowered fescue, pine bluegrass, and bottlebrush squirreltail.

Small meadows occur in the river bottom of the upper canyon as a result of early homesteaders clearing the land for agriculture, on moist benches above the river in the lower canyon. In addition to the forbs and grasses mentioned in the previous plant communities, typical forbs include California poppy, least hopclover, and tidy-tips; soft cheat, bulbous bluegrass, foxtail barley, and few-flowered wild oatgrass are typical grasses.

The few riparian communities occur in narrow bands along the river, in drainages along the canyon, and on the edges of islands in the river. Due to the fluctuating river levels from the outflow of the J.C. Boyle Powerhouse, the establishment of streamside riparian vegetation is limited. Predominant riparian overstory species are Oregon white oak, birch, white alder, and Oregon ash. Blue elderberry, Lewis mockorange, willow, Douglas spiraea, and western wild grape make up the common shrub layer. Common forbs include watercress, monkey-flower, speedwell, cattail, and boreal bog-orchid; reed canary grass, sedges, and rushes are also present. Although not a major component of the riparian community, stands of quaking aspen are found in drainages along the canyon.

The occurrence of threatened and endangered plants in the study area are unknown at the present time. Limited surveys have been conducted in the past to document these species. Several species occur nearby and may potentially be found in the study area. One federal candidate species (C2), the pygmy monkey-flower, has been found on the Ward Road, which is adjacent to the west rim in the upper canyon, just outside the study area boundary (Tomlins 1989, personal communication). Another candidate species, Green's mariposa lily, has been found south of the study area. A portion of the canyon is within the historic range of this species and it potentially occurs here (Brock 1988), although none were found in 1986 during the city of Klamath Falls' survey. Short-podded thelypody is a forb that historically has been found on the Klamath River near the town of Keno (Abrams 1944) and may occur in the study area (King 1989, personal communication). This Category 3C species has been nominated for the BLM's sensitive species list by the Lakeview District BLM. In addition, the Oregon Natural Heritage Database has listed this species as threatened in Oregon, but more common or stable elsewhere. Bellinger's meadow foam (federal and Oregon state candidate species) has been found adjacent to the canyon, and similar habitat (level, seasonally wet, rocky meadows) is found in the canyon.

Water

Water resources are a key component in shaping the animal and plant communities found within the study area. Although the river within the study area is the primary focus of examination, factors upstream significantly affect this portion of the river. Those factors that are discussed in this section include water rights, flows, beneficial uses, quality (including that of Upper Klamath Lake), and temperature.

Water Rights. PP&L is licensed to divert up to 2,500 cfs of Klamath River water for the operation of the J.C. Boyle Hydroelectric Project. In addition, PP&L has three other water right claims which were acquired with the purchase of land adjacent to the river. Two of the permits allow diversion from the Klamath River, and one uses water from small tributaries of the Klamath; all three are for irrigation, stock and domestic use. The volume of water that could be withdrawn by these three permits is an insignificant portion of the total river volume. The Oregon State Department of Forestry has a permit to use up to 10,000 gallons of water per day from an unnamed tributary of the Klamath River (within the proposed designation reach), near the Topsy Road, for dust abatement. The city of Klamath Falls currently has an application pending with the FERC for licensing of a hydroelectric project which would be located primarily within the segment proposed for designation. The city submitted an application to the Oregon Water Resources Department for the diversion of water for hydroelectric generation, but the Water Resources Department rejected the application for the project. This is currently being appealed by the applicant.

The Bureau of Reclamation's (BOR) Klamath Project diverts water from the Klamath River near the city of Klamath Falls for agricultural irrigation. Rights were claimed for all unappropriated waters of the Klamath River Basin by the BOR for this project. The Oregon Water Resources Department is in the process of adjudicating all water claims in the Klamath River Basin. The OPRD and the ODFW have applied to the Water Resources Department for an instream water right on the Klamath Scenic Waterway. Based on the release regime from the J.C. Boyle Powerhouse, the application requests 1,500 cfs for recreation and 550 cfs (not additive) for fish population and habitat. Within the California segment of the upper Klamath River, the California State Water Resources Control Board does not have any water use applications or claim of rights on file.

The Klamath River Basin Compact provides guidance along with other applicable laws for water rights administration in the Klamath Basin.

The major purposes of the Klamath River Basin Compact, as stated in Article 1, are:

A. To facilitate and promote the orderly, integrated and comprehensive development, use, conservation and control thereof for various purposes, including, among others: the use of water for domestic purposes; the development of lands by irrigation and other means; the protection and enhancement of fish, wildlife, and recreational resources; the use of water for industrial purposes and hydroelectric power production; and the use and control of water for navigation and flood prevention.

B. To further intergovernmental cooperation and comity with respect to these resources and programs for their use and development and to remove causes of present and future controversies by providing (1) for equitable distribution and use of water among the two states and the Federal Government, (2) for preferential rights to the use of water after the effective date of this compact for the anticipated ultimate requirements for domestic and irrigation purposes in the upper Klamath River Basin in Oregon and California, and (3) for prescribed relationships between beneficial uses of water as a practicable means of accomplishing such distribution and use.

Stream Flows. Stream flows have been measured since January 1959 by the USGS at a gaging station located 0.7 mile below the J.C. Boyle Powerhouse. Data from water year (October to September) 1961 through 1988 show an average annual flow of 1,926 cfs with a maximum discharge of 11,000 cfs measured in March 1972 and a minimum flow of 283 cfs in February 1968. Mean monthly flow data show that highest monthly flows occur December through April and the lowest occur June through August.

The J.C. Boyle Powerhouse typically operates in a peaking mode with one turbine operating during low flow periods (summer), and both turbines, at times continuously, during high flows (late winter/early spring). Peaking operations cause significant daily water fluctuations in the river. In the summer, this ranges from a baseflow of 300 to 400 cfs (outflow from the dam and springs in the bypass reach) to approximately 1,500 cfs with one turbine running (1,250 cfs maximum throughflow at each turbine). During high-flow periods (winter), with both turbines running and water spilling over the dam, river flows range from 3,000 to 8,000 cfs. The daily winter fluctuations are less drastic since baseflow is much higher due to precipitation or seasonal runoff. Actual effects of typical summer peaking operations (one turbine) on the river level are seen in a vertical difference of approximately 1 to 2 feet between high and low flow. During periods of non-generation, this dewatering leaves a portion of the streambed exposed and dry.

Beneficial Uses. The appropriation of the surface waters of the Klamath Basin is governed by state law and the Klamath River Basin Compact (ORS 542.620). The Compact became effective in 1957 upon ratification by Oregon, California and the U.S. Congress. Article III of the Compact addresses beneficial uses in the Klamath River Basin.

The DEQ has expanded upon these beneficial uses specifically for water quality management purposes of the Klamath River (OAR 350-41-962). These established beneficial uses are public and private domestic water supply, industrial water supply, irrigation, livestock watering, salmonid fish rearing and spawning, resident fish and aquatic life, wildlife and hunting, fishing and boating, water contact recreation, and aesthetic quality.

Water Quality. Water quality standards have been set by the DEQ for Klamath Basin waters and specifically for the Klamath River from Upper Klamath Lake to the state line (OAR 340-41-965). Water quality is monitored monthly by the DEQ at several locations above the Keno Dam and at the USGS gaging station just below the J.C. Boyle Powerhouse (RM 219.9). The city of Klamath Falls has also monitored water quality at several locations between Keno Dam and Copco Reservoir in relation to the proposed Salt Caves project. Some of this data shows that DEQ water quality standards (range values) were violated for dissolved oxygen, pH, conductivity and total coliform.

Water quality of the Klamath River under designation consideration is affected by upstream point and non-point sources of pollutants which enter the main stem of the river. The Klamath River upstream from Keno Dam has been listed by the DEQ as a waterbody suspected of being "water quality limited" due to detection of toxic pollutants above criteria set by the Environmental Protection Agency (EPA). The pollutants include mercury found in fish tissue, and lead, arsenic and zinc measured in bottom sediments. The ambient data indicate that the presence of mercury is derived from industrial sources, but insufficient information is available on the heavy metals associated with the bottom sediments to assess their effects on water quality or to determine their source of origin.

Some potential sources of these pollutants include wastewater effluent from city and suburban sewage treatment facilities and lumber mills adjacent to the river, irrigation returns at Klamath Straits Drain, and naturally-occurring background levels of heavy metals in river sediments. The state has primary responsibility to prevent, reduce, or eliminate pollution and is currently developing water quality assessment plans and control strategies for those waterbodies that are either not meeting or suspected of not meeting water quality standards and thus not supporting beneficial uses. As part of these studies, the DEQ is establishing total maximum daily loads (TMDLs) for municipalities and industries discharging effluent into the Klamath River. Oregon DEQ water quality data also show that the Klamath River above Keno Dam violates dissolved oxygen and pH standards and exceeds EPA established toxic criteria levels of un-ionized ammonia during low summer flows. To address this problem, the DEQ has proposed TMDLs for ammonia and biochemical oxygen demand (BOD); both measure pollutants that lower the oxygen content in the river.

The Klamath Project, administered by the BOR, started in 1905 to provide irrigation water and flood control to reclaimed lands of Lower Klamath and Tule Lakes. The project area includes 233,625 acres of irrigable lands in the Klamath Basin. The project, which has the largest water rights appropriation in the basin, diverts water from Upper Klamath Lake and Klamath River through canals and ditches to various irrigation districts and the Tule Lake National Wildlife Refuge Complex. Drainage water from this closed basin is conveyed back into the Klamath River via the Klamath Straits Drain, entering the river upstream from Keno, Oregon.

