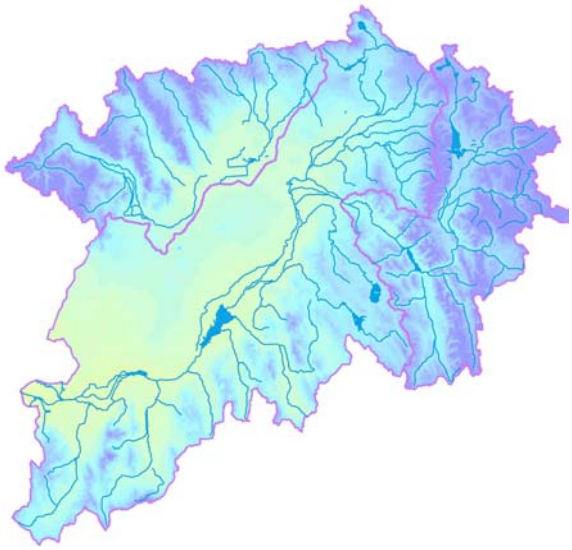
Draft Management Plan
Upper Snake Province

Submitted To

The Northwest Power and Conservation Council
Portland, Oregon



Prepared by

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Introduction

Upper Snake Province Plan

The overall goal of the Upper Snake Province (USP) Plan is to protect, mitigate, and enhance aquatic and terrestrial habitats, species assemblages, and ecological functions in the USP over the next 10 to 15 years. The Plan will help direct project funding to the Upper Snake Closed, Snake Headwaters, and Upper Snake Subbasins as part of the Northwest Power and Conservation Council's (NPCC) Fish and Wildlife Program (FWP). The function of the FWP is to mitigate damages to fish and wildlife caused by the development and operation of the Columbia River's hydropower system. The goal of the USP Plan encompasses more than fish and wildlife corrective actions by including other issues such as urban sprawl, water diversions, and public land management issues. By documenting a more inclusive list of ecological health issues beyond hydropower effects on fish and wildlife, the Plan will give planners and scientists a broader perspective for effecting change in the subbasins, while providing an opportunity for leveraging resources within their respective programs.

The USP Plan covers three of the 62 subbasins in the Columbia River Basin — the Upper Snake Closed, Snake Headwaters, and Upper Snake Subbasins. These three subbasins compose 14 percent of the land area and 14 percent of the surface water runoff within the Columbia Basin. These subbasins do not directly support anadromous fish but do provide flows to the Lower Snake River that are important for fry/smolt migrations and spawning redd survival.

Subbasin and province plans were developed in an open public process that included the participation of a wide range of State, Federal, local, and Tribal governments; local managers; land owners; and other stakeholders, a process the NPCC hopes will ensure support of the final USP Plan and direct funding to the best fish and wildlife projects that will do the most good.

Plan Components

The USP Plan is composed of three components: the Assessment, Inventory, and Management Plan. The Assessment was produced in May 2004. The Assessment forms the scientific and technical foundation of the USP Plan and identifies the limiting factors impeding the biological performance of fish and wildlife populations. The Assessment also identifies focal habitats and focal species used for evaluating protective and restorative activities (progress) of the Plan's implementation. An Addendum to the Assessment was prepared in December 2004 to better provide a rationale for the selection of focal habitats and focal species. The Inventory was produced in December 2004 and identifies fish and wildlife projects over the past 5 years and their status in improving ecological conditions in the three USP subbasins. The Management Plan presented here describes a vision for the USP and identifies the limiting factors preventing the USP from being a vibrant, diverse, and ecologically balanced riverine ecosystem. In addition, the Management Plan describes

biological objectives and strategies designed to address the limiting factors. The Management Plan also includes information about the relationship between the objectives and strategies and their consistency with the Endangered Species Act (ESA) and the Clean Water Act (CWA). The Plan content is consistent with the Technical Guide (NPPC 2001b) and recommendations made by the Independent Scientific Review Panel (ISRP).

Planning Process

The process used to prepare all components of the USP Plan is described in Appendix A. It includes lists of the Technical Team and Planning Team members who helped create this Plan and an earlier effort. Need to describe the planning team members in this section.

Northwest Power and Conservation Council

The NPCC is responsible for developing and periodically revising the Columbia River Basin Fish & Wildlife Program. In the 2000 revision, the NPCC proposed that 62 locally developed subbasin plans, as well as plans for the mainstem Columbia and Snake Rivers, be developed and adopted into its Fish & Wildlife Program The NPCC has administered subbasin planning contracts pursuant to requirements in its Master Contract with the BPA (NPPC 2002). The NPCC is responsible for review an adopting each subbasin plan, including ensuring that it is consistent with the visions, biological objectives, and strategies adopted at the Columbia Basin and province levels.

Bonneville Power Administration

The BPA is a federal agency established to market power produced by the federal dams in the Columbia Basin. As a result of the Northwest Power Act of 1980, BPA is required to allocate a portion of power revenues to mitigate the damages caused to fish and wildlife populations and habitat from federal hydropower construction and operation. These funds are provided and administered through the Lower Snake River Compensation Plan (LSRCP). BPA provide the funding to the NPCC for subbasin planning.

Shoshone-Bannock Tribes

The Shoshone-Bannock Tribes (SBT) served as the lead entity and fiscal agent for the planning effort for the Upper Snake River subbasin, managing the contract with the NPCC and contracting for other services, as required, to prepare the subbasin plan. The SBT will pursue, promote, and where necessary, initiate efforts to rehabilitate the Snake River system and affected unoccupied lands to a natural condition. This includes the rehabilitation of component resources to conditions that most closely represent the ecological features associated with the natural riverine ecosystem. In addition, the SBT will work to ensure the protection, preservation, and where appropriate – the enhancement of Rights reserved by the SBT under the Fort Bridger Treaty of 1868 and any inherent aboriginal rights.

Idaho Department of Fish and Game and Other Appropriate Agencies

Idaho Department of Fish and Game (IDFG) was contracted by the NPCC to complete the USP Assessment and Inventory prior to the SBT completing the Management Plan. IDFG organized a Technical Team of natural resource specialists familiar with the USP and completed their drafts of the documents by May 2004. An overview of the Technical Team's process and their participants are presented in Appendix A-1.

Scientific Framework of the Plan

The FWP provided a technical guide that identified planning elements for this and other plans that were created for the 62 subbasins across the Columbia River ecosystem. A Management Plan is intended to be a living document that will be updated every 3 to 5 years, and will include new information to guide revision of the biological objectives, strategies, and project implementation. The NPCC views plan development as a continual process of evaluation and refinement of the region's efforts through adaptive management, research, and evaluation. More information about subbasin planning can be found at http://www.nwcouncil.org.

Location and Physical Description of the Upper Snake Province

The USP is the uppermost province of the Snake River system and includes areas within Idaho, Wyoming, Utah, and Nevada (Figure 1). It includes the Snake River and all its tributaries from its headwaters in Wyoming and Idaho to Shoshone Falls, Idaho, as well as the closed basins on the northern edge of the Snake River Plain. The USP is divided into three subbasins: Snake Headwaters, Upper Snake, and Upper Snake Closed. It encompasses 28,902 square miles with elevations ranging from 3,300 feet (1,006 meters) at the lower boundary of the province at Shoshone Falls to 13,770 feet (4,197 meters) at the summit of the Grand Teton near the eastern edge of the USP in Wyoming. The headwaters of the Snake River, the largest tributary of the Columbia River, originate on the Yellowstone Plateau within and just outside the boundaries of Yellowstone National Park in Wyoming and Idaho. Surface waters originating in the Upper Snake Closed Subbasin flow onto the Snake River Plain where they drain to the subsurface, then discharge to the Snake River at Thousand Springs below Shoshone Falls.

Vision Statement

The vision for the Upper Snake Province Plan is to pursue, promote, and, where necessary, initiate efforts to protect and restore the Upper Snake River ecosystem. The vision for the USP Plan is to enhance, establish, maintain, and protect a healthy ecosystem that supports a diversity of aquatic and terrestrial species and will offer a diverse array of ecological environments that have been altered or lost. Such conditions will provide for the diverse social, cultural, tribal, and economic needs as established by treaty and law including recovery of Federally listed and State and Tribal sensitive species. This vision will support the NPCC's FWP's principles of mitigating the adverse effects to fish and wildlife caused by the development and operation of the hydrosystem and the guiding principles for the Upper Snake Province.

All Applicable Laws, Policies, and Regulations

The USP Plan and Assessment, and subsequent programs and actions that are adopted to implement the Plan's vision statement and biological objectives, shall expressly comply with existing local, State, Tribal, and Federal laws, regulations, and policies. This is to include private property rights, including water rights and local land and water use planning. All proposed actions to benefit fish and wildlife shall not be interpreted to compromise, influence, or preclude any government or agency from carrying out any past, present, or future duty or responsibility that it bears or may bear under any authority. Nothing in this

Plan or the participation in its development constitutes a waiver or release of any rights, or is intended to compromise, influence, or preclude any government or agency from carrying out its mandates, including eminent domain and condemnation proceedings, or interfere with or injure private property rights, including water rights or contracts held by spaceholders within the U.S. Bureau of Reclamation's (USBR's) reservoir projects.

Fish and Wildlife Program Principles

The development of the USP Plan vision, objectives, and strategies has been guided by the vision, scientific principles, and basin-level fish and wildlife objectives found in the NPCC 2000 FWP. As such, they are consistent with the key sections of the FWP that follow.

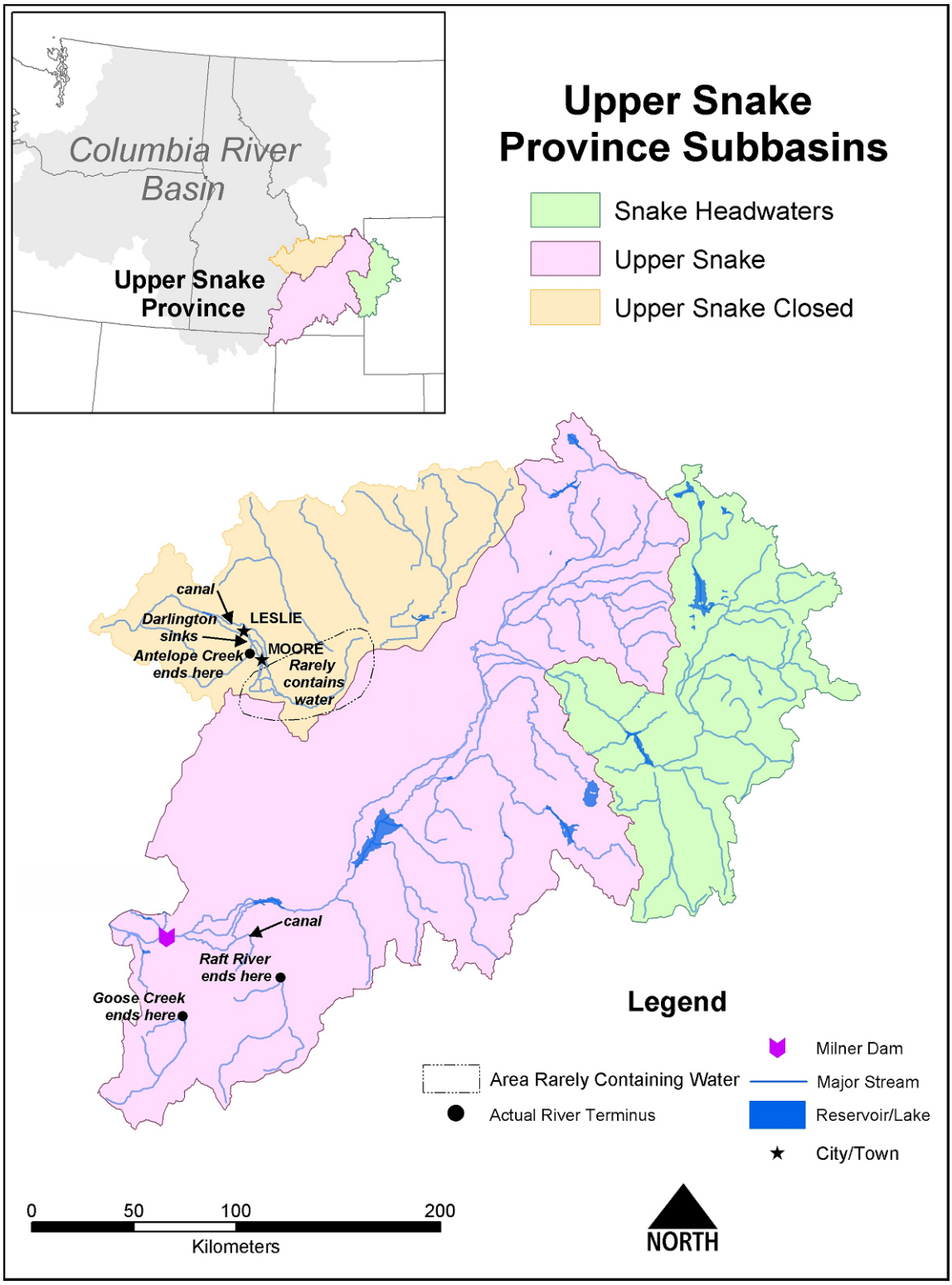

FIGURE 1
Map of the Snake Headwaters, Upper Snake, and Upper Snake Closed Subbasins

The FWP will work to protect and restore the natural ecological functions, habitats, and biological diversity of the Columbia River Basin. It will mitigate the adverse effects to fish and wildlife caused by the development and operation of the hydropower system. In those places where this is not feasible, other methods that are compatible with naturally reproducing fish and wildlife populations will be used. Where impacts have irrevocably changed the ecosystem, the FWP will protect and enhance the habitat and species assemblages compatible with the altered ecosystem.

