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42 San Poil Subbasin Management Plan

The San Poil Subbasin Management Plan was developed by the San Poil Subbasin Work Team. Detailed information describing the membership and formation of the Subbasin Work Teams and the process used to develop and adopt the management plan can be found in Section 1.2. In general, the components of the management plan, including the subbasin vision, guiding principles, and prioritized biological objectives and strategies were developed in a series of six meetings between June 2003 and March 2004.

The Oversight Committee (OC), Technical Coordination Group, and the San Poil Subbasin Work Team worked collaboratively to establish technically sound objectives and strategies that respond to the limiting factors identified in the subbasin assessment. The management plan was developed in several iterations between the OC and Subbasin Work Teams and the Technical Coordination Group.

Biological objectives were developed using a tiered approach. The Council developed the Columbia River Basin biological goals based on the scientific principles identified in the 2000 Fish and Wildlife Plan. The OC established the province level objectives under the Columbia River Basin level goals by responding to recommendations from the GEI Team, the Technical Coordination Group, and the Subbasin Work Teams. The Subbasin Work Teams developed the subbasin level biological objectives and strategies under the Province objectives, with assistance from the Technical Coordination Group and the GEI Team.

42.1 Summary of San Poil Assessment and Limiting Factors

The vision and biological objectives of the management plan reflect what is learned in the assessment and inventory work. In the San Poil Subbasin, the aquatic and terrestrial assessments and inventories are described in detail in sections 38 to 41 of this document. A brief overview of the key limiting factors that are addressed in this management plan is included below.

42.1.1 San Poil Aquatic Assessment and Limiting Factors

Redband/rainbow trout, Chinook, and kokanee were selected as focal species in the San Poil Subbasin. All three of these species are native to the San Poil Subbasin, although anadromous Chinook are no longer present in the Subbasin because of the lack of fish passage at Chief Joseph and Grand Coulee dams.

Overall, the most important limiting factors for fisheries in the San Poil Subbasin resulted from the construction of Grand Coulee Dam and the subsequent loss of anadromous fishes and the conversion of rivers into reservoirs. The loss of the anadromous life history in the blocked area had a wide range of impacts on the fish, wildlife, and people of the area. These impacts are described in more detail in sections 2.2 and 1.4.1, but include loss of aquatic productivity, loss of fishing opportunity, increased fishing and hunting pressure on other species, and increased stocking of nonnative species. These limiting factors are addressed in the San Poil Subbasin Management Plan through objectives 1A1, 1A2, 2A1, 2A2, 2A3, 2C1, and 2C2.

We used QHA modeling to help us assess the limiting factors in the rivers and streams of the Subbasin. The most significant stream habitat limiting factors for the focal species are listed in tables 42.1-1, 42.1-2, and 42.1-3. In parentheses is the number of reaches or watersheds within the San Poil Subbasin where that particular habitat attribute is the worst habitat-related limiting factor. The numbers in the Objective column correspond to the subbasin objectives that were developed in this management plan to address this limiting factor. Aquatic objectives for the San Poil Subbasin are described in more detail in Section 42.3.

Within the San Poil Subbasin obstructions was the variable that was the greatest problem for resident redband trout, while low flows was the habitat variable that was most often indicated for adfluvial rainbow trout. Low flow, fine sediment, and obstructions were implicated relatively equally as the most deteriorated habitat variable for kokanee.

Table 42.1-1. Stream habitat conditions that currently most deviate from the reference for adfluvial rainbow trout, San Poil Subbasin. The number in parenthesis is the number of reaches or watersheds within the San Poil Subbasin where that particular habitat attribute is the worst habitat-related limiting factor. The numbers in the Objective column correspond to the subbasin objective that was developed to address this limiting factor in Section 42.3.

Adfluvial Rainbow	
Habitat Condition	**Objective**
Low Flow (15)	1B2, 1B7
Obstructions (11)	1B2. 1B1
High Flow (10)	1B2, 1B7
Habitat Diversity (7)	1B2. 1B6
Fine Sediment (6)	1B2, 1B5
Riparian Condition (5)	1B2, 1B3
Low Temperature (4)	1B2
Oxygen (3)	1B2
High Temperature (1)	1B2, 1B4

Table 42.1-2. Stream habitat conditions that currently most deviate from the reference for resident rainbow trout, San Poil Subbasin. The number in parenthesis is the number of reaches or watersheds within the San Poil Subbasin where that particular habitat attribute is the worst habitat-related limiting factor. The numbers in the Objective column correspond to the subbasin objective that was developed to address this limiting factor in Section 42.3.

Resident Redband	
Habitat Condition	**Objective**
Obstructions (28)	1B2, 1B1
Riparian Condition (22)	1B2, 1B3
Habitat Diversity (21)	1B2, 1B6
Low Flow (10)	1B2, 1B7
Channel Stability (8)	1B2, 1B6

Resident Redband	
Habitat Condition	**Objective**
Fine Sediment (5)	1B2, 1B5
High Temperature (1)	1B2, 1B4

Table 42.1-3. Stream habitat conditions that currently most deviate from the reference for kokanee, San Poil Subbasin. The number in parenthesis is the number of reaches or watersheds within the San Poil Subbasin where that particular habitat attribute is the worst habitat-related limiting factor. The numbers in the Objective column correspond to the subbasin objective that was developed to address this limiting factor in Section 42.3.