The source of the Klamath River -- Upper Klamath Lake -- is another potential source of non-point pollution. Upper Klamath Lake is a hyper-eutrophic lake that supports an abundant algal population. Lake water quality varies according to season and the annual amount of runoff entering the lake. Studies (Coleman, et al. 1988) have pointed out that the eutrophic condition of the lake, though natural, has been accelerated through agricultural activities, livestock production, logging, urban development, and reclamation of wetlands for agriculture, which have created a significant increase in organic nutrients entering the lake. This high, external nutrient loading, combined with internal nutrient-rich sediments, high concentrations of nutrients in groundwater, and extremely shallow waters (mean lake depth of eight feet) cause massive blooms of blue-green algae that typically occur in the lake in the summer. These blooms result in poor water quality conditions, which include extremely high pH levels and wide fluctuations in levels of dissolved oxygen and carbonic acid. As the pH increases, the toxicity of un-ionized ammonia also

increases. These conditions, along with regional agricultural runoff and other non-point source pollution entering the Klamath River between the outlet of the lake and Keno Dam, contribute to river water quality problems that can occur during low summer flows. As these massive quantities of blue-green algae decay and flow downstream, they increase the BOD and lower dissolved oxygen levels. This can be offset by aeration occurring naturally in the river. In addition, the algae can impart a bad odor to water and a detrimental taste to game fish. This high nutrient loading, although detrimental to the Upper Klamath Lake, helps maintain the productive wild rainbow trout population downstream -- the nutrient-rich waters provide a food source for the flourishing aquatic invertebrates, which in turn provide an abundant prey base for rainbow trout.

Water quality downstream from pollution sources will naturally improve due to dilution of the pollutants. This mixing occurs on the Klamath River as low-quality waters flow downstream. In addition, the heavy algal loads are diluted and mixed in the water column, and dissolved oxygen levels increase as water flows through turbulent sections downstream and is aerated. Dissolved organic matter within the water contributes to the distinctive coffee color and foam that is often noted on the Klamath River. Instream reservoirs such as J.C. Boyle and Keno can improve or degrade water quality. According to one source (city of Klamath Falls 1986), the presence of instream reservoirs can reduce pH, bacterial counts, nutrients, sediments and turbidity, BOD, and settling of algal loads. Conversely, another study on the Klamath River (Phinney and Peck 1960) stated that impoundments greatly increase organic loads and burden the river.

Water Temperature. River water temperatures in the study area vary with season and by segment. Highest water temperatures occur June through August in conjunction with increasing local air temperatures, lower flows, and degraded water quality. Daily summer temperature fluctuations are least in the bypass reach and greatest in the lower segments. Because of the stable flows and instream springs in the bypass reach, temperatures remain relatively constant, typically around 70 degrees in August and 48 to 53 degrees in early spring. Mid-day peaking operations at the J.C. Boyle Powerhouse cause significant daily temperature fluctuations in lower segments -- in August typically reaching a high of 70 degrees in early evening following the passage of the warmer large volume of reservoir water from turbine operations, and a low of 58 degrees in early morning hours (city of Klamath Falls 1986). Between 1959 and 1988 the maximum water temperature recorded at the USGS station in the designation segment was 75.2 degrees and the minimum was 32 degrees.

Geology

Regional Geology. The upper Klamath River is in a transition area between the High Cascade and Basin and Range Provinces. High Cascade features include Quaternary-age volcanic flows -- mostly basaltic and andesitic -- that cap older volcanic deposits and cinder cones from minor upper Pleistocene and recent-age pyroclastic eruptive centers. Significant volcanic centers along the Cascade Range include Mt. McLoughlin, 30 miles north of the area, and Mt. Shasta, 40 miles south. Local basin and range features include a series of fault block mountains separated by basins, and normal faults that run in a north-northwest direction with the down-thrown side to the northeast, creating an en echelon or stair-step pattern. Evidence of these fault patterns is found north and east of the study area. In geologic timeframes, the area has low seismo-tectonic (earthquake) activity; however, there have been several moderate earthquakes in recent months north of the area near Aspen Lake, including 5.9 and 6.0 magnitude earthquakes in September. There is ongoing tectonic activity to the west.

Lithology. The oldest exposed rock is a rapidly weathering middle to upper Miocene-age tuff of unknown thickness with varying degrees of welding. The Salt Caves anticline structure occurs in this welded tuff. Folding is rarely noted in welded tuff. The cause of the Salt Caves folded structure is unknown, but is considered unlikely to have a tectonic origin. The Miocene tuff is overlain by upper Tertiary- to Pleistocene-age basalts and andesites that are approximately 900 to 1,000 feet thick; the basalts and andesites

are overlain by Quaternary alluvium, colluvium, talus, lacustrine, and landslide deposits. Landslides are most common in the southern half of the segment proposed for designation.

Mineral Resources. No economic mineral deposits are known to exist. Potential mineral resources are too remote or of insufficient quality or quantity to be extracted economically. The potential resources that do exist in the area -- gravel deposits, diatomite (clay) beds, basalt and andesitic basalt quarry sites (used for roads and as riprap), and geothermal resources -- are located in California. No federal oil, gas, or geothermal leases exist.

Soils. The soils in the study area are relatively shallow and rocky with a generally high clay content in either the surface or subsurface layers. Soil textures are somewhat variable and include gravelly loam, stony loam, cobbly loam, gravelly clay loam, clay loams, and clays. Erosion and mass soil movements are characteristic occurrences in the geomorphically young Klamath River Canyon, which is being actively downcut by the upper Klamath River. There are some major landslides in the canyon, such as the one on the east side of the canyon at RM 214 and the one on the northwest side of the canyon between RM 210 and 211.

Alternatives

The NEPA requires that the full range of reasonable alternatives must be considered. The range must be developed with a recognition of the options that are realistically available given the authority of the agency taking the action and the scope of the proposed action. In the case of the state of Oregon's application for wild and scenic river designation for the upper Klamath River, the scope of the Department of the Interior's inquiry is extremely narrow. The only question possible is whether or not the segment under consideration should be designated pursuant to section 2(a)(ii) of the NWSRA. The possibility of other designations -- for example, designating the Klamath Canyon as a wilderness area or as a national park, or changing proposed BLM classifications -- are not within the purview of the present evaluation or the NPS. Consideration of non-designation options -- other than the status quo or 'no action' -- is likewise, beyond the purview of the evaluation.

It is, however, within the scope of the evaluation to consider alternative forms of wild and scenic river designation. For example, thought might be given to designation of only a portion of the Klamath River under consideration or, alternatively, to extend the designation to encompass a greater area. Likewise, consideration could be given to an alternative classification, as, for example, a recreational rather than a scenic classification. In the case of the Klamath River, both a change in the segment and a change in the classification were rejected as unreasonable or not possible.

Designation of only a portion of the segment is unwarranted because: 1) The entire segment has been found to meet eligibility requirements; 2) the resource values within the canyon are interconnected, and no discernable benefit would be derived from compartmentalizing management within the segment; and 3) all existing and proposed management plans consider the entire segment. Designation of a larger segment was not considered further because: 1) The BLM has previously found that the segment immediately upstream is ineligible; 2) the segment immediately downstream, while found to meet eligibility criteria, cannot be considered under section 2(a)(ii) except through an application by the Governor of California; and 3) and perhaps most importantly, section 2(a)(ii) does not allow for the indiscriminant alteration of a governor's application by the responsible agency.

A change in classification from scenic to wild is not possible because the segment was found to not meet the requirements for a wild classification. A change to a recreational classification is not warranted because the management prescriptions associated with a scenic classification most closely correspond to existing landowner (public and private) management plans, and, as such, a change in classification to recreational would result in no discernable change in how the river is managed or in value to the public.

After giving consideration to the range of possibilities allowed under section 2(a)(ii) of the NWSRA, two reasonable alternatives were identified: **Alternative A - No Action** and **Alternative B - National Scenic River Designation**.

Alternative A: No Action

Under this alternative, no action would be taken by the Department of the Interior to designate the upper Klamath River under section 2(a)(ii) as a national wild and scenic river. The alternative would not preclude the possible designation of the river into the System through the BLM's preparation of a legislative EIS, which would be submitted to Congress for consideration. The river would continue to be a state designated scenic waterway in accordance with the OSWA. A state scenic waterway management plan would be adopted to establish the intensity of protection, or development allowed, according to the state classification of the river segment. As provided for under section 202(c)(9) of the Federal Land and Policy Management Act of 1976, land uses and developments on BLM-administered land would be compatible with State Scenic Waterway guidelines. In all likelihood, the plan would be developed as a cooperative effort between the state of Oregon and the BLM. All current state and local water pollution and land use regulations which protect the river and its adjacent lands would continue to be in effect.

The BLM would continue as the principal administrative agency for federal land. The RMP would be implemented; the upper Klamath River would be managed as an ACEC and a SRMA. Various other administrative classifications also exist to protect the resources; however, since the BLM classifications are administrative, they could be enhanced or diminished through future BLM land use planning processes.

Alternative A would not provide permanent protection from FERC-licensed hydropower facilities, or from other federally assisted water resource projects having a direct and adverse effect on the upper Klamath's outstanding natural and cultural resources.

Alternative B: National Wild and Scenic River Designation

Under this alternative, the upper Klamath River would be designated as a state-administered component of the National Wild and Scenic Rivers System. The state would administer the river in accordance with the OSWA and other applicable state law. The BLM would continue as the principal management agency (due to its percentage of land holdings), in cooperation with the appropriate state and local agencies and private landowners. Long-term protection and enhancement of nationally significant resources would be realized. In accordance with the OSWA and the NWSRA, a river management plan would be prepared for protection and enhancement of resource values.

Most land uses and activities on public lands would continue at their current intensity, but could be prohibited from increasing in either intensity or amount if they adversely affect the outstanding resource values. Federal designation would not affect private lands. Existing and future land uses and activities on private lands would be allowed, subject to state and local laws, restrictions, and land use plans.

Under Alternative B, the FERC would be prohibited from granting a license for any new dam or other hydroelectric facilities within the protected river corridor. In addition, other federally sponsored, licensed, or funded water resource projects that would result in an adverse impact to the river's free-flowing condition, or any of the outstanding resources described earlier in this report, would be prohibited.