The NPCC FWP can be accessed at: http://www.nwcouncil.org/library/2000/2000-19/Default.htm)

Guiding Principles for the Upper Snake Province Plan

The following principles will help guide implementation of all USP objectives and strategies:

- Recognize and support the province-wide objectives for resident fish losses in the NPCC's FWP.
- Recognize and support the basin-wide objectives for wildlife losses in the NPCC's FWP.
- Identify and prioritize projects and utilize resources to implement the USP Plan and the Pacific Northwest Electric Power Planning and Conservation Act, including the ESA and local, State, Federal, and Tribal programs, obligations, and authorities.
- Protect Tribal cultural resource properties. These include less-tangible Tribal religious and cultural values that are tied to natural resources within the USP.
- Protect non-Tribal cultural resource properties within the USP.
- Respect and honor private property rights and recognize projects implemented by individuals, partnerships, and corporations that have protected, improved, or restored ecosystems.
- Respect, recognize, and honor the legal authority, jurisdiction, reserved tribal treaty rights, and executive orders.
- Recognize and respect the diverse economic benefits of consumptive and non-consumptive fish and wildlife resources and outdoor recreation associated with healthy, properly functioning ecosystems.
- Promote local participation, including private property owners, in natural resource problem solving and subbasin-wide conservation efforts to restore and protect public resources and ecological function.
- Utilize a scientific foundation for diagnosing ecosystem problems, designing and prioritizing projects, implementing monitoring, and evaluating projects to improve results of future efforts.
- Provide information and opportunities to residents of the USP to promote understanding and appreciation of the value of healthy and properly functioning ecosystems.

- Protect, enhance, and restore those treaty rights that are important to Tribal subsistence, including fish, wildlife, and plant resources.
- Utilize incentive-based and educational approaches to promote ecologically sound use of natural resources.
- Inform the public of the diverse economic benefits associated with healthy and properly functioning ecosystems.
- Protect, perpetuate, enhance, and restore habitats in a way that will sustain and recover aquatic and terrestrial species with emphasis on the recovery of ESA-listed and native species. Provide adequate protections for unique habitats that play an important ecological role.
- Improve and maintain water quality throughout the subbasins.
- Protect and enhance open space that contain natural habitat areas for the benefit of native fish and wildlife.
- Expect ecosystem enhancement and stewardship of natural resources, while recognizing all components of the ecosystem, including the human component.
- Recognize that opportunities for natural resource-based extraction economies can coexist with fish and wildlife resources when they participate in the protection and recovery of aquatic and terrestrial species, water quality, and other elements of a healthy, valuable ecosystem.

CHAPTER 2

Ecological Issues, Focal Habitats, Focal Species, and Limiting Factors

Ecological Issues

There are primary ecological or over-arching anthropogenic impacts that have collectively and independently led to the altered and fragmented habitats as well as the existing species conditions and compositions within the USP. Primary ecological issues that were identified by the authors and Technical Team members during the development of the original Assessment (May 2004) were further refined during the re-evaluation process for this Management Plan. The issues identified within the USP (Table 1) formed the basis for identifying the limiting factors. The purpose of identifying the issues here is to provide a background understanding for framing the limiting factors.

TABLE 1
Issues Identified within the USP*

Aquatic Species and Habitats	Terrestrial Species and Habitats
Physical barriers created by the construction and operation of dams and diversions.	Fire management (that is, fire suppression) within the USP and the impacts on vegetation diversity.
The lack and loss of water from streams by irrigation diversions and canals.	Historic timber management practices and the associated impacts to both terrestrial and aquatic species and habitats.
Water quality limitations result from reservoir fluctuations and low pool management	The impacts of current and historic range manipulations for livestock grazing and grazing intensity.
Habitat loss resulting from stream and riparian habitat alteration.	Non-native plant and animal species introductions and invasions detrimental to native species and habitats.
Past management of aquatic species, that is, the impacts from introductions of non-native species.	

*Issues are separated by aquatic and terrestrial species and habitats although the issues may overlap.

For ecosystems to provide the maximum amount of habitat quantity and quality for native species, all components of the ecosystem must be functioning properly. Each component of the ecosystem performs a different function, although none of the components function in isolation. The Assessment (Part I) dissected the ecological issues into more specific manageable components. These components are focal habitats, focal species, and their specific limiting factors.

Focal Habitats and Focal Species

Focal species either have special ecological, cultural, or legal status, or can be used to evaluate the health of the ecosystem and effectiveness of management actions. The following selection criteria were used in identifying focal species:

- Federal/State classification
- Cultural/economic significance
- Critical ecological function
- Indicator of environmental health
- Locally significant or rare
- Guild representative
- Habitat obligate
- Managed species
- Relationship to salmon
- Data availability

Using the above criteria as a starting point, the Technical Team identified focal species and focal habitats to serve as the representative key ecological components within the USP. Understanding the ecological roles of focal fish and wildlife species in their respective focal habitats is important to decision makers because it aids in understanding the consequences of management actions. For this reason, focal species were also selected for each focal habitat as health indicators. Focal species include fish, mollusks, wildlife, and vegetative species depending on what species best represented a particular habitat type. Focal habitats and associated focal species were chosen by the Technical Team and are described in detail in the Assessment. Five species represent aquatic habitat and 24 species represent terrestrial habitats. The rationale for their selection is presented in the Addendum to the Assessment.

Limiting Factors

The identification of limiting factors to focal habitats and focal species is the scientific basis of this planning process. Limiting factors describe the source of ecological disruption to individual focal habitats and focal species and provide a framework for creating specific, measurable biological objectives and strategies (Table 2). Limiting factors were defined by the Technical Team and modified by the Planning Teams based on information presented in the Assessment and Addendum to the Assessment.

TABLE 2
Focal Habitats, Focal Species, and Limiting Factors

Focal Habitats	Focal Species	Limiting Factors
I) Aquatic:	Yellowstone cutthroat trout Bull trout Mountain whitefish Utah valvata snail Snake River physa snail	**Impoundment and Dam Operation:** A. Altered hydrograph below dams prevents natural stream processes B. Fish passage barriers C. Low reservoir levels degrade the habitat of over-wintering focal species D. Low reservoir levels degrade reservoir and downstream water quality **Diversions/Canals:** E. Fish passage barriers F. Habitat connectivity — reduced natural flows G. Water quality H. Water quantity **Habitat Alteration:** I. Channel bank stability J. Instream habitat K. Diking/channelization **Focal Species Stability:** L. Introduced species M. Isolation/fragmentation N. Focal species recruitment N1. Survival N2. Abundance
II) Riparian/Wetland:	Western toad Yellow-billed cuckoo American beaver	A. Altered hydrograph (dams/diversions) B. Changes in land use C. Transportation impacts D. Overgrazing E. Recreation activities are damaging riparian and wetland areas F. Spring flows and associated habitats are being lost to spring capping/piping for livestock tanks G. Beaver management

TABLE 2
Focal Habitats, Focal Species, and Limiting Factors

Focal Habitats	Focal Species	Limiting Factors
III) Open Water/Ponds/ Impoundments:	Western grebe American white pelican Trumpeter swan Common loon	A. Water fluctuations affect loafing, feeding, nesting, and brood rearing habitat for waterfowl, colonial waterbirds, and shorebirds B. Human disturbance during nesting and brood rearing C. Lack of available or suitable habitat for waterfowl and shorebirds on ponds and impoundments
IV) Pine/Fir Forest:	Black-backed woodpecker Great gray owl Boreal owl, Northern goshawk	A. Loss of large, late-seral stands B. Fragmentation of forest complexes C. Lack of natural fire regime D. Insect and disease damage
V) Juniper/Mahogany:	Curl-leaf mountain mahogany	A. Lack of natural fire regime B. Invasive plant species competition C. Loss of regeneration
VI) Whitebark Pine:	Whitebark pine	A. White-pine blister rust
VII) Aspen:	Quaking aspen	A. Conifer encroachment B. Inadequate regeneration C. Insect and disease damage
VIII) Mountain Brush:	Antelope bitterbrush Green-tailed towhee Mule deer Rocky Mountain elk	A. Mountain brush regeneration B. Fire C. Invasive plant species competition D. Land use change
IX) Shrub-Steppe:	Northern sagebrush lizard Greater sage-grouse Sage sparrow	A. Loss of shrub-steppe habitat B. Undesirable invasive plant species competition C. Land conversion/development D. Fire E. Juniper encroachment

CHAPTER 3

Biological Objectives and Strategies

Biological objectives describe the physical and biological changes needed to achieve the vision for the Management Plan and are consistent with the scientific principles established by the NPCC. Strategies provide specific steps necessary to accomplish the biological objectives. The biological objectives and strategies were developed from the identified factors that are limiting focal habitats and associated focal species. One of the underlying premises of the Management Plan is that ecosystem components rarely function independently. Hence, most of the objectives and strategies that were developed are considered to be interrelated. That is, the successful implementation of one objective will likely help to ensure the success of one or more additional objectives, furthering the vision of protecting and enhancing species, populations, habitats, and ecological functions within the USP.

While the objectives and strategies have a biological focus, they also have important social, political, and economic implications. Indeed, social factors are important determinants of future success of the Management Plan. For example, the accomplishment of some of the objectives and strategies will require the cooperation of private land owners and local communities. Ongoing efforts with public education will continue to help resolve challenges that arise before and during the implementation phase of the plan or any specific project. An important component of the objectives and strategies is that they are consistent with and supportive of the Shoshone-Bannock Tribal (SBT) culture.

The biological objectives and strategies were developed by the Planning Team and are consistent with the four biological objectives for the 2000 Columbia River Basin Fish and Wildlife Program (NPCC 2004):

1. A Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife.
2. Mitigation across the basin for the adverse effects to fish and wildlife caused by the development and operation of the Columbia Basin hydropower system.
3. Sufficient populations of fish and wildlife for abundant opportunities for Tribal trust and treaty right harvest and for non-Tribal harvest.
4. Recovery of fish and wildlife that are listed under the ESA and that are affected by the development and operation of the Columbia Basin hydropower system.

The following text presents the biological objectives and strategies categorized according to their aquatic and terrestrial focal habitats, focal species, and corresponding limiting factors:

I. Focal Habitat: Aquatic
Focal Species: Yellowstone Cutthroat Trout, Bull Trout, Mountain Whitefish, Utah Valvata Snail, Snake River Physa Snail

A) Limiting Factor: Altered hydrograph below dams.

Biological Objective:

1. Restore natural river processes below dams (hydropower and irrigation), including peak flows that access the floodplain, to benefit focal aquatic species.

Rationale: Dam operations prevent natural seasonal flows and fluctuations and can disrupt ecological processes within and outside the stream channel.

Strategies:

a) Assess the hydrologic regime under which the impounded river has developed.

b) Assess the hydrologic regime needed to maintain properly functioning conditions with a goal of long-term benefits to focal aquatic species.

c) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

d) Develop a range of hydrologic operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that maximize the natural hydrograph and benefit focal aquatic species.

e) Educate the public and interested parties on the range of alternatives developed to maximize the natural hydrograph and benefit focal aquatic species.

f) Develop a cooperative dam operational plan from A1d and A1e.

g) Implement operational flows that incorporate A1a through A1f.

h) Monitor and evaluate the effectiveness of the implemented operations and modify, if necessary, within the State, Tribe, and Federal contractual obligations that best meet the life history needs of focal species.

i) Involve the public in developing the cooperative dam operation plan.

B) Limiting Factor: Fish passage barriers are created by the dam structures.

Biological Objective:

1. Restore upstream connectivity around dams.

Rationale: Hydropower and irrigation structures were not designed with fish passage components for native fishes. Downstream migration occurs either through the turbines or over spillways. There are no vectors for upstream migrations, which results in restricted seasonal migrations and can cause genetic isolation of meta-populations.

Strategies:

a) Inventory the priority impounded rivers and streams for instream barriers that restrict upstream connectivity for focal aquatic species.

b) Develop a range of alternatives that examines the cost/benefit of various passage methods to present to the owners/operators of the structures.

c) Develop methods to secure funding for implementing restorative passage for focal species at priority sites.

d) Select a priority alternative with the involvement of owners and operators.

e) Monitor and evaluate the effectiveness of the selected passage design to meet the long-term life history needs of focal species.

f) Involve the public in developing the passage restoration plan.

