

**Chapter VI—Affected Environment and Environmental Consequences**



## PURPOSE

This chapter discusses the affected environment and environmental consequences of the alternatives and provides background material on current conditions. The major effect of the action alternatives is to enhance salmon and steelhead in varying amounts above current populations. This improvement would affect the fishery and related activities over a wide area from far upstream to the mouth of the Rogue River and into the ocean. Other effects of the alternatives would be limited primarily to the area of the seasonal reservoir formed by Savage Rapids Dam—from Savage Rapids Dam to the confluence of Evans Creek about 3.5 miles upstream. Effects on social well-being (except those related to increased salmon and steelhead) would be confined to the local area including, the cities of Grants Pass and Rogue River, the GPID service area, and the residents along the seasonal impoundment.

Background material on climate, physiography, economic conditions, and other aspects are provided in this chapter as an aid to reader understanding. The following categories of affected environment are discussed:

Economics	Hydrology
Water quality	Wild and Scenic Rivers
Land Use	Fish and wildlife
Vegetation	Endangered and threatened species
Recreation	Cultural resources
Air quality	Noise
Esthetics	Social well-being
Energy requirements	Indian Trust Assets

## CLIMATE

The climate of the Rogue River basin is dominated by maritime influences which contribute to relatively mild, wet winters and warm, dry summers. The frost-free period is about 172 days at Grants Pass. Temperatures at Grants Pass vary from an average of 39 degrees Fahrenheit (°F) in January to 71 °F in July, although highs of 90 °F and even 100 °F are not uncommon. About 50 percent of the average annual precipitation of 32 inches falls from November through January, and less than 2 percent falls during July and August. Snow accumulates at high elevations during

winter and early spring and is the principal source of streamflow during late spring and summer.

Precipitation records for Grants Pass show a significant trend likely to affect area stream runoff. These records show a relatively wet period with average to above average rainfall beginning in 1950 and continuing through 1974 with only a few minor breaks. Beginning in 1975, there was an abrupt change to a dry trend. With the exception of a few years in the early 1980's, rainfall has continued well below average. The net loss to the area over the past 15 years has been approximately 50 inches of rain or the equivalent of going without rain for 1-1/2 years (Haskett 1991).

## PHYSIOGRAPHY

The Rogue River basin consists of a narrow valley cut into the western slope of the Cascade Range, a broader central valley area, and another narrow section downstream where the Rogue River breaches the Klamath Mountains before entering the Pacific Ocean. The basin is bordered on the north by the Umpqua Mountains and on the south by the Siskiyou Range.

The Klamath Mountain region is rugged with narrow winding valleys and sharp divides, although local differences in elevation between valley bottoms and nearby ridges are usually less than 3,500 feet. Slopes of 30 degrees are common in the mountains. Low relief and subdued topography of the Grants Pass-Merlin area contrast sharply with the rugged hills and steep canyons along the western and northern basin boundaries.

Nearly all the valley lands lie below 1300 feet elevation. Lands along Evans Creek range from 950 to 1300 feet while those near Grants Pass range from about 920 to 1000 feet.

Stream gradients vary widely. Evans Creek drops 270 feet per mile in its headwaters and then levels off to about 30 feet per mile below RM 28. The Rogue River between the cities of Rogue River and Grants Pass drops an average of 9 feet per mile.

## SEISMICITY

Savage Rapids Dam is located in the Klamath Mountains geomorphic division of southwestern Oregon. Some of the oldest rocks in Oregon,

estimated at 200 million years old, are exposed in this mountainous terrain. Although severe tectonic activity has folded and faulted most of these rocks into a complex assemblage, there are no known active faults in the area. The last major crustal disturbance occurred more than 60 million years ago.

The dam is in Zone 1 of the 1969 seismic risk map of Oregon. Zone 1 is classified as an area that can expect minor damage, corresponding to intensity V-VI on the Modified Mercalli Scale. The major earthquake on record, in 1873, had an intensity of VII. This earthquake was believed to be centered near the Oregon-California border between Crescent City, California, and Port Orford, Oregon, about 60 to 70 miles southwest from Savage Rapids Dam. The closest recorded earthquake to the dam was near Talent, Oregon, about 25 miles southeast, where an intensity V event was recorded on August 16, 1931. On April 14, 1920, an intensity V earthquake was recorded in the Crater Lake area, about 65 miles northeast of the dam. An intensity VI event on August 23, 1962, centered in northern California about 80 miles southwest of the dam, had an intensity V rating at Grants Pass, Oregon.

The foundation for the dam is partly on firm rock and partly on compacted, cemented gravel which forms a stable foundation. Given this foundation and the dam's design and construction, historic earthquakes would not have caused any significant damage to Savage Rapids Dam.

## **ECONOMIC AND DEMOGRAPHIC SETTING**

The local economy of Jackson and Josephine Counties, which extend southward to the Oregon-California border, is based on agriculture and related agri-business, lumber, wood products, and tourism.

The lumber and wood products sector consists mainly of logging, lumber mills, and plywood manufacturing. Douglas fir is the major commercial tree species and accounts for about 50 percent of the commercial growing stock in Jackson County and two-thirds in Josephine County. Douglas fir is the primary species used in the production of softwood plywood and lumber.

The mountains, lakes, and the Rogue River in particular provide abundant recreation opportunities. Many people come to fish for salmon and steelhead or to float or jetboat on the river. A significant industry has

developed to provide the services necessary to support the recreation and tourist economy.

## Population

Population changes of the two counties have followed the Oregon State trend of the 1980's with most of the increase due to in-migration. A total of 53 percent of Jackson County and 73 percent of Josephine County population growth in the 1980's resulted from migration. The 1990 Census population in the two counties totaled approximately 209,000 persons—about 146,000 in Jackson County and 63,000 in Josephine County.

Grants Pass is the largest city in Josephine County with about 18,000 residents. If the surrounding urban area is included, the population swells to about 40,000. The city of Rogue River in Jackson County has a population of about 1,800 residents.

## Employment

Employment in Jackson and Josephine Counties encountered wide swings during the 1980's. All sectors of the economy faced increases and decreases in employment. After reaching the bottom of an economic slump in 1982, the area economy began a strong upward climb. By 1988, substantial recovery had been generated in manufacturing and construction. Agricultural employment averages about 2,000 in Jackson County and 400 in Josephine County and has remained somewhat stable.

Since 1988, there has been a downward turn in the manufacturing industries of lumber and wood, but construction, trade, and services continue to grow. Jackson County's manufacturing has decreased by 12 percent, losing nearly 1,400 jobs in the lumber and wood industry. Non-manufacturing employment increased by 17 percent during the same period with increases in construction (18 percent), trade (17 percent), and services (33 percent). Jackson County's projected unemployment rate for 1993 is 8.5 percent.

In the same time period, Josephine County's manufacturing decreased by 23 percent, losing nearly 800 jobs in the lumber and wood industry. Non-manufacturing employment increased by 10 percent with increases in construction (24 percent), trade (4 percent), and services (19 percent). However, the projected 1993 unemployment rate for Josephine County was

11.5 percent. With unemployment running that high, Josephine County is classified as a "labor surplus area." Employers in areas receiving this designation are eligible for preference in obtaining Federal procurement contracts.

## Income

Per capita income is one of the better measures of economic well-being and can also provide an indication of the level of economic activity within a local economy. County personal income is divided by total county population to arrive at the county per capita income. Personal income is made up of net earnings, dividends, interest, rent, and transfer payments.

In 1991, per capita income in Jackson County was \$15,953, a increase of 4.9 percent over the previous year. Jackson County ranked 16th out of 36 Oregon counties in terms of per capita income in 1991 and was at 91 percent of Oregon State per capita income of \$17,495.

Josephine County per capita income in 1991 was \$14,004, a 1 percent increase over the 1990 figure. Josephine County ranked 34th out of 36 Oregon counties in terms of per capita income in 1991 and at just 80 percent of the Oregon State per capita income.

Analysis of the components of personal income indicates that a much smaller portion of personal income is derived from net earnings and much more is derived from other components than is average for the State and the Nation (see table VI-1). This indicates the population of the two counties is older and includes a higher percentage of retired persons. As more retired people enter the county, the percent of personal income derived from dividends, interest, rents, and transfer payments will continue to increase.

Table VI-1.—Percent of personal income by major component (1991)  
[Source: State of Oregon Employment Department]

Area	Net earnings	Dividends, interest, and rent	Transfer payments
Nation	66.7	17.2	16.1
Oregon State	65.1	18.0	16.9
Jackson County	58.4	21.3	20.3
Josephine County	48.0	24.2	27.8

## Effects of the Alternatives on Economic Conditions

Implementation of the action alternatives would have long term effects on the national economy due to an increase in salmon and steelhead production and the increased commercial and sport fishing harvest. Effects on the regional economy would be short-term only and would stem from construction.

### Preferred Alternative

***National Economic Development.***—The Preferred Alternative would provide annual equivalent benefits of \$4,998,600 due to increased annual harvest of salmon and steelhead. Derivation of NED benefits is shown in tables III-7 and III-8 in chapter III.

***Regional Economic Development.***—RED effects would be short term, limited to the 5-year construction period. The direct effect from construction on the economic output of the region is estimated at \$15,200,000. Construction expenditures of \$11 million would create approximately 120 jobs during a 5-year construction period. Personal income would increase by \$2,205,000 with a total income increase of about \$4,266,000.

