Other Management Plans

This section summarizes local, state, and federal management plans that were considered in preparation of this plan.

County Plans

Elmore County Comprehensive Plan: The goals and objectives of the 1992 Elmore County Draft Plan were identified for each facet of the plan including water, timber, fish and wildlife, mining, recreation, agriculture and public utilities. The Elmore County Water Goal (Goal I) is to protect, develop and maintain the quality and quantity of our water resource. To accomplish this, they have identified eight (8) water objectives, of which the more relevant to the upper Boise River basin plan include:

-coordinating with the State Water Resources staff to monitor areas of declining groundwater levels and take necessary action to halt lowering before it becomes critical, including recharging from stream sources

-working with the IDWR and seeking approval to study and construct necessary water development projects in the Boise River drainage system to transfer water into arid portions of Elmore County

These goals and objectives are consistent with the 1992 State Water Plan objectives and policies (IWRB, 1992).

Ada County Comprehensive Plan (Ada County, 1990): Although only the northeast corner of the county lies in the basin, the residents of Ada County are the primary users of the upper Boise River basin. Upper Boise River basin activities and management practices have a direct impact on the lower Boise River basin, from Lucky Peak Dam through Boise to the confluence with the Snake River. The Ada County Comprehensive Plan addresses several aspects of water quantity and quality that are impacted by activities in the upper basin. The areas addressed include:

-sufficient stream flow in the Boise River necessary to maintain water quality and to support swimming, tubing, fishing and other water recreation

-identify aquifer recharge and watershed areas to preserve their functions in protecting surface and ground water quality

-examination of alternative methods of preserving the watershed resources through management practices and/or public land purchases

-runoff control integrated into a watershed plan in a manner to maintain natural runoff rates, reduce erosion and flood hazards and to maintain the area's water quality and recharge capabilities

State Plans

State Water Plan (IDWR, 1992): Each individual river reach, corridor or basin plan, such as this one, is guided by, and must be consistent with, the objectives and policies of the State Water Plan. The State Water Plan, which is reviewed by the IWRB every five years, addresses water use, conservation, protection, management and development, and specific concerns for the three major basins of the state.

IDFG Fisheries Management Plan 1991-1995 (IDFG, 1990a): Fish species considered in this management plan relevant to the upper Boise River basin plan include rainbow trout, cutthroat trout, bull trout, brook trout, whitefish and kokanee. The IDFG's Bureau of Fisheries is responsible for both the resident fishery and introduced or hatchery fishery, both of which may be impacted by this plan. Fishery policies of the IDFG that are relevant include the following:

-managing Idaho waters to provide optimum sport fishery, to give priority to wild fish populations, and to maintain self-sustaining populations of fish.

-opposing any activity that results in significant loss or degradation of habitat capable of supporting self-sustaining fish populations.

-working with FERC to insure that hydroelectric development on Idaho waters will have minimal impacts to aquatic resources.

-striving to insure that adequate flows remain in Idaho streams to protect aquatic and riparian resources and provide for fish- and wildlife-oriented recreation.

-opposing hydroelectric development on rivers designated as "protected" by the Northwest Power Planning Council unless the project has a benign impact on and provides an exceptional benefit to fish and wildlife resources.

-supporting efforts to develop a State Protected River system.

IDFG's specific objectives and programs for the Boise River Basin seek to improve reservoir management and establish minimum stream flows. This includes pursuing the establishment of a minimum pool in Arrowrock Reservoir. Special fishing regulations for the Middle Fork Boise River (Middle Fork and North Fork confluence to Kirby Dam) have been implemented to enhance the resident fishery.

IDPR Statewide Comprehensive Outdoor Recreation Plan (SCORP; IDPR, 1989): Idaho Department of Parks and Recreation (IDPR) is charged with developing and maintaining the Statewide Comprehensive Outdoor Recreation Plan (Idaho Code 67-4223 (f)). The IDPR through its comprehensive outdoor recreation planning process, identified the priority recreational needs for the southwest Idaho region as follow (in order of priority): picnic areas; trail facilities including hiking trails, exercise trails, trailhead parking, historic trails and nature trails; tent camping sites; and swimming beaches (IDPR, 1989). Most of these activities currently are available in the basin. The opportunity to develop additional facilities is also available.

Idaho Wetlands Conservation Priority Plan (IWCPP; IDPR, 1989): This plan was prepared by the Idaho Department of Parks and Recreation in response to section 303 of the Emergency Wetlands Resources Act of 1986 and is included in SCORP. IWCPP identifies wetlands that should receive protection. The IWCPP was compiled to help agencies focus their efforts on the most important wetlands in the state. The assessment criteria address wetland losses, threats, functions and values. No wetlands in the Boise basin are listed, but the basin has not yet been inventoried.

Federal Plans

Boise National Forest Land and Resource Management Plan and Final Environmental Impact Statement (USDA, 1990a; USDA, 1990b): The Boise National Forest Management Plan is a comprehensive blueprint for land and resource management on forest property for the next 10-15 years. It takes its direction from the Resources Planning Act (RPA) and the National Forest Management Act (NFMA). The Forest Plan focuses on a discussion of the forest resources, responses to issues, management direction and implementation. Relevant management guidelines include: conducting practices to be in compliance with state water quality standards, improving

facilities to enhance whitewater recreation experiences, implementing watershed improvement projects, obtaining water rights necessary to achieve Forest multiple use objectives, and maintaining riparian habitats.

Boise National Forest Timber Harvesting Five-Year Action Plan 1990-1995 (USDA, 1990c): Every year, the Boise National Forest updates their Five-Year Action Plan for harvesting on the forest. The crude volume of the proposed cut and the year projected for the harvest may change, as both are reevaluated at the time of the sale. The areal size and location of the sale doesn't usually change. The 1990-95 Action Plan for the Boise National Forest contains 18 prospective sales and cuts planned for the upper Boise River basin, and the estimated volume, acreage, location, and projected sale and cut years.

BLM Cascade Resource Management Plan (USDI, 1987): The Cascade Resource Management Plan was prepared in 1987 by the BLM with the intent of establishing a framework for managing their Cascade District over the next two decades. The basic purposes of this plan are: 1) to insure that the BLM lands are managed under the principles of multiple use and sustained yield; and 2) to insure that objectives and actions are responsive to the major issues and achieve an equitable and proper balance of resource use and protection.

As it impacts this basin, the plan has established management guidelines for the Boise Front ACEC that include restricting motorized vehicular use, regulating livestock grazing to maintain optimal habitat condition, not permitting any new roads to be built, and emphasizing native species management. In the Final EIS, the selected management objective emphasized preservation of significant natural resource features with moderate increases in commodity resource uses.