Environmental Consequences

This section includes an evaluation of the impacts of the two alternatives on natural, scenic, recreational and cultural resources. Note that under both alternatives, existing protection mechanisms and management agreements would persist. These mechanisms were described earlier in the Resource Protection Section.

This EA is being prepared in recognition that the FERC is considering a license application submitted by the city of Klamath Falls for development of the Salt Caves Hydroelectric Project. It is not the intent or the responsibility of this assessment to address the impacts from the Salt Caves project, or its economic feasibility. The question being considered here is: What are the impacts from wild and scenic river designation? The consideration of impacts associated with construction and operation of Salt Caves is the responsibility of the FERC, and those analyses are included in their environmental impact statement on the proposed Salt Caves Hydroelectric Project.

Alternative A - No Action

Threatened and Endangered Species

No impact would occur to plants and animals, including threatened and endangered species. Existing monitoring and protection of known T&E species would continue. The level of monitoring of T&E species and their habitats could increase or decrease as appropriate and new management goals could be developed as necessary.

Floodplains, Wetlands and Water Quality

There would be no impact to floodplains, wetlands, or water quality. Federal lands along the Klamath River would be managed with standard BLM riparian management area buffers to protect the riparian zone and fish habitat. The BLM would continue to assess resource activities that could affect water quality. Floodplains and wetlands on federal lands are protected in accordance with Executive Orders 11988 and 11990. Cumulatively, these regulations require the BLM to protect water quality during its land management planning and implementation and to comply with all state and local water quality protection measures.

Prehistoric and Historic Resources

There would be no impacts under Alternative A. Existing monitoring and protection of prehistoric and historical values on public land would continue. Prehistoric sites could be nominated as an Archaeological District to the National Register of Historic Places. Unintentional damage to cultural resources on public and private land would continue from recreation and other activities.

Native American Traditional Use

No impacts would be expected under Alternative A. Access to, and use of, religious and cultural sites would continue under the American Indian Religious Freedom Act. Unintentional damage to cultural resources on public and private land would continue from recreation and other activities.

Recreation

The BLM would continue to manage the canyon for semi-primitive motorized opportunities. Whitewater rafting experiences would continue under current management from water releases for power generation from the J.C. Boyle Powerhouse. Annual levels of VUDs associated with whitewater boating would continue to increase slightly, diminishing recreation experience and opportunities for solitude. Degradation of recreation sites could be accelerated from the increase in use. The BLM's minimal management presence could be increased. The management plan could be written to include improvements in access and interpretive facilities.

Klamath River Basin Compact

Alternative A would have no impact on the Klamath River Basin Compact. The Compact would continue to guide distribution of water in the Klamath River Basin in conjunction with existing state law.

Hydroelectric Power

No impact would occur to existing hydroelectric facilities or power generation. Existing hydroelectric facilities, power withdrawals, and rights-of-ways would be maintained and the J.C. Boyle and Copco projects would be reviewed for relicensing in 2006.

New hydroelectric facilities would have to be consistent with existing BLM land use plans. New dams, reservoirs, or other water impoundment facilities would be inconsistent with the state Scenic Waterways Act; however, projects such as the Salt Caves Hydroelectric Project could be licensed by the FERC.

This is not to say, however, that Salt Caves would in fact be licensed and built. Several obstacles stand in the way, including legal problems associated with the state of Oregon's decision to not grant a 401 water quality certificate; the OSWA's prohibition on new dams; the Northwest Power Planning Council's Protected Areas Program; the Electric Consumers Protection Act of 1986 as it relates to both the OSWA and the Protected Areas Program; the upper interim protection status by the BLM affording the segment the same protection as a designated river; the BLM's proposed designation of the area as an ACEC; and other resource protection mechanisms identified in the Resource Protection Section. It is possible that the courts could find one or more of these as compelling rationale for denying the FERC authority to license the project. However, there is no absolute certainty.

Timber and Grazing

Timber and grazing would not be affected under Alternative A. Constraints on timber harvest on public land are in effect in the Klamath River Canyon. Timber would remain in the BLM timber base and timber harvest would be subject to BLM management guidelines. Grazing and agricultural activities would continue with emphasis on improving riparian habitat.

On private lands, land use would continue subject to existing state and local laws and land use plans. Timber harvest activities on private lands are regulated by the Oregon Forest Practices Act. In addition, timber harvest activities within 1/4 mile of the river would be regulated under the Oregon Administrative Rules for Oregon Scenic Waterways which requires notification to the OPRD of planned timber harvest operations. No effects on the timber industry in Klamath County would result under Alternative A.

Mining

This alternative would have no impact on mining activities in the area. Placer mining in the river would continue to be inconsistent with the OSWA. Surface disturbance from prospecting, quarrying or mining within 1/4 mile of each river bank requires notification to the OPRD. Notification includes plans to ensure that debris, silt, chemicals and other pollutants would not be discharged into, or allowed to reach, the water. Likewise, natural beauty cannot be substantially impaired. Failure to fully satisfy these conditions causes the denial of necessary permits. However, it is unlikely review of any proposed mining activity would even be necessary as there are no known mineral deposits. No other impacts would occur to mineral resources based on past and anticipated future activity. Public and private land uses and developments would continue subject to existing state and local laws and land use plans.

Water Rights and Usage

Alternative A would have no impact on water rights and usage. The states of Oregon and California would continue to administer water rights under the provisions of state law and the Compact. Existing diversions would be unaffected. Any new water rights applications would be subject to existing state law and the Compact.

Scenic Resources

Public lands in the river corridor would continue to be managed under VRM Class II guidelines. Alternative A would not provide long-term protection from the negative impacts on the scenic resource values associated with federally assisted water resources projects.

Alternative B - Federal Wild and Scenic River Designation

Threatened and Endangered Species

Long-term protection of threatened and endangered fish and wildlife dependent on current conditions would be augmented under the NWSRA as these are identified as outstandingly remarkable resources. Designation would enhance the existing laws, policies and classifications of fish and wildlife habitat in the canyon. The ODFW, USFWS and BLM would continue to have management authority. The construction and maintenance of minor structures for protection, conservation, rehabilitation, or enhancement of fish and wildlife habitat would be acceptable, provided they do not affect the free-flowing characteristic of the river, nor conflict with the outstanding resources.

However, if visitor use increased as a result of designation, increased fishing and hunting pressure could occur. Increased whitewater boating could have a negative effect on nesting bald eagles and prairie falcons and on a maternity colony of Townsend's big-eared bat. Any potential conflicts between wildlife and visitors, and needed mitigative measures, are addressed in the interim management plan, or through other mechanisms (BLM regulations, Endangered Species Act, etc.), and will be defined in the final river management plan.

Floodplains, Wetlands and Water Quality

Designation would have no impact on floodplains or wetlands. The NWSRA provides no specific guidance on water quality for scenic rivers; however, new or expanding projects or activities that would potentially

affect water quality within, upstream, and downstream would be constrained by federal and state water quality laws. Management standards for scenic rivers state that water quality in designated river segments should be maintained or improved to meet federal criteria or federally approved state standards. This is currently being addressed through EPA and DEQ programs for the state of Oregon.

Stringent standards protecting floodplains and wetlands on private lands are already in place under the OSWA. Filling in state-designated rivers, removing soil and gravel, or changing riverbanks in any way, regardless of the amount of soil and rock involved, requires a special approval of the Division of State Lands and the State Land Board. Incompatible wetland fillings are subject to denial. National wild and scenic river designation will not add to restrictions already in place.

Prehistoric and Historic Resources

Designation would not have significant impact on prehistoric or historic resources. These resources would continue to receive the protection and consideration mandated by other federal laws and policies. Designation would protect these resources from degradation by federal water projects. Prehistoric and historic resource sites will continue to be identified, evaluated and protected in a manner compatible with the current management objectives of the river and in accordance with applicable regulations and policies.

Native American Traditional Use

Designation would have a positive effect on Native American traditional use of the canyon by providing long-term protection for the outstandingly remarkable values revered by Native Americans. These values are substantial contributing factors to Native American spiritual and cultural activities in the canyon.

Recreation

Alternative B would have no significant effect on recreation. Designation would ensure the continuation of a variety of recreational opportunities provided under current BLM management guidelines and classifications. Visitor use could increase slightly as a result of designation as has been documented on some other designated rivers. As use increases, there might be a slight elevation of the potential for fire and environmental damage, including vandalism, litter or overuse. Opportunities for solitude could decrease with increased use. Increased visitor use is already being addressed in the state river management plan and in the BLM RMP.

Klamath River Basin Compact

There would be no conflict between management of the upper Klamath River under the NWSRA and the Compact. The Compact would continue to guide distribution of water in the Klamath River Basin. Existing uses and water rights would continue. Water appropriations compatible with protection of the outstanding resource values, including offstream storage, would be allowed to the extent they are consistent with state law, the Compact, and section 13 of the NWSRA. Section 13(e) states that:

Nothing contained in this Act shall be construed to alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any States which contain any portion of the national wild and scenic rivers system.

The Oregon Attorney General has concluded that, due to section 13(e), there is no necessary conflict between the NWSRA and the Compact.

Hydroelectric Power

There would not be any significant impact to natural and cultural resources under Alternative B. Hydroelectric power would continue to be generated at existing facilities upstream and downstream from the designated section. Maintenance of the J.C. Boyle Hydroelectric Project, and construction of associated new structures, would be permitted, provided the area remained natural in appearance and the structures harmonized with the surrounding environment.

New hydroelectric projects, including Salt Caves, would be prohibited. As stated earlier, the assessment of impacts from development of the Salt Caves project is the responsibility of the FERC and has been addressed in their FEIS.