Very little statistical data is available upon which to measure the economic value of recreation impacts. Use has not been monitored or user-day numbers collected on this stretch of the Rogue River. However, after consultation with experts knowledgeable about the local area, Reclamation does not foresee any significant increase or decrease in the use of the affected stretch of the river, but rather a change in the type of use (i.e., changing from a water skiing, jet skiing, motor boating area to a float trip, fishing [both float and bank], and jet boating area).

Scenic qualities would be reduced for some time and would change over the long term but that is not expected to affect local motel and recreational vehicle campsite use.

Property owners who have made improvements (boat docks or ramps) to take advantage of the seasonal lake would have individual losses and real estate values may drop temporarily. However, riverfront property would be expected to maintain its high value.

### **Dam Retention Alternative**

*National Economic Development.*—The Dam Retention Alternative would provide annual equivalent benefits of \$3,870,900 due to the increased annual harvest of salmon and steelhead.

*Regional Economic Development.*—RED effects would be short term, limited to the 6-year construction period. The direct effect from construction on the economic output of the region is estimated at \$23,900,000. Construction expenditures of \$17 million would create approximately 190 jobs during a 6-year construction period. Personal income would increase by \$3,950,000 with a total income increase of about \$6,713,000.

The GPID would be responsible for financing and funding \$2,848,000 of the construction costs. Assuming a repayment period of 30 years and an interest rate of 6 percent, the increased costs to the GPID due to construction of the Dam Retention Alternative would be \$207,000 annually throughout the repayment period.

### **No Action Alternative**

The No Action Alternative would have no effect on national or regional economic development.

## **WATER**

Water supply, water rights, and water use are important components of the JCWMIS study which was initiated in part to provide help to the GPID in addressing these issues and identifying potential conservation measures. These issues are fully addressed in a separate report on facilities improvements (DNA 1994).

Resolution of the water rights issues will have an effect on the sizing of irrigation diversion facilities and, therefore, on the cost of alternatives. The future amount of irrigation diversion, which will be settled through resolution of the water right issues with the State of Oregon, is the only factor related to water supply. The annual irrigation diversion in the future is expected to be less than that of the past. The best estimate and the rate of diversion assumed for this study is 150 cfs, the current estimated requirement, which compares with the historical diversion of 180 cfs.

Since the amount of diversion will be the same for all alternatives including the no action alternative, selection of a fish passage alternative will have no effect on water supply. Discussion of water supply, water rights, and water use in this report is limited and provided only for background information.

## Rogue River

The average annual runoff of the Rogue River is over 2.5 million acre-feet at Grants Pass and 8 million acre-feet at the mouth. Flows at Grants Pass have ranged from 500 cfs to as high as 152,000 cfs. During late winters and early spring, flows at Grants Pass have reached 35,000 cfs (bankfull capacity) about every other year.



Photo VI-1.—Rogue River near Greens Creek, below Savage Rapids Dam.

Completion of Lost Creek Dam in 1977 provided significant regulation of flows in the middle reach of the Rogue River. About 10 to 20 percent of the total Rogue River flow originates upstream of Lost Creek Dam. Under current operation, 70 to 75 percent of the riverflow in July and August is from Lost Creek Dam releases. Flow duration analyses show that with the Lost Creek Dam operation, the State minimum flow requirement of 1,200 cfs at Savage Rapids Dam (OWRD 1985) can be met 92 percent of the time.

Chapter VI—Affected Environment and Environmental Consequences

Figures VI-1 and VI-2 show the runoff patterns of the Rogue River at Grants Pass (OWRD 1985).

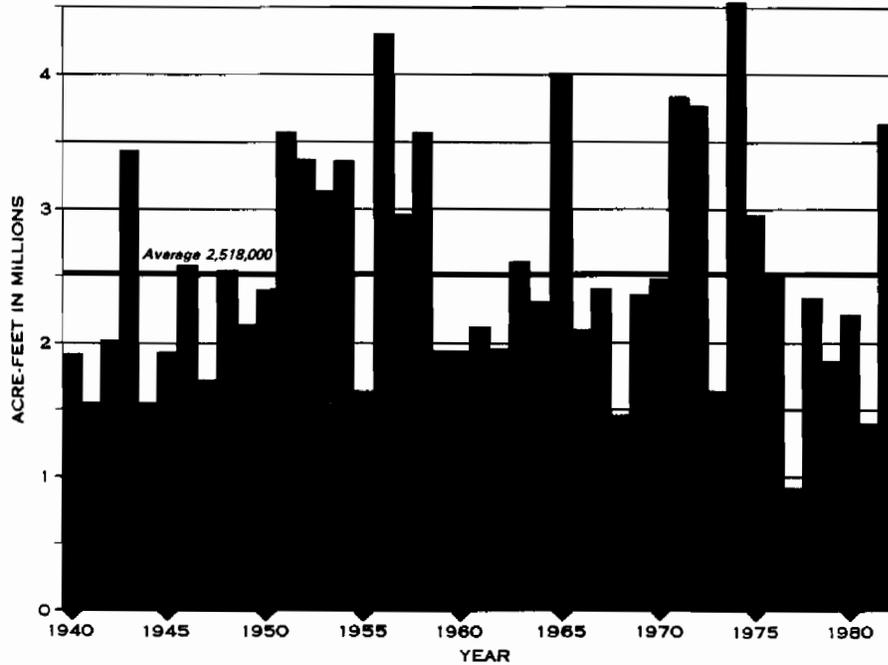


Figure VI-1.—Annual runoff of the Rogue River at Grants Pass.

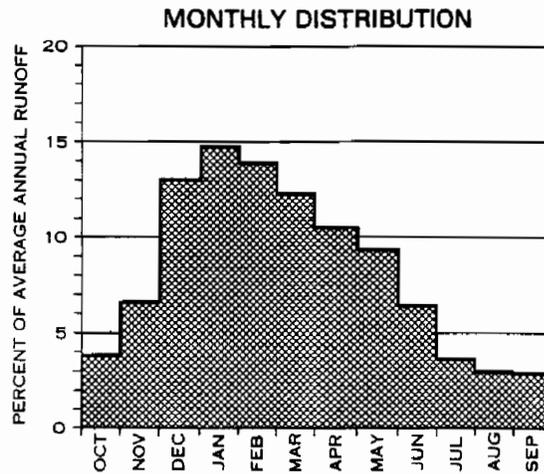


Figure VI-2.—Monthly distribution of Rogue River runoff at Grants Pass.

## Water Use

The Rogue River is the principal source for municipal, industrial, and irrigation water and for water-based recreation in the Grants Pass area. Oregon Statute 538.270 prohibits the use of main stem Rogue River for industrial use and for hydroelectric power development below RM 157 (50 miles upstream from Savage Rapids Dam) to avoid potential conflicts with anadromous fish runs. Moreover, the potential for further out-of-stream use of the Rogue River is severely restricted.

A 1988 Oregon Court ruling in *Diack v. City of Portland* proclaimed that no actions can be taken which affect the instream flow of those sections of Oregon's waterways that have been designated as wild and scenic (see "Wild and Scenic Waterways"). In response to the *Diack* decision, the State set standards of acceptable instream flows for the lower Rogue River, as shown in table VI-2.

Table VI-2.—Minimum, maximum, and recommended flows for the Rogue River State Scenic Waterway (Applegate River to Lobster Creek)  
[Source: Oregon Water Resources Department]

Month	Flow (cubic feet per second) near Agness (gauge 14372300) <sup>1</sup>			Recommended		Scenic waterway
	Minimum <sup>2</sup>	Maximum <sup>2</sup>	Average <sup>3</sup>	Fish <sup>4</sup>	Recreation	
January	3,104	13,340	6,933	1,600	3,500	3,500
February	3,071	30,282	8,598	1,600	3,500	3,500
March	2,207	17,750	7,572	1,600/3,200	3,500	3,500
April	2,455	15,086	5,609	3,200	3,500	3,500
May	2,577	8,158	4,315	3,000	2,000	3,000
June	2,140	5,363	3,250	2,700	2,000	2,700
July	1,829	3,446	2,383	1,800	2,000	2,000
August	1,858	3,370	2,321	1,800/2,400	2,000	2,000/2,400
September	1,630	3,187	2,249	2,400/1,500	2,000/1,600	2,400/1,600
October	1,421	3,497	2,281	1,300	1,600	1,600
November	1,386	16,652	4,857	1,600	1,600/3,500	1,600/3,500
December	2,124	29,250	7,038	1,600	3,500	3,500

<sup>1</sup> A "/" indicates that flow changes in mid-month.

<sup>2</sup> Minimum and maximum flows are the lowest and highest mean monthly flows measured during 1981-1990.

<sup>3</sup> Average flow is the 50-percent exceedance mean monthly flow value as estimated by the Oregon Department of Water Resources for period of record 1981-1990.

<sup>4</sup> Fish flows are recommended through analysis of research by McPherson and Satterthwaite (ODFW).

Under currently defined water rights and instream flow requirements, the Rogue River at Grants Pass has no additional streamflow available for diversion during most of the year (OWRD 1991a). Some storage water may be available between June 1 and October 15 from existing Corps reservoirs. Applegate Lake has about 45 acre-feet of storage available and Lost Creek Reservoir has about 3,000 acre-feet of storage available.

The major water user in the area is GPID which has rights to divert water for irrigation and an instream nonconsumptive water right for operation of its hydraulic turbines. GPID facilities are used to divert water from the Rogue to smaller streams under an ODFW water right. Historically, the out-of-stream diversion at Savage Rapids Dam has average about 180 cfs, (recently 170 cfs) although the total water right was much higher. The nonconsumptive instream use to power the pump turbines is 800 cfs.