Kokanee	
Habitat Condition	**Objective**
Fine Sediment (6)	1B2, 1B5
Low Flow (5)	1B2, 1B7
Obstructions (5)	1B2, 1B1

Although habitat degradation is one of the primary limiting factors for native fishes within the San Poil Subbasin, other factors have negatively impacted the native fish communities within the Subbasin. Nonnative fish introductions within the San Poil Subbasin and in the mainstem Columbia River have had negative impacts on the native fish communities of the San Poil River and its tributaries. The recreational and subsistence fishery is heavily dependent on nonnative fishes such as eastern brook trout and walleye. These fishes have a variety of negative impacts on native fish populations within the Subbasin. Direct predation, competition, and genetic hybridization are a few of the documented consequences of nonnative species introductions. Although it is well documented that nonnative species can have detrimental effects on native fishes, large scale changes in habitat often force managers to fill voids in recreational and subsistence fisheries with species that are more suited for the currently available altered habitats. Management plan objectives that are designed to address nonnative species issues are 1C1, 2A2, and 2C2.

42.1.1 San Poil Terrestrial Assessment and Limiting Factors

Wildlife in the San Poil Subbasin are limited by habitat quantity and quality. Construction of the Grand Coulee Project affected habitats along the lower 12 miles of the San Poil River. In addition, the project had a number of secondary effects to terrestrial resources, including accelerated rates of industrial, agricultural, and residential development leading to loss of habitat; increased hunting pressure on wildlife; and loss of salmonid nutrients to the ecosystem.

Factors currently limiting terrestrial resources in the Subbasin are dominated by loss of habitat and modification of habitat quality as a result of human land uses. The San Poil Subbasin has been highly modified from historic conditions due primarily to timber harvest, increased road densities, agriculture and grazing. Approximately two percent of native habitats have been converted to agriculture and developed land uses.

Management plan objectives addressing the losses from the construction of and inundation from the FCRPS are Objective 1A and associated sub-objectives. Management plan objectives that address the operational impacts to terrestrial species and habitats are Objective 1B and associated sub-objectives. Objectives 2A through 2D address secondary impacts of the hydropower system, as well as other impacts to terrestrial resources that have affected the Subbasin.

42.2 Subbasin Vision and Guiding Principles

The vision for the San Poil Subbasin is:

> *We envision the San Poil Subbasin and Curlew Lake being comprised of and supporting viable, diverse wildlife populations, and their habitats, that contribute to the social, cultural, and economic wellbeing of the Pacific Northwest.*

In addition to the vision, the members of the San Poil Subbasin Work Team drafted the following guiding principles:

1. Subbasin planning should be consistent with the Northwest Power Act, Northwest Power and Conservation Council's Fish and Wildlife Program and technical guidance for subbasin planning, while complementing existing plans, policies, and planning efforts.
2. Integrated subbasin plans should consider ecological and political boundaries.
3. Human interests can be balanced with fish and wildlife needs.
4. All people are stewards for future generations.
5. The subbasin plan should be based on best-available science.
6. Subbasin plans will address cultural, recreational, and subsistence issues.
7. Public involvement is essential for successful plan development and implementation.
8. The subbasin plan will give priority to self-sustaining fish and wildlife populations when appropriate.

42.3 Aquatic Objectives and Strategies

The Columbia River Basin and IMP objectives for aquatic resources presented below were not assigned priorities by the OC. The San Poil Subbasin objectives which follow were prioritized by the Work Team. The ranking of the objectives is given in parenthesis after the objective. The strategies are presented in order of priority beneath each objective. Objectives and strategies also included in the research, monitoring, and evaluation plan are marked with an asterisk.

Columbia River Basin Level Category 1: Mitigate for resident fish losses.

Columbia River Basin Level Goal 1A:
Complete **assessments of resident fish losses** throughout the Columbia River Basin resulting from the federal and federally-licensed hydrosystem, expressed in terms of the various critical population characteristics of key resident fish species.

Province Level Objective 1A:
Fully mitigate fish losses related to construction and operation of federally-licensed and federally operated hydropower projects.

Subbasin Objective 1A1: Expand stable littoral zones along the San Poil arm of Lake Roosevelt to contribute to the Upper Columbia Subbasin objective of stabilizing 10 percent of the reservoir surface area. (Priority 10)

Strategy a: Use vegetation enhancements, annual seeding and water retention in backwater areas to increase near-shore fish production, increase shoreline stability, and reduce erosion.

Strategy b: Conserve and protect intact or restored riparian areas.

Strategy c: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 1A2: Assess and implement nutrient enrichment program for Lake Roosevelt and tributaries. (Priority 12)

Strategy a: Return marine derived nutrients to systems consistent with prudent disease and fish health practices.