C) Limiting Factor: Low reservoir levels can degrade the habitat of over-wintering focal aquatic species within reservoir impoundments.

Biological Objective:

1. Maintain sufficient reservoir levels to support over-wintering focal species.

Rationale: Low reservoir levels remove protective habitat for over-wintering species and increase their susceptibility to predation by non-native predators.

Strategies:

a) Evaluate focal species' life history needs as they relate to over-wintering within reservoirs.

b) Examine a range of operational opportunities that would result in long-term benefits to focal species within reservoirs.

c) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the reservoir.

d) Develop a range of reservoir operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that also benefit focal aquatic species within reservoirs.

e) Educate the public and interested parties on the range of alternatives to benefit focal aquatic species.

f) Develop a cooperative operational plan from C1d and C1e.

g) Implement the operational methods that will provide long-term benefits to focal species within reservoirs that incorporates the State, Tribal, Federal contractual obligations to water users.

h) Involve the public in developing in-reservoir levels.

D) Limiting Factor: Low reservoir levels can degrade reservoir and downstream water quality.

Biological Objective:

1. Maintain water quality downstream of dams that meets the life history needs of focal aquatic species.

Rationale: Wave action from winds resuspends fine sediments when the reservoirs are low, increasing turbid conditions, decreasing physico-chemical suitability of the water column and resulting in transporting, exchanges, and redeposition of fine sediments within overlying and outflowing waters. These conditions can be detrimental to survival and growth downstream fish and other aquatic biota and spawning habitats.

Strategies:

a) Assess water quality conditions downstream of dams.

b) Evaluate the water quality needs of focal species downstream of dams.

c) Evaluate the State, Tribal, and Federal and contractual obligations to the water users within the reservoir.

d) Educate the public and interested parties on the range of alternatives developed to maximize the natural hydrograph and benefit focal aquatic species.

e) Develop a range of reservoir operations that incorporates the State, Tribal, and Federal contractual obligations to water users and benefits focal species downstream.

f) Develop an operational plan.

g) Implement the most effective cost/benefit alternative that supports D1e.

h) Monitor and evaluate the effectiveness of D1g and modify, if necessary, within State, Tribal, and Federal contractual obligations that best meet the life history needs of focal species.

Biological Objective:

2. Maintain reservoir water levels to support water quality requirements of focal species.

Rationale: This objective focuses on in-reservoir species that try to survive with the fluctuating in-reservoir water levels as a result of water releases for either hydropower needs or irrigation demands. These water level fluctuations are especially damaging during the heat gain periods of low summer pools and the oxygen deprivation period of ice covered winter pools. This objective is different from the earlier objective that focused only on focal fish species that reside downstream of reservoirs.

Strategies:

a) Assess reservoir water quality conditions as they relate to fluctuating reservoir levels.

b) Evaluate the in-reservoir water quality needs of focal species.

c) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the reservoir.

d) Develop a range of operational opportunities that would best support in-reservoir water quality needs of focal species.

e) Educate the public and interested parties on the range of alternatives developed in D2d to meet the applicable water quality standards.

f) Develop a cooperative operational plan from D2a and D2e.

g) Implement the operational methods that will provide long-term benefits to focal species within reservoirs.

h) Monitor and evaluate the effectiveness of D1g and modify if necessary, within the State, Tribal, and Federal and contractual obligations that best meet the in-reservoir needs of focal species.

i) Involve the public in developing in-reservoir water level options.

E) Limiting Factor: Fish passage can be restricted by diversions and canal structures.

Biological Objective:

1. Restore upstream connectivity around diversions for fish passage.

Rationale: There are State, Tribal, and Federal mandates that control the operation of irrigation dams and diversion structures that are different from hydropower facilities. That is why fish passage objectives and strategies for irrigation structures are separately addressed from hydropower structures.

Strategies: Apply Strategies B1a through B1f as applicable to diversions and canals.

a) Inventory the priority impounded rivers and streams for instream barriers that restrict upstream connectivity for focal aquatic species.

b) Develop a range of alternatives that examines the cost/benefit of various passage methods to present to the owners/operators of the structures.

c) Develop methods to secure funding for implementing restorative passage to benefit focal species at priority sites.

d) Select a priority alternative with the involvement of owners and operators.

e) Monitor and evaluate the effectiveness of the selected passage design to meet the long-term life history needs of focal species.

f) Involve the public in developing a fish passage restoration plan.

F) Limiting Factor: Diversions and canals reduce natural stream flows, potentially causing problems with habitat connectivity.

Biological Objective:

1. Maintain flows below dams/diversions that support focal species.

Rationale: Stream flows can be reduced by water diversions. Overall location of water in many areas of the USP makes it difficult to keep enough water within some stream reaches to support focal species. This objective will quantify the seasonal water needs of focal species and evaluate the operations to determine whether irrigation demands can be met while providing better releases to meet the needs of focal species.

Strategies: Apply Strategies A1a through A1i as applicable to diversions and canals.

a) Assess the hydrologic regime under which the impounded river has developed.

b) Assess the hydrologic regime needed to maintain properly functioning conditions with a goal of long-term benefits to focal aquatic species.

c) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

d) Develop a range of hydrologic operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that maximize the natural hydrograph and benefit focal aquatic species.

e) Educate the public and interested parties on the range of alternatives developed to maximize the natural hydrograph and benefit focal aquatic species.

f) Develop a cooperative operational plan from F1d and F1e.

g) Implement operational flows that incorporate F1a through F1f.

h) Monitor and evaluate the effectiveness of the implemented operations and modify, if necessary, within the State, Tribal, and Federal contractual obligations that best meet the life history needs of focal species.

i) Involve the public in developing the dam operational plan.

Biological Objective:

2. Identify and reduce artificially blocked streams or unscreened diversions.

Rationale: Some irrigators use push-up dams and other temporary structures to divert water into irrigation ditches, creating temporary fish barriers. Also, many irrigation diversions do not have fish screens to prevent fish from being directed away from the channel and into a field or pasture where they cannot survive.

Strategies: Apply Strategies B1a through B1f as applicable to diversions and canals.

a) Inventory the priority impounded rivers and streams for instream barriers that restrict upstream connectivity for focal aquatic species or have unscreened diversions.

b) Develop a range of alternatives to resolve blockage/screening issues for owners/operators of the structures and/or unscreened diversions.

c) Develop methods to secure funding for implementing restorative passage or screening options for focal species at priority sites.

d) Select a priority alternative with the involvement of owners and operators.

e) Monitor and evaluate the effectiveness of the alternative selected for implementation to meet the long-term life history needs of focal species.

f) Involve the public in the strategy to screen diversions and remove stream barriers.

G) Limiting Factor: Water quality can be degraded as a result of water withdrawals.

Biological Objective:

1. Restore water quality conditions, including stream flows, to meet focal species' needs as well as applicable water quality standards.

Rationale: Water diversions remove water from the riverine system and can affect various life stages of focal fish species. Some irrigation return flows carry heavy loads of suspended sediments and nutrients from agricultural fields and discharge back to rivers and streams. This objective focuses on potentially poor water quality caused by irrigation diversions (attributed to low flows) and polluted irrigation return flows. The focus is on helping operators find solutions that improve irrigation operation while reducing impacts to focal species.

Strategies:

a) Prioritize and evaluate streams to assess their water quality conditions as they relate to the life history needs of focal species as well as applicable water quality standards and guidelines.

b) Prioritize areas or reaches where existing conditions fail to support the life history needs of focal species or that fail to meet applicable water quality standards and guidelines.

c) Educate the public on the findings and evaluate the cost/benefit of corrective measures within priority areas that support G1b.

d) Develop a cooperative water quality improvement plan from G1a through G1c.

e) Implement plan/methods from G1d.

f) Monitor and evaluate the effectiveness of G1e and modify, if necessary, to best meet the life history needs of focal species and meet applicable water quality standards and guidelines.

H) Limiting Factor: Irrigation diversions and canals can reduce instream water quantity.

Biological Objective:

1. Maintain flows to support focal species' needs including migration.

Rationale: Maintaining water quantity is closely related to water quality for meeting a variety of life history needs of focal species. If flows are reduced greatly during summer irrigation season, water temperatures can rise, algal problems can occur, and dissolved oxygen (DO) concentrations can drop.

Strategies: Apply Strategies A1a through A1d and A1f through A1h as applicable to diversions and canals.

a) Assess the hydrologic regime under which the impounded river has developed.

b) Assess the hydrologic regime needed to maintain properly functioning conditions with a goal of long-term benefits to focal aquatic species.

c) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

d) Develop a range of hydrologic operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that maximize the natural hydrograph and benefit focal aquatic species.

e) Develop a cooperative dam operational plan from H1d and H1e.

f) Implement operational flows that incorporate H1a through H1f.

g) Monitor and evaluate the effectiveness of the implemented operations and modify, if necessary, within the State, Tribal, and Federal contractual obligations that best meet the life history needs of focal species.

h) Develop and implement a public education program and/or incentives that focus on conservation and mitigation programs and improve stream flows to benefit focal species.

I) Limiting Factor: Habitat Alteration – Some natural stream channels have become unstable.

Biological Objective:

1. Restore or stabilize stream reaches that have become unstable (e.g., braided channels, down-cutting, etc.) from land management practices.

Rationale: Added flows and increased sediment inputs (i.e., anthropogenically derived) alter channels and can degrade habitat quality and quantity, particularly spawning habitats.

Strategies:

a) Inventory and prioritize unstable stream reaches that can support critical life history functions for focal species.

b) Identify sources that have caused channel instability.

c) Develop a cooperative restoration plan that identifies cost/benefit alternatives to stabilize priority reaches that support the needs of focal species and support applicable standards.

d) Educate the public on problems in I1b and the cooperative restoration plan in I1c.

e) Implement I1d.

f) Monitor and evaluate the effectiveness of I1e and modify, if necessary, within the framework of I1c.

Biological Objective:

2. Protect, enhance, and restore riparian health and function along streams supporting focal species and to meet applicable water quality standards.

Rationale: By protecting or enhancing riparian areas through altering land management impacts, stream health can be protected from potential damage or restored from degradation. Low-gradient streams are most vulnerable to becoming unstable once vegetation has been removed or damaged along the stream banks. The previous objective focused on actively repairing damaged streams, while this objective focuses on managing the land to protect or restore riparian function as it relates to stream stability.

Strategies:

a) Inventory and prioritize riparian reaches that support critical life history functions for focal species.

b) Identify sources (e.g., riparian roads, vegetation management, etc.) that contribute to degraded riparian conditions instream reaches.

c) Develop a cooperative plan that identifies cost/benefit alternatives for protecting and/or improving riparian function as it relates to stream stability and providing habitat needs for focal species.

d) Educate the public on the effects of the impacts identified in I2b and restoration plan in I2c.

e) Implement I2c.

f) Evaluate the effectiveness of I2e and modify, if necessary, within the framework of I2d.

J) Limiting Factor: Instream habitats for fish can be lost or degraded because of channel alterations.

Biological Objective:

1. Protect, enhance, and restore instream structure, diversity, and complexity (e.g., riffle/pool ratio, LWD, width/depth ratio, etc.) necessary for supporting the life history functions of focal species.

Rationale: This objective does not look at stream health based on stability and function but examines the specific biological needs of focal fish species at all life stages.

Strategies:

a) Inventory and prioritize reaches that support critical life history functions for focal species.

b) Identify sources (e.g., riparian roads, vegetation management) that have resulted in degraded instream conditions of focal species' habitats.

c) Develop a cooperative restoration plan that identifies cost/benefit alternatives of improving priority instream reaches that support the needs of focal species.

d) Educate the public on the effects of the impacts identified in J1b and restoration plan in J1c.

e) Implement J1c.

f) Monitor and evaluate the effectiveness of J1e and modify, if necessary, within the framework of J1d.

K) Limiting Factor: Some stream segments have been artificially diked or channelized.

Biological Objective:

1. Restore or mitigate aquatic habitats and stream banks that have been artificially diked and/or channelized (note: mitigate where restoration is not possible).

Rationale: Stream channels have been altered to protect against flooding, armor unstable channels, or to completely move stream channels. Many past alterations created ecological problems and can be corrected.

Strategies:

a) Inventory and prioritize stream reaches that have been diked or channelized that could support critical life history functions of focal species.

b) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

c) Develop a cooperative restoration plan that identifies cost/benefit alternatives to rehabilitating or mitigating priority reaches that support the needs of focal species.

d) Educate the public on the effects of the impacts identified in K1a and benefits from the restoration plan in K1c.

e) Implement K1c.

f) Monitor and evaluate the effectiveness of K1e and modify, if necessary, within the framework of K1d.

L) Limiting Factor: Introduced species have adversely affected the life histories of focal species.