Future out-of-stream diversions by the GPID are expected to range from about 117 to 145 cfs as GPID implements its conservation plan (Newton 1994).

In addition, the Fort Vannoy Irrigation District and the Apple-Rogue District Improvement Company have minor irrigation water rights. The ODFW has a water right to divert water from the Rogue River to enhance flows in tributaries, and this water, when requested, is carried by GPID facilities.

The cities of Grants Pass and Rogue River divert water for municipal and industrial purposes.

### **Water Quality**

The Rogue River is generally clear and the chemical, physical, and biological qualities are excellent. During flood periods brought on by intense fall and winter storms, the river is turbid and sediment-laden but still well below problem limits. Recorded maximum turbidity levels are about ten times lower than levels that adversely affect salmon. Hot, dry periods in the summer can produce undesirable high water temperatures; however, this effect has been moderated by storage releases from Lost Creek Reservoir.

Because of the relatively small size of the impoundment of Savage Rapids Dam, water rapidly flows through this reach. As a result, all water quality parameters of the reservoir are the same as for the Rogue River.

## Ground Water

Several separate actions have recently taken place to develop a better understanding of the ground-water systems in the study area. The primary concern for this interest is facility service planning by both the city of Grants Pass and Josephine County. Ground-water resources were reviewed recently (Haskett 1991). Under a jointly funded contract, DNA recently completed a ground-water management program (Newton 1992). DNA has brought together several other studies and has attempted to fill some of the gaps with additional work. The study ends at the Josephine-Jackson county line. However, the geologic conditions within the Evans Creek drainage and between the county line and the city of Rogue River are similar, and it can be assumed that the following summary from Newton's report would also apply to this part of the study area:

“Operation of the reservoir does not significantly affect ground-water levels except in the close vicinity of the river. Under current operations the surface of the reservoir is lowered at the time that ground-water levels could be expected to be near their lowest.”

## Effects of the Alternatives on Water

### Preferred Alternative

The current instream right to power the hydraulic turbines would be forfeited as pumping power would be provided by electric motors. Other water rights would be unaffected. Elimination of the reservoir is not expected to have a significant effect on ground-water levels. Shallow wells near the reservoir edge, that in effect pump directly from the river, would be affected over the entire year to much the same extent as they are now affected for 9 months when the reservoir is lowered.

Water quality would be reduced slightly during construction due to increased turbidity. Contractors will be required to use methods to reduce turbidity during construction. Compliance with the various State, local, and Federal permit processes, especially as required under sections 402 and 404 of the Clean Water Act, will provide adequate mitigation of normal construction impacts. Increased turbidity would continue at intervals during flood periods until the accumulated sediments behind Savage Rapids

Dam are moved downstream. None of these are considered to be significant.

About 320 acre-feet (516,000 cubic yards) of sediment have accumulated behind the dam and consists of 32 percent sand, 52 percent silt, and 16 percent clay. Chemical analyses of sediment samples show that trace elements trapped within the sediments are below or within the baseline range for soils of the Western United States.

Given the slope of the Rogue River from the dam to the ocean as well as the frequency and magnitude of flood events, nearly all of the accumulated sediment would be transported downstream. Finer silt and clay materials should remain in suspension throughout the lower river until reaching the ocean. Due to the volume of the Rogue River, no significant increase in measurable turbidity would be expected. Sand-sized materials would move more slowly, partially filling the pools in the pool-riffle environment downstream and filling the interstitial space among the gravel and cobble in slower moving channel areas in much the same manner as normal erosional processes. Virtually all sediment would be transported out of the existing reservoir area within 5 to 10 years. Because movement will primarily occur during flood events, which are normally turbid, any increase in turbidity resulting from the accumulated sediment would be insignificant.

The temperature of river water at the site may decrease slightly with the swifter flow of water in the natural channel, and dissolved oxygen content would be higher. No quantification of these values is available.

### **Dam Retention Alternative**

Water rights would not be affected. Turbidity would increase slightly during construction but the increase would be temporary and would have no significant effect on the quality of riverflows. Contractors would be required to minimize adverse water quality changes during construction. Compliance with the various State, local, and Federal permit processes, especially as required under sections 402 and 404 of the Clean Water Act, will provide adequate mitigation of normal construction impacts.

### **No Action Alternative**

This alternative would have no effect on water use or water quality.

## **WILD AND SCENIC RIVERS**

Under The Wild and Scenic Rivers Act of 1968, a reach of the Rogue River was included as a component of the national wild and scenic rivers system. This reach extends from its confluence with the Applegate River (about RM 95), just west of the city of Grants Pass, to Lobster Creek Bridge (about RM 11), 88 miles downstream. The State of Oregon system of scenic rivers includes the same river reach and two more reaches in the Rogue River basin. The additional reaches are: (1) the main stem Rogue River from the headwaters to RM 173 and (2) the Illinois River from the Deer Creek confluence (RM 47) downstream to the mouth at the confluence with the Rogue River (Rogue River RM 47). These river reaches are shown in figure VI-3.

The action alternatives (Preferred Alternative and the Dam Retention Alternative) do not invade any river reach in the national system of wild and scenic rivers or the state system of scenic rivers and would not diminish the scenic, recreation, or fish and wildlife values or have any effect on streamflows. The greatest concern is potential effects on water quality. Temporary, but insignificant increases in turbidity could be expected during construction as summarized under "Effects of the Alternatives on Water." Sediment would be transported downstream over a period of years under the Preferred Alternative, but would be moved during high flow and flood events. During these events turbidity due to the Preferred Alternative would be insignificant compared with the background turbidity. Salmon and steelhead fish production of the Rogue River would be significantly increased as discussed under "Effects of the Alternatives on Fish."

In summary, the action alternatives would have no significant or measurable adverse effect on any wild and scenic river, but would have a large positive effect due to increased populations of salmon and steelhead. A Section 7(a) Determination by the U.S. Forest Service and the BLM concurs with this assessment (see attachment J).

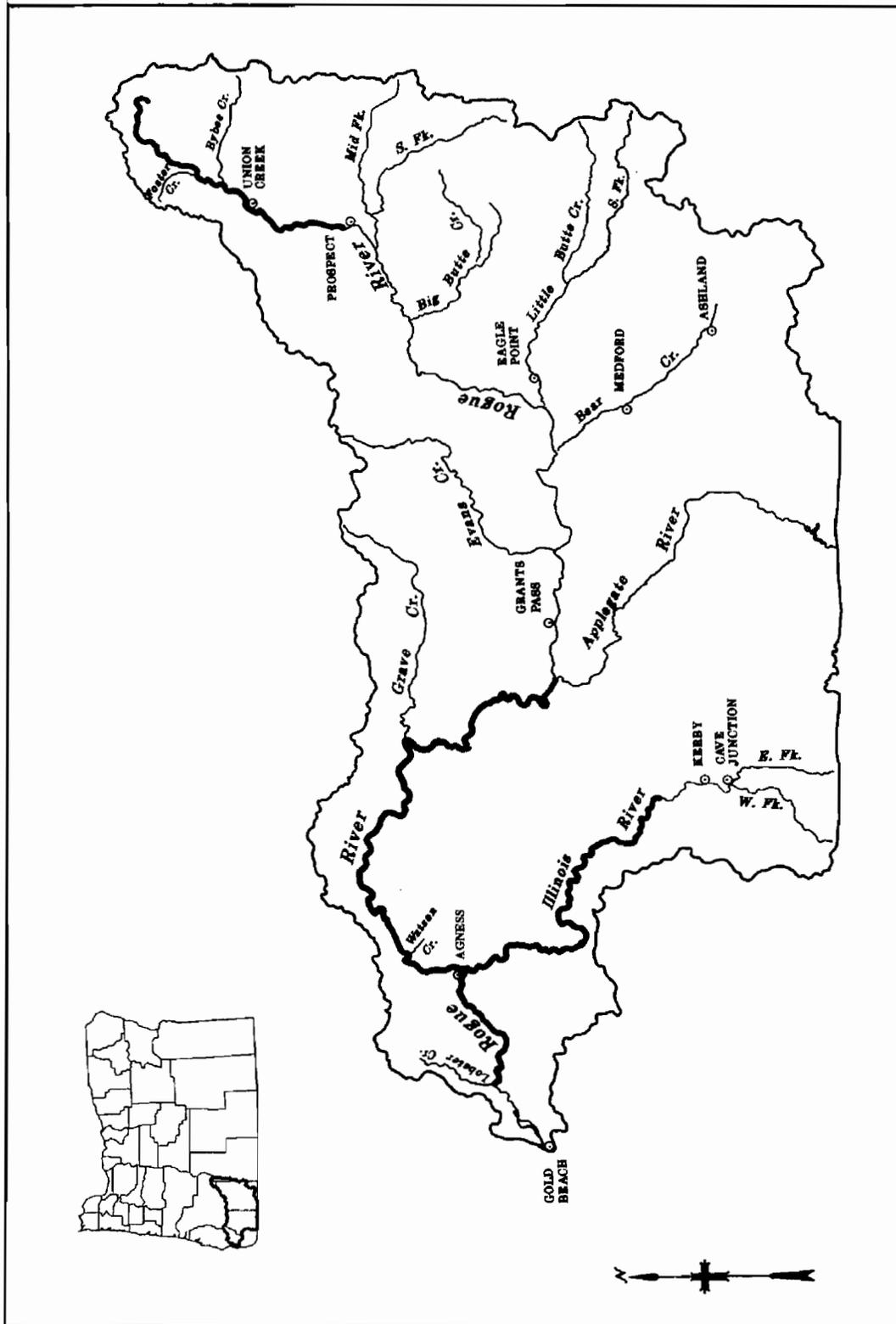


Figure VI-3.—Rogue River basin scenic waterways.