Strategy b: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Columbia River Basin Level Goal 1B:
Maintain and restore **healthy ecosystems and watersheds**, which preserve functional links among ecosystem elements to ensure the continued persistence, health and diversity of all species including game fish species, non-game fish species, and other organisms. Protect and expand habitat and ecosystem functions as the means to significantly increase the abundance, productivity, and life history diversity of resident fish at least to the extent that they have been affected by the development and operation of the federal and federally-licensed hydrosystem.

Province Level Objective 1B:
Protect and restore in-stream and riparian habitat to maintain functional ecosystems for resident fish, including addressing the chemical, biological, and physical factors influencing aquatic productivity.

Subbasin Objective 1B1: Inventory all barriers in San Poil Subbasin by 2005 and begin implementing necessary passage improvements associated with man made barriers by 2006. (Priority 7)

Strategy a: Remove identified barriers at 20 percent per year over five years, where prudent. Work team note: Many barriers have already been identified and prioritized by agencies and tribes and removal should not be held up until others are inventoried.

Strategy b*: Inventory and prioritize barrier removal.

Strategy c*: Develop minimum in-stream flows for fish-bearing streams within the San Poil River Subbasin that meet the biological requirements of salmonid fishes.

Strategy d: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Strategy e: Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.

Subbasin Objective 1B2: Begin implementation of habitat strategies for addressing identified limiting factors for all focal species and native fishes by 2005. (Priority 1)

Strategy a: Conduct riparian habitat restoration, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species.

Strategy b: Improve water quality on Curlew Lake.

Strategy c: Return marine derived nutrients to systems consistent with prudent disease and fish health practices.

Strategy d: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Strategy e: Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road densities to desired levels in accordance with existing land management plans.

Strategy f: Construct spawning channels or acclimation sites to increase natural salmonid production.

Subbasin Objective 1B3: Enhance, conserve, and protect riparian habitats to the extent that 80 percent of each stream's riparian areas remain intact and functional. (Priority 3)

Strategy a: Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species.

Strategy b: Conserve and protect intact or restored riparian areas.

Strategy c: Limit livestock from riparian areas and replant native riparian plants where needed.

Strategy d: Use vegetation enhancements, annual seeding and water retention in backwater areas to increase near-shore fish production, increase shoreline stability, and reduce erosion.

Strategy e: Protect and restore cottonwood galleries.

Strategy f: Implement weed control.

Strategy g: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 1B4: Maintain and/or achieve stream temperatures below 18^{o} C for all streams that support salmonid fish populations. (Priority 6)

Strategy a: Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species.

Strategy b: Conserve and protect intact or restored riparian areas.

Strategy c: Limit livestock from riparian areas and replant native riparian plants where needed.

Strategy d*: Develop minimum in-stream flows for fish-bearing streams within the San Poil River Subbasin that meet the biological requirements of salmonid fishes.

Strategy e: Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.

Strategy f: Enforce water right allocations (both WDOE and Tribes).

Strategy g: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 1B5: Enhance and maintain streambed embeddedness at between 20 percent and 30 percent on all streams with known salmonid populations. (Priority 9)

Strategy a: Conduct riparian habitat restoration, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species.

Strategy b: Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road densities to desired levels in accordance with existing land management plans.

Strategy c: Install in-stream structures that improve habitat complexity (i.e. Vortex rock weirs, drop log structures, root wads, habitat boulders, etc.).

Strategy d: Limit livestock from riparian areas and replant native riparian plants where needed.

Strategy e: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 1B6: Reduce width to depth ratios to < 10 for all streams within the Subbasin. (Priority 11)

Strategy a: Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species.

Strategy b: Install in-stream structures that improve habitat complexity (Vortex rock weirs, drop log structures, root wads, habitat boulders, etc.).

Strategy c: Conserve and protect intact or restored riparian areas.

Strategy d: Limit livestock from riparian areas and replant native riparian plants where needed.

Strategy e: Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road

densities to desired levels in accordance with existing land management plans.

Strategy f: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 1B7: Protect and maintain flows adequate for all life stages of focal and native fish species in all intermittent, ephemeral, and perennial streams. (Priority 5)

Strategy a: Implement water conservation, storage, recharge and reclamation projects.

Strategy b: Develop minimum in-stream flows, and target flows, for fish-bearing streams within the San Poil River Subbasin that meet the biological requirements of salmonid fishes.

Columbia River Basin Level Goal 1C:
Restore **resident fish** species (subspecies, stocks and populations) to near historic abundance throughout their historic ranges where suitable habitat conditions exist and/or where habitats can be restored.

Province Level Objective 1C1:
Protect, enhance, restore, and increase distribution of native resident fish populations and their habitats in the IMP with primary emphasis on sensitive, native salmonid stocks.

Province Level Objective 1C2:
Maintain and enhance self-sustaining, wild populations of native game fish, and subsistence species to provide for harvestable surplus.

Province Level Objective 1C3:
Minimize negative impacts