Northwest Conservation and Electric Power Plan (NWPPC, 1991): The Northwest Power Planning Council (NWPPC) originated with the 1980 Pacific Northwest Electric Power Planning and Conservation Act. The goal of the NWPPC's power plan is to ensure that the Pacific Northwest will have a reliable electricity supply well into the next century. The plan has several objectives: 1) to purchase more than 1350 megawatts of conservation and other low cost resources over the next 10 years; 2) to shorten the lead time for bringing new resources into the power system to improve flexibility; 3) to confirm costs and availability of additional resources; and 4) to encourage regulatory and other changes to facilitate plan implementation.

In addition to the 1350 megawatts of projected conservation energy, the Council recommends that BPA and the region's utilities begin siting, licensing, and designing facilities at cost-effective sites in the Northwest. It estimates that this would yield an additional 150 megawatts by 2000. The new projects must comply with the protected areas requirements (which are based exclusively on fish and

wildlife attributes) of the Council's Columbia River Basin Fish and Wildlife Program (below) and the Council's hydropower acquisition criteria.

Columbia River Basin Fish and Wildlife Program (NWPPC, 1987): As directed in the 1980 Power Act, in 1982, the Northwest Power Planning Council began to develop its Columbia River Basin Fish and Wildlife program. It represents a system wide approach to dealing with the affect of power production on the Columbia Basin's fish and wildlife. The program addresses: 1) salmon and steelhead; 2) resident fish and wildlife; and 3) general considerations (e.g., future hydropower development).

Salmon and steelhead no longer are able to migrate into the upper Boise River basin which means that the resident fish and wildlife facet of the program is the most directly used for this basin plan. Of greatest concern to the NPPC is development of mitigation plans for lost or altered fish and wildlife habitat with the development of hydroelectric dams and reservoirs.

Local Issues

Local issues were identified through the scoping process by the public, both at large and through the Advisory Group, and through federal and state agency input (Appendix B, p. B-1). Scoping was an ongoing process that entailed regular meetings of the Advisory Group and discussion with agency personnel. Throughout the planning process, issues emerged, were clarified, and prioritized. The result yielded, for the most part, the objectives of this basin plan (p. 38). At the initial Advisory Group meeting (May 23, 1991), the members began to discuss some of the more obvious issues that they felt needed to be addressed in this plan. A public issues meeting was held July 30, 1991 to which both the public and the Advisory Group were invited. Department staff distributed a survey questionnaire to help identify issues (see Public Issues Meeting, p. B-2). People were asked to consider the river basin attributes that they most valued and what they perceived to be the major threats to those attributes. That meeting was attended by 55 individuals, 35 of whom returned their surveys. Following that, the Water Resource Board issued a press release, soliciting comments from the public unable to attend the public issues meeting. The response resulted in a total of 44 surveys returned.

The (valued) basin attributes most frequently mentioned were water quality, quality recreation, free-flowing rivers, wilderness, and fish and wildlife (Table 3). Significant threats to the basin mentioned were population growth, dams and diversions, poor mining and logging practices, lack of recreational opportunities, and road construction (Table 4). Most of these contributions show that the main concern is maintenance of environmental, recreational and aesthetic qualities of the basin, while still being able to utilize the resources, such as timber and minerals. Most people

perceived hydropower development as a threat and free-flowing rivers as an attribute that was needed to maintain the primitive quality of the basin. Water quality was considered of critical importance in the basin because of the failure of Kirby Dam on the Middle Fork Boise River. At the time of the Public Issues Meeting, the future for Kirby Dam and its residual toxic sediments was not known.

Water Allocations and Projected Uses

Since January 1980, the IDWR has issued no water right permits for consumptive use of water during the period June 15 to November 1 on the Boise River and its tributaries above Lucky Peak Reservoir. In May 1992, a moratorium on most new ground and surface water uses was imposed by IDWR for the duration of the current drought. Water rights issued prior to 1980, upstream of Arrowrock and Lucky Peak, are summarized in Appendix C, Table 38, p. C-49.

All Arrowrock's active capacity of 286,600 AF has been allocated by the Bureau of Reclamation for irrigation (IDWR, 1974). Lucky Peak, on the other hand, has 111,950 AF allocated to irrigation companies or canal districts, and 152,300 AF that is allocated or reserved for stream flow maintenance, 50,000 AF of which IDFG can use (USACE, 1988a). Table 5 provides the breakdown of those allocations for both Arrowrock and Lucky Peak.

Table 3. Attributes Identified by the Public as Important for the Upper Boise River Basin.*

Water Quality	Watershed Management for Irrigation/Water Quantity
Recreation	Managed Forestry
Free-flowing Rivers/Protection/Instream Flows	Hydropower Site
Wilderness/Primitiveness	Mining Laws/Restrictions
Fishery	Few Roads/Good Road Maintenance
Wildlife	Water Conservation
Multiple-Use Land/Public Land	Healthy Native Vegetation
Scenic Value Preservation	Flood Control
Healthy Riparian Areas	Seclusion
Comprehensive Basin Plan/Management Monitoring	Hot Springs
Accessible from Major Urban Areas	

*Forty-four people responded, listing anywhere from 1 to 5 valued attributes each.

Table 4. Important Threats to the Resources of the Upper Boise River Basin Identified by the Public.*

Population growth: development, habitat abuse	Heavy Natural Resource Use
Dams and Diversions	No Monitoring of Conditions
Poor Mining Practices	Spread of Introduced Weeds
Poor Logging Practices	Open Pit/Heap Leach Mining
No Recreational Opportunities/Recreation Over-use	Outside Interests (Feds, CA,etc)
Road Building/Road Paving	Structures in Streambed
Erosion	Publicity
No Planning	Insufficient Flood Control
Increasing Power Costs	Reservoir Fluctuations (no minimum pool established)
No IWRB Action	Private Economic Gain Over Public Gain
Hazardous Wastes	Economics More Important Than Watershed Health
Poor Land Management	Sale of Private Land
Legal Red Tape	

*Forty-four people responded, listing anywhere from 1 to 5 threats each.

Table 5. Space Allocations in Arrowrock and Lucky Peak Reservoirs, 1988 Status (USACE, 1988a).

Name	Arrowrock	Lucky Peak
The Districts	200,816	
Nampa & Meridian Districts	55,055	
Pioneer Irrigation District (Phyllis)	21,018	16,000
Farmers Union Ditch Company	2,874	10,000
Settlers Irrigation District	1,778	10,000
Farmers Co-op Canal Company	1,227	
Ridenbaugh Canal Company	3,832	35,000
Ballentyne Ditch Company		1,300
Boise City Canal Company		1,000
Boise Valley Ditch Company		2,500
Bubb (South Boise Mutual)		500
Canyon County Water Company		6,000
Capitol View Irrigation District		300
Davis Ditch (Village of Garden City)		1,500
Eagle Island Water Company		7,650
Eureka Water Company No. 1		2,800
Little Pioneer (Pioneer Ditch Co.)		500
Middleton Irrigation Association		6,380
Middleton Mill Ditch Company		4,620
New Dry Creek Ditch Company		3,000
New Union Ditch Company		1,400
Rossi Mill (South Boise Water)		700
Thurman Mill		800
Idaho Fish & Game		50,000
TOTAL	286,600	161,950

Minimum Stream Flows

There are no minimum stream flows established in the upper Boise River basin. IDWR policy considers the basin above Lucky Peak Dam to be fully appropriated from June 15 to November 1. Because of the potential impacts of even nonconsumptive uses, the Board is considering application for minimum stream flows on key reaches (Final Actions and Recommendations #2, p. 57).