## **LAND USE**

Most agricultural land consists of pasture, range, and woodland. Approximately 298,000 acres of land (17 percent) is in farms in Jackson County and about 37,000 acres (4 percent) in Josephine County. Lands served by the GPID are mostly in small tracts (3 acres or less), with few full-time commercial agricultural operations.

Urban growth and agriculture compete for suitable flat lands. Irrigated lands within GPID have decreased from about 12,000 acres in the 1930's to about 7,760 acres at present. Irrigated lands consist mainly of pasture, alfalfa, gardens, and lawns. Hillsides surrounding the valley areas are covered with forested growth. Land adjacent to the Rogue River has been developed for both residential and commercial use.

Local zoning regulations have been developed in accordance with the policies of the Oregon Land Conservation and Development Commission. Much of the land originally classified as arable and which once represented potential expansion of irrigated agriculture, is now zoned as forest or woodland reserve. Stringent use restrictions apply to these lands and they are no longer available for irrigation.

Lands around the reservoir above Savage Rapids Dam are zoned for a variety of uses that include woodland resources, exclusive farm use, rural residential, suburban residential, and open space reserve. Between the dam and the bridge that crosses the river at Rogue River, there are about 263 tax lots that could be classified as lakeside. Of these, 214 lots access directly on the river and the remaining 49 lots are close with a view of the river but do not access directly on the river. Included are 16 businesses that include motels, campgrounds, and other small enterprises. As of June 1990, approximately 184 homes/cabins had been built along the shores of the reservoir and there were approximately 122 vacant lots. Some of these vacant lots are used by their owners on a temporary basis for camping or day-use activities.

## **Effects of the Preferred Alternative on Land Use**

Approximately 1 to 1.5 acres of land would be required for the pumping plants and appurtenant facilities.

A total of 110 acres of seasonal flatwater would be eliminated and the area would revert to a riverine environment. It is assumed that the GPID flood easement on these lands would be abandoned and landowners would extend their current property uses and permanent fixtures toward the new high waterline. There may be some short term shifts or disruptions in land values but the Preferred Alternative is not expected to affect land values in the long term.

Whether additional development will be made at Savage Rapids Park is unclear as Jackson County has returned control of the land to GPID. However, other public parks at the upper end of the reservoir and private camping sites located around the seasonal reservoir would likely extend development to the new high waterline.

This alternative would have no effect on prime and unique farmlands.

This alternative would affect the flood plain only in the 3.5-mile reach of river upstream from the pumping plants. The high waterline would be closer to the river center with elimination of the seasonal reservoir. Since floods are controlled primarily by Lost Creek Dam upstream, this alternative would not be expected to significantly affect the potential for flooding. However, development on private lands toward the new high waterline and into the flood plain could be expected with some increased potential for flood damage.

Elimination of the seasonal reservoir would allow development of some wetland vegetation in the area. It is unlikely that any increase would be significant.

## **Effects of the Dam Retention Alternative on Land Use**

This alternative would have no effect on land use.

## **Effects of the No Action Alternative on Land Use**

This alternative would have no effect on land use.

## **FISH**

The Rogue River supports a large population of anadromous salmonids including spring and fall chinook salmon, coho salmon, summer and winter steelhead trout, and sea-run cutthroat trout. Of these, steelhead trout and chinook salmon are the most abundant and the most widely distributed. The ODFW has indicated that the Rogue River basin supports the largest population of wild anadromous salmonids in Oregon.

There are also four species of resident trout, six species of warm-water game fish, two species of sturgeon, and shad which have overlapping or coinciding distributions; the latter two are anadromous. The Rogue River fisheries are nationally known for diversity and productivity.

Coastal stocks of salmon and steelhead are at very depressed levels. Coho stocks have been especially hard hit by poor ocean survival conditions. These, as well as adverse conditions locally, are reflected in depressed fish counts at Gold Ray Dam.

At the time of this writing, none of the resident or anadromous fish found in the Rouge River were listed under the Endangered Species Act, however the status of most salmon and anadromous trout species are being reviewed by the NMFS (see also "Endangered and Threatened Species" section).

## **Aquatic Habitat**

The historic diversity and productivity of the Rogue River indicate that the river is healthy. Although logging, urban, and agricultural development have likely had a detrimental effect in some areas, the overall quality of the aquatic system is considered excellent by fish biologists.

Habitat within the confines of the reservoir created by Savage Rapids Dam is poor for salmon and steelhead because flow is slowed and bottom sediments do not contain gravelly conditions favorable for spawning beds. As a result, adults do not generally spawn in the reservoir reach. Juvenile salmonids, which rely on the river current to carry them downstream to the ocean, may be exposed to higher levels of predation from fish and birds as they migrate downstream through the slower moving waters of the reservoir.

Seasonal raising and lowering of the impoundment limits the establishment of an aquatic substrate to support a significant resident fish population of trout or other resident fish.

## **Anadromous Fish**

Anadromous refers to species that spend a portion of their life cycle in salt water but spawn in fresh water. Salmon, steelhead trout, sturgeon, shad, and lamprey are the most common anadromous species. Salmon and some other anadromous species die shortly after spawning. Steelhead trout, in contrast, may survive to spawn more than once, returning to the sea after each spawning period.

### **Salmonid Species**

Two distinct races of steelhead exist in the Rogue River—summer run and winter run. Adult summer steelhead enter the river from June to September, moving slowly upstream, occasionally holding near the mouth of cooler tributaries. Generally, the first winter freshets cause these fish to move into smaller tributaries of the middle and upper Rogue River system; spawning commences in mid-January.

The run of winter steelhead is larger and more widely distributed. This race enters the system primarily in mid-October and are found in most streams of the drainage where spawning is not precluded by a lack of water flow, lack of spawning habitat, or the presence of natural or man-made passage barriers.

A fish run unique to some coastal streams including the Rogue River is a run of "half-pounders." These are immature steelhead that have been in the ocean for about 2 months and swim upstream with the summer run of adult spawners. They appear to be too immature to spawn and those that successfully avoid capture and other dangers probably return to the ocean.

There are also two runs of chinook salmon—spring and fall. Adult spring chinook enter the Rogue River in the spring, remain in the main stem above Gold Ray Dam through the summer, and spawn in the fall. Fall chinook enter the system early in the fall and spawn through December, tending to use the river and tributary systems below Gold Ray Dam.

Coho salmon ascend the system as mature adults in the fall and spawn through January in smaller tributaries below Gold Ray Dam.

Sea-run cutthroat trout enter the Rogue River primarily in summer and early fall, migrating as far up as the Illinois River at RM 27.1. These fish normally do not spawn until the fall freshets are adequate to permit entry into the tributary streams.

About 375,000 anadromous salmonids with an estimated value of \$31.5 million are produced annually (ODFW 1985). Included in this total is an annual sport and commercial harvest of 162,000 chinook salmon and an annual sport harvest of 95,000 steelhead (ODFW 1988). The ODFW has a management policy giving first and highest consideration to the protection and enhancement of wild (as opposed to hatchery bred) anadromous fish stocks.

### **Fish Passage**

Detailed study of fish passage issues at Savage Rapids Dam were completed in the 1970's. Since then, numerous studies of Rogue River fisheries have been completed or are ongoing by ODFW in conjunction with the Corps Rogue River Basin Project.

Facilities in the basin that affect the salmon and steelhead or actual passage conditions at Savage Rapids Dam include Lost Creek Dam at RM 157 on the main stem Rogue River, Elk Creek Dam on Elk Creek (a tributary at RM 152), and Cole M. Rivers Fish Hatchery (located just downstream from Lost Creek Dam and operated by ODFW). The Corps recently published an environmental document (Corps 1991) which contains an abundance of information regarding the life cycles of the various salmonids in the Rogue system, effects of temperature, turbidity, and the flow regulation provided by Lost Creek Dam.

The last estimate of salmon and steelhead passage at Savage Rapids Dam was prepared by USFWS in 1981 (USFWS 1981) and was based on averages of escapement upstream at that time. Counts at Gold Ray Dam, 18 miles upstream from Savage Rapids Dam, are only partially indicative of the numbers passing Savage Rapids Dam. Fall chinook spawn in two main stem areas between the two dams. Chinook and steelhead also spawn in the Evans Creek drainage; summer steelhead spawn mostly in the tributaries and winter steelhead spawn mostly in the main stem of Evans Creek.

Table VI-3 shows that the 1981 estimate of average passage of salmon and steelhead at Savage Rapids Dam was 120,500 fish. Passage estimated at Gold Ray for the high year, low year, recent 10-year average, and the entire 52-year record are shown. Counts at Gold Ray Dam have been highly variable in recent years. The highest count at Gold Ray Dam was over 140,000 fish in 1987 and the lowest count in recent years was about 23,600 fish in 1992. The average for the period 1984-1993 is 76,081 fish passing Gold Ray Dam.