Timber and Grazing

Department of the Interior Management Guidelines and Standards for the NWSRA state that agricultural and forestry practices should be similar in nature and intensity to those present in the area at the time of designation. Timber harvesting would be conducted so as to avoid adverse impacts on the river area values. However, these restrictions are already in place as a result of BLM management guidelines, and further restrictions will almost certainly be imposed as a result of the area being classified as an ACEC and the forest planning procedure currently underway; designation as a wild and scenic river would not add further constraints beyond those in effect from current BLM management.

Designation would have no impact on timber harvest on private lands, which is regulated by the Oregon Forest Practices Act. In addition, timber harvest activities on private lands within 1/4 mile of the river would be regulated under the Oregon Administrative Rules for Oregon Scenic Waterways which requires among other things, notification to the OPRD of planned timber harvest operations. No additional effects on the timber industry in Klamath County would result from designation of the upper Klamath River.

Generally, agricultural and grazing activities on public land that are present at the time of designation would not be affected. However, increases from current levels may be prohibited if the increase would cause a substantial adverse effect on the natural appearance of the river area. This is again consistent with current and proposed BLM, Weyerhaeuser and PP&L guidelines and management categories and the OSWA.

Mining

There would be no significant impact to mining under Alternative B. Section 8 of the NWSRA provides for the withdrawal of all public lands from entry, sale, or disposal within the boundaries of rivers in the System. If an unperfected mining claim is located on the river at the time it is included in the System, the operation may continue subject to such regulations as the Secretary of the Interior prescribes to provide safeguards against pollution of the river and unnecessary impairment of the scenery. All mineral activity must be conducted in a manner that minimizes surface disturbance, sedimentation and pollution, and visual impairment. Reasonable mining claims and mineral lease access would be permitted.

On private lands, mining would be subject to existing federal, state and local laws, restrictions, and land use plans. Existing mining activities would not be directly affected by national wild and scenic river designation; they would be subject to the same regulations of the OSWA as outlined under the No Action Alternative for state notification, discharges, aesthetics, etc. Again, however, the question is probably moot due to a lack of known mineral reserves. Due to the lack of mineral activity in the area, existing mining claims, and known mineral deposits, designation would have no impact on public or private lands.

Water Rights and Usage

Designation would have no impact on existing water rights and usage. Existing irrigation systems and other water developments and diversions would not be affected by designation. Any new water diversion proposed within or upstream of the designated river segment would require evaluation to determine if it would conflict with the protection and enhancement of the values that caused it to be included in the System.

The specific effect of designation on future water rights applications cannot be assessed in a hypothetical setting. There are too many variables which would have to be considered in determining whether designation would have any impact on new water rights. Generalized statements that designation would preclude future agricultural development or offstream storage are unfounded. Some water rights developments could be beneficial to flows in the designated segment. For example, releases of water from offstream storage upstream of the designated segment could enhance flows during periods of low water. Acquisition of any new water rights after designation would be governed by existing laws. However, PP&L (and others) owns senior rights upstream and downstream of the designation segment for the purposes of power generation, and it is extremely unlikely that any proposed future offstream use of water within the designation segment large enough to impact the outstanding resources would not also interfere with PP&L's water rights.

Scenic Resources

No significant impacts to scenic resources would result from wild and scenic river designation. Designation would ensure long-term protection for the Class A scenic resources. Again, this would not be a new management procedure, but would be, instead, the solidification of management and classification practices already present. The canyon would be protected against land uses or activities on public land along the river that could impair the outstandingly remarkable scenic resources. Many land uses and activities could still occur, but not within sight of the river. Again, this is consistent with existing BLM and state of Oregon laws and regulations. Land uses and activities within 1/4 mile of the river would be subject to review by the OPRD for private lands and the BLM for public lands. The NWSRA could place limitations on activities that would degrade scenic resources; however, the river is already under VRM Class II management objectives by the BLM. All federally sponsored water resources projects would be reviewed by the BLM and the state of Oregon to ensure that no adverse impacts on the river's outstanding scenic values would result.

Developments on private land within sight of the river that could impair the scenic quality in the river corridor are addressed by the OSWA, and the NWSRA would not add new regulatory conditions beyond those already imposed by the OSWA.

Preferred Alternative and Conclusions

The Preferred Alternative is B -- National Wild and Scenic River Designation. Designation of the river into the System will enhance many of the protections already in place for the upper Klamath River and will fill the gaps in those protections. Specifically, designation will preclude federal water resource projects that would alter the free-flowing condition of the river or degrade the outstanding resources present. The No-Action Alternative would allow for the possibility of federal projects which could seriously degrade these resources. Also, without long-term protection, gradual, negative impacts on the river's natural, recreational and cultural values could result. Designation would slow or stop environmental damage with few potential restrictions on future land uses, developments, or activities. In addition, increased attention to the river by local, state and federal governments could lead to actual enhancement of the natural environment.

Designation into the National Wild and Scenic Rivers System would constitute a continuation and confirmation of existing conditions. Impacts to resources would not be significant, and there would be little,

if any, changes in management of the river and its resources. Wild and scenic river designation is compatible with existing uses. Many future changes in river use will be compatible with wild and scenic river designation (although not necessarily with other laws and regulations) provided they do not significantly and negatively impact the outstanding resources or the free-flowing condition of the river. For these reasons, the National Park Service finds that designation of the upper Klamath River as a national wild and scenic river will have no significant impacts to the environment. An environmental impact statement is not required.

List of Documents, Persons and Agencies Consulted

The documents, persons and agencies consulted by the NPS or the BLM in the preparation of the EA are included in the bibliography (Appendix F).

CONCLUSIONS AND RECOMMENDATIONS

In evaluating Governor Roberts' request to designate the Klamath River into the National Wild and Scenic Rivers System, the National Park Service finds that:

- The river is free-flowing as defined by the Departments of the Interior and Agriculture.
- The Klamath River possesses outstandingly remarkable cultural, historic, natural, scenic and recreational resources that are valuable to the region and the country.
- The Klamath River is designated into a state wild and scenic rivers system as required by section 2(a)(ii) of the National Wild and Scenic Rivers Act.
- The state, together with the BLM, has adequate protection mechanisms in place to protect the free-flowing character and the outstandingly remarkable resources of the upper Klamath River. The state and the BLM also have the management framework and resources necessary to implement those laws and regulations.
- The environmental assessment concludes that designation will have no adverse effects on any existing water or land use; will not have any significant impact on the quality of the environment; and will add significantly to the long-term protection of important river values.

Based on these findings, the National Park Service concludes that all requirements of section 2(a)(ii) of the National Wild and Scenic Rivers Act and Department of the Interior guidelines have been met, and, in most instances, exceeded. Designation of the upper Klamath River into the National Wild and Scenic Rivers System is in the public interest. The National Park Service therefore recommends that the state of Oregon's application for wild and scenic river designation for the upper Klamath River be approved. The recommended designation extends from immediately downstream of the John C. Boyle Powerhouse (river mile 220.3) to the Oregon-California border (river mile 209.3). The river is recommended as a National Scenic River.

APPENDICES

A - Glossary & Abbreviations Used

B - International Whitewater Rating Scale

C - Fish & Wildlife in the Klamath River Canyon

D - Common Plants in the Klamath River Canyon

E - Agency Positions & Public Attitudes

F - Bibliography

G - Distribution List

H - Report Preparers & Reviewers

Appendix A - Glossary & Abbreviations Used

2(a)(ii)	Section 2(a)(ii) of the National Wild and Scenic Rivers Act, allows a state to petition the Secretary of the Interior to add a river to the National Wild and Scenic Rivers System with state management
ACEC	Area of Critical Environmental Concern, a designation by the Bureau of Land Management where management emphasizes protection of rare and critical natural resources
AUM	Animal Unit Month, a measurement of grazing, the amount of forage needed to support one cow and her calf for one month
BLM	United States Bureau of Land Management
BOD	Biochemical or Biological Oxygen Demand, used to define the health of a stream, high oxygen demand from decomposers due to nutrient loading reduces oxygen available for higher life forms
BOR	United States Bureau of Reclamation
CA	Cooperative Agreement, as used in this document an agreement between the Bureau of Land Management, Pacific Power and Light, Weyerhaeuser, and Oregon Department of Fish and Wildlife on management of the Klamath River Canyon, signed in August 1991
cfs	Cubic Feet Per Second, used to measure a river's flow in volume
Compact	Klamath River Basin Compact, an agreement between Oregon, California and the federal government on how to manage the waters of the Klamath River
Copco	California dam, reservoir and powerhouse owned by the Pacific Power and Light Company
DEIS	<i>Draft Environmental Impact Statement for the Salt Caves Hydroelectric Project</i> , released by the Federal Energy Regulatory Commission in 1989
DEQ	Oregon Department of Environmental Quality
DRMP	<i>Draft Klamath Falls Resource Area Resource Management Plan and Environmental Impact Statement</i> , prepared by the Bureau of Land Management's Klamath Falls Resource Area to address future management of the area, currently being finalized
EA	Environmental Assessment, required by the National Environmental Policy Act to assess potential impacts to the environment, results are either a finding that no significant impacts will occur or that an environmental impact statement is needed
EIS	Environmental Impact Statement, an analysis of impacts required by the National Environmental Policy Act when the federal government undertakes an action with significant impacts to the environment
ESFC	Oregon Energy Siting Facilities Council
EPA	United States Environmental Protection Agency