Biological Objective:

1. Protect, enhance, and restore genetic integrity of focal species.

Rationale: Introductions of non-native rainbow trout have often resulted in hybridization with native Yellowstone cutthroat trout where these species co-occur in the USP. This hybridization has resulted in fragmented populations of pure strains of the native trout and reduced the genetic integrity of Yellowstone cutthroat trout in much of the USP.

Strategies:

a) Identify genetic strongholds of resident and migratory focal species (especially Yellowstone cutthroat trout) within the USP subbasins.

b) Identify hybridization threats to L1a.

c) Evaluate hybridization risks with barrier removals.

d) Develop priorities within a cooperative restoration plan that protect and expand the distribution of L1a species (consider Tribal subsistence).

e) Implement high-priority projects from L1d that protect and expand the distribution of L1a species.

f) Monitor and evaluate the effectiveness of L1e within the framework of L1d.

g) Monitor and evaluate the role of hatcheries as a tool for enhancing focal species in their present and historic range.

Biological Objective:

2. Maintain flows to provide connectivity/migration to meet focal species' life history needs.

Rationale: This objective examines the specific connectivity and migration needs of focal fish species. Previous connectivity issues addressed passage opportunities around dam and irrigation structures only, whereas this objective evaluates the biological connections needed to maintain all life stages of focal species.

Strategies: Apply Strategies A1b through A1i as applicable to flows.

a) Assess the hydrologic regime needed to maintain properly functioning conditions with a goal of long-term benefits to focal aquatic species.

b) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

c) Develop a range of hydrologic operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that maximize the natural hydrograph and benefit focal aquatic species.

d) Educate the public and interested parties on the range of alternatives developed to maximize the natural hydrograph and benefit focal aquatic species.

e) Develop a cooperative operational plan from L2c and L2d.

f) Implement operational flows that incorporate L2a through L2e.

g) Monitor and evaluate the effectiveness of the implemented operations and modify, if necessary, within the State, Tribal, and Federal contractual obligations that best meet the life history needs of focal species.

h) Involve the public in developing a hydrologic operational plan.

i) Consider L1c above (evaluate hybridization risks with barrier removals) in any connectivity restoration plan.

M) Limiting Factor: Some meta-populations of focal species have been isolated because of habitat fragmentation.

Biological Objective:

1. Improve connectivity of meta-populations of focal species (e.g., stream flow).

Rationale: Genetic diversity within a species is an important requirement to sustain that species. Meta-populations of aquatic species often were linked during winter migrations but now, because of low flows and dams, some of these connections have been broken, leaving isolated sub-populations.

Strategies: Apply Strategies A1b through A1i as applicable to stream flows between focal species' populations.

a) Assess the hydrologic regime needed to maintain properly functioning conditions with a goal of long-term benefits to focal aquatic species.

b) Evaluate the State, Tribal, and Federal contractual obligations to the water users within the river.

c) Develop a range of hydrologic operation alternatives that incorporates the State, Tribal, and Federal contractual obligations to the water users that maximize the natural hydrograph and benefit focal aquatic species.

d) Educate the public and interested parties on the range of alternatives developed to maximize the natural hydrograph and benefit focal aquatic species.

e) Develop a cooperative operational plan from M1c and M1d.

f) Implement operational flows that incorporate M1a through M1e.

g) Monitor and evaluate the effectiveness of the implemented operations and modify, if necessary, within the State, Tribal, and Federal contractual obligations that best meet the life history needs of focal species.

h) Involve the public in developing a dam operational plan.

i) Consider L1c above (evaluate hybridization risks with barrier removals) in any connectivity restoration project.

Biological Objective:

2. Remove physical barriers that prevent migration of focal species.

Rationale: There are known or potential barriers to fish passage such as dams, diversions, stream push-up dams, and impassable culverts that need to be evaluated and prioritized collectively for the biological needs of focal species. These barriers were addressed in prior objectives individually based on barrier category, land ownership, and corresponding regulations. With this objective, these barriers are evaluated and prioritized based on the greatest biological needs of the focal species.

Strategies: Apply Strategies B1a through B1e for restoring connectivity to upstream habitats.

a) Inventory the priority impounded rivers and streams for instream barriers that restrict upstream connectivity to focal aquatic species.

b) Develop a range of alternatives that examines the cost/benefit of various passage methods to present to the owners/operators of the structures.

c) Develop methods to secure funding for implementing restorative passage for focal species at priority sites.

d) Select a priority alternative with the involvement of owners and operators.

e) Monitor and evaluate the effectiveness of the selected passage design to meet the long-term life history needs of focal species.

f) Consider L1c (evaluate hybridization risks with barrier removals) in any connectivity restoration project.

N) Limiting Factor: Focal species recruitment can potentially be limited at all life stages.

Biological Objective:

1. Survival: Improve survival of focal species in all life stages.

Rationale: This objective covers those biological needs for focal species not already addressed by other objectives.

Strategies:

a) Identify and prioritize specific threats to focal species' survival.

b) Develop priorities within a cooperative restoration plan to improve survival within and among focal species populations.

c) Educate the public and interested parties on threats to focal species' survival and plan to implement high-priority projects.

d) Implement N1b.

e) Monitor and evaluate the effectiveness of N1d and modify, if necessary, within the framework of N1b.

Biological Objective:

2. Abundance: Increase focal species numbers to viable usable population according to the Title 36 mandate of the Idaho Department of Fish and Game (IDFG).

Rationale: It is important to manage for numbers that are beyond minimum thresholds, and provide numbers that support the important economic contribution of fishing and related outdoor recreation to the rural economy of the USP.

Strategies:

a) Develop and implement a public information program for rural communities of the Province and broader public regarding the importance of healthy fisheries to rural economies.

b) Monitor and evaluate the distribution and population strength of focal species within the subbasins.

c) Develop priorities within a cooperative restoration plan to maintain and improve focal species populations (consider Tribal subsistence) within priority areas.

d) Enlist support and involvement of rural communities for restoring and protecting viable fisheries

e) Implement high-priority projects within priority areas identified in N2b.

f) Monitor and evaluate the effectiveness of N2c and modify, if necessary, within the framework of N2b.

II. Focal Habitat: Riparian/Wetland
Focal Species: Western Toad, Yellow-billed Cuckoo, American Beaver

A) Limiting Factor: Altered hydrograph (dams/diversions).

Biological Objective:

1. Protect and enhance the riparian cottonwood forests in river bottoms.

Rationale: Natural flow regimes are critically important to maintain and perpetuate cottonwood riparian communities along rivers and streams. Cottonwood riparian communities, along with other riparian and wetland communities, are the most important wildlife habitats in the Upper Snake Subbasin. Without seasonal high flows, cottonwood riparian communities degrade over time as older trees die and they are not replaced by new plants. Protecting and enhancing existing cottonwood stands is extremely important to many wildlife species.

Strategies:

a) Develop and implement a public information program for land owners and the general public regarding the importance of cottonwood riparian communities and carry this through the entire project.

b) Identify key cottonwood/willow areas within the subbasins including existing and potential stands. Use specific yellow-billed cuckoo habitat requirements to determine key habitat parameters. Further define other factors important to identifying sites with potential for development of viable cottonwood/willow communities including, but not limited to: stream or river gradient, floodplain width, natural or altered flow regime, geomorphology, adjacent land uses, historic photos, etc.

c) Determine ownership status and general management needs relative to ownership (i.e., review management on Federal lands; acquire management ability on private lands).

d) Acquire and/or secure key cottonwood and other riparian/wetland habitat areas through mechanisms such as conservation easements, fee-title acquisition, land owner agreements, or management rights for mitigation, long-term management, and restoration.

e) Develop general and specific goals for vegetation conditions based on riparian focal species' habitat requirements with an emphasis on multi-tiered stands with multiple age classes of cottonwoods.

f) Assess the condition of key existing and potential cottonwood stands in terms of specific focal species' habitat requirements defined in A1b above.

g) Prioritize sites for project implementation based on habitat needs and cost/benefit assessment.

h) Develop site-specific management plans to achieve vegetation goals within specified time frames (e.g., NPCC process of management).

i) Implement site-specific projects based on site prioritization.

j) Monitor and evaluate progress toward goals and modify implementation if needed.

Biological Objective:

2. Restore bank-full discharge events below dams for riparian maintenance production.

Rationale: Natural flow regimes are critically important to maintain and perpetuate cottonwood riparian communities along rivers and streams. Bank-full discharge events (equal to about a 1.5- to 2-year interval peak flow) are important for maintaining existing riparian communities. Bank-full flows allow recharge of floodplain alluvium, providing important moisture as plants begin their annual growth. Bank-full flows that saturate the floodplain early in the growing season provide critical moisture to support riparian vegetation through the growing season as water stored in the alluvium is released back to the river or stream later in the summer.

Strategies:

a) Develop and implement a public information program for land owners and the general public regarding the importance of bank-full discharges to riparian and wetland vegetation and associated wildlife and carry this effort through the entire project.

b) Identify stream and river reaches where bank-full discharges are constrained by reservoirs or major diversions.

c) Determine which of these reaches have current or potential riparian stands or other desired riparian habitats that would benefit from bank-full, riparian maintenance discharges (based on Biological Objective A1 for Riparian/Wetland Focal Habitat).

d) Work with dam operators, water managers, and stakeholders to develop opportunities for short-duration, peak water releases below dams and major diversions to enhance riparian areas. These releases should coincide with normal hydrograph peaks and occur during years with adequate water supply or high snow packs.

Biological Objective:

3. Restore discharges below dams that activate floodplain function.

Rationale: Periodic flood flows that exceed bank-full discharge, followed by gradual recession to summer flow levels, are necessary for cottonwood regeneration and the long-term survival of cottonwood communities. Flood flows of this type erode river banks and create point bars with exposed mineral soils, which are needed for cottonwood seeds to germinate. Following germination, seedling root growth must be fast enough to keep up with the rate at which alluvial groundwater levels recede or the seedlings will dry out and not survive their first growing season. Under natural conditions, the successful establishment of a new cottonwood age class requires flows high enough to create sites suitable for germination timed to match the timing of cottonwood seed release, followed by a slow recession in discharge and groundwater levels. If seedlings survive the first year, they must also have the proper conditions for several subsequent years in order to survive to maturity. Naturally, the combination of conditions that results in a successful establishment of a new cottonwood age class may occur only once every 20 to 30 years.

Strategies:

a) Develop and implement a public information program for land owners and the general public regarding the importance of periodic flow levels that activate floodplain functions and carry this through the entire project.

b) Identify stream and river reaches below dams and diversions where flows exceeding bank-full discharges have been eliminated.

c) Determine which of these reaches have current, potential, or desired riparian habitats that would benefit from flows exceeding bank-full, riparian

establishment discharges (based on information from Biological Objectives A1 and A2 for Riparian/Wetland Focal Habitat).

d) Determine the desired discharge, duration, and timing of flows exceeding bank-full for each reach where flows are controlled by upstream storage and where flows exceeding bank-full would substantially benefit existing or potential cottonwood/willow riparian communities.

e) Determine which of the reaches identified in A3c and A3d could accommodate flows exceeding bank-full without causing substantial (as determined with land owner input) economic losses.

f) Work with dam operators, water managers, and stakeholders to create short-duration, peak water releases below dams and major diversions that exceed bank-full to regenerate decadent cottonwood stands and promote cottonwood and willow development in non-functioning riparian areas. Peak discharge periods would likely complement existing operations and would need to coincide with normal peak hydrograph dates during years of high snow pack.

Biological Objective:

4. Conserve water within the existing legal framework and identify and develop opportunities to improve stream flows that will benefit riparian/wetland habitats and focal species.

Rationale: Adequate instream flows are vital for the maintenance of healthy riparian and wetland communities, which support the riparian focal species as well as many other riparian-obligate species.

Strategies:

a) Develop and implement a public information program for land owners and the general public related to the importance of water conservation to improve stream flows (recognizing that there are no Federal or State instream flow water rights outside of the minimum stream flow rights held by the IWRB) that will benefit riparian/wetland habitats and focal species and carry this through the entire process.

b) Focusing on the sites identified in A1b, identify important geographic areas where water diversions adversely affect stream flows and riparian habitat and where water conservation would benefit stream flows and associated riparian areas.

c) Identify local and regional aquifer recharge function that might be detrimentally affected as a result of enacting water conservation in the identified geographic areas and develop plans to maintain aquifer recharge.

d) Assess and pursue those water conservation projects that would benefit priority riparian/wetland areas and where aquifer recharge would not be reduced.

e) Identify local and regional aquifer recharge practices that work to the detriment of focal riparian/wetland habitats and identify options for altering those practices to restore those habitats.

f) Create economic incentives that encourage water conservation practices (e.g., drip and sprinkler irrigation) in those focal areas that promote riparian/wetland health.

g) Study and identify opportunities to develop agreements and arrangements such as "willing buyer/willing seller" to obtain water rights that would be used to provide stream flow benefits for riparian and wetland habitats, recognizing that there are no Federal or State instream flow water rights outside of the minimum stream flow rights held by the IWRB.

h) Provide opportunities to support monitoring of water right allocations where outcomes will likely achieve mutual benefits to riparian/wetland habitats in addition to water users.