Table VI-3.—Estimated salmon and steelhead passage

Year	Spring Chinook	Fall Chinook	Coho	Steelhead		Total
				Summer	Winter	
1981 USFWS estimate of average passage at Savage Rapids Dam						
Average	49,700	8,500	1,000	37,300	24,000	120,500
Counts at Gold Ray Dam						
Average 1984-1993	43,584	7,532	2,934	11,117	10,914	76,081
Average (52 years)	31,126	3,148	1,981	6,016	9,317	51,598
High year (1987)	81,581	10,699	5,395	24,955	17,587	140,217
Low year (1959)	13,972	735	371	865	4,550	20,493

A major concern in estimating current fish passage is that operation of Lost Creek Dam and Cole M. Rivers Fish Hatchery have changed salmon and steelhead passage at Savage Rapids Dam. Annual releases of spring chinook smolts from the hatchery have averaged about 1.6 million beginning in 1986. Summer and winter releases have varied over time, but an annual release of 150,000 smolts per stock is intended.

Fall chinook spawning has shifted further upstream because of (1) flow changes due to Lost Creek Dam and (2) hatchery production and release of spring chinook. Chinook salmon have also increased because ocean harvests have been reduced to protect Klamath River stocks which mix with Rogue River stocks in the ocean off northern California and southern Oregon. Coho salmon increases are connected with higher releases from

the hatchery, making the coho run in the Rogue River essentially a hatchery run.

Because of the many changes in the last 20 years and the variability in runs in recent years, the 52-year average and counts made more than 30 years ago at Gold Ray Dam probably don't have much validity in estimating current passage. In addition, the ratio of escapement past Savage Rapids Dam compared to escapement past Gold Ray Dam appears to have changed but the magnitude of change is not known.

Reclamation chose to use the 1981 USFWS estimate of salmon and steelhead escapement past Savage Rapids Dam for the analysis in this report. All fish population and fishery effects are based on the 1981 estimate including the estimate that elimination of all passage problems at the site would increase escapement at the site by 22 percent. USFWS has recently indicated that this estimate of 22 percent remains valid (see attachment C).

### Migration Periods

Counts of upstream migrants at Gold Ray Dam and of juvenile fish caught in a downstream migrant trap at Savage Rapids Dam indicate that salmon and steelhead migrate upstream or downstream in all months. Figure VI-4 summarizes the timing of adult and juvenile migrations.

Species	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Adults												
Fall chinook									■	■	■	■
Spring chinook				■	■	■	■	■				
Coho										■	■	■
Summer steelhead						■	■	■	■	■	■	■
Winter steelhead	■	■	■	■	■							
Juveniles												
Chinook					■	■	■	■	■	■		
Coho				■	■	■	■	■	■			
Steelhead			■	■	■	■	■	■	■			

■ = period of first one-half of adult migration

Figure VI-4. Migration of salmon and steelhead past Savage Rapids Dam.

## Resident Fish

Resident trout are native to most streams. Rainbow trout are common in the middle and upper Rogue River system. Coastal cutthroat trout are found in the headwater sections of most high elevation tributaries. Brook trout and brown trout, introduced species, are found primarily in the North Fork Rogue River between Prospect and Union Creek.

Warm-water game fish are most abundant in various lakes, reservoirs, and ponds; however, harvestable populations are found in some sections of the main stem Rogue River. The most prevalent species are black crappie, largemouth bass, bluegill, brown bullheads, and green sunfish.

The most abundant nongame fish include suckers, carp, roach, sculpins, dace, and red-sided shiners. Not all species are found throughout the basin, but overlapping ranges of the various species encompass nearly all fresh waters of the Rogue system.

## Effects of the Alternatives on Fish

### Preferred Alternative

The use of cofferdams during construction and staging of construction activities on one side of the river at a time would allow upstream and downstream fish movement to continue during construction.

The Preferred Alternative would improve fish habitat in the 3.5-mile reach as the seasonal impoundment changes to a riverine environment. Restoration of this reach would provide additional habitat for fall chinook spawning. Full realization of this potential may require the State Marine Board to prohibit or carefully control jet boat use in this reach. Release of accumulated sediment from the reservoir reach is not expected to have a significant effect on water quality (see "Effects of the Alternatives on Water") or fish.

Man-made fish passage problems at Savage Rapids Dam would be eliminated resulting in an increase in the escapement of salmon and steelhead at the site. Salmon and steelhead escapement at Savage Rapids Dam would be increased about 22 percent. This escapement assumes the catch-to-escapement ratios and the harvest increases of 87,900 salmon and steelhead shown in table III-6 in Chapter III. Recently, the ODFW made

high, medium, and low estimates of potential escapement increases with the Preferred Alternative (see attachment D). Table VI-4 summarizes the earlier estimate and the recent ODFW estimates of increased escapement by species.

Table VI-4.—Increased salmon and steelhead escapement with the Preferred Alternative

Species	1981 Estimate	ODFW Estimates		
		Low	Medium	High
Spring chinook	9,100	3,458	5,493	13,340
Fall chinook	8,200	1,389	2,205	5,356
Coho	400	220	350	849
Summer steelhead	4,400	1,071	1,701	4,131
Winter steelhead	4,600	1,486	2,360	5,731
Total	26,700	7,624	12,109	29,407

Improved escapement at Savage Rapids Dam under this alternative would help in the recovery of any anadromous species that may be listed under the ESA

In addition to anadromous fish benefits, the Preferred Alternative would benefit resident fish which could more easily move up and down the river to find a suitable habitat as flow conditions change. No estimate of increased resident fish populations has been made.

### Dam Retention Alternative

The use of cofferdams and staging of construction activities to one side of the river at a time would allow one fish ladder to function at all times so that fish movement would not be impeded during construction.

There would be no change in a fish habitat of the 3.5 mile reservoir reach with the Dam Retention Alternative.

Manmade fish passage problems at Savage Rapids Dam would be reduced resulting in an estimated increase in a salmon and steelhead escapement of about 17 percent. Total harvest increases would be about 68,100 salmon and steelhead based on earlier estimates. Recently, ODFW made high and low estimates of an increased escapement for the Dam Retention Alternative. The ODFW cautions that their high estimate is very optimistic and is based on maintaining fish passage facilities in peak conditions and does not account for any possible acute incidents such as screen failure. Table VI-5 summarizes increased escapement using the earlier estimate that assumes a 5 percent loss due to passage and the recent high and low estimates of the ODFW.

Table VI-5.—Increased salmon and steelhead escapement with the Dam Retention Alternative

Species	1981 Estimate	ODFW Estimates	
		Low	High
Fall chinook	6,400	1002	5,356
Spring chinook	7,000	2,495	13,340
Coho	300	159	849
Summer steelhead	3,400	773	4,131
Winter steelhead	3,600	1,072	5,731
Total escapement	20,700	5,442	29,407

Improved escapement at Savage Rapids Dam under this alternative would help in the recovery of any anadromous species that may be listed under the ESA

In addition to anadromous fish benefits, the Dam Retention Alternative would benefit resident fish which could more easily move up and down the river to find a suitable habitat as flow conditions change. No estimates of resident fish populations have been made.

### **No Action Alternative**

The No Action Alternative would have not change fish habitat or fish passage. Fish passage losses would continue at the same rate as in the past.

## **WILDLIFE**

The area surrounding the reservoir formed by Savage Rapids Dam can be classified as urban and suburban. Interstate Highway 5 borders the reservoir on the north and State Highway 99 borders the reservoir on the south. As a result, wildlife found in the area is composed mostly of those species associated with water/riparian areas and high levels of human disturbance. Waterfowl species are the most common with the greatest numbers occurring in the spring and fall migration periods. However, some species are present year-round. Diving ducks (mergansers, scaup, redheads, and goldeneye) are common in the pool immediately upstream from the dam because of the numbers of small fish in the area. Migratory song birds are also common users of wooded forest or shrub areas. Wading or shore birds use the area mostly during drawdown when floats, bars, and shoreline are available and human disturbance is limited. Fur-bearing mammals (mink, beaver, river otter, muskrat, nutria, raccoon) may use the area intermittently but are not likely to be permanent residents.

Other species that may use the area include upland game species that are found in the agricultural areas of the basin—ring-necked pheasant, California quail, mourning dove, and bandtailed pigeon. Resident brush rabbits and western gray squirrels are present but limited.

### **Effects of the Preferred Alternative**

Construction would disturb wildlife which would temporarily move out of the area. This disturbance would be short term and would not be significant, especially as the site is within an urban setting.

Some waterfowl species that currently use the seasonal reservoir would be displaced by other wildlife associated with more riverine conditions. Because the existing shoreline area is highly developed as private homes or businesses, human disturbances would continue to be high. Changes in wildlife populations would not be significant.

## **Effects of the Dam Retention Alternative**

Construction would disturb wildlife which would temporarily move out of the area. This disturbance would be short term and would not be significant, especially as the site is within an urban setting.

## **Effects of the No Action Alternative**

The No Action Alternative would have no effect on wildlife.

## **VEGETATION**

Natural vegetation in the Grants Pass area consists of oak/madrone deciduous woods and pine/Douglas fir mixed conifer forest. The general land cover is a natural woody forest with a mixed shrub/herbaceous understory.

The shoreline along the seasonal reservoir is highly developed consisting of scattered houses, lawns, gardens, small pastures, parks, and recreation vehicle campgrounds. In some areas, deciduous trees and shrubs form dense riparian vegetation. Alder, ash, cottonwood, willow, snowberry, sumac and blackberry are common along the shoreline.

When the reservoir is lowered at the end of the irrigation season, some persistent grasses are revealed but most of the land between the reservoir high waterline and the natural high waterline of the river is rocky or gravelly and bare of vegetation.