Water Quality

Throughout the planning process, the public indicated that the greatest attribute of the basin streams is the high water quality.

The federal Clean Water Act (section 319) requires states to develop Best Management Practices (BMP) to minimize pollution from nonpoint sources, such as timber harvesting and agriculture. The Idaho Forest Practices Act, Rules and Regulations, mandates that timber harvests must follow the BMP as established by the rules of the Act. If a stream reach is designated as a Stream Segment of Concern (SSOC) because of a timber harvest threat to water quality in the watershed, a Local Working Committee (LWC) is usually established by the Department of Lands. The role of the LWC is to review the BMP for the watershed and where appropriate, establish a site specific BMP. There are two SSOCs in the basin, the North Fork Boise River and Crooked River.

With the failure of Kirby Dam on May 26, 1991, the water quality of the Middle Fork Boise River and main Boise River was impacted. Historic mining activity above Kirby Dam, caused high levels of arsenic and mercury in the sediments that were impounded and now have been partially released into the Middle Fork. The Forest Service estimated that 90,000 cubic yards has washed down stream with 160,000 to 210,000 remaining behind the dam (McIntyre, 1991). Water, sediment, and fish sampling done after the Kirby failure by the DEQ found levels of both arsenic and mercury in the water exceeding accepted standard levels, and "hot spots" in the sediments. Fish tissue levels were not statistically different than fish sampled elsewhere in the basin (McIntyre, 1991). The unreleased sediments remaining above Kirby led to reconstruction of the dam during the winter of 1991-92.

Flood Control

Because of the lack of development in the basin, the potential for municipal and residential flood damage above Lucky Peak Dam is not extreme. The only serious concern for flood damage has

been near Idaho City. Flooding along Mores Creek drainage and tributaries, such as Elk Creek, has generally been due to a midwinter (frequently December) warm-temperature snowmelt, often combined with a rain-on-snow event. The historic mine tailings on Elk Creek have gradually displaced the stream causing it to shift westward, posing a potential flood problem. The debris can fill the channel during a flood, particularly at the Centerville Road bridge area, and divert additional floodflows back into Idaho City (FEMA, 1988). Beaver activity along Elk Creek has also been known to create minor flooding problems. Because Idaho City's water is supplied by Elk Creek, any flooding causes concern about the community's water quality.

Bear Run Creek, an intermittent tributary of Elk Creek, which runs through Idaho City, has exceeded its banks on several occasions (summer and winter) and flooded Main Street. Flooding of other small tributaries to Mores Creek, can be due to intense thunderstorms. Mores Creek has also been subject to ice jam flooding, particularly at the highway bridges. The state has recently been modifying some of these problem areas (FEMA, 1988).

Flood control below Lucky Peak Dam is dependent on the management of the three major dams in the basin. By an agreement between Corps of Engineers, Bureau of Reclamation, and the IDWR, the regulation objective discharge at Glenwood Bridge in Boise is 6500 cfs (USACE, 1988a). The spill at Diversion Dam can have flows up to 8000 cfs and the river will still be at 6500 cfs below town because of irrigation diversions.

The proposed Twin Springs project would increase the flood control space in the Boise basin by more than 30 percent according to the irrigation districts' study (Boise-Kuna Irrigation District et al., 1990). The study also states that with Twin Springs dam, the minimum combined flood control space in Lucky Peak and Arrowrock Reservoirs can be reduced from 165,000 to 132,000 AF, because of the additional space in a Twin Springs reservoir. During wet years, the increased storage including Twin Springs Reservoir, would limit flood damage resulting from discharges above the regulated 6500 cfs at Glenwood or from use of Lucky Peak emergency spillway. Since the dam was constructed (1955), there were 12 different years in which the flow at Glenwood exceeded 6500 cfs and 8 months (2 in 1974 and 1986) in which the average was in excess of 6500 cfs (USACE, 1988a). According to a study done in 1974 by the IDWR, the probability of a maximum regulated flow exceeding 6500 cfs in Boise is 30 percent (IDWR, 1974).

Flood control below Lucky Peak has created unnatural conditions on the lower Boise River that may actually lead to increased flood damage. With the prevention of the annual beneficial process of floodplain scouring, sediment deposition and vegetation growth have reduced the volume capacity of the channel. This means that in the arrival of a future flood, the damage to the ever-increasing development on the floodplain could be extensive. Secondly, there is serious concern

among plant ecologists that the cottonwoods are not sexually reproducing because the seedbed for germination is poor due to the lack of flood-related deposition from overland flow or flood events (Tiedemann, 1991).

River Protection

Historic and Existing River Protection

Northwest Power Planning Council (NWPPC) Protection: The NWPPC Columbia River Basin Fish and Wildlife protection program identifies those river reaches that warrant protection against any future hydropower development (NWPPC, 1990). The NWPPC designated 95 distinct reaches on 38 separate streams in the basin for protection (Table 6). This is based exclusively on their fish and wildlife attributes. The information the Council uses to make their designations is based on recommendations from several organizations including the USFS, BLM, indian tribes, and local interests. The IDFG manages the data base and recommends most updates.

Table 6. Northwest Power Planning Council's Protected Areas Designations, Upper Boise River Basin (Allen et al., 1986).