FEIS	<i>Final Environmental Impact Statement for the Salt Caves Hydroelectric Project</i> , released by the Federal Energy Regulatory Commission in June 1990
FERC	United States Federal Energy Regulatory Commission
J.C. Boyle	John C. Boyle, used in association with the John C. Boyle Dam and the John C. Boyle Powerhouse, owned and operated by the Pacific Power and Light Company
MOU	Memorandum of Understanding, agreement between the Bureau of Land Management, Pacific Power and Light, Weyerhaeuser, Oregon Department of Fish and Wildlife, and California Fish and Game on management of the Klamath River Canyon, signed in April 1991
NEPA	National Environmental Policy Act
NPS	United States National Park Service
NPS-12	National Park Service National Environmental Policy Act Compliance Guideline
NPS-77	National Park Service Natural Resources Management Planning Guideline
NRI	Nationwide Rivers Inventory, a listing of potential additions to the National Wild and Scenic Rivers System released in 1980 by the National Park Service
NWSRA	National Wild and Scenic Rivers Act
ODFW	Oregon Department of Fish and Wildlife
OPRD	Oregon State Parks and Recreation Department
OSWA	Oregon Scenic Waterways Act
PP&L	Pacific Power and Light Company, a privately held utility
PRMP	<i>Proposed Resource Management Plan and Final Environmental Impact Statement</i> , management plan currently being finalized by the Bureau of Land Management's Klamath Falls Resource Area
RM	River Mile, measured upstream from the river's mouth
RMP	Resource Management Plan, developed by federal agencies to address resource utilization and protection on/for public lands
SCORP	State Comprehensive Outdoor Recreation Plan
Secretary	Secretary of the Interior
SEIS	<i>Draft Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl</i> , prepared by the Forest Ecosystem Management Team to address timber harvest in the Pacific Northwest
SRMA	Special Recreation Management Area, a designation by the Bureau of Land Management where recreation is emphasized

System	National Wild and Scenic Rivers System
T&E	Threatened and Endangered Species
TMDL	Total Maximum Daily Load, used by the state of Oregon to define pollution discharges
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRM	Visual Resource Management, a Bureau of Land Management plan to protect scenic resources
VUD	Visitor Use Day, one person using a resource or an area for 8 hours
WHMA	Wild Horse Management Area, designation by the Bureau of Land Management where the land is managed to benefit wild horse herds
WRC	Oregon Water Resources Commission

Appendix B - International Whitewater Rating Scale

The International Whitewater Difficulty Scale divides whitewater challenge into six classes, with Class I being the easiest. Class VI is at the extreme limit of boatability; beyond this, the river is considered to be unrunnable.

Class I: Easy. Fast moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.

Class II: Novice. Straightforward rapids with wide, clear channels which are evident without scouting. Occasional maneuvering may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured and group assistance, while helpful, is seldom needed.

Class III: Intermediate. Rapids with moderate, irregular waves which may be difficult to avoid and which can swamp an open canoe. Complex maneuvers in fast current and good boat control in tight passages or around ledges are often required; large waves and strainers may be present but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-volume rivers. Scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy but group assistance may be required to avoid long swims.

Class IV: Advanced. Intense, powerful but predictable rapids requiring precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast maneuvers under pressure. A fast, reliable eddy turn may be needed to initiate maneuvers, scout rapids, or rest. Rapids may require "must" moves above dangerous hazards. Scouting is necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong eskimo roll is highly recommended.

Class V: Expert. Extremely long, obstructed, or very violent rapids which expose a paddler to above-average endangerment. Drops may contain large, unavoidable waves and holes or steep congested chutes with complex, demanding routes. Rapids may continue for long distances between pools, demanding a high level of fitness. What eddies exist may be small, turbulent, or difficult to reach. At the high end of the scale, several of these factors may be combined. Scouting is mandatory but often difficult. Swims are dangerous, and rescue is difficult even for experts. A very reliable eskimo roll, proper equipment, extensive experience, and practiced rescue skills are essential for survival.

Class VI: Extreme. These runs often exemplify the extremes of difficulty, unpredictability and danger. The consequences of errors are very severe and rescue may be impossible. For teams of experts only, at favorable water levels, after close personal inspection and taking all precautions. This class does not represent drops thought to be unrunnable, but may include rapids which are only occasionally run.

Appendix C - Fish & Wildlife in the Klamath River Canyon

BIRDS KNOWN TO OCCUR IN THE STUDY AREA

Raptors

Turkey vulture (*Carthartes aura*)
Sharp-shinned hawk (*Accipter striatus*)
Cooper's hawk (*Accipter cooperii*)
Northern goshawk (*Accipter gentilis*)
Osprey (*Pandion haliaetus*)
Bald eagle (*Haliaetus leucocephalus*)
Golden eagle (*Aquila chrysaetos*)
Red-tailed hawk (*Bueto jamaicensis*)

American kestrel (*Falco sparverius*)
Prairie falcon (*Falco mexicanus*)
Peregrine falcon (*Falco peregrinus*)
Long-eared owl (*Asio otus*)
Great horned owl (*Bubo virginianus*)
Western screech owl (*Otus kennicottii*)
Flammulated owl (*Otus flammeolus*)
Northern pygmy owl (*Glaucidium gnoma*)

Waterfowl

Tundra swan (*Cygnus columbianus*)
Canada goose (*Branta canadensis*)
Common merganser (*Mergus merganser*)
Barrow's goldeneye (*Bucephala islandica*)

Wood duck (*Aix sponsa*)
Green-wing teal (*Anas crecca*)
Cinnamon teal (*Anas cyanoptera*)
Mallard (*Anas platyrhynchos*)

Upland Gamebirds

Blue grouse (*Dendragapus obscurus*)
California quail (*Callipepla californica*)
Mountain quail (*Orertyx pictus*)
Chukar (*Alectoris chukar*)

Red-legged partridge (*Alectoris rufa*)
Wild turkey (*Meleagris gallopavo*)
Band-tailed pigeon (*Columba fasciata*)
Mourning dove (*Zenaida macroura*)

Water Birds

Double-crested cormorant
(*Phalacrocorax auritus*)
Great blue heron (*Ardea herodias*)
Spotted sandpiper (*Actitis macularia*)
Killdeer (*Charadrius vociferus*)

Ring-billed gull (*Larus delawarensis*)
California gull (*Larus californicus*)
Forster's tern (*Sterna forsteri*)
Belted kingfisher (*Ceryle alcyon*)
American dipper (*Cinclus mexicanus*)

Non-Game Birds

Vaux's swift (*Chaetura vauxi*)
Common nighthawk (*Chordeiles minor*)
White-throated swift (*Aeronautes saxatalis*)
Northern flicker (*Colaptes auratus*)
Acorn woodpecker (*Melanerpes formacivorus*)
Lewis' woodpecker (*Melanerpes lewis*)
Downy woodpecker (*Picoides pubescens*)

Hairy woodpecker (*Picoides villosus*)
Pileated woodpecker (*Dryocopus pileatus*)
Yellow-bellied sapsucker (*Sphyrapicus varius*)
Western flycatcher (*Empidonax difficilis*)
Ash-throated flycatcher (*Myiarchus cinerascens*)
Say's phoebe (*Sayornis saya*)
Olive-sided flycatcher (*Contopus borealis*)

Empidonax sp. (*Empidonax* sp.)
 Violet-green swallow (*Tachycineta thalassina*)
 Tree swallow (*Tachycineta bicolor*)
 Bank swallow (*Riparia riparia*)
 Cliff swallow (*Hirundo pyrrhonota*)
 Scrub jay (*Aphelocoma coerulescens*)
 Stellar's jay (*Cyanocitta stelleri*)
 Common raven (*Corvus corax*)
 American crow (*Corvus brachyrhynchos*)
 Wrentit (*Chamaea fasciata*)
 Black-capped chickadee (*Parus atricapillus*)
 Mountain chickadee (*Parus gambeli*)
 Brown creeper (*Certhia americana*)
 Red-breasted nuthatch (*Sitta canadensis*)
 House wren (*Troglodytes aedon*)
 Canyon wren (*Catherpes mexicanus*)
 Bewick's wren (*Thyromanes beweckii*)
 Kinglet sp. (*Regulus* sp.)
 Mountain bluebird (*Sialia currucoides*)
 Western bluebird (*Sialia mexicana*)
 Townsend's solitaire (*Myadestes townsendi*)
 Thrush sp. (*Catharus* sp.)

American robin (*Turdus migratorius*)
 European starling (*Sturnis vulgaris*)
 Warbling vireo (*Vireo gilvus*)
 Orange-crowned warbler (*Vermivora celata*)
 Yellow-rumped warbler (*Dendroica coronata*)
 Yellow warbler (*Dendroica petechia*)
 MacGillivray's warbler (*Oporornis tolmiei*)
 Wilson's warbler (*Wilsonia pusilla*)
 Black-headed grosbeak
 (*Pheucticus melanocephalus*)
 Lazuli bunting (*Passerina amoena*)
 Rufous-sided towhee (*Pipilo erythrophthalmus*)
 Song sparrow (*Melospiza melodia*)
 Chipping sparrow (*Spizella passerina*)
 Brewer's sparrow (*Spizella breweri*)
 White-crowned sparrow
 (*Zonotrichia leucophrys*)
 Dark-eyed junco (*Junco hyemalis*)
 Red-winged blackbird (*Agelaius phoeniceus*)
 Brewer's blackbird (*Euphagus cyanocephalus*)
 Northern oriole (*Icterus galbula*)
 Western tanager (*Piranga ludoviciana*)
 Purple finch (*Carpodacus purpureus*)

MAMMALS KNOWN TO OCCUR IN THE STUDY AREA

Furbearers

Bobcat (*Felis rufus*)
 Coyote (*Canis latrans*)
 Gray fox (*Urocyon cinereoargenteus*)
 Raccoon (*Procyon lotor*)
 Ringtail (*Bassariscus astutus*)
 River otter (*Lutra canadensis*)

Beaver (*Castor canadensis*)
 Muskrat (*Ondatra zibethicus*)
 Mink (*Mustela vison*)
 Fisher (*Martes pennanti*)
 Long-tailed weasel (*Mustela frenata*)
 Short-tailed weasel (*Mustela erminea*)

Big Game

Roosevelt elk (*Cervus elaphus roosevelti*)
 Black-tailed deer (*Odocoileus hemionus*)

Black bear (*Ursus americanus*)
 Cougar (*Felis concolor*)