## **Effect of the Preferred Alternative**

An area of about 3 acres would be affected by construction. Most if not all of this area has been highly disturbed by past construction activities and during the construction period this area would be denuded of vegetation. At the completion of construction, the area where the dam was removed, the area around the pumping plants and the staging areas for construction would be reshaped to blend with the natural contours and reseeded. In the long term, these areas would assume a more natural aspect and probably support more wildlife than currently.

The area between the natural high waterline of the Rogue River and the high waterline of the seasonal impoundment would fill in with natural vegetation appropriate to a riverine environment. Vegetation along the old high waterline could be expected to gradually change in character. Since all of this area is privately owned, landscaping, planting, and maintenance will vary by ownership.

Because of the seasonal nature of the reservoir, raised during the irrigation season and lowered the remainder of the year, permanent wetlands have not developed as a result of reservoir operation. Elimination of the seasonal reservoir would have no effect on wetlands.

## **Effect of the Dam Retention Alternative**

An area of about 2 acres would be affected by construction. During the construction period, most if not all of this area would be denuded of vegetation. At the completion of construction, the disturbed area would be reshaped to blend with the natural contours and reseeded. In the long term, this area would assume the current aspect.

## **Effect of the No Action Alternative**

The No Action Alternative would have no effect on vegetation compared to the current and historical operation of the dam.

## **ENDANGERED AND THREATENED SPECIES**

Some species of plants and animals in the general area are listed as endangered or threatened under the ESA. Endangered species are defined as any species which is in danger of extinction throughout all or a significant portion of its range. Threatened species are defined as species which are likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Although candidate species have no technical protection under the ESA, Reclamation's policy is to avoid adverse effects to these species to the extent possible and provide mitigation if needed. These species are included here for general information as it is possible some candidates could be listed prior to project completion.



View immediately upstream of Savage Rapids Dam at full pool elevation.



View further upstream with the seasonal lake at full pool elevation showing development and typical vegetation along the shoreline.



## Fish

Currently there are no ESA listed fish species within the Rogue River system, but steelhead trout and coho salmon have recently been proposed for listing. In addition, all other anadromous trout species of Oregon, Idaho, Washington, California, and Montana and all other Pacific salmon are currently the subject of comprehensive status reviews. These species include sea-run cutthroat trout and chum, sockeye and chinook salmon. The reviews are to be completed throughout 1995 and 1996.

### **Coho Salmon (*Oncorhynchus kisutch*)**

On July 19, 1995, NMFS proposed three distinct populations of Coho (Central California Coast, Southern Oregon/Northern California Coasts, and Oregon Coast) for listing as threatened under the ESA. This includes the coho run of the Rogue River.

### **Steelhead (*Oncorhynchus mykiss*)**

On March 16, 1995, NMFS proposed the “Klamath Mountains Province Steelhead” (all steelhead stocks between Cape Blanco, Oregon and Cape Mendocino, California) for listing as threatened under the ESA. This includes all steelhead runs of the Rogue River.

## Wildlife

### **Listed Species**

**Bald Eagle (*Haliaeetus leucocephalus*).**—The bald eagle is listed as threatened. Bald eagles are known to migrate through the area and spend some time foraging on the Rogue River during migration. No active nests are located along or near the reservoir area.

**Northern Spotted Owl (*Strix occidentalis*).**—This owl is listed as a threatened species. Although it may be found in the general area, habitat along the Rogue River in the vicinity of the reservoir area is not suitable for the species.

### **Candidate Species**

***Pacific Western Big-Eared Bat (*Plecotus townsendii townsendii*)***.—This bat is a candidate category 2 species. Category 2 indicates a species for which existing information indicates listing may be warranted, but biological information to support a proposed rule is lacking. Occurrence of the bat within 2 miles of the Rogue River has been documented. Preferred habitat includes caves and sometimes buildings.

***Northwest Pond Turtle (*Clemmys marmorata marmorata*)***.—This turtle is a candidate category 2 species. Preferred habitat consists of ponds and small lakes with abundant vegetation, but the turtle is also found in marshes, slow moving streams, reservoirs, and occasionally in brackish water. The reservoir formed by Savage Rapids is not preferred habitat because of the seasonal transition between the lake and swift flowing stream.

***Northern Red-Legged Frog (*Rana aurora aurora*)***.—This frog is a candidate category 2 species. Preferred habitat is in and near ponds or other permanent water with extensive vegetation. The frog is also found in damp woods.

### **Plants**

No species of threatened or endangered plants are known to be in the area. However, one Federal candidate category 2 species has been found in the general area. The coral seeded allocarya (*Plagiobothrys figuratus* var. *corrallicarpus*) has been found in three locations west of Grants Pass. All three locations are about 1 mile from the river. Habitat along the reservoir does not appear suitable for the plant.

### **Effect of the Alternatives on Threatened and Endangered Species**

Available data were examined, and a survey of the area that would be affected by the project was made with representatives of fish and wildlife agencies. The habitat of the affected area is not suitable for any listed species except the bald eagle. Effects on wintering bald eagles would be insignificant and limited to temporary disturbance during construction. Elimination of the seasonal reservoir would have no effect on wintering

bald eagles. The affected area is unsuitable to all candidate species except fish and, possibly, the Pacific western big-eared bat which would not be affected.

Reclamation has determined that none of the alternatives would likely have any measurable effect on any ESA-listed or candidate species. There would be positive effects on the salmon undergoing status review and steelhead trout recently proposed for listing as threatened under ESA. (See “Effects of the Alternatives on Fish” for discussion of the positive effects of the Preferred and Dam Retention Alternatives.) The No Action Alternative would have no effect on listed or candidate wildlife species but would continue to cause losses in steelhead and salmon populations.

## RECREATION

### General

Throughout the Rogue River basin, recreation and tourism are considered to be the fastest growing economic activities (OWRD 1985). The Rogue River is nationally and internationally recognized for its diverse recreation opportunities. Visitors as well as residents use the river and adjacent land for fishing, hunting, camping, backpacking, hiking, boating (including whitewater), jet skiing, picnicking, photography, nature study/viewing, and sightseeing. Water skiing is limited to reservoirs. Federal, State, county, and city governments and private industry have been instrumental in providing numerous parks, recreation facilities, and opportunities to accommodate users.

With the exception of hunting, backpacking, and hiking, these recreational activities are present in the Grants Pass/Savage Rapids Dam area.

Boating is becoming increasingly popular. Between 1987 and 1989, boat registration in Jackson County increased 6.1 percent and in Josephine County increased 7.1 percent to respective totals of 9,293 and 3,840 boats. Although no figures are available, the use of drift boats, rafts, and other floating devices probably increased at an even greater rate. River running and touring on the Rogue River have become so popular that permits are now required for many downstream reaches in order to regulate the number of trips and people in an effort to limit adverse effects on the river system. Boating activity for area rivers and lakes is shown in table VI-6.

Table VI-6.—Boating activity (boating-days)  
 [Source: 1990 Statewide Boating Survey, Oregon]

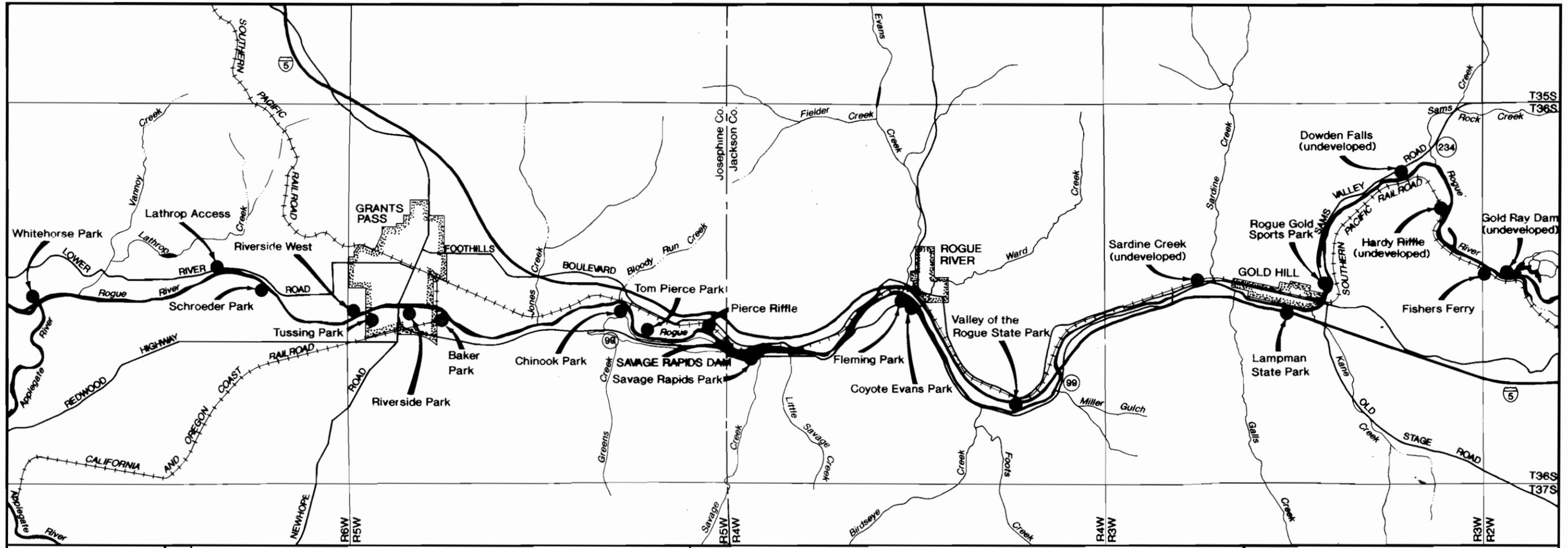
Body of water	Fishing	Cruising	Skiing	Sailing
Jackson County				
Emigrant Lake	5,681	110	6,459	1,227
Fish Lake	7,071	705	-	-
Howard Prairie Reservoir	16,294	1,465	1,721	3,624
Hyatt Reservoir	727	-	-	-
Lost Creek Reservoir	36,359	3,752	13,301	468
Rogue River	13,146	914	-	-
Savage Rapids Reservoir	-	<sup>1</sup> 520	-	-
Willow Creek Reservoir	2,506	376	734	-
Applegate Reservoir	5,020	26	-	-
Subtotal	86,804	7,348	22,735	5,348
Josephine County				
Illinois River	129	-	-	-
Rogue River	18,642	1,830	1,335	129
Selmac Lake	1,005	26	-	-
Subtotals	19,758	1,856	1,335	129
Total	106,562	9,204	1,335	5,477

<sup>1</sup>All boating-days, including water skiing but not other activities such as jet skiing, and floating using durtbags or tahitis.