Name	Reach	Name	Reach
Mores Creek and Main Boise River Watershed		**Middle and North Fork Boise Watershed**	
Boise River	Lucky Pk. Dam to confluence North and Middle Forks	Middle Fork Boise River	Confluence with North Fork Boise to Headwaters
Mores Creek	Lucky Peak Res. to headwaters	Browns Creek	Mouth to headwaters
Robie Creek	Lucky Peak Res. to headwaters	Roaring River	Mouth to headwaters
Daggett Creek	Mouth to headwaters	Roaring River, E FK.	Mouth to headwaters
Smiths Creek	Mouth to headwaters	Hot Creek	Mouth to headwaters
Grimes Creek	Mouth to headwaters	Blackwarrior Creek	Mouth to headwaters
Macks Creek	Mouth to headwaters	Queens River	Mouth to headwaters
Granite Creek	Mouth to headwaters	Little Queens River	Mouth to headwaters
Elk Creek	Mouth to headwaters	King Creek	Mouth to headwaters
Bannock Creek	Mouth to headwaters	Yuba River	Mouth to headwaters
Deer Creek	Lucky Peak Res. to headwaters	Decker Creek	Mouth to headwaters
Grouse Creek	Lucky Peak Res. to headwaters	Grouse Creek	Mouth to headwaters
Willow Creek	Mouth	Sawmill Creek	Mouth to headwaters
Wood Creek	Mouth to headwaters	French Creek	Mouth to headwaters
Cottonwood Creek	Lucky Peak to headwaters	Meadow Creek	Mouth to headwaters
Logging Gulch Creek	Mouth to headwaters	Rabbit Creek	Mouth to headwaters
Browns Creek	Mouth to headwaters	Crooked Creek	Mouth to headwaters
Sheep Creek	Mouth to headwaters	Big Owl Creek	Mouth to headwaters
		Bear Creek	Mouth to headwaters
		Johnson Creek	Mouth to headwaters

Federal Wild & Scenic River System: The Boise National Forest 1990 Land and Resource Management Plan lists 11 river segments (segments = reaches) in the basin that they propose to study for their suitability to be eligible for inclusion into the national Wild & Scenic Rivers System (Table 7). In order to be eligible for inclusion, the segment must be both 1) free-flowing, and 2) possessing one or more outstandingly remarkable values. Until eligibility studies are completed, the segments are managed to protect outstanding values (USDA, 1990a).

On February 14, 1991, Governor Andrus signed a memorandum of understanding with the Forest Service and Bureau of Land Management stating that the state would coordinate its future river planning efforts with Federal Wild & Scenic Rivers studies. To this end, the IDWR and BNF have attempted to coordinate their studies on several coincident reaches (Middle Fork Boise, Yuba and Roaring Rivers). The only limitations have been that IDWR began this basin study well before the BNF and planned for legislative review in 1993. Consequently, the extent of collaboration has been limited primarily to sharing data and planning resources.

Table 7. Streams Proposed for Study as Federal Wild and Scenic Rivers, Upper Boise River Basin (USDA, 1990).

Stream	Segment	Potential Designation	Potential Outstandingly Remarkable Values
Crooked River	Whoop-Em-Up Cr. to N.F. Boise	Wild	Fish
Bear River	Headwaters to N.F. Boise	Wild	Wildlife
N.F. Boise River	Wilderness Boundary to Johnson Cr.	Recreational	Wildlife, Fish, Natural Features, Recreation
N.F. Boise River	Johnson Cr. to Hunter Cr.	Wild	Wildlife, Fish, Natural Features, Recreation
N.F. Boise River	Hunter Cr. to Rabbit Cr.	Recreational	Wildlife, Fish, Natural Features, Recreation
N.F. Boise River	Rabbit Cr. to M.F. Boise R.	Wild	Wildlife, Fish, Natural Features, Recreation
M.F. Boise River	Forest Boundary to Willow Cr.	Recreational	Wildlife, Fish, Natural & Cultural Features
Yuba River	Headwaters to Trail Cr.	Wild	Fish
Yuba River	Trail Cr. to M.F. Boise	Recreational	Fish
Roaring River	Headwaters to where river crosses FS Rd. 255	Wild	Wildlife, Natural Features
Roaring River	Where river crosses FS 255 to M.F. Boise R.	Recreational	Wildlife, Natural Features

Scenic and Recreational Values

Preservation of scenic and recreational values within the upper Boise River basin was one of the issues most often cited by the public during the planning process. Related attributes identified in the scoping process included wilderness, proximity to populations, fisheries, wildlife, access, solitude and hot springs. Potential impacts and issues cited relative to these values include over-use, increased population, maintenance needs of existing facilities, need for more developed facilities, and protection of primitive areas. The Boise National Forest predicts recreational use on the forest will increase by 14.78% for the next decade (1990-2000) and 12.90% for the following decade (2000-2010) (USDA,

1990a). Recreational activity on forest lands within the basin for 1991 increased by 2.2% from the previous year.

Interviews with various recreational users including campers, hikers, trail bikers, and fishermen have suggested that scenery is the major reason for selecting an area to recreate. A 1991 recreation study conducted in the Boise River system found 59% of those surveyed cited the aesthetic values of the river corridors as the reason for visiting the area (Long, 1991). A 1987 angler survey found fisherman placed high values on the "beauty of an area" and water quality when selecting an area to fish (Reid, 1989). All of these surveys and public response during the planning process indicate the importance of aesthetics to the recreation experience.

From the standpoint of aesthetics in river corridors, immediate threats could include changes in water quality or quantity, development in land areas immediately adjacent to the river corridors, impacts to riparian areas, and erosion of streambanks. Many of these potential impacts may occur from resource utilization such as logging, mining, hydropower construction, or development of private land changing the natural character of the landscape. Yet, recreation use itself can cause substantial aesthetic impacts through lack of developed facilities and subsequent over use leading to degradation of riparian areas and streambanks. Development of additional recreation sites will also change the natural setting valued by many to a more developed character.

The need for expansion of developed campgrounds and trail opportunities within the basin was cited often by agencies and users during the planning process. This is especially critical in river corridors such as the Middle Fork Boise River and North Fork Boise River where dispersed camping use exceeds available developed facilities resulting in adverse recreational impacts. Provision of developed facilities may reduce impacts to riparian areas and erosion to fragile streambanks. Any additional developed recreation sites should to be balanced with preserving the more pristine natural camping and recreational experiences preferred by many. This may be accomplished by locating campgrounds in areas that already receive heavy dispersed use because of accessibility. A need exists for environmental education regarding low impact recreational activities in the river corridors.

Substantial trail use occurs in the basin, particularly along streams and river corridors. Many trails are poorly maintained and signed. Sedimentation and riparian impacts are likely from stream crossings and trail erosion. The public and SCORP have identified trail maintenance and expansion of trail facilities as a high priority need.

Effects to recreational resources may occur from resource utilization in the basin. Timber and mining occur within the basin. Short- and long-term effects are possible from these activities

including changes in landscape aesthetics, increased traffic and noise on basin roads. Hydro project proposals will result in permanent impacts to some recreational activities.

If constructed, the Twin Springs project could modify boating activities on portions of the mainstem, North and Middle Forks Boise River. Given reports of boating conflicts and safety issues on Lucky Peak, there may be additional need for this type of boating (Hoedt, 1992). Twin Springs would not be a viable alternative for meeting flatwater boating needs, because access conditions would make it less attractive than Lucky Peak. However in low water years, the Twin Springs project may supplement water levels at Lucky Peak extending boating use and providing more surface area to reduce boating conflicts (Boise-Kuna Irrigation District et al., 1990). More study would be necessary to find the current cause of conflicts on Lucky Peak and whether Twin Springs is a feasible alternative to resolving this problem.