Other Mammals

Porcupine (*Erithizon dorsatum*)
 Striped skunk (*Mephitis mephitis*)
 Western spotted skunk (*Spilogale gracilis*)
 Nuttall's cottontail (*Sylvilagus audubonii*)
 Western gray squirrel (*Sciurus griseus*)
 California ground squirrel
 (*Spermophilus beechyii*)
 Yellow pine chipmunk (*Eutamias amoenus*)

Bushy-tailed woodrat (*Neotoma cinerea*)
 Deer mouse (*Peromyscus maniculatus*)
 Trowbridge's shrew (*Sorex trowbridgii*)
 Townsend's big-eared bat (*Plecotus townsendii*)
 Little brown bat (*Myotis lucifugus*)
 California myotis (*Myotis californicus*)
 Yuma myotis (*Myotis yumanensis*)
 Hoary bat (*Lasiurus cinereus*)

HERPTILES KNOWN TO OCCUR IN THE STUDY AREA

Reptiles

Western rattlesnake (<i>Crotalus viridis</i>)	California mountain kingsnake (<i>Lampropeltis zonata</i>)
Ringneck snake (<i>Diadophis punctatus</i>)	Western fence lizard (<i>Sceloporus occidentalis</i>)
Common garter snake (<i>Thamnophis sirtalis</i>)	Alligator lizard (<i>Gerrhonotus</i> sp.)
Western terrestrial garter snake (<i>Thamnophis elegans</i>)	Sagebrush lizard (<i>Sceloporus graciosus</i>)
Gopher snake (<i>Pituophis melanoleucus</i>)	Western skink (<i>Eumeces skiltonianus</i>)
Racer (<i>Coluber constrictor</i>)	Western pond turtle (<i>Clemmys marmorata</i>)

Amphibians

Western toad (<i>Bufo boreas</i>)	Long-toed salamander (<i>Ambystoma macrodactylum</i>)
Pacific tree frog (<i>Hyla regilla</i>)	

FISH KNOWN TO OCCUR IN THE STUDY AREA

Brown trout (<i>Salmo trutta</i>)	Tui chub (<i>Gila bicolor</i>)
Rainbow trout (<i>Oncorhynchus mykiss</i>)	Marbled sculpin (<i>Cottus klamathensis</i>)
Lost River sucker (<i>Deltistes luxatus</i>)	Pacific lamprey (<i>Lampetra tridentata</i>)
Shortnose sucker (<i>Chasmistes brevirostris</i>)	Yellow perch (<i>Perca flavescens</i>)
Klamath largescale sucker (<i>Catostomus snyderi</i>)	Pumpkinseed (<i>Lepomis gibbosus</i>)
Klamath smallscale sucker (<i>Catostomus rimiculus</i>)	Brown bullhead (<i>Ictalurus nebulosus</i>)
Blue chub (<i>Gila coerulea</i>)	Fathead minnow (<i>Pimephales promelas</i>)
	Klamath speckled dace (<i>Rhinichthys osculus</i>)

Appendix D - Common Plants in the Klamath River Canyon

Trees

Sugar pine (*Pinus lambertiana*)
Ponderosa pine (*Pinus ponderosa*)
Douglas-fir (*Pseudotsuga menziesii*)
White fir (*Abies concolor*)
Incense-cedar (*Libocedrus decurrens*)
Western juniper (*Juniperus occidentalis*)
Golden chinquapin (*Castanopsis chrysophylla*)

Oregon white oak (*Quercus garryana*)
California black oak (*Quercus kelloggii*)
Birch (*Betula* sp.)
Oregon ash (*Fraxinus latifolia*)
Quaking aspen (*Populus tremuloides*)
White alder (*Alnus rhombifolia*)

Shrubs

Mountain-mahogany (*Cercocarpus* sp.)
Manzanita (*Arctostaphylos* sp.)
Deerbrush (*Ceanothus integerrimus*)
Wedgeleaf ceanothus (*Ceanothus cuneatus*)
Bitterbrush (*Purshia tridentata*)
Rabbitbrush (*Chrysothamnus* sp.)
Western serviceberry (*Amelanchier florida*)
Gooseberry (*Ribes* sp.)

Snowberry (*Symphoricarpos* sp.)
Oregon grape (*Berberis aquifolium*)
Poison oak (*Rhus diversiloba*)
Blue elderberry (*Sambucus cerulea*)
Lewis mockorange (*Philadelphus lewisii*)
Willow (*Salix* sp.)
Douglas spiraea (*Spiraea douglasii*)
Western wild grape (*Vitis californica*)

Forbs

Buckwheat (*Eriogonum* sp.)
Western buttercup (*Ranunculus occidentalis*)
Pussytoes (*Antennaria* sp.)
Nuttall's gayophytum (*Gayophytum nuttallii*)
Puget balsamroot (*Balsamorhiza deltoidea*)
Wild strawberry (*Fragaria* sp.)
Lupine (*Lupinus* sp.)
Mountain dandelion (*Agnoseris* sp.)
Yarrow (*Achillea millefolium*)
Solomonplume (*Smilacina* sp.)
Large-flowered collomia (*Collomia grandiflora*)

Woolly sunflower (*Eriophyllum lanatum*)
Tarweed (*Madia* sp.)
California poppy (*Eschscholtzia californica*)
Least hopclover (*Trifolium dubium*)
Tidy-tips (*Layia glandulosa*)
Watercress (*Porippa nasturtium-aquaticum*)
Monkey-flower (*Mimulus* sp.)
Speedwell (*Veronica* sp.)
Boreal bog-orchid (*Habenaria dilatata*)
Cattail (*Typha latifolia*)

Grasses

Two-flowered fescue (*Festuca reflexa*)
Western fescue (*Festuca occidentalis*)
Idaho fescue (*Festuca idahoensis*)
Blue wildrye (*Elymus glaucus*)
Medusahead wildrye (*Elymus caput-medusae*)
Cheatgrass (*Bromus tectorum*)
Hairy brome (*Bromus commutatus*)

Soft cheat (*Bromus mollis*)
Needlegrass (*Stipa* sp.)
Pine bluegrass (*Poa scabrella*)
Bulbous bluegrass (*Poa bulbosa*)
Bluebunch wheatgrass (*Agropyron spicatum*)
Bottlebrush squirreltail (*Sitanion hystrix*)
Foxtail barley (*Hordeum* sp.)

Few-flowered wild oatgrass
(*Danthonia unispicata*)
Reed canary grass (*Phalaris arundinacea*)

Rush (*Juncus* sp.)
Sedge (*Carex* sp.)

Threatened & Endangered Plant Species Potentially Found in the Area

Greene's mariposa lily (*Calochortus greenei*)
Short-podded thelypody
(*Thelypodium brachycarpum*)

Pygmy monkey-flower (*Mimulus pygmaeus*)
Bellinger's meadow foam
(*Limnathes floccosa* ssp. *bellingiana*)

Appendix E - Agency Positions and Public Attitudes

The NPS has received numerous letters and telephone calls in response to the state of Oregon's application for designation of the upper Klamath River. Following is a summary of the views expressed in those letters and telephone calls.

Local Government

A small number of elected officials within the immediate vicinity of the upper Klamath River wrote in opposition to wild and scenic river designation. These officials believe that the Salt Caves Hydroelectric Project is economically important to their communities and necessary for their financial security. Without the project, these elected officials fear loss of revenues as well as loss of off-stream storage for spring runoff water that may be needed to satisfy the needs of irrigation, endangered suckers, and downstream salmon. One representative letter stated that local government should decide designation and that a multiple-use philosophy should guide river management.

State Government

One letter from an Oregon Public Utility Commissioner stated that power produced by the proposed Salt Caves Project does not fit regional power needs and that the Northwest Power Planning Council lists the study area as a protected area in its plan. It also notes that the project will not be able to compensate the public for lost recreational and cultural values.

One member of the Oregon legislature wrote in opposition to the designation, stating that increased federal regulation of property and prevention of hydroelectric projects hamper the future of eastern Oregon.

Members of Congress

One member of Oregon's congressional delegation wrote in support of the designation, referencing the BLM's finding of eligibility and suitability, Oregon voters' support, and the proposed hydroelectric project's inconsistency with virtually every existing state/regional plan.

Two members of Oregon's congressional delegation and one from California's opposed designation. One letter stated that the upper Klamath River Basin area should continue to be managed in accord with the Klamath River Basin Compact. A second letter mentioned the need in economically depressed timber-dependent communities for development of the Salt Caves Hydroelectric Project.

Native American Tribes

The Klamath Tribe wrote in support of wild and scenic designation. The tribe's support is based on the fact that the upper Klamath River is located within their aboriginal territory and has important cultural and spiritual significance to the tribe. The Klamath Tribe notes a high number of prehistoric sites in the area that demonstrates the intense use of the corridor by Native Americans. The tribe contends that fish and wildlife resources provide sustenance, but also have spiritual, cultural and historical significance to the tribes. The tribe's religious concepts have developed through intimate daily contacts with their environment. The Klamath Tribe mentioned the seven outstandingly remarkable values found in the river canyon. To the tribe, the resources are more than outstanding; they give substance and identity. Thus, the tribe considers the upper Klamath River to be sacred. They view the proposed hydroelectric project as "ill founded and environmentally unsound."

Private Organizations

A few farm-related and cattlemen organizations wrote letters to oppose designation based primarily on water concerns. They stated that the OPRD has filed for recreational water use of 1,500 cubic feet per second and that the normal summer flow is less than this. These organizations are concerned that the remaining water would come from the Klamath Project irrigation flows that are critical to the livelihood of farm families. Many of the letters stated the need for a "working or multiple use river" and wanted no change from current management policies.

Many local, state, and national conservation and recreation organizations wrote in support of designation. They endorsed the BLM's original finding of eligibility and mention the river canyon's multitude of outstanding natural resources, including the river's scenic beauty.