Biological Objective:

5. Reduce the impact of invasive plant species on native species and ecosystems.

Rationale: Invasive herbaceous and woody plants (including noxious weeds) compete with and often displace native species. This can occur at all strata within riparian communities (herbaceous, shrub, and tree layers). Invasive plant species provide poor-quality wildlife habitat compared to native species.

Strategies:

a) Develop, implement, and support a public information program for land owners and the public on invasive plant species and their legal responsibilities to treat noxious weeds on their lands.

b) Work with Federal agencies and State, local, and Tribal governments to develop a program that secures funds for the control of invasive plant species.

c) Develop economic incentives for land owners to control invasive plant species in and adjacent to riparian areas.

d) Identify project opportunities for near- and longer-term treatment and eradication of invasive plant species and continuation of existing invasive plant species control actions on important habitat areas.

e) Design projects involving the application of herbicides such that herbicide applications will not degrade current riparian habitat, hinder regeneration of cottonwoods and willows, or adversely impact insect species used by focal species such as the yellow-billed cuckoo for food.

f) Evaluate the benefits and risks of various weed control methods: using hand control measures (such as pulling weeds and grubbing), applying bio-controls, or using chemical controls.

g) Herbicides should only be applied by hand in buffer areas around high-priority riparian areas. Aerial and broadcast spraying should not be permitted in priority riparian and wetland areas.

B) Limiting Factor: Changes in land use.

Biological Objective:

1. Prevent future loss of riparian/wetland areas.

Rationale: Land use changes that can adversely affect riparian communities include clearing for agriculture, development of housing projects or single "trophy" homes, and construction of power-related facilities along corridors. The removal of riparian vegetation for any of these activities destroys wildlife habitat. In addition, the presence of people and pets disturbs and displaces many species of wildlife. Developments of all types in riparian areas fragment larger blocks of habitat into smaller patches, which do not support species that require larger areas.

Strategies:

a) Develop and support programs, such as the Soil Conservation Commission (SCC)/Natural Resources Conservation Commission (NRCS) Idaho One Plan or similar concepts, as a means of educating land owners on the incentive programs available for land use modifications that benefit riparian/wetland areas.

b) Identify riparian and wetland areas vulnerable to development.

c) Prioritize riparian sites in need of protection from conversion to other uses that would degrade riparian habitat values.

d) Work with cooperative partners to develop alternatives and funding sources that provide riparian habitat protection; include the South Idaho Mitigation Plan where appropriate.

C) Limiting Factor: Transportation impacts.

Biological Objective:

1. Protect, enhance, and restore riparian and wetland function.

Rationale: Construction and use of transportation corridors can result in both direct and indirect impacts on wetland and riparian communities. Construction of new facilities in wetland and riparian areas removes habitat and fragments larger blocks of habitat. Traffic results in direct wildlife mortality when vehicles collide with or run over wildlife.

Strategies:

a) Review and evaluate impacts of transportation systems on riparian/ wetland environments.

b) Coordinate responsible entities on methods for improving road management along or within riparian areas.

c) Work with county highway districts (or their equivalent) and the Idaho Transportation Department to modify road and right-of-way management practices to first avoid and then minimize impacts to riparian/wetland habitats.

D) Limiting Factor: Overgrazing.

Biological Objective:

1. Protect, enhance, and restore riparian and wetland habitats where they are being impacted by grazing activities.

Rationale: Livestock grazing can be detrimental to riparian vegetation and wildlife habitat values. Livestock can remove the current growth of existing plants, readily browse young cottonwoods and willows to the point that young plants do not survive, girdle and kill smaller trees, compact soil, degrade stream banks, and are a source of noxious and other invasive weed seeds. Livestock grazing also can cause erosion and stream head-cutting, resulting in incised channels and lowered groundwater levels on former floodplains. When groundwater levels are lowered, riparian and wetland vegetation that occurred on the original floodplain is replaced by upland species or weeds tolerant of drier conditions. Livestock overgrazing is not compatible with healthy riparian communities and prevents improvement in the condition of wetland and riparian areas.

Strategies:

a) Coordinate public, Tribal, and private owners and managers with permits to reduce grazing impacts on riparian/wetland areas.

b) Where livestock grazing is impacting existing or potential key riparian and wetland habitats, work with the land management agencies, grazing permit holders, and private land owners to modify livestock grazing in terms of season-of-use, livestock numbers, duration of grazing, and grazing locations to avoid impacts and promote recovery of healthy riparian vegetation conditions.

c) Work with land management agencies and private land owners to restrict livestock grazing to promote willow and cottonwood growth and recruitment. The goal is to improve the condition of riparian communities and meet the habitat needs of the yellow-billed cuckoo, other focal species, and other riparian obligates.

Biological Objective:

2. Protect, enhance, and restore springs that have been impacted by overgrazing.

Rationale: Many of the natural springs that have not been developed to provide livestock water are subject to heavy livestock grazing pressure, which removes vegetation and severely degrades or eliminates wildlife habitat value.

Strategies:

a) Identify springs that are impacted by developments for grazing purposes and evaluate their role in grazing management.

b) Implement strategies that promote the protection, enhancement, or restoration of spring developments in relation to D2a.

E) Limiting Factor: Recreation activities can damage riparian and wetland areas.

Biological Objective:

1. Protect, enhance, and restore riparian and wetland habitats where they are being impacted by recreation activities.

Rationale: Trail development and human recreation activities can have detrimental effects on vegetation and wildlife through the introduction of weed species, direct removal of habitat, fragmentation of larger habitat patches, and increased wildlife disturbance because of human presence.

Strategies:

a) Identify riparian and wetland habitats that have been damaged by recreation activities and seek protection through appropriate processes.

b) Work with land managers to close, repair, or maintain offending trails in riparian/wetland areas.

F) Limiting Factor: Spring flows and associated habitats are being lost to spring capping/piping for livestock tanks.

Rationale: Many natural springs have been developed to provide livestock water. Spring development for this purpose usually involves diverting the spring at its source into a water trough of some type. In the process, the spring is dried up and its value for wildlife is eliminated.

Biological Objective:

1. Restore and protect springs at livestock watering developments that lost, or will lose wetland and riparian vegetation.

Strategies:

a) Work with resource specialists to identify spring developments that may or will lose wetland and riparian vegetation.

b) Identify and implement alternatives for physically modifying spring developments that would restore natural spring function and re-establish wetland and riparian vegetation at the spring source while meeting water right requirements.

G) Limiting Factor: Beaver management.

Biological Objective:

1. Reintroduce beavers as a means of restoring and enhancing riparian and wetland habitats.

Rationale: Beavers historically played a vital role in developing wetlands along many of the smaller drainages in the subbasins. Beaver dams raise groundwater levels, thereby improving soil moisture conditions on adjacent floodplains and supporting wetland and riparian species. Assuming there is enough food present, reintroducing beavers into streams with incised channels traps sediment and often results in higher groundwater levels on floodplains adjacent to beaver dams, which will then support riparian communities. These riparian areas and the wetlands created behind the beaver dams are extremely valuable wildlife habitat.

Strategies:

a) Develop and implement an information program for land owners and the public on the benefits of beavers over the range of resources.

b) Expand cooperative efforts to reintroduce beavers on public, Tribal, and private lands where appropriate.

c) Identify and prioritize stream reaches that could benefit most from beaver reintroduction and focus efforts on those segments.

d) Implement and monitor and evaluate reintroduction projects.

III. Focal Habitat: Open Water/Ponds/Impoundments
Focal Species: Western Grebe, American White Pelican, Trumpeter Swan, Common Loon

A) Limiting Factor: Water fluctuations can affect loafing, feeding, nesting, and brood rearing habitat for waterfowl, colonial waterbirds, and shorebirds.

Biological Objective:

1. Manage water levels to benefit loafing, nesting, feeding, and brood rearing habitat for waterfowl, colonial waterbirds, shorebirds, and other aquatic focal species and their habitats.

Rationale: Increasing water levels during the nesting season often floods and destroys nests. Decreasing water levels can expose floating nests to mammalian predation and desiccate shallow feeding areas for these birds. Minimizing these changes or slowing the rate of change can benefit these and other species.

Strategies:

a) Identify the most important loafing, nesting, feeding, and brood rearing habitats within reservoirs and other major impoundment waters in the province and identify the most important reservoirs that provide this function.

b) Evaluate open water/pond/impoundment focal species' life history needs as they relate to and are negatively influenced by water level fluctuation and water quality degradation resulting from sediment entrainment from fluctuation effects on the reservoir.

c) Examine and identify a range of operational opportunities that would result in long-term benefits to focal species within reservoirs.

d) Examine and identify a range of different system configurations within the existing operation's authorized purposes, contract obligations to space holders, State law, and State water plans that would result in long-term desired benefits to open water/pond/impoundment focal species.

e) Evaluate reservoir operations within authorized purposes, applicable water rights, and contractual obligations to space holders within all reservoirs.

f) Develop a range of reservoir operation alternatives within authorized purposes, contractual obligations to space holders, and State laws that provides the most benefit to open water/pond/impoundment focal species within reservoirs (this considers both existing and alternative operation scenarios).

g) Work with dam operators and reservoir/impoundment managers to determine the best operation alternative(s) to manage water elevation fluctuations and provide for focal species' life history needs.

h) Educate the public and interested parties on the range of alternatives to benefit focal aquatic species.

i) Develop a cooperative operational plan from A1g and A1h.

j) Implement the operational methods that will provide long-term benefits to focal species within reservoirs.

k) Involve the public in developing a plan to maintain reservoir water levels.

l) Identify, enhance, and protect heavily impacted stream and reservoir banks (eroded or sloughed) from reservoir fluctuations that negatively impact open water focal species.

m) Enhance and protect areas identified in A1l.

B) Limiting Factor: Human disturbance during nesting and brood rearing.

Biological Objective:

1. Protect colonial rookeries and waterfowl broods from disruptive human disturbance. Colonial water birds are sensitive to human disturbance, especially early in the nesting season. Reducing human disturbance will increase nesting success.

Strategies:

a) Identify colonial rookeries and key waterfowl nesting and brood rearing areas on reservoirs and other water bodies.

b) Collaborate with fisheries managers to establish population goals for interactive avian and focal aquatic species.

c) Complete Strategy A1 above for open water/pond/impoundment focal species and then work with dam operators and reservoir/impoundment managers to protect the most important nesting and brood rearing areas from the adverse effects of recreation and achieve avian population goals.

d) Work with regulatory authorities to enact and enforce seasonal wake restrictions and seasonal water recreation closure zones to protect important nesting and brood rearing areas.

C) Limiting Factor: Lack of available or suitable habitat for waterfowl and shorebirds on ponds and impoundments.

Biological Objective:

1. Protect, enhance, and restore nesting habitat for waterfowl and shorebirds on ponds and impoundments.

Rationale: Nesting habitat for ground-nesting waterfowl and shorebirds generally consists of residual herbaceous vegetation left over from the previous growing season. Residual nesting habitat can be adversely affected by livestock grazing during and after the previous growing season. Actions to substantially limit or eliminate livestock grazing in the vicinity of ponds and impoundments would improve cover for ground-nesting waterfowl and shorebirds.

Strategies:

a) Identify ponds or impoundments in the USP that now have suitable nesting habitat for waterfowl and shorebirds or have the potential to be converted to nesting habitat.

b) Acquire ponds or impoundments that now have suitable nesting habitat for waterfowl and shorebirds or have the potential to be converted to nesting habitat.

IV. Focal Habitat: Pine/Fir Forest
Focal Species: Black-backed Woodpecker, Great Gray Owl, Boreal Owl, Northern Goshawk

A) Limiting Factor: Loss of large, late-seral stands.

Biological Objective:

1. Identify, enhance, and protect potential late-seral forest habitats to benefit focal species and achieve forest Desired Future Conditions (DFC). These and other

wildlife species require large blocks of late-seral pine/fir forests for their survival.

Strategies:

a) Work with land managers to create large contiguous, late-seral stage habitats where lacking.

b) Determine, through literature research, the relationship between snag availability and population dynamics of the great gray owl and boreal owl.

c) Determine, through literature research, the seasonal habitat requirements of the northern goshawk and the distribution of suitable goshawk habitat within the subbasins.

d) Work with land managers to preserve and enhance the condition of breeding and wintering habitats of focal species and other late-seral pine/fir forest obligates.

B) Limiting Factor: Fragmentation of forest complexes.

Biological Objective:

1. Use forest management practices to achieve DFC of large stands of healthy forests. These focal species as well as many other species that use late-seral pine/fir forests require large blocks of undisturbed forest complexes for their survival. This is especially true of larger carnivores such as the Canada lynx, wolverine, and grizzly bear. Forest practices, including timber harvest and road-building and use, as well as trail development and use, can fragment these large blocks of habitat into smaller areas interrupted by areas of unsuitable habitat, thereby degrading remaining surrounding forest areas. These actions also introduce sources of human disturbance that displace wildlife, degrade habitat value, and result in predator mortality.