Whitewater boating opportunities for novices on the main Boise River and Middle Fork Boise River and advanced user opportunities available on the North Fork Boise River from Rabbit Creek to the confluence would be reduced if the Twin Springs project was found feasible and constructed. Beginning level opportunities are available further upstream on the Middle Fork. However, the advanced stretch on the North Fork Boise River could not be replaced in the immediate vicinity of Boise. A more advanced whitewater experience is available on the South Fork Boise; however, this stretch already receives significant use (Lucachick, 1992). Whitewater experiences near Boise of similar challenge with similar visual and solitude characteristics are the unroaded section of the South Fork Salmon, and the unroaded portion of the Deadwood River (Lucachick, 1992).

Basin Objectives

The following objectives are based on the issues and concerns identified for the Basin:

1. Maintain and improve the water quality of the streams and lakes in the basin. Particular attention needs to be paid to the Middle Fork Boise River and North Fork Boise River, Crooked River, Mores Creek, Grimes Creeks, and Beaver Creek.

2. Maintain high quality recreation typically associated with free-flowing and unpolluted rivers.

3. Insure that fish and wildlife habitat, particularly along the Middle and North Forks Boise River, is not further degraded by reduced water quality and habitat destruction.

4. Encourage multiple-use management practices outside the Sawtooth Wilderness Area, recommended Ten Mile Wilderness Area, and protected river corridors.

5. Encourage sound, state-of-the-art watershed and riparian area management practices to insure water quality and groundwater recharge, and healthy ecosystems.

6. Encourage good land stewardship through implementation of BMPs for forestry, mining, and grazing.

7. Protect outstanding free-flowing rivers in the basin through either state protection or minimum instream flows.

8. Protect scenic values in the basin, particularly in areas that are threatened such as Mores Creek which parallels State Scenic Highway 21.

9. Protect potential hydropower sites, such as Twin Springs, from uses and threats (e.g., upstream diversions) that may compromise that potential.

10. Maintain the primitive character of the basin, particularly along the Middle and North Forks Boise River. Existing roads should be maintained, particularly access to Atlanta, but new road building and upgrading, and new development, should be limited.

11. Continue to assess opportunities for development of upper Boise River basin water resources for beneficial use within and outside the basin.

SUITABILITY ANALYSIS OF RIVER REACH DESIGNATIONS

An analysis of the suitability of river reaches for inclusion in a state protected river system consists of two steps: 1) a screening process followed by 2) an examination of management alternatives.

Screening Evaluations

Individual reach boundaries are based on the following: 1) USGS reach designations (largely based on natural hydrographic distinctions), and 2) commonalities defined by the screening results. Reaches that fall entirely or largely within the Sawtooth Wilderness Area were not considered because they receive *de facto* protection being within an established Wilderness Area.

Waterways possessing outstanding fisheries, wildlife, recreation, aesthetic or geologic resource values are eligible for state designation as natural or recreational waterways (Idaho Code, Sec. 42-1731). The objective of the screening process is to identify river corridors possessing these outstanding resource values. This was accomplished by evaluating aesthetic, biologic, and recreation data for importance using one of three categories - very high, high, or moderate to low. Resources evaluated as very high are considered to possess *outstanding resource values*.

Outstanding resources are defined as: *unique*, *highly-valued*, and/or *extremely sensitive resources*. This may be shown by 1) legal protection excluding or limiting development; 2) special agency management designations protecting the resource; 3) significant public concern voiced for its protection; and/or 4) resources susceptible to adverse impacts with little possibility of mitigating these impacts. Specific criteria for aesthetic, biologic and recreation resources to determine outstanding resource values were developed for the Upper Boise River Basin Plan and are described below. River segments with at least one outstanding resource value are identified in Plate 15.

Screening Evaluation for Biological Resources (Fish, Wildlife, and Biological Communities)

Data collected for the upper Boise River basin biological evaluation focused on three areas: fisheries, wildlife and special management areas or unique biological communities. The data were either provided by fish and wildlife biologists with state and federal agencies or obtained directly from the professional literature.

Evaluation Criteria: Fish and wildlife species that are listed by the U.S. Fish and Wildlife Service as threatened, endangered or candidates were considered in screening evaluation as were species listed by the Conservation Data Center (CDC--formerly Idaho Natural Heritage Program). The CDC evaluates sensitive species in regard to their global status and their local (state) status, then ranks them from 1 (most threatened) to 5 (least threatened). The combined global and local values were calculated so that the evaluation would not be biased by either local or global status.

Federal and CDC listed fish and wildlife species of concern that were considered in this plan are listed in Table 8. Species listed by the USFWS are either endangered, threatened, or candidate species.

Table 8. USFWS Threatened, Endangered, and Candidate Species and Conservation Data Center's Global and State Ranks for Sensitive Species in the Upper Boise River Basin (Moseley and Groves, 1992).

Species	USFWS Listing	Global Rank*	State Rank*
Fisher (Martes pennanti)		5	1
Wolverine (Gulo gulo)	**candidate**	4	2
Fringed myotis bat (Myotis thysanodes)		5	1
River otter (Lutra canadensis)		5	4
Gray wolf (Canis lupus)	**endangered**	4	1
Bald eagle (Haliaeetus leucocephalus)	**endangered**	3	3
White-headed woodpecker (Picoides albolarvatus)		5	1
Goshawk (Astur atricapillus)	**candidate**	4	4
Flammulated owl (Otus flammeolus)		4	3
Bull trout (Salvelinus confluentus)	**candidate**	4	2
Westslope cutthroat trout (Oncorhynchus clarki)		5	2
Tiehm's rush (Juneus tiehmii)		5	2
Pine woods cryptantha (Cryptantha simulans)		4	1
Tall swamp onion (Alium validum)		4	1
Wilcox's primrose (Primula wilcoxiana)	**candidate**	2	2
Silvery whitlow grass (Draba argyraea)	**candidate**	3	3
Idaho goldenweed (Haplopappus aberrans)	**candidate**	3	3
Giant helleborine (Epipactis gigantea)		4	3
Idaho douglasia (Douglasis idahoensis)		2	2

(**bold type** are those species listed by USFWS)

* CDC ratings

1 = critically imperiled because of extreme rarity or because of some factor of its biology making it especially vulnerable to extinction

2 = imperiled because of rarity or because of other factors demonstrably making it very vulnerable to extinction

3 = either very rare and local throughout its range or found locally in a restricted range or because of other factors making it vulnerable to extinction

4 = apparently secure, though it may be quite rare in parts of its range, especially at the periphery

5 = demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery

Fisheries: The attributes of the fishery resource that were considered were habitat, abundance, and sensitive fish species. The Habitat Condition Index (HCI) is a fish habitat evaluation method used primarily by the Forest Service that considers streambank stability, streambank cover,

stream flow, water quality, and sediment. A percentage value is calculated and anything above 85% is considered very high quality habitat, between 80-84% is considered high quality habitat, and below 80% moderate to low.