Individuals

The overwhelming response from private individuals was in favor of designation. Over 1,000 individuals wrote in support, emphasizing the river's remarkable natural and scenic river values, and the need to preserve the free-flowing nature of the river. Many also spoke of the need for permanent protection for the river. These letters represented 44 states and three countries (U.S., Canada and Japan).

A few letters were received, predominately from Klamath Falls, expressing opposition to designation. They cited the possible economic impact of not developing hydroelectric power. An equal number of local residents wrote in support of designation. (This split in opinion among local residents is consistent with local referendums on the subject.)

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Appendix G - Distribution List

This draft report was distributed to the heads of the following federal agencies for comment.

Federal Energy Regulatory Commission
United States Department of Agriculture
United States Department of Agriculture, Forest Service
United States Department of Agriculture, Soil Conservation Service
United States Department of Commerce, National Marine Fisheries Service
United States Department of Commerce, National Oceanic and Atmospheric Administration
United States Department of Energy
United States Department of the Army, Corps of Engineers
United States Department of the Interior, Bureau of Indian Affairs
United States Department of the Interior, Bureau of Land Management
United States Department of the Interior, Bureau of Mines
United States Department of the Interior, Bureau of Reclamation
United States Department of the Interior, Fish and Wildlife Service
United States Department of the Interior, Geological Survey
United States Department of Transportation
United States Environmental Protection Agency

The following libraries received copies of the report to be placed in general readership. Where possible, multiple copies were sent for distribution to branch libraries.

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Josephine County Library, Grants Pass, Oregon
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Lloyd Delap Law Library, Klamath Falls, Oregon

In addition, the Bureau of Land Management and the National Park Service compiled an extensive list of all known persons, agencies, elected officials, businesses and organizations having an interest in the designation of the upper Klamath River into the National Wild and Scenic Rivers System. This report was distributed in accordance with the following lists.

Federal Officials

Senator Barbara Boxer (CA)	Representative Elizabeth Furse (OR)
Senator Dianne Feinstein (CA)	Representative Wally Herger (CA)
Senator Mark Hatfield (OR)	Representative Michael Kopetski (OR)
Senator Robert Packwood (OR)	Representative Robert Smith (OR)
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Governor Barbara Roberts	Senator Lenn Hannon
Senator Brady Adams	Senator Rod Johnson
Senator Bill Bradley	Senator Robert Kintigh
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Local, State, Federal Agencies and Affiliated Organizations

Benton County Board of Commissioners
BLM - Alaska State Office
BLM - Arizona State Office
BLM - Arizona Strip District
BLM - Baker City Resource Area
BLM - Burns District Office
BLM - California State Office
BLM - California State Office
BLM - Colorado State Office
BLM - Coos Bay District Office
BLM - Denver Service Center
BLM - Eastern States Office
BLM - Eugene District Office
BLM - Idaho State Office
BLM - Lakeview District Office
BLM - Medford District Office
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BLM - Nevada State Office
BLM - New Mexico State Office
BLM - Oregon State Office
BLM - Prineville District Office
BLM - Redding Resource Area
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BLM - Roswell Resource Area
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BLM - Salem District Office
BLM - Spokane District Office
BLM - Ukiah District Office
BLM - Utah State Office
BLM - Vale District Office
BLM - Vernal District Office
BLM - Worland District Office
BLM - Wyoming State Office
California Assistant Attorney General
California Department of Conservation
California Department of Fish & Game
California Department of Fish & Game
California Department of Fish & Game
California Department of Food & Agriculture
California Department of Parks & Recreation
California Department of Transportation
California Department of Water
California Department of Water Resources
California Department of Water Resources
California Dept of Forestry/Fire Protection

California Dept of Forestry/Fire Protection
California Dept. of Boating & Waterways
California Energy Commission
California Indian Legal Services
California Indian Legal Services
California State Lands Commission
California Water Resources Control Board
California Water Resources Control Board
City of Bend
City of Dorris
City of Haines
City of Klamath Falls
City of Klamath Falls
City of Mitchell
City of Philomath
City of Prairie City
City of Prineville
City of Salem
Coos County
Deschutes County
Deschutes County Board of Commissioners
Douglas County
Federal Energy Regulatory
Federal Energy Regulatory
Federal Energy Regulatory
Federal Energy Regulatory Commission
Federal Energy Regulatory Commission
Klamath County
Klamath County Board of Commissioners
Klamath County Economic Development
Klamath County Planning Department
Klamath County Solid Waste Management
Klamath Soil & Water Conservation District
Lakeview Multiple Use Advisory Council
National Marine Fisheries Service
National Oceanic/Atmospheric Administration
National Park Service
National Park Service
National Park Service
National Park Service - Mid-Atlantic Region
National Park Service - Midwest Region
National Park Service - North Atlantic Region
National Park Service - Washington
National Park Service - Washington
Oregon Department of Agriculture

Oregon Dept. of Economic Development
Oregon Dept. of Economic Development
Oregon Department of Energy
Oregon Department of Energy
Oregon Department of Environment
Oregon Department of Environmental Quality
Oregon Department of Fish & Wildlife
Oregon Department of Fish & Wildlife
Oregon Department of Fish & Wildlife
Oregon Department of Fish & Wildlife
Oregon Department of Fish & Wildlife
Oregon Department of Fish & Wildlife
Oregon Department of Forestry
Oregon Department of Forestry
Oregon Department of Geology
Oregon Department of Justice
Oregon Department of Land Conservation
Oregon Department of Parks & Recreation
Oregon Department of Parks & Recreation
Oregon Department of Transportation
Oregon Department of Water Resources
Oregon Dept. of Fish & Wildlife
Oregon Division of State Lands
Oregon Fish & Game Council
Oregon Forest Industries Council
Oregon - Governors Forest Planning Team
Oregon - Governors Forest Planning Team
Oregon - Governors Forest Planning Team
Oregon - Historical Preservation Office
Oregon Legal Services
Oregon Marine Board
Oregon Scenic Waterways Advisory Comm.
Oregon Scenic Waterways Advisory Comm.
Oregon Scenic Waterways Advisory Comm.
Oregon Scenic Waterways Advisory Comm.
Oregon Scenic Waterways Advisory Comm.
Oregon Scenic Waterways Advisory Comm.
Oregon State Library
Siskiyou County
Siskiyou County
Siskiyou County
Siskiyou County
Siskiyou County Planning Department
Siskiyou County Visitors' Bureau
Soil Conservation Service
U.S. Air Force
U.S. Air Force Regional Environmental Office
U.S. Army Corps of Engineers
U.S. Army Corps of Engineers
U.S. Army Corps of Engineers
U.S. Bureau of Indian Affairs
U.S. Bureau of Reclamation
U.S. Bureau of Reclamation
U.S. Bureau of Reclamation
U.S. Bureau of Reclamation

U.S. Department of Agriculture
U.S. Department of Energy
U.S. DOI Office of the Regional Solicitor
U.S. DOI - Regional Environmental Officer
U.S. Environmental Protection Agency
U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service
U.S. Fish and Wildlife Service
U.S. Forest Service
U.S. Forest Service
U.S. Forest Service
U.S. Forest Service
U.S. Forest Service - Columbia River Gorge
U.S. Forest Service - Fremont Forest
U.S. Forest Service - Klamath Forest
U.S. Forest Service - Regional Office
U.S. Forest Service - Sierra NF
U.S. Forest Service - Umpqua National Forest
U.S. Forest Service - Willamette NF
U.S. Forest Service - Zigzag Ranger District
U.S. Soil Conservation Service
U.S. Soil Conservation Service

Businesses, Environmental Organizations, Farm Organizations, Others

A.R.T.A.
Ace Towing
Advanced Energy Engineering
Adventure Center
Adventure Connection
Adventures Whitewater
All Outdoors Adventure Trips
All Seasons Sports
America Outdoors
American Canoe Association
American Fisheries Society
American Forest Council
American Graphics
American Rivers
American Rivers - N'west Office
American Rivers Water Resources
American Whitewater Affiliation
American Whitewater Affiliation
American River Recreation
Anasazi Productions
Ancient Forest Defense Fund
Arneson & Wales
Assembly Office of Research
Associated Chamber of Commerce
Associated Oregon Industries
Audubon Society
Audubon Society
Audubon Society
Audubon Society
Audubon Society
Audubon Society of Corvallis
Audubon Society - Klamath Basin
Audubon Society of Lane County
Audubon Society of Napa-Solan
Audubon Society of Portland
Audubon Society of Portland
Audubon Society of Portland
Basin Eyecare
Beach's Jewelers
Beak Consultants
Biblioteek Voor Hedendaagse
Bigfoot Outdoor Company
Blackman Farms
BVRD, M.N.F.
Caddis Fly Angling Shop
California Clearinghouse
California Trout
Camp Forest Farm
Cascade River Runners
Champion Securities Corporation
Cheyne Bros.
Chuck Fisher Realtors

Clearing Up
Cogan Sharpe Cogan
Columbia Plywood Corp.
Conference Tribes / Siletz Indians
Cultural Heritage Foundation
Davis Wright Tremaine
Denman and Cooney
Diment, Billings and Walker
Douglas Timber Operators, Inc.
Ducks Unlimited/Shasta Internat'l
Duncan, Weinberg, Miller
EA Engineering
Eagle Sun, Inc
Eagle Sun, Inc.
East Bakersfield High School
Eastern Oregon Mining Assoc.
Ebasco Environmental
Ebasco Services, Inc.
Ecology Ctr of Southern California
EIP Associates
Epic Adventures
ERA Nicholson & Associates
First Capital
Four Runners 4 Wheel Drive Club
Friends for Dev. of Renewable
Friends of the Earth
Friends of the River
Friends of Walker Creek Wetlands
Friends Of The Greensprings
Global Youth Academy
Good Work
Great Out of Doors Rafting
Greenpeace
Grubb & Ellis Company
Headwaters
Headwater Adventures
Headwaters, Inc.
Herald & News
Heritage Research Associates, Inc.
Holman Realty, Inc.
Hoover Inst. on War . . . Peace
Horsefly Irrigation District
Idaho Rivers United
Interagency Archaeological Srvcs.
J.C. Penney
Jeld-Wen, Inc.
JNS Excavation
Johnson Lumber Company
Jolles, Sokol and Bernstein
KAGO AM & FM 99
KBOY AM/FM
KDKF-TV
KDRV-TV