Strategies:

a) Identify where public forest lands have been fragmented to the detriment of focal species and correct those past actions.

C) Limiting Factor: Lack of natural fire regime.

Biological Objective:

1. Reduce fuel loads where appropriate. Use fire management to achieve DFC of healthy forests.

Rationale: Human control of fires during the last 100 years has resulted in many areas with dense stands of smaller conifers that compete with each other for water, light, and nutrients. Managing for a more natural fire regime would improve the health of forest vegetation and reduce the potential for very large fires. Note however, that lodgepole pine, one of the dominant trees of the subbasins, is a relatively short-lived, fire-dependent species and fires in lodgepole pine forests are a normal process needed for forest regeneration. Reducing fuel loads should not be

used as a reason for building new roads into roadless areas as this results in habitat fragmentation.

Strategies:

a) Reduce fuel loads through use of forest management practices (commercial/pre-commercial thinning, timber harvest, prescribed burning) in stands where fire loss is a threat.

b) Allow the use of natural wild fires to burn in Wilderness Areas, Roadless Areas, Wilderness Study Areas, and where fire is a useful event for achieving natural fire regime and DFC of pine/fir and aspen focal habitats.

D) Limiting Factor: Insect and disease damage.

Biological Objective:

1. Use forest management practices to control the spread of insects and disease.

Strategies:

a) Based on recent timber inventories, identify the most important areas within each subbasin that have insect and disease problems relative to improving habitat for focal species.

b) Prescribe and implement management actions accordingly.

V. Focal Habitat: Juniper/Mahogany

Focal Species: Curl-leaf Mountain Mahogany

A) Limiting Factor: Lack of natural fire regime.

Biological Objective:

1. Restore the natural fire regime to prevent juniper encroachment and restore mahogany stands.

Rationale: Juniper encroachment into mountain mahogany stands was historically controlled by periodic fires that probably burned into mahogany from adjacent shrub-steppe communities. Fire control during the last 100 years has allowed junipers to encroach into both mountain mahogany and shrub-steppe communities. Careful use of fires in mahogany stands can eliminate the encroaching junipers while promoting regrowth of mahogany.

Strategy:

a) Allow natural fires to burn in areas of Wilderness Areas, Roadless Areas, and Wilderness Study Areas where this will benefit mountain mahogany.

B) Limiting Factor: Competition with invasive plant species.

Biological Objective:

1. Limit/treat invasive plant species that compete with mahogany.

Rationale: Invasive plant species compete for moisture and nutrients. Control of these plants will improve the health of mountain and curl-leaf mahogany stands.

Strategy:

a) Use integrated management techniques to manage invasive plant species.

C) Limiting Factor: Loss of regeneration.

Biological Objective:

1. Limit livestock and elk grazing/browsing to allow successful mahogany regeneration.

Rationale: Mahogany is a preferred browse species for elk and livestock. All efforts to regenerate mahogany stands must be accompanied by limiting browsing by elk and livestock until the plants are large enough to withstand this pressure without jeopardizing their survival.

Strategy:

a) Use appropriate techniques for stand establishment and to manage wildlife and livestock browsing where improved mountain mahogany regeneration is a goal.

VI. Focal Habitat: Whitebark Pine
Focal Species: Whitebark Pine

A) Limiting Factor: White-pine blister rust.

Biological Objective:

1. Protect remaining stands of whitebark pine from white-pine blister rust.

Rationale: White-pine blister rust has killed a large percentage of whitebark pines in southern and central Idaho in recent years. Historically, whitebark pines have been fairly resistant to pine bark beetles because the beetles could not complete their life cycle in 1 year due to the high elevation and cold conditions where whitebark pines grow. However, warmer average temperatures of the last 15 years have allowed pine bark beetles to complete their life cycle in whitebark pines within one season rather than two, thereby increasing whitebark pine mortality, in addition to the problems from white-pine blister rust. Any actions that can protect remaining stands of whitebark pines from white-pine blister rust and pine bark beetles should be considered.

Strategy:

a) Support ongoing research on white-pine blister rust and encourage establishment of stands of whitebark pine in its historic range.

Biological Objective:

2. Understand and establish conditions that support existing and new stands of whitebark pine.

Strategy:

a) Restore the natural fire regime.

VII. Focal Habitat: Aspen
Focal Species: Quaking Aspen

A) Limiting Factor: Conifer encroachment.

Biological Objective:

1. Manage to have 80 percent of the mixed conifer/aspen habitat complex occur in 100 percent aspen stands.

Rationale: Aspen habitats are extremely valuable for many wildlife species. Fire control has allowed conifers to encroach into and replace aspens. The absence of fire has also allowed many aspen stands to become old and decadent, but without disturbance these old stands cannot be regenerated. Management actions that remove conifers and promote aspen regeneration will improve and perpetuate this valuable habitat type.

Strategy:

a) Identify existing aspen stands and use appropriate forest management techniques to restore 80 percent of those stands to a pure aspen habitat type.

Biological Objective:

2. Manage aspen stands against pine/fir encroachment.

Rationale: Same as A1 for quaking aspen immediately above.

Strategies:

a) Use prescribed burns to control pine/fir encroachment.

b) Allow natural fires to burn in areas in Wilderness Areas, Roadless Areas, and Wilderness Study Areas where this will benefit aspen.

B) Limiting Factor: Inadequate regeneration.

Biological Objective:

1. Reintroduce fire to regenerate aspen in decadent/diseased aspen stands.

Rationale: Same as A1 for quaking aspen immediately above.

Strategy:

a) Use prescribed burns to regenerate decadent stands.

Biological Objective:

2. Manage livestock and big game to allow aspen regeneration after fire in decadent stands.

Rationale: Browsing by livestock and big game species, especially elk when at high density, during the first few years after management to regenerate aspens during the first few years after management to regenerate aspens substantially reduces the long-term success of the action. Early browsing kills young sprouts and those that survive can be substantially deformed, reducing long-term survival.

Strategy:

a) Rest and protect regenerating aspen from livestock grazing for 3 to 4 years following restoration efforts (or longer if needed) on public land allotments where prescribed burns occur.

C) Limiting Factor: Insect and disease damage.

Biological Objective:

1. Manage insect and disease problems in aspen stands.

Rationale: If insects and disease are problems in aspen regeneration areas, they would need to be controlled to increase the chances of long-term success.

Strategy:

a) Determine if insects or disease are factors in aspen decline or regeneration problems and implement measures to address these issues, if appropriate.

VIII. Focal Habitat: Mountain Brush
Focal Species: Antelope Bitterbrush, Green-tailed Towhee, Mule Deer, Rocky Mountain Elk

A) Limiting Factor: Mountain brush regeneration.

Biological Objective:

1. Restore, enhance, and protect the geographic extent of remaining mountain brush habitats. Mountain brush communities can be degraded by many factors including development, long-term fire control, and declining wildlife value as stands age. Maintaining wildlife habitat values of mountain brush stands requires that they be protected from all forms of degradation and that decadent stands be managed to regain habitat value.

Strategies:

a) Determine the distribution of mountain brush communities and begin a cooperative program with public land managers and private land owners to

use appropriate vegetation IDFG to use appropriate vegetation management techniques to improve habitat for focal species.

b) Develop and implement a program to educate the public regarding the importance of mountain brush communities for focal species and other wildlife.

B) Limiting Factor: Fire.

Biological Objective:

1. Manage fire to maintain mountain brush habitats.

Rationale: Historically, fire played a key role in the long-term maintenance of mountain brush communities. However, fire control, recreation developments, and the presence of invasive plant species have changed the fire dynamic of mountain brush communities. Productive stands must receive priority for fire suppression. Fire may need to be used to regenerate decadent mountain brush communities. However, the presence of invasive plant species affects fire behavior and temperature as well as post-fire succession and restoration. All fires in mountain brush communities, whether natural or prescriptive, will likely require active post-fire restoration actions to promote desired native shrub, grass, and forb species and control invasive plant species.

Strategy:

a) Work with land managers to determine which mountain brush communities are high priority for fire suppression, post-fire restoration, and beneficial fire prescriptions.

C) Limiting Factor: Invasive plant species competition.

Rationale: See B1 for mountain brush immediately above regarding control of invasive plant species following fires. Invasive plant species are encroaching into mountain brush communities and degrading habitat values. Once established, invasive plant species such as cheatgrass substantially increase the risk of fire and can dramatically shorten the interval between fires compared to the interval of pre-European settlement times. More frequent fires in mountain brush communities infested with invasive plant species favor the weeds and eventually lead to the loss of shrubs and native grasses and forbs.

Biological Objective:

1. Control invasive plant species such as cheatgrass from encroaching/replacing mountain brush habitats.

Strategy:

a) Work with land managers and private land owners to identify and control invasive plant species and to reduce the extent and spread of existing invasive plant species infestations within mountain brush communities.

D) Limiting Factor: Land use change.

Biological Objective:

1. Identify and protect important mountain brush habitats that lie in winter range areas and/or are vulnerable to development. Mountain brush communities are often extremely valuable big game winter range and are also popular sites for home development. Roads, houses, and the associated people and pets are not compatible with maintaining high-value winter range.

Strategies:

a) Identify mountain brush communities that provide big game winter range and designate these areas as a high priority for fire suppression.

b) Identify mountain brush communities that are privately owned and provide big game winter range or are in danger of development. Designate these areas as a very high priority to protect from conversion to other uses. Develop a thorough range of action alternatives, potential cooperative entities, and funding sources that could be enlisted to assist in protecting these privately owned mountain brush communities threatened by development.

IX. Focal Habitat: Shrub/Steppe
Focal Species: Northern Sagebrush Lizard, Greater Sage-grouse, Sage Sparrow

A) Limiting Factor: Loss of shrub-steppe habitats.

Biological Objective:

1. Protect, enhance, and restore shrub-steppe habitats.

Rationale: Thousands of acres of shrub-steppe habitats have been converted to agricultural uses throughout the Upper Snake Subbasin. Most of those that remain have been degraded by more than 100 years of livestock grazing and related range vegetation manipulation. The three focal species, as well as many others. The three focal species, as well as many others, are sagebrush obligates. Maintaining or improving habitat for these wildlife species requires that remaining shrub-steppe habitats be protected from conversion to other uses and that degraded shrub-steppe habitats be enhanced and restored.

Strategies:

a) Improve on and use the existing program to educate the public regarding the importance of shrub-steppe communities for focal species and other wildlife.

b) Determine the distribution of shrub-steppe communities and begin a program to use appropriate vegetation management techniques to improve habitat of focal species.

Biological Objective:

2. Minimize impacts to native bunch grasses and forbs from livestock grazing and maintain diverse shrub-steppe canopy cover.

Rationale: High-quality habitat for the focal species and other sagebrush obligates requires a diverse mix of native bunch grasses and forbs, along with a healthy sagebrush component. Livestock grazing reduces both native forbs and grasses. The rate of successful nesting by greater sage-grouse increases substantially when there is high-quality residual grass cover from the previous growing season. Chick survival is dependent on the presence of native forbs. Livestock grazing removes bunch grasses so that residual nesting cover for sage-grouse and other species is degraded and also substantially reduces forbs over time. Livestock are also a vector for the establishment of invasive plant species, which further directly and indirectly degrade habitat value for sagebrush obligates.

Strategy:

a) Identify key shrub-steppe communities for focal species (especially greater sage-grouse) and reduce livestock grazing levels so that native bunch grasses and forbs recover.

B) Limiting Factor: Undesirable invasive plant species competition.

Biological Objective:

1. Control undesirable invasive plant species competition.

Rationale: Invasive plant species have encroached or are encroaching into shrub-steppe communities and are degrading habitat values. Invasive plant species out-compete native grasses and forbs, degrading habitat values for all focal species. Once established, invasive plant species such as cheatgrass substantially increase the risk of fire and can dramatically shorten the interval between fires compared to that of pre-European settlement times. More frequent fires in shrub-steppe communities infested with invasive plant species eventually lead to the total loss of shrubs and native grasses and forbs. When this occurs, habitat value for sagebrush obligates is eliminated.

Strategies:

a) Map the distribution of invasive plant species and prioritize treatment.

b) Expand the coordinated effort of those who are treating invasive plant species.

c) Monitor the treatment of invasive plant species

C) Limiting Factor: Land conversion/development.

Biological Objective:

1. Reduce or eliminate land use conversion and habitat fragmentation.

Rationale: Thousands of acres of shrub-steppe habitats have been converted to agricultural uses throughout the Upper Snake Subbasin. Further conversion of shrub-steppe to other land uses will eliminate additional habitat for focal species. Fragmentation of large stands of shrub-steppe habitat by roads, power and fuel rights-of-way, wind turbines, and other developments degrades habitat value of remaining habitats up to 2 miles from the site of the activity, increases human disturbance, increases the occurrence of invasive plant species, and substantially increases the potential for fires. In the presence of invasive plant species, fires severely degrade the habitat value of native shrub-steppe habitats.