Idaho Department of Fish and Game fisheries biologists describe a very high population abundance of wild rainbow trout density as having greater than 10 juveniles or 4 adults per 100 m^2 of stream, a high abundance would range from 4-10 juveniles or 2-4 adults, and anything below that would constitute a moderate to low abundance.

The sensitive fish species listed in this basin are the bull trout (formerly called Dolly Varden) which is listed as a candidate, and the cutthroat trout. Because the bull trout habitat is cosmopolitan in the basin, being a candidate, would give every reach in the basin a high rating. The cutthroat trout has been planted in the basin and probably not threatened. Consequently, the more discriminatory criteria of habitat and population abundance were used.

Wildlife: A very high wildlife evaluation for sensitive or game species (mule deer, elk) would require that the most critical habitat is located on or adjacent to their breeding grounds or fawning, calving or nesting areas. Winter roosting areas for bald eagles would be given a very high evaluation. Also included would be federal threatened and endangered species or CDC species with combined global and state values no greater than 4 (Table 8). Wildlife ranges have been mapped by USFS wildlife biologists for the entire Boise N.F. Wintering areas for elk, deer, and mountain goat were designated high. USFWS Candidate species or CDC species with combined values of 5 or 6, were given a high evaluation. CDC species with combined values greater than 6 were designated moderate to low.

Unique or Protected Communities: These areas are usually managed by federal and state agencies and include: Research Natural Areas (RNA), Areas of Critical Environmental Concern (ACEC), Wildlife Management Areas (WMA), Wilderness Areas (WA), Special Interest Areas (SIA), or wetlands listed by the USFWS National Wetland Inventory (NWI), or other recognized inventory.

Special communities that are evaluated as very high include designated wetlands, Research Natural Areas, Wildlife Preserves, or Wilderness Areas (existing or recommended). The EPA has identified the North Fork Boise River as a "priority wetland" but the USFWS National Wetland Inventory and the State Comprehensive Outdoor Recreation Plan (SCORP) have not yet identified and designated any wetlands in the basin. However, their inventories are not finished and therefore the possibility exists that the basin contains additional valuable wetlands. Special communities that were evaluated as high include Special Interest Areas (USFS designation), Areas of Critical Environmental Concern (BLM designation) or IDFG Wildlife Management Areas.

Results: The results of the biological evaluation of the basin are presented in Table 9 and illustrated in Plate 12 (map pocket). The plate depicts river basin areas and stream reaches categorized as very high, high, and moderate. Table 9 summarizes specific resources satisfying these criteria.

Screening Evaluation for Aesthetic Resources (Scenic Values and Natural Features)

Data collection for the upper Boise River basin aesthetic analysis identified scenic landscape values, viewer characteristics, and agency aesthetic management objectives summarized in the resource summary section and described in more detail in Appendix C. The aesthetic evaluation identified landscapes: 1) possessing outstanding scenic values; 2) viewed from the most sensitive viewpoints (see Appendix C, p. C-21; viewer characteristics); and 3) managed specifically to protect scenic values. Aesthetic resources were evaluated as very high, high, or moderate to low (Table 10 and Plate 13).

Evaluation Criteria: Aesthetic resources evaluated as very high include landscapes with outstanding or unique scenic qualities, viewsheds from extremely sensitive viewpoints, and landscapes managed to protect the aesthetic values of the area. These are resources which are easily impacted with little potential to mitigate.

Landscapes evaluated as very high are characterized by unusual, distinctive, unique or outstanding scenic values (Appendix C, p. C-20). Landscapes so identified are considered the most outstanding scenery in the basin.

Identification of extremely sensitive viewpoints was accomplished through review of inventory data compiled by the Boise National Forest. Additional viewpoints were added to the inventory, and sensitivity levels reviewed and revised to reflect current sensitivity of the user. Extremely sensitive viewpoints were identified as viewpoints where the activity is highly dependent on the aesthetic environment, and visual impacts would be difficult to mitigate. These were evaluated as very high.

Agency aesthetic resource management objectives were reviewed. Landscapes managed to allow only ecological changes to the characteristic landscape indicate very high aesthetic resource values. Additionally, special agency designations which are instituted to specifically, or in combination with other resource objectives, protect aesthetic resources were examined.

Table 9. Screening Evaluation Criteria and Results for Biological Resources, Upper Boise River Basin.

Very High	Boise Basin	High	Boise Basin	Moderate to Low	Boise Basin
Fisheries		Fisheries		Fisheries	
USFS Current Habitat Condition Index (HCI) rating of 85 or greater or Rainbow adult density greater than 4.0 fish/100 m2 or Rainbow juvenile density greater than 10.0 fish/100 m2 or Federal LE species or Conservation Data Center (CDC) Global and State rating no greater than 4 OR	Sheep Creek (12.01)	USFS HCI rating 80-84 or IRIS high abundance rating or Rainbow adult density 2-4 fish/100 m2 or Rainbow juvenile density 4-10 fish/100 m2 or Federally Listed Candidate habitat or Conservation Data Center (CDC) Global and State rating 5 or 6 OR	Roaring River (8.6), Yuba River (4.4), Rabbit Creek (4.5), Johnson Creek (8.6) Bull trout	USFS HCI rating below 80 or Rainbow adult density less than 2.0 fish/100 m2 or Rainbow juvenile density less than 4.0 fish/100 m2 or Conservation Data Center (CDC) Global and State rating greater than 6 OR	M. Fork Boise (all sections) N. Fork Boise (all sections) Queens River (2.9), Crooked River (2.9) Bear River (1.6)
Wildlife		Wildlife		Wildlife	
Critical habitat for natives and migrants (federal listed species; nesting, roosting, calving, etc.) or Federal LE species or Conservation Data Center (CDC) Global and State rating no greater than 4 OR	Bald eagle, Gray wolf	Winter range for native game or nongame species or Federal Candidate species or Conservation Data Center (CDC Global and State rating 5 or 6 OR	Elk, deer, mt. goat winter ranges Wolverine, Fisher, White-headed woodpecker, Fringed myotis bat	Conservation Data Center (CDC) Global and State rating greater than 6	Flammulated owl, Goshawk, River otter, Westslope cutthroat trout
Plants	Wilcox's primrose, Idaho douglasia	Plants	Tall swamp onion, Silvery whitlow grass, Idaho goldenweed	Plants	Giant helleborine, Tiehm's rush
Unique or protected communities		Unique or Protected Communities			
Wetlands: EPA or NWI or SCORP listing or Research Natural Area or Wildlife Preserve or Wilderness Area/ Recommended Wilderness	Bannock Creek RNA, N. Fork Boise RNA (p), Roaring River RNA (p), Sawtooth Wilderness Area, Ten Mile Wilderness Area (recommended)	Special Interest Area/ Area of Critical Environmental Concern or State Wildlife Management Area	Boise Front WMA Boise Front ACEC		

Table 10. Screening Evaluation Criteria and Results for Aesthetic Resource, Upper Boise River Basin.