## Savage Rapids Reservoir

For this study, the affected environment with regard to recreation is limited to the Rogue River corridor from Coyote Evans Park near the city of Rogue River to Savage Rapids Dam, adjacent lands, and the area just downstream from the dam. Coyote Evans park is located at the upper end of the Savage Rapids Dam impoundment.

Except as noted below, Federal, State, and local agencies have not counted the actual number of visitors nor enumerated the types of activities along this reach of the Rogue River. However, Reclamation has consulted a number of recreation professionals and obtained local opinions. Recreation areas and facilities for all locations in and near the general area are shown on the Public Recreation Areas map.



FACILITIES	JOSEPHINE COUNTY													JACKSON COUNTY								
	WHITEHORSE (COUNTY)	LATHROP ACCESS (COUNTY)	SCHROEDER (COUNTY)	RIVERSIDE WEST (CITY)	TUSSING (COUNTY)	RIVERSIDE (CITY)	BAKER (CITY)	CHINOOK (COUNTY)	TOM PIERCE (COUNTY)	PIERCE RIFFLE (COUNTY)	SARGE RAPIDS (COUNTY)	FLEMING (CITY)	COYOTE EVANS (CITY)	VALLEY OF THE ROGUE (STATE)	SARDINE CREEK (COUNTY) (future boat ramp)	LAMPMAN (STATE)	ROGUE GOLD (CITY & COUNTY)	DOWDEN FALLS (COUNTY) (future boat ramp)	HARDY RIFFLE (COUNTY) (undeveloped)	FISHERS FERRY (COUNTY)	GOLD RAY DAM (COUNTY) (future boat ramp)	
BEACH			X				X			X												
POTABLE WATER	X		X	X		X			X			X	X	X			X					
BOAT RAMP	X	X	X				X	X		X	X		X	X			X			X		
TOILETS	X		X	X		X			X	X	X	X	X	X			X			X		
CAMPGROUND	X		X											X								
DAYUSE/ PICNIC AREA	X	X	X	X	X	X		X	X	X	X	X	X	X		X						
OTHER	trail, nature viewing area, shelter		ball field, tennis & basketball courts	tennis courts & ball fields		shelters, ball field, lawn bowling		handicap fishing pier	trail, playground ballfields, shelters	trail, nature viewing area				freeway rest area	fishing access	tennis courts	fishing access	fishing access	fishing access		fish viewing ladder, old power plant	

**EXPLANATION**

● Recreation Area

SCALE OF MILES

UNITED STATES  
DEPARTMENT of the INTERIOR  
BUREAU of RECLAMATION  
GRANTS PASS DIVISION,  
ROGUE RIVER BASIN PROJECT, OREGON

JOSEPHINE COUNTY WATER  
MANAGEMENT IMPROVEMENT STUDY  
**PUBLIC RECREATION AREAS**

Denver, Colorado January 1991

Recreation activities on the reservoir include the use of motor boats for water skiing and riding for pleasure, jet skiing, swimming, and limited fishing. These activities are limited somewhat since the reservoir is narrow. Drift boat, canoe, and raft use on the reservoir are extremely low. The State estimated approximately 520 motorized boating-days on the reservoir in 1990 (Oregon State Marine Board 1990).

Jackson County Parks Department has surveyed auto license plates at Savage Rapids Park and concluded that the primary users of the reservoir are people who live in the area, mostly from the city of Grants Pass. The area is close and easily accessible for short duration visits.

Although tourists use the area, the use is probably secondary to fishing and whitewater boating/rafting on the Rogue River. The reservoir is not a primary or secondary destination site for any significant number of non-local visitors. As noted above, even local use is limited because of the narrow surface area of the reservoir which contributes to crowding and creates safety problems, limited public access, and limited facilities.

### **Fishing and Fish Viewing**

Josephine County Parks Department and Jackson County Parks Department have indicated that the quality of fishing in the reservoir is considered poor and is an incidental activity.

The State formerly stocked the reach from Gold Ray Dam to the upper end of Savage Rapids impoundment with catchable-size trout, but stocking was stopped in 1994 to avoid conflict with wild fish. The current policy is that no planting will be made in the main stem Rogue River below Lost Creek Dam, about 32 miles upstream from Gold Ray Dam.

Although the area on the left (south) abutment of the dam is not designed or developed for public access, the location is well known and used by local people for fish viewing during spawning runs. Local groups have installed a bench here. No estimate of this use is available.

Most of the fishing in this general area takes place in the 2,000-foot reach downstream from Savage Rapids Dam to Pierce Riffle because this reach has a higher than average concentration of fish.

## Public Facilities

At the upstream end of the reservoir and within the city of Rogue River, a 4-acre parcel of land has been developed into two day-use parks—Coyote Evans and Fleming Parks. These parks are operated and maintained by the city of Rogue River. Savage Rapids Park, located a short distance upstream from Savage Rapids Dam, is operated and maintained by a private entity under contract to the GPID. Jackson County ordinances allow camping on sites for up to 30 days. All of these campgrounds stay very busy during the high use season from May to September.<sup>1</sup>

***Coyote Evans Park.***—Leased to the city of Rogue River by the ODFW, this park caters mainly to river users and serves as a primary launch and takeout location for floatboaters and jet boaters who use the river upstream from the reservoir. Some people using canoes and drift boats travel downstream and takeout at Savage Rapids Park; but, according to the Jackson County Parks Department, the number is very low. Facilities at Coyote Evans Park include a picnic area, barbecue grills, and vehicle parking. The Jackson County Parks Department estimates that over 50,000 people visit the park each year.

***Fleming Park.***—Adjacent to Coyote Evans Park and owned and operated by the city of Rogue River, this park serves as a local picnic and fishing area, as a rest stop for travelers because of its proximity to Interstate 5, and accommodates one commercial concession which provides jet boat rides on the Rogue River upstream from the reservoir. Facilities include restrooms, barbecue grills, picnic tables, and open-space areas. Jackson County Parks Department estimated that this park had 100,000 visitors during 1989.

***Savage Rapids Park.***—Savage Rapids Park is the only public access adjacent to the reservoir. In 1975, Jackson County leased 10 acres of land from GPID and developed this recreation site, one-quarter mile upstream from the dam. Currently, 5 acres have been developed to provide a boat launching facility, picnic area, restrooms, vehicle parking, and a beach. In 1989, one county official estimated visitation at about 50,000 people.

The county deferred development of the remaining 5 acres of land until funds were available and has now returned the development to GPID. The park is now operated as a fee park under a year to year contract. Future development and operation of the park is uncertain.

---

<sup>1</sup>Jackson County Parks Department, personal communication.

### Private Facilities

The State has declared much of the Rogue River above Savage Rapids Dam as navigable. In Oregon, this designation means private ownership of adjacent land extends only to the mean high waterline of the river. The river and the lands below the high waterline are public.

Where a reach of river has not been declared navigable, the State defines adjacent land ownership as extending to the middle of the watercourse. The Rogue River in the vicinity of Savage Rapids Dam and its impoundment has not been declared navigable. Public access to these waters is very limited and has caused considerable tension—"no trespassing" signs are common throughout this area.

*Commercial.*—Four areas on the south side of the reservoir have been privately developed for commercial recreation, as shown in table VI-7. These operations provide overnight and long-term camping.

Table VI-7.—Commercial campgrounds

Campground	Number of sites
Rogue River RV Park	21
Have A Nice Day	15
Circle RV Park	25
Unnamed new site	12

*Residential*—As of mid-1993, landowners had installed 106 permanent boat docks, 9 floating boat docks, and 38 boat ramps along the reservoir shoreline for personal use.

## Effect of the Alternatives on Recreation

### Preferred Alternative

Removing the dam would result in the restoration of a natural river channel and more fish would migrate upstream unimpeded. Fishing opportunities would be greatly enhanced in the 3-mile reach upstream from the dam.

The heavy concentration of fish and fishermen between the dam and Pierce Riffle would be eliminated as fish disperse over this reach and the 3-mile reach upstream from the pumping plants.

The popular activity of viewing migrating fish at the Savage Rapids Dam fish ladders would be eliminated. The nearest opportunity for viewing anadromous fish passing up a fish ladder would be Gold Ray Dam, approximately 18 river miles upstream.

There may be an opportunity to revamp Savage Rapids Park as a public access point for the river; however, the future of the park is uncertain at this time.