Strategies:

a) Encourage land managers to place high importance on shrub-steppe communities for focal species and prevent habitat fragmentation by roads or rights-of-ways or by land conversion.

b) Minimize the amount of shrub-steppe sold or traded out of Federal ownership and then converted to other uses.

c) Create and develop offsite mitigation for land conversion.

Biological Objective:

2. Restore planted crested wheatgrass areas to shrub-steppe habitats.

Rationale: Crested wheatgrass has virtually no value for wildlife. Restoring crested wheatgrass areas to shrub-steppe habitats would provide substantial benefits to focal species and other wildlife.

Strategy:

a) Restore crested wheatgrass seedings to shrub-steppe habitat where the seedings have fragmented shrub-steppe areas.

Biological Objective:

3. Restore shrub-steppe habitats in areas displaced by cheatgrass monocultures.

Rationale: Cheatgrass monocultures have virtually no value for wildlife. Restoring cheatgrass monocultures to shrub-steppe habitats would provide substantial benefits to focal species and other wildlife.

Strategy:

a) Treat cheatgrass monocultures and plant native shrub-steppe vegetation.

D) Limiting Factor: Fire.

Biological Objective:

1. Prevent invasive plant species establishment.

Rationale: Invasive plant species are encroaching into shrub-steppe communities and degrading habitat values. Invasive plant species out-compete native grasses and

forbs, degrading habitat values for all focal species. Once established, invasive plant species such as cheatgrass substantially increase the risk of fire and can dramatically shorten the interval between fires compared to that of pre-European settlement times. More frequent fires in shrub-steppe communities infested with invasive plant species eventually lead to the total loss of shrubs and native grasses and forbs. When this occurs, habitat value for sagebrush obligates is eliminated.

Strategy:

a) Implement post-fire restoration so that shrub-steppe communities can be re-established.

E) Limiting Factor: Juniper encroachment.

Biological Objective:

1. Treat Utah juniper encroachment on shrub-steppe habitat. Juniper encroachment into shrub-steppe habitats displaces native shrubs, grasses, and forbs and generally degrades habitat values for shrub-steppe focal species and other shrub-steppe obligates. Reducing existing juniper encroachment will improve shrub-steppe habitat values. Controlling future juniper encroachment will maintain shrub-steppe habitat value.

   Strategy:

   a) Treat juniper encroachment (e.g., Utah Juniper) into shrub-steppe habitat to maintain long-term shrub-steppe habitat value.

CHAPTER 4

Coordination with Existing Programs

For the USP Plan to be adopted by the NPCC, it must conform to existing Federal guidelines of the ESA and CWA. The USP Plan provides an important context for prioritizing areas for ecological protection and restoration that can mutually assist in the recovery of ESA species and their critical habitat while supporting components of the State of Idaho's Water Quality Management Plan. The following is a brief description of the ESA and CWA mandates and the applicable biological objectives that mutually contribute to addressing species recovery and supporting improved water quality.

Endangered Species Act Considerations

The USP contains species listed as threatened or endangered under the ESA (16 U.S.C. §§ 1531–1544). The ESA, as amended, establishes a national program for the conservation of threatened and endangered species of fish, wildlife, and plants and the habitats on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with the USFWS and National Marine Fisheries Service (NOAA Fisheries), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy their designated critical habitats.

Section 7 of the ESA also makes it clear that all Federal agencies should participate in the coordination of programs that involve listed species. Under this provision, Federal agencies often enter into partnerships and memoranda of understanding with the USFWS or NOAA Fisheries for implementing and funding conservation agreements, management plans, and recovery plans developed for listed species. Development of these types of partnerships is encouraged under the ESA to enable proactive approaches for managing listed species.

Consistency with Existing Recovery Plans

The USFWS and NOAA fisheries are developing, or have developed, recovery plans for species listed under the ESA. Actions called for in the USP Plan, which includes listed species under USFWS jurisdiction, are consistent and integrated with USFWS recovery plans in their objectives, application, performance measures, and recovery criteria.

There are presently 12 species listed as endangered or threatened, or are a candidate for listing, under the ESA that exist or have potential habitat within the USP (Table 3). Four of these ESA-listed or candidate species are also focal species identified in the USP Plan for assessing the long-term health of focal habitats. These species are the Utah valvata snail (endangered), Snake River physa snail (endangered), and bull trout (threatened) for aquatic habitats, and the yellow-billed cuckoo (candidate) for riparian and wetland habitats. Bull trout is the only fish species listed under the ESA that currently exists in the USP, and occurs specifically in the Upper Snake Closed Subbasin.

TABLE 3
List of Threatened, Endangered, and Candidate Species by USP Subbasin

	Listed and Candidate Species				
		Subbasin Occurrence			
Species	Status	Snake Headwaters	Upper Snake	Upper Snake Closed	Focal Species
Utah valvata snail (*Valvata utahensis*)	LE		X		X
Idaho springsnail (*Pyrgulopsis idahoensis*)	LE				
Snake River physa snail (*Physa natricina*)	LE		X		X
Bliss Rapids snail (*Taylorconcha serpenticola*)	LT		X		
Banbury Springs lanx (*Lanx n* sp.)	LE		X		
Bull trout (*Salvelinus confluentus*)	LT			X	X
Gray wolf (*Canis lupus*)	Exp/Non	X	X	X	
Grizzly bear (*Ursus arctos*)	LT	X	X		
Ute ladies'-tresses orchid (*Spiranthes diluvialis*)	LT	X	X		
Bald eagle (*Haliaeetus leucocephalus*)	LT	X	X	X	
Canada lynx (*Lynx canadensis*)	LT	X	X	X	
Yellow-billed cuckoo (*Coccyzus americanus*)	C	X	X	X	X

C = ESA Listing candidate
LT = ESA listed threatened
LE = ESA listed endangered
Experimental / Nonessential

Utah Valvata Snail and Snake River Physa Snail

The Utah valvata snail and Snake River physa snail are two of five Snake River snail species that were listed concurrently as threatened or endangered on December 14, 1992 (57 FR 59244). Figure 2-29 in the USP Assessment identifies the known locations of the Utah valvata snail and Snake River physa snail. *The Snake River Aquatic Species Recovery Plan* (Snail Recovery Plan; USFWS 1995), which covers the middle Snake River (from C. J. Strike Reservoir to American Falls Dam), lists the impounding of the previously free-flowing river reaches, reductions in cold-water habitats, deteriorating water quality, and the introduction and invasion of non-native species as the primary threats to the Snake River mollusks, including the Utah valvata snail and Snake River physa snail (USFWS 1995).

The strategy for recovery of the Snake River mollusks is identified within the Snail Recovery Plan (1995) and includes:

- Secure, restore, and maintain essential aquatic habitats (Priority 1)
- Rehabilitate, restore, and maintain watershed conditions (Priority 1)
- Monitor native fauna populations and habitat (Priorities 1 and 2)
- Update and revise recovery plan criteria and objectives (Priority 2)

Table 4 shows the common links between the Snake River mollusks recovery strategies and the Management Plan's corresponding biological objectives.

TABLE 4
Snake River Mollusks Recovery Strategies and Corresponding Management Plan Objectives

Snake River Mollusks Recovery Strategies	Corresponding USP Plan Objectives
Secure, restore, and maintain essential aquatic habitats	I-A1, I-D1, I-D2, I-F1, I-G1, I-H1, I-I1, I-I2, I-J1, I-L2, I-M1
Rehabilitate, restore, and maintain watershed conditions	All aquatic objectives (I-A1 through I-N2)
Monitor native fauna populations and habitat	I-A1, I-D1, I-D2, I-F1, I-G, I-H1, I-I1, I-I2, I-M1, I-N1
Update and revise recovery plan criteria and objectives	All aquatic objectives (I-A1 through I-N2)

Bull Trout

All populations of bull trout within the contiguous U.S. (lower 48 states) were listed under the ESA as threatened on November 1, 1999 (64 FR 58910). The *Draft Bull Trout Recovery Plan* (Recovery Plan, USFWS 2002) provides a framework for implementing recovery actions and identifying critical habitats for the species. Within the USP, bull trout are only found in the Little Lost Watershed, part of the Upper Snake Closed Subbasin. Bull trout is identified as a focal species in the USP Assessment specifically to address the limiting factors affecting the Little Lost Watershed. This Management Plan identifies aquatic and riparian/wetland limiting factors, biological objectives, and strategies that encompass the limiting factors and objectives listed in the Recovery Plan.

The Recovery Plan states reasons for bull trout declines are primarily from elevated stream temperatures caused by a combination of natural and management-induced conditions. Temperature problems are exacerbated by stream water loss from irrigation diversions, stream habitat degradation from improper livestock grazing practices, and historic stream-side timber harvesting. Other, less important, factors contributing to bull trout declines include sediment and pollutant runoff from transportation networks, mining, and land developments. Habitat fragmentation from barriers genetically isolates populations. Past fisheries management practices have introduced competing non-native fishes that threaten bull trout populations.

The Recovery Plan (USFWS 2002) identifies four objectives for the successful recovery of bull trout in the Little Lost Watershed.

- Maintain current distribution of bull trout and restore distribution in previously occupied areas within the Little Lost Recovery Unit
- Maintain stable or increasing trend in abundance of bull trout in the Little Lost Recovery Unit
- Restore and maintain suitable habitat conditions for all bull trout life history stages and strategies.
- Conserve genetic diversity and provide opportunity for genetic exchange

Table 5 shows the common links between the bull trout recovery objectives and the Management Plan's corresponding biological objectives.

TABLE 5
Bull Trout Recovery Plan Objectives and Corresponding Management Plan Objectives

Bull Trout Recovery Plan Objectives	Corresponding Management Plan Objectives
Maintain and restore bull trout distribution	I-B1, I-E1, I-F2, I-G1, I-H1, I-L2.
Maintain or increase bull trout abundance	All aquatic objectives (I-A1 through I-N2)
Restore and maintain habitat for all life stages	I-F1, I-F2, I-H1, I-I1, I-I2, I-J1, I-K1,
Conserve genetic diversity/provide genetic exchange	I-L1, I-L2, I-M1, I-M2, I-N1, I-N2

Yellow-billed Cuckoo

The yellow-billed cuckoo is a candidate species with the USFWS for listing under the ESA. The final rule, dated October 30, 2001, lists the western Distinct Population Segment (DPS) as warranted for Federal listing but precluded by higher priority species. There is no USFWS recovery plan or proposed critical habitat for this species in Idaho. It is a rare, sometimes erratic visitor and breeder in the Snake River Valley, which includes portions of the USP. However, the primary threats to the species include habitat loss, overgrazing, tamarisk invasion of riparian areas, river management, logging, and pesticides as causes of decline.

Yellow-billed cuckoos in the western U. S. appear to require large blocks of healthy riparian habitat for nesting (particularly multi-layered cottonwood/ willow complexes). Nesting occurs almost exclusively close to water, possibly due to humidity requirements for hatching and rearing young.

The biological objectives in the Management Plan that benefit cottonwood/willow complexes along the lower reaches of the USP could potentially benefit yellow-billed cuckoos. Depending on location of a project, implementation of the following objectives could provide a mutual benefit to the yellow-billed cuckoo: biological objectives I-A1, I-I2,

and all objectives listed under the riparian/wetland focal habitat (includes II-A1 through II-G1).

Clean Water Act Considerations

The EPA administers the Federal CWA, requiring enforcement of water quality standards by states. These standards are segregated into point and non-point source water pollution, with point sources requiring permitting. Although controversial, this segregation means that most farming, ranching, and forestry practices are considered non-point sources and, thus, do not require permitting by the EPA. A TMDL, or total maximum daily load, is a tool for implementing water quality standards where impairment of beneficial uses exists (EPA 2004). Stream reaches that are impaired are listed according to CWA Section 303(d). Once a stream is 303(d) listed, a TMDL is developed that analyzes or quantifies the sources of impairment and their contribution to meeting water quality standards. The State of Idaho is required to develop an implementation plan within 18 months once a TMDL is completed by the State and approved by the EPA. The plan describes what management action will be implemented to correct the pollution problem and bring the stream reach into compliance. Management actions to improve non-point sources are voluntary. As a result, many State and Federal programs exist that provide cost-share incentives to private land owners to implement management actions to correct exceedences identified in the TMDL.

Implementation of the Management Plan's biological objectives and associated strategies would mutually aid water quality attainment for 303(d)-listed water bodies. The following summarizes where the Plan's biological objectives are consistent with correcting particular pollution sources that have been documented in completed TMDLs and are a part of water quality implementation plans by the Idaho Department of Environmental Quality (IDEQ). The IDEQ manages the water quality program for the State of Idaho.

Consistency with Idaho's Water Quality Management Plan

The vision of the Idaho Non-point Source Management Program is that all long-term goals and short-term objectives be implemented in a manner to protect or restore (where possible) the beneficial uses of the State's surface water and groundwater (IDEQ 1999). The continuing focus for the State of Idaho within the foreseeable future will be to develop and implement TMDLs for 303(d)-listed water bodies. The State of Idaho has committed to the completion of TMDL implementation plans within an 18-month period following the EPA approval of a TMDL (IDEQ 1999).