Keck Science Center/Clairmont
Kerns, J.W. Irrigation Company
KFLS/KKRB
Kingfisher Float Trips
Kiwanias
KLAD Radio
Klamath Basin Water Resources Advisory Comm.
Klamath Bassmasters
Klamath Bow Hunters
Klamath Bow Hunters
Klamath Bow Hunters
Klamath County Flycasters
Klamath County Historical Society
Klamath Union High School
Klamath Co. Economic Develop.
KOTI-TV
KS, OK, AR River Commission
KTVL-10 Medford
Lake County Farm Bureau
Lakeview Mult. Use Ad. Council
Lakeview Mult. Use Ad. Council
Lakeview Mult. Use Ad. Council
Lakeview Mult. Use Ad. Council
Land and Water Associates
Langell Valley Irrigation
Local Residents for Old Growth
Lower Columbia Canoe Club
Mad River Canoe Company
Mason, Bruce & Girard, Inc.
Mazama High School
McKenzie River Guides Assoc.
Medford Mail Tribune
Menasha Corporation
Merle West Medical Center
Modoc Lumber Company
Motorcycle Riding Association
Mountain Resort
Mountain Title Co.
MSM Technical Conferences
Mule Deer Foundation
National Audubon Society
National Council / Paper Industry
National Org. for River Sports
National Wildlife Federation
National Wildlife Federation
National Wildlife Federation
Native Plant Society
Nature Society
Noah's World of Water
Nome Health Care
Northcoast Environmental Center
Northwest Audio & Telecom
N'west Environmental Defense Ctr
N'west Forest Resource Council
N'west Forest Resource Council

Northwest Power Planning Council
Northwest Rafters' Association
Northwest Rafters' Association
Novak's Auto Parts
NPSO - Corvallis Chapter
Oregon Farm Bureau Federation
Oregon Forest Industries Council
Oregon Grange Division
Oregon Guides and Packers
Oregon Guides and Packers, Inc.
Oregon Hunter's Association
Oregon Hunter's Association
Oregon Institute of Technology
Oregon Institute of Technology
Oregon Institute of Technology
Oregon Inst. of Tech. Library
Oregon Laser Consultants
Oregon Legal Services Corp.
Oregon Natural Desert Assoc.
Oregon Natural Resources Council
Oregon Natural Resources Council
Oregon Natural Resources Council
Oregon Natural Resources Council
Oregon River Experiences
Oregon State University
Oregon Trout
Oregon Trout
Oregon Trout
Oregonian
Pacific Northwest 4WD Assoc.
Pacific Northwest 4WD Assoc.
Pacific Northwest 4WD Assoc.
Pacific Northwest Waterway Assoc
Pacific Power and Light Company
Pacific Power and Light Company
Pacific Power and Light Company
Pacific Power and Light Company
Pacific Power and Light Company
Pacific Rivers Council
Park Place Real Estate
Pecos River Compact Commission
Pelican Tractor Company, Inc.
Planning & Conservation League
Portland State University
Portland State University Library
Rainland Fly Casters
Rapid Shooters
Reed College
Resource Mgt. International
Resources Agency of California
Rocky Point Resort
Rogue Flyfishers
Rogue/Klamath River Adventures
Rookstool and Alter
Rookstool-Hansen Real Estate
Rural Enterprise Committee

Sacramento River Council
Sage Advisor
San Francisco Chronicle
Sanctioned Outers
Save Our Klamath River
Save Our Klamath River
Save Our Klamath Jobs
Scott-Free River Expeditions
Seattle City Light
Select Development/Construction
Shasta Cascade Wonderland Assoc
Shasta Nation
Sierra Club
Sierra Club - Cascade Chapter
Sierra Club - Loma Prieta Chapter
Sierra Club - Northwest Office
Sierra Club - Oregon Chapter
Sierra Club - Oregon Chapter
Sierra Club - Oregon Chapter
Sierra Club - Oregon Chapter
Sierra Club - Redwood Chapter
Sierra Club Legal Defense Fund
Sierra Mac River Trips
Sierra Whitewater Expeditions
Silver Cloud Farm
Siskiyou Daily News
Society of American Foresters
Society of American Foresters
Sonoma State University
Southern Oregon State College
Southern Oregon State College
Southern Pacific Trans. Company
SPAV
Starker Forest, Inc.
Stoel, Rivers . . . & Wysel
Sturdi-Craft
Swisher Fly Fishing
The Williamson River Club
Thomas Lumber Company

Timbers Motel
Tri-Power
Tributary Whitewater Tours
Trillium Valley Farm
Trout Unlimited
Trout Unlimited
Tulelake Growers Association
Tulelake Irrigation District
Tuolumne Regional Water District
Turtle River Rafting Co.
University of California
University of Oregon
Unlimited Pheasants
Upper Cow Creek Comm. Center
W.E.T.
Ward's Home Ranch Herefords
Warm Springs Agency
Watermaster
WaterWatch of Oregon
West. Aquatic Turtle Rsrch. Con.
Wetlands Conservancy
Weyerhaeuser Company
Weyerhaeuser Company
Weyerhaeuser Company
Whitewater Connection
Whitewater Excitement, Inc.
Whitewater Rapid Transit
Whitewater Voyages
Whitewater Voyages
Wild Water Adventures
Wilderness Society
Wilderness Society
Wilderness Society
Wilderness Watch
Wilderness Watch
Wildfires Stable
Willamette Industries, Inc.
Willamette Timbermen Assoc.
Winthrop Associates
Yurok Transition Team

Individuals

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Deborah Africa
Bernie Agrons
Steve Aguiar
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Bill G. Alexander

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Diane Allen
Don Allen
Stewart Allen
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S. Almeida
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Dan Applebaker
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Robert Coe
Cathy Cogur
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Constance Coleman
Bill Collier
Doug Collier
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Forrest Collins
James Collins
Michael Collins
Frank Colver
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Wendy Conner
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Walter Cook
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Linda Alper Cooney
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Randall Curtis
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Patricia J. Cutler
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Liz Daeges
Veronica Daggett
Craig Dahl
Steven Danaher
Edward Danehy
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Harold Daughters
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Irene David
Don Davidson
Robert H. Davies
Larry Davis
Mark Davis
Patricia Davis
Ray Davis
Roland Davis
Ken Dawdy
Laurie Dawson, M.D.
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Chuck DeMarco
Kathaleen & Dan DeSalles
Vera DeVoss
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Mike Deas
Leslie Degroff
Charlie R. Dehlinger
Clyde L. Dehlinger
B. S. Deighton
Zachary Denning
James Denoon
Sara E. Denzler
Jack Desmond
Bill Devall
Julia Dicker
Robert C. Dickerson II
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Patricia Diluzio
Irving C. Dixon
Elan Doan
Ray & Louisa Dodd
Phil Doddridge
Kathleen Dodge
Gary W. Dolgin
Michael Dolin
Steve Donaldson
R. Stephen Dorsey
Carol N. Doty

Dottie & James Dougher
Mary Douglass
Hugh Dragich
M. Draper
Charles Dreisbach
Robert Dresden
Frank Drew, Jr.
Frank Drew, Sr.
Neil Drew
Roger Drosd
W. D. Dryden, D.M.D.
Julie DuBois
Mark DuBois
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Kenneth Dugan
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Neal Eberlein
Joseph Ebersole
Deanna Ebert
Constantina Economou
Idella Edgar
Woodrow Edgar
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Gsar Edwards, D.M.D.
Jeffrey Edwards
Frederick D. Ehlers
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Eleanor Elander
R. Elliot
Pat Elliott
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Jane Erickson
Herb & Mickey Ermolik
Hilary Ernst

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Nancy Goetzl
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Frank Gong
Hunter Gooch
Arlene Gooding
Jack Gookin
Don Gourley
Dr. & Mrs. J. L. Graham
Peter & Kitson Graham
Gaylord Grams
Thomas Grannenan
Hallidie Grant
Paul W. Grant
Aggie Green
Louise Green
Hal D. Greene
Ken Griest
Lloyd Griggs
Joe H. Griggs
Michael Gross
Richard Grow
Ron Guenther
Thomas Guldman
Patrick Gulledge
J. W. Gurl
Pat Gustavson
Joe & Nel Hadfield
William & Carmen Hadwick

Jeff Hagedorn
Merle W. Hague
Frances M. Hahn
Christian P. Hald
Mike Hale
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Bill Hamilton
J. T. Hamilton
Keith Hamilton
Roger Hamilton
Joseph A. Hammer
John L. Hammond
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Sprague Hananan
Carol Handelman
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Garrett Harley
Karen & Tom Harmony
Steven Harper
Robert Harrahill
Carl Harris
Peter Harris
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Matt Hartman
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Dave Hartwell
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Dave Harvey
Richard Hasbrouck
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Barbara Hassing
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Dick Henzel

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Steve Hess
Hildred Hester
Stephen Heuer
Heather Hickman
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Neil Hicks
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Don Hill
Donald P. Hill
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Orville Hodges
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Barbara Hoffman
Brian Hoffmann
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Katherine Holmes
Charles S. Holmes
Dolores Holzgang
Charlene H. Holzwarth
Jon & Catherine Hooper
Donn Hopkins
John Horton
George Hoskinson
Donald Hotchkiss
Harvey Houston
Glen Howard
Robert L. Howard
Susan Hubbard
Ken & Carol Huddleston
Mike Hughes
Brian R. Humble
Bonnie Humes
David Hummel
Donald L. Hummel
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George B. Hutchinson
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