The current 520 days of motorized boat use on the seasonal reservoir would be dispersed to other sites. Travel to Lost Creek Lake, Howard Prairie Lake east of Ashland, or other area reservoirs for motorized boating will be more time consuming and expensive. Yet, these reservoirs offer safer and better opportunities for such boating since they are wider and larger than Savage Rapids reservoir. (Galesville Reservoir, located north of Grants Pass and outside the two-county area, is nearer than many other reservoirs and could be expected to receive some of the displaced use.)

Private recreation facilities associated with water recreation such as boating docks constructed by homeowners and business will become unusable. Some of these may be reconstructed closer to the new waterline and others may be abandoned or removed.

Use of drift boats, kayaks, rafts, and "durtbags" (large styrofoam-filled vinyl bags) through the 3-mile river reach above the pumping plants would likely increase. If the rapids are passable, some jet boat use could be expected. The potential for disturbance of spawning fish might lead to the regulation or prohibition of jetboat use in this reach. Changes in the length, duration, and type of boating activities would probably be most noticeable between Valley of The Rogue State Park and Grants Pass. Since this area is relatively urban, tours through the reach would not be as popular as tours through more scenic portions of the Rogue. Generally, commercial operators consider only the Rogue River west of the junction of the Applegate River or stretches of the river east of the city of Rogue River scenic for commercial purposes. However, jet boat tours might use the Savage Rapids reach as a new corridor between scenic areas.

Since this area is close to populated areas, residents and tourists could use this area for shorter, more convenient trips. Many of the commercial outfitters contacted indicated that their clients are interested in short-duration trips such as this area could provide. Rapids are the most important consideration for rafters—the configuration of rapids at the site may prove to be a barrier, a tough challenge, or just a fun ride.

Although the types of recreation activities will change, overall recreational use is not expected to change significantly. Public access to this river reach will remain essentially unchanged and problematic since public access is limited primarily to Savage Rapids Park.

### **Dam Retention Alternative**

This alternative would have no effect on recreation.

### **No Action Alternative**

This alternative would have no effect on recreation.

## **CULTURAL RESOURCES**

### **River Corridor**

The Rogue River corridor has been extensively used by prehistoric as well as historic populations, and the potential for cultural resource sites may be significant in undisturbed areas. Because of extensive disturbance due to construction in the past in areas that would be affected by new construction, it is unlikely that there are any significant resources near the dam and a survey is considered unnecessary (see “Consultation and Coordination” chapter).

### **Savage Rapids Dam**

Savage Rapids Dam does not qualify as an historic structure. Reclamation conducted a thorough investigation of the dam and sent the results to the State Historic Preservation Officer (SHPO) for evaluation. The results of

the State's review are contained in a letter dated August 1, 1990. The SHPO agreed ". . . the dam is not eligible for the National Register of Historic Places."

## **Effect of the Alternatives**

It is unlikely that any alternative would have an effect on cultural resources. Construction of the Preferred Alternative and the Dam Retention Alternative would take place in areas that have been highly disturbed. For that reason, it is unlikely that there would be any impact to prehistoric or historic cultural resources.

If prehistoric or historic cultural resources are identified before or during project construction, Reclamation will consult with the SHPO and the Advisory Council on Historic Preservation to determine significance and subsequent action. The resources would be preserved or mitigated. Mitigation could include excavation, avoidance, or documentation consisting of an historic overview, measured drawings, and photographs.

## **AIR QUALITY**

Air quality in the Grants Pass area is generally good. Outdoor burning is occasionally banned but the reason is fire danger, not air quality considerations. Temperature inversions in the winter can cause decreases in air quality, but inversions are short lived because of the frequency of storms and rains.

The alternatives would have no significant effect on air quality except temporary effects associated with construction. There may be some minor and temporary impacts from construction activity, but these would be controlled by compliance with existing State permit requirements and local ordinances.

## **NOISE**

Savage Rapids Dam is located in an urban setting with highways located on both sides of the river and a railroad on one side. As a result the noise level at the dam is fairly high.

## **Effect of the Preferred Alternative**

Construction will result in an increased level of noise during the construction period. Contractors will be required to implement methods and operations that keep noise to an acceptable level. Brief periods of intense noise and lower levels of increased noise over a longer period can be expected. Various methods for removal of the existing facilities will be explored as intense noise for short periods (e.g., blasting) may be more acceptable than less intense noise for longer periods. This concern will be addressed during final designs.

In the long-term, the electrically powered pumping plants will add to the noise level in the general vicinity. Careful siting of facilities, addition of vegetation, and a design that focuses sound upwards will generally mitigate noise. Noise from operation of the existing dam will be eliminated. The noise level is not expected to change significantly.

## **Effect of the Dam Retention Alternative**

Construction will result in an increased level of noise during the construction period, and contractors will be required to implement methods and operations that keep noise to an acceptable level.

In the long term, there would be no change in the level of noise at the site.

## **Effect of the No Action Alternative**

This alternative would have no effect on noise levels.

## **ESTHETICS**

Savage Rapids Dam is an intrusion into the general riverine view of the Rogue River. However, the area is generally urban or suburban with an interstate highway on one side and a State highway on the other side of the river in the reach from Savage Rapids Dam to the city of Rogue River. When the reservoir is raised to create the seasonal impoundment, the view of the area is generally that of a small, narrow lake. When the reservoir is drained, the view of some reaches is that of a river with wide, cobble shores that are bare of vegetation.

## **Effect of the Preferred Alternative**

Construction of the pumping plants and demolition of Savage Rapids Dam would result in confusion and a constantly changing construction scene. These effects would be short term and are not considered significant in an urban setting.

Removal of the dam would change the scenic view from that of a small lake to a natural river. Native vegetation would reestablish through natural processes within 5 years where not seeded. Reseeding in the area of dam removal and construction of the pumping plants would result in substantial vegetation coverage in 2 years. In some cases, the river surface would no longer be visible from residences because the slope of the riverbank would block the view. In these cases, the change would be similar to what is currently experienced between irrigation seasons.

The pumping plants, pipelines, and overhead power transmission lines are designed to blend with the natural environment and would be less obtrusive than the existing dam.

## **Effect of the Dam Retention Alternative**

Construction at Savage Rapids Dam would result in a constantly changing construction scene. These effects would be short term and are not considered significant in an urban setting.

## **Effect of the No Action Alternative**

This alternative would have no effects on esthetics.

# **SOCIAL WELL BEING**

## **Effect of the Preferred Alternative**

Lakeside residents will become riverside residents. The docks and lake access facilities they have constructed will become unusable. They will have to travel farther than the end of their property line if they wish to

participate in flatwater recreation activities. Their summertime view of the lake will become a year-round view of the river. Some residents have said they will be glad to be rid of the noise associated with water skiing and jet skiing.

Local recreationists will have to travel farther to participate in flatwater recreation.

Some tour guide and boat rental businesses feel that tourism could actually increase as people are attracted to a "new" stretch of river for fishing, floating, etc. Businesses near the river will likely continue to have the same, if not an increased, level of business.

Helicopters would no longer have a fairly large area deep enough to scoop up water for fighting forest fires. However, many smaller, adequate sites should exist in the area but would not be as convenient as the existing reservoir and would vary with river lows.

Since a supply of construction workers exists in the local area, no influx of construction workers is likely. Over a short period (3 to 6 years) construction jobs will provide employment for some unemployed individuals. Other businesses may see a short-term increase in sales.

## **Effect of the Dam Retention Alternative**

The Dam Retention Alternative will have little effect on most residents and would have no effect on those that currently use or live next to the reservoir.

## **Effect of the No Action Alternative**

The No Action Alternative will have no effect on most residents. Salmon and steelhead fishery interests and environmental groups would probably continue to work toward removal of the dam. Patrons of the GPID, will be left in a state of anxiety on the future status of the GPID until such time as solutions are implemented.

## **ENERGY REQUIREMENTS**

### **Effect of the Preferred Alternative**

Conversion from hydraulic to electrically operated pumps will increase the annual power consumption at the site by an estimated 5,675,800 kWh. This is equivalent to the average use of about 380 homes in the Pacific Northwest. Forecast deficits would be increased but such an increase is not significant on a regional basis.

### **Effect of the Dam Retention Alternative**

Electric power consumption at the site would not be increased significantly.

### **Effect of the No Action Alternative**

There would be no effect from this alternative.

## **INDIAN TRUST ASSETS**

There are no Indian owned lands in the vicinity of Savage Rapids Dam, there are no Indian Reservations located in the Rogue River basin, and no Indian trust assets such as hunting and fishing rights have been identified in the basin (see "Consultation and Coordination" chapter).

## **ENVIRONMENTAL JUSTICE**

Neither the Preferred Alternative nor the Dam Retention Alternative would have an adverse impact on minorities or low-income populations and communities.

## **UNAVOIDABLE ADVERSE EFFECTS**

The Preferred Alternative would have two unavoidable adverse effects—loss of 110 acres of seasonal flatwater and increased electric power consumption. Neither is considered significant. Safer flatwater recreation is available at several reservoirs in the area, and the flatwater recreation loss would be offset by increased whitewater and other recreation associated with a free flowing river. The increased power consumption is not considered significant to the integrated Pacific Northwest Power Pool.

No unavoidable adverse effects were identified for the Dam Retention Alternative and the No Action Alternative.

## **IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES**

The Preferred Alternative would eliminated 110 acres of seasonal flatwater and associated recreational opportunities. In addition, there would be an annual electric power commitment of 5,675,800 kWh.

No irreversible and irretrievable commitments of resources were identified for the Dam Retention Alternative and the No Action Alternatives.