Evaluation Class	Criteria	Upper Boise River Basin Plan
Very High	Landscapes possessing outstanding scenery or unique, rare features. Viewpoints where viewers are extremely sensitive to changes in the visual landscape. Agency management restricting visual change to ecological occurrences.	Landscapes with class A scenic values (Appendix C, p. C-20) Sawtooth Wilderness Area Recommended Ten Mile Wilderness Area
High	Scenic landscapes visible within the foreground of high sensitivity viewpoints. **and** Agency management requiring visually compatible or harmonious changes to landscape.	Landscapes with class B scenic values viewed from foreground viewshed of viewpoints with high sensitivity. **and** VQO retention (Appendix C, p. C-22) VRM class II (Appendix C, p. C-22)
Moderate to Low	Scenic landscapes viewed beyond foreground views. Landscapes with minimal scenic variety. Landscapes viewed from moderate to low sensitivity viewers. Agency management allowing visual changes that may visually dominate the landscape.	Landscapes with class B scenic values and viewed from the middleground and beyond from viewsheds. Landscapes with class C scenic values. Landscapes viewed from viewpoints with moderate to low sensitivity. VQO - Modification or maximum modification. VRM Class IV

Rivers identified as eligible for wild and scenic river suitability analysis received no special consideration in the aesthetic analysis for the upper Boise River basin plan. The eligibility finding serves an initial inventory function highlighting the need for detailed suitability studies. These detailed studies have not been completed, and therefore, no information is provided to support suitability.

Resources with high aesthetic values are not unique or outstanding regionally, but are highly valued by the public. Although agency management may not prohibit development, the resource is sensitive to disturbance, and changes could not easily be mitigated.

High aesthetic resource values in the Upper Boise basin include scenic landscapes (Class B) visible from the foreground (up to 1/4-1/2 mile) of highly sensitive viewpoints. Activities within the foreground viewshed are more likely to result in high visual impacts because of the proximity to the viewer. Consequently, impacts are also less likely to be mitigated successfully. Agency management requiring visual change be compatible with characteristic landscape patterns also signifies high viewer

sensitivity and aesthetic values. Mitigation of visual impacts in these management areas are more difficult.

The remaining basin was categorized as moderate to low for aesthetic values. This encompasses lands which possess landscape scenic values common to the region or with minimal variety (Class B or C), as seen by viewers, and/or viewed at a distance (beyond 1/4 to 1/2 mile) from highly sensitive viewpoints are less likely to experience significant visual impacts, and therefore, were evaluated as moderate to low.

Results: Plate 13 depicts the river basin areas categorized as very high, high, or moderate to low for aesthetic values. Table 10 summarizes these resource values.

Screening Evaluation for Recreation Resources

The recreation evaluation focused on opportunities occurring within specific river corridors. The evaluation entailed identification of recreation units; analysis of the recreational diversity and importance for each recreation unit. Categorization of a final evaluation value was done for each recreation unit (very high, high or moderate to low).

Rivers and streams within the basin were grouped into discrete recreation units. These units were delineated on the basis of landform, hydrology, land use patterns, visual character, and information received from the Advisory Group and agencies. A total of 33 recreation units were identified for the following drainages: main stem Boise, North and Middle Forks Boise, Mores Creek, Grimes Creek, Roaring River, Yuba River, Bear River, Queens River, Sheep Creek, Black Warrior Creek, Swanholm Creek, Johnson Creek, and Phifer Creek (Plate 14).

Evaluation Criteria: Recreational diversity is a measure of the variety of recreational activities available in the recreation unit. Four criteria were assessed to arrive at a diversity value -- land-based recreation activities, water-based recreation activities, natural features and access level.

Land-based and water-based recreation activities occurring within the river corridor were identified through review of developed facilities described in agency documents and maps; communications with various agencies and user groups; and review of a recreational survey conducted in the summer of 1991 along the main, North and Middle Forks of the Boise (Long, 1991). Land-based activities include camping, hiking, or hunting. Water-based recreation includes fishing, swimming and boating.

Natural features were identified which enhance recreation opportunities or experiences. These include water characteristics influencing the type of boating activity possible; aesthetic values of the unit; special wildlife habitat characteristics providing increased opportunities for wildlife observation; and general viewing characteristics within the river corridor.

Level of access was described to provide information regarding the types of recreational activities possible, potential use volumes, and opportunities for a primitive versus more developed recreation experience. Assessment of land and water-based recreation activities, natural features and access levels resulted in a diversity rating for the recreation unit of very high, high, moderate or low.

Recreational importance was determined through review of four criteria: 1) unique or rare features which enhance the recreation experience were identified, i.e., unusual landforms, hot springs, water falls or rapids, or significant fisheries; 2) public concern for the recreational value of the unit was determined from public and advisory group input, and agency consultation, 3) use volume for a recreation unit was based on recreational survey data collected in the summer of 1991 and agency consultation, and 4) special designations or agency recreation management objectives were reviewed. The compilation of these four criteria resulted in an importance rating of very high, high, moderate, or low.

A final evaluation class for each recreation unit was based on an assessment of the diversity and importance of recreational opportunities. Final evaluation classes possible include very high, high, and moderate to low.

A recreation unit evaluated as very high fulfills at least one of the following: a) provides outstanding recreation opportunities encompassing a great diversity of recreational activities; b) provides a unique or rare experience within the region or basin; c) receives the highest use; and/or d) possesses an agency designation indicating national or regional significance.

A recreation unit evaluated as high is characterized by river segments a) receiving high use but providing opportunities typical for the region; b) providing a moderate diversity of recreational opportunities; and/or c) having an agency recommended designation indicating the national or regional significance of the recreation resource.

Moderate to low designations define those river segments with typical recreational opportunities and moderate to low use. Numerous stream segments did not receive recreation evaluation classes because insufficient data were available to complete an analysis.

Results: Recreation evaluation criteria and the results of the recreation evaluation are summarized in Table 11 and displayed in Plate 14. Specific recreational features of these units are summarized in the Department's planning files.

Resource and Development Summaries of Outstanding Reaches

The reaches in the basin that emerged from the screening process with at least one outstanding value, whether it be biological, aesthetic, or recreational are described in Table 12 and Plate 15.

Management Alternatives

The suitability analysis process involves comparing several different management alternatives and developing a single alternative that best meets the objectives of the basin plan. Four alternatives were prepared, ranging from no action to protection of all river reaches possessing outstanding resource values. These four alternatives (A-D), which were discussed by the Advisory Group, are presented in Appendix D, p. D-1. Maps of each alternative are available for review in IDWR files.

Table 11. Recreation Evaluation Criteria and Screening Results, Upper Boise River Basin.

Evaluation Class	Criteria	Recreation Units
Very High	Significant recreational opportunities available as indicated by a great diversity of activities including unique or rare experience; highest use areas; or agency **designation** indicating the national or regional significance of recreational opportunities.	• River Segments within Sawtooth Wilderness • Sheep Creek (William Pogue National Recreation Trail) • North Fork Boise from Black Rock to Troutdale - Continuous Class IV whitewater in roadless setting • North Fork Boise from Swanholm Road to Johnson Creek - Unroaded segment of "highest-valued fishery resource" • North Fork Boise from Black Rock to Barber Flat and Boise from Willow Creek to Troutdale - Highest recreational use volume
High	River segments with a high use volume and moderate recreation diversity or recreation opportunities typical for the region; or agency **recommended designation** indicating the national or regional significance of the recreation resource.	• River segments within Recommended Ten Mile Wilderness • Sections of the North and Middle Forks Boise - High diversity • Lucky Peak - High diversity • Mores Creek (above Idaho City) - High diversity • Swanholm Creek - High diversity • Crooked River (two segments) • Roadless stretch of Bear River
Moderate to Low	River segments with low use volume and providing recreational opportunities typical and abundant within the region.	• Mores Creek (below Idaho City) • Grimes Creek • Arrowrock Reservoir • Yuba River • Roaring River • Portion of Bear River
Unknown	Insufficient data to evaluate.	• Portion of Crooked River • Middle Fork Roaring River • Black Warrior Creek

Table 12. Resource and Development Summaries of Outstanding Reaches, Upper Boise River Basin.

Reach	Outstanding Values	Development Potential
Boise River (Lucky Peak Dam to North and Middle Fork confluence)	bald eagle winter roosting habitat outstanding recreational value above Arrowrock reservoir (2nd most popular segment in 1991 IDPR recreation study) high recreational diversity NWPPC protection eligible for Wild & Scenic River study	3 geothermal hot springs in reach 3 inactive hydropower study sites on reach 1 inactive reservoir study site roaded entire reach
Sheep Creek (Main Boise to headwaters)	outstanding juvenile wild rainbow trout abundance William Pogue National Recreation Trail NWPPC protection	
Middle Fork Boise River (North Fork Boise confluence to Roaring River)	bald eagle winter roosting habitat past Roaring River IDFG manages as quality wild trout fishery NWPPC protection eligible for Wild & Scenic River study	8 geothermal hot springs along reach roaded entire reach 2 inactive hydropower study sites on reach recreational dredging
Roaring River (East and Middle Forks confluence to headwaters)	outstanding scenic quality in headwaters (Trinity Lakes) eligible for Wild & Scenic River study candidate Research Natural Area in reach NWPPC protection	
Phifer Creek (upper portion to headwaters)	outstanding scenery	roaded
Hot Creek (upper portion to headwaters)	outstanding scenery NWPPC protection	
Black Warrior Creek (Middle Fork confluence to headwaters)	outstanding fish habitat NWPPC protection	area has mining potential for several types of ore deposits
Queens River (Middle Fork confluence to Sawtooth Wilderness Area boundary)	outstanding fish habitat recreational access to Sawtooth Wilderness Area NWPPC protection	roaded entire reach
Yuba River (Middle Fork to confluence with Decker Cr.)	outstanding fish habitat eligible for Wild & Scenic River study NWPPC protection	roaded reach mining potential as identified by Atlanta Gold Corp.
Yuba River (Decker Cr. to headwaters)	outstanding fish habitat eligible for Wild & Scenic River study outstanding scenic quality in headwaters NWPPC protection	mining potential as identified by Atlanta Gold Corp.
Decker Creek (Yuba R. to headwaters)	outstanding fish habitat outstanding scenic quality in headwaters NWPPC protection	roaded lower portion mining activity and potential as identified by Atlanta Gold Corp.

Table 12. Resource and Development Summaries of Outstanding Reaches, Upper Boise River Basin.

Reach	Outstanding Values	Development Potential
North Fork Boise River (Middle Fork Boise confluence to Rabbit Cr.)	outstanding fish habitat advanced whitewater through unroaded canyon eligible for Wild & Scenic River study candidate Research Natural Area in reach NWPPC protection	
North Fork Boise River (Rabbit Cr. to Little Owl Creek)	outstanding fish habitat from Rabbit Cr. to Roaring River (less than half of reach) outstanding recreational value and diversity (contains highest used rec. seg.) eligible for Wild & Scenic River study NWPPC protection	roaded entire reach 3 inactive hydropower study sites on reach
North Fork Boise River (Hunter to Johnson Creek)	outstanding fish habitat outstanding scenery unroaded, wilderness quality eligible for Federal Wild & Scenic River study NWPPC protection recommended Ten Mile Wilderness	3 inactive hydropower study sites on reach area has mining potential for several types of ore deposits
North Fork Boise River (Johnson Creek to Sawtooth Wilderness Area boundary)	outstanding fish habitat outstanding scenery eligible for Federal Wild & Scenic River study NWPPC protection recommended Ten Mile Wilderness	area has mining potential for several types of ore deposits
Crooked River (North Fork confluence to FS road 384)	outstanding fish habitat eligible for Wild & Scenic River study NWPPC protection	
Crooked River (Above FS road 348 to headwaters)	outstanding fish habitat roaded portion of reach recommended Ten Mile Wilderness Area NWPPC protection	
Beaver Creek (east fork portion to headwaters)	elk calving area highway 21 runoff sediments impact Crooked River NWPPC protection	roaded
Edna Creek (upper portion to headwaters)	elk calving area	
Bear River (North Fork Boise confluence to FS road 348)	outstanding fish habitat NWPPC protection eligible for Wild & Scenic River study	roaded for a very short portion

Table 12. Resource and Development Summaries of Outstanding Reaches, Upper Boise River Basin.

Reach	Outstanding Values	Development Potential
Bear River (from FS road 348 to headwaters)	outstanding fish habitat outstanding scenic quality recommended Ten Mile Wilderness Area NWPPC protection eligible for Wild & Scenic River study	
Bear Creek (Bear River confluence to headwaters)	outstanding fish habitat NWPPC protection outstanding scenic quality recommended Ten Mile Wilderness Area	roaded reach
Johnson Creek (North Fork confluence to Sawtooth Wilderness Area boundary)	outstanding fish habitat outstanding scenic quality access trail to Sawtooth Wilderness Area NWPPC protection recommended Ten Mile Wilderness Area	area has mining potential for several types of ore deposits
Elk Creek (Deer Creek to Headwaters)	outstanding fish habitat elk calving area in headwaters NWPPC protection	roaded most of the reach water supply for Idaho City active mineral exploration