303(d)-Listed Segments

Section 303(d) of the CWA requires that water bodies violating State or Tribal water quality standards be identified and placed on a 303(d) list. Water bodies that do not meet water quality standards with implementation of existing management measures are listed as impaired under §303(d) of the CWA. It is each state's responsibility to develop its respective 303(d) list and establish a TMDL for the parameter(s) causing water body impairment (USEPA 2004).

Within the USP subbasins, there are 162 water-quality-limited water body segments. Existing pollution controls or requirements are inadequate to provide for the attainment and

maintenance of water quality standards (i.e., impaired or threatened by pollution) for these stream segments. In total, more than 3,000 km (1,800 miles) of rivers and streams, excluding reservoirs, are currently water-quality-limited in the USP subbasins. In order to have the most current list and data on 303(d) streams, Section 1.7.1 of the Assessment was revised with the recently EPA-adopted list. This revision is found in Appendix X of the Addendum to the Assessment.

TMDLs in Upper Snake Province

A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and instream water quality conditions. The TMDL establishes the allowable loadings or other quantifiable parameters for a water body and thereby provides the basis to establish water-quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards.

Assessments of TMDLs have been completed for many of the 303(d)-listed waterbodies in the USP. Table 6 presents these waterbodies, their listed pollutants, and the corresponding biological objectives from the Management Plan that would directly improve these pollution problems.

TABLE 6
Summary of Completed TMDLs Within the Upper Snake Province and Applicable Management Plan Objectives

Watershed (EPA Approval Date)	Pollutant(s)	Applicable Objectives from Management Plan
Big Lost River (August 2004)	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Ammonia	I-G1
	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
Fall Creek (April 2004)	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
Upper Henry's Fork (Not required)	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
Lemhi River (March 2000)	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Bacteria (fecal coliform)	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1
Idaho Falls (Draft)	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
Little Lost River (September 2000)	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1

TABLE 6
Summary of Completed TMDLs Within the Upper Snake Province and Applicable Management Plan Objectives

Watershed (EPA Approval Date)	Pollutant(s)	Applicable Objectives from Management Plan
Medicine Lodge (May 2003)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Habitat Alteration	I-I2, I-J1, I-K1, II-A2, II-C1, II-D1, II-D2, II-G1
Palisades (February 2001)	Sediment	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
Teton (February 2003)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Habitat Alteration	I-I2, I-J1, I-K1, II-A2, II-C1, II-D1, II-D2, II-G1
Teton Supplement (Sept 2003)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Habitat Alteration	I-I2, I-J1, I-K1, II-A2, II-C1, II-D1, II-D2, II-G1
Willow Creek (June 2004)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
American Falls (Draft)	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Bacteria	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
Blackfoot River (April 2002)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Organics	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1

TABLE 6
Summary of Completed TMDLs Within the Upper Snake Province and Applicable Management Plan Objectives

Watershed (EPA Approval Date)	Pollutant(s)	Applicable Objectives from Management Plan
Portneuf River (April 2001)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Bacteria	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Oil and grease	I-G1
Goose Creek (July 2004)	Sediment /Phosphorus	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Bacteria	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1
	Temperature	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Flow Alteration	I-A1, I-D1, I-F1, I-G1, I-H1
Lake Walcott (June 2000)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Dissolved Oxygen	I-D1, I-F1, I-G1, I-I2
	Pesticides	I-G1
	Oil and grease	I-G1
Raft River (June 2000)	Temperature/Nutrients	I-A1, I-D1, I-F1, I-G1, I-H1, I-I1, I-I2, II-A1, II-A2, II-A4, II-B1, II-C1, II-D2, II-E1, II-F1, II-G1
	Bacteria	I-I2, II-A1, II-B1,II-C1, II-D1, II-D2, II-F1
	Sediment	I-A1, I-D1, I-F1, I-G1, I-H1
	Flow Alteration	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Habitat Alteration	I-I2, I-J1, I-K1, II-A2, II-C1,II-D1, II-D2, II-G1
Upper Snake-Rock (August 2000)	Sediment/Nutrients	I-D2, I-I1, I-I2, II-A3, II-C1, II-D1, II-E1, II-G1
	Bacteria	I-I2, II-A1, II-B1, II-C1, II-D1, II-D2, II-F1
	Ammonia	I-G1
	Pesticides	I-G1
	Oil and grease	I-G1

Water Quality Anti-Degradation Policy (39-3603)

The State of Idaho has a Water Quality Anti-degradation Policy that, in general, states that surface water quality shall be maintained at a level to support the designated beneficial uses.

Many of the biological objectives and strategies of the USP Plan are very applicable to, and supportive of, the anti-degradation policy. Some streams, though not listed as polluted yet, have been degraded by natural and anthropogenic causes over time and are vulnerable to future listing. Appendix B presents a qualitative rating of the Plan's biological objectives to the applicable Federal CWA and ESA mandates. One consideration within the CWA rating of each objective is its contribution to the anti-degradation policy.

ESA and CWA Qualitative Evaluation of Biological Objectives

Appendix B is a matrix that provides a qualitative evaluation of the biological objectives in the Plan and their contribution to the Federal CWA and ESA mandates. In other words, do the objectives contribute to addressing problems with the 12 listed or candidate ESA species, and those recently and currently petitioned species for ESA consideration (pigmy rabbit, sage-grouse, Jackson Hole spring snail, and sharpe-tailed grouse) and do the objectives contribute to improving 303(d)-listed water bodies and/or are supportive of the anti-degradation policy? The rating criteria used in Appendix B follows:

(++) highly supportive = there is a direct benefit to the Federal mandate
(+) supportive = there is an indirect benefit to the Federal mandate
(0) neutral = no expected direct or indirect benefits to the Federal mandate
(-) negative = direct or indirect negative effects to the Federal mandate

The qualitative matrix in Appendix B could be used as a tool by planners in evaluating project submittals. Each project submittal will likely employ multiple objectives and their associated strategies to correct limiting factors. Submittals could be rated on their cumulative benefits to CWA and ESA issues as part of the overall evaluation process. The local project application review committee could expand or modify this matrix.

CHAPTER 5

Project Application Preparation and Evaluation Process

Participant Status

In the past, the fish and wildlife program of the Shoshone-Bannock Tribe's (SBT) and the Idaho Department of Fish and Game (IDFG) have received FWP funding for implementing and managing wildlife mitigation projects based on their regulation-mandated fish and wildlife responsibilities and technical expertise with in the USP. The NPCC encourages other Federal, State, Tribal agencies, and non-governmental organizations to be involved in the Fish and Wildlife Program that funds fish and wildlife projects.

Upper Snake Basin Working Group—Projects Planning

The SBT-and IDFG representatives agreed to facilitate a working group of participants with the goal of preparing and submitting coordinated project applications. By developing a collaborative working group for project submissions, it will bring local technical expertise together from Federal, State, Tribal agencies, and non-governmental organizations. The working group will guide fish and wildlife managers and other interested parties through a coordinated process to identify priority areas, projects, time frames for project development, and applications that fits within the NPCC time-frame for the appropriate FWP program period. This time frame is described as a rolling 3-year review that spans the 15-year program period.

Core Group—Projects Submission

Some agency participants of the Planning Team (SBT, IDFG, BLM, and USFWS) for the USP Plan also agreed to function as a Core Group to evaluate project submittals as an interim step prior to final proposal submission to the NPCC. The planning has developed evaluation criteria for the Core Group to use in their evaluation and ranking criteria for proposed projects that are submitted to the NPCC. The Core Group will provide regional planning expertise through their evaluation criteria that will aid the NPCC in their decision-making process. Each application submitted to the NPCC for funding will include a review form or letter of support from the Core Group that provides a review of each proposal and the level to which the proposal is consistent with the USP Plan. The following section describes the criteria proposed for use by the Core Group in their evaluation.

Criteria Guiding Prioritization

Habitat-Based Program: Does the project help complete mitigation for adverse effects to fish and wildlife caused by the development and operation of the hydropower system?

- Assesses resident fish losses in terms of various critical population characteristics of key species
- Quantifies wildlife losses caused by the construction and inundation of hydropower projects
- Addresses and quantifies wildlife losses caused by operation and secondary losses due to operation of the hydropower system
- Addresses mitigation previously estimated by existing fish and wildlife loss assessments

Build From Strength: Does the project help to protect healthy ecosystem features within the province or subbasin that support existing populations that are healthy and productive?

- Protects existing high-quality habitats as determined by the Assessment
- Expands high-quality habitats by connecting or improving adjacent habitat
- Protects existing benefits from fish and wildlife valued by the people of the USP or subbasin

Restore Ecosystems: Does the project improve the Columbia River ecosystem to sustain an abundant, productive, and diverse community of fish and wildlife?

- Expands and maintains diversity within and among species
- Significantly increases abundance, productivity, and/or life history diversity
- Addresses problems identified in water quality implementation plans
- Artificial production will complement habitat improvements and be used consistently with ecological principles for fish recovery and clearly benefit wild populations.

Use Native Species: Does the program protect and restore natural ecological function and native species in native habitats as a starting point and direction for needed biological conditions?

- Benefits focal species
- Provides protection and works to restore ESA-listed species
- Benefits species and populations of concern to provincial and subbasin fish and wildlife managers

Cost Effective: Projects will be new and existing, applied to desired outcome and physical and biological realities (do-able).

- Collaborative with affected stakeholders
- Coordinated throughout the subbasin and USP
- Connects fish and wildlife mitigation and restoration efforts
- Implementation can occur timely, relative to NPCC time frames and funding review process
- Consistent with an adequate, efficient, economical, and reliable electrical power supply

CHAPTER 6

Research, Monitoring, and Evaluation

The research, monitoring, and evaluation (RM&E) protocol for the USP Plan is not included in this planning document. Although the technical guide for plan development recommends including this section, the NPCC has recently recommended not including this element in the USP Plan for this planning cycle. The NPCC is in the process of clarifying and standardizing RM&E guidance to provide more consistency among subbasin and province plans. The NPCC time frame is described as a rolling 3-year review of plans across a 15-year period of the FWP. It is expected that the NPCC's RM&E guidance will be included in the next 3-year planning cycle for the USP Plan. However, in the absence of programmatic guidance for RM&E by the NPCC, all proposals submitted to the NPCC will be required to contain individual monitoring and evaluation components that will be used to measure and evaluate proposed project successes.

CHAPTER 7

References

EPA. See U.S. Environmental Protection Agency.

FWS. See U.S. Fish and Wildlife Service.

Idaho Department of Environmental Quality. 1999. Idaho nonpoint source management plan. http://www.deq.state.id.us/water/nps/nps.htm

IDEQ. See Idaho Department of Environmental Quality.

Martin, R.C. and G.A. Meuleman. 1989. Minidoka Dam wildlife impact assessment. Idaho Department of Fish and Game. Boise, Idaho. 69 pp.

Northwest Power and Conservation Council. 2000. Columbia River Basin Fish and Wildlife Program. <http://www.nwcouncil.org/library/2000/2000-19/Default.htm>

Northwest Power Planning Council (NPPC). 2001a. Subbasin planning overview. Northwest Power Planning Council Document 2001-19, Northwest Power Planning Council, Portland, Oregon, 3 pp. <http://www.nwppc.org/fw/subbasinplanning/admin/guides/overview.htm>

Northwest Power Planning Council (NPPC). 2001b. Technical guide for subbasin planners. Northwest Power Planning Council Document 2001-20, NPCC, Portland, Oregon, 24 pp. <http://www.nwppc.org/library/2001/2001-20.htm>

NPCC 2004. Fish and Wildlife Program, Northwest power and Conservation Council. 12/30/2004. http://www.nwppc.org/fw/program/Default.htm

NPCC. See Northwest Power and Conservation Council.

NPPC. See Northwest Power Planning Council.

Sather-Blair, S. and S. Preston. 1985. Wildlife impact assessment palisades project, Idaho. U.S. Fish and Wildlife Service, Office of Ecological Services, Boise, Idaho. 84 pp. plus attachments.

U.S. Environmental Protection Agency (EPA). 2004. Total maximum daily load program: Region 10: The Pacific Northwest. http://yosemite.epa.gov/R10/water.nsf/

USFWS. See U.S. Fish and Wildlife Service.

U.S. Fish and Wildlife Service (USFWS). 1995. Snake River Aquatic Species Recovery Plan. November 26, 1995.

U.S. Fish and Wildlife Service (USFWS). 2002. Bull trout (*Salvelinus confluentus*) Draft Recovery Plan. Region 1, Southwest Idaho recovery unit, Idaho. Chapter 18 *in* U.S. Fish and Wildlife Service. U.S. Fish and Wildlife Service, Portland, Oregon.

Appendix A

DRAFT MANAGEMENT PLAN APPENDIX B

Comparison of Biological Objectives with CWA and ESA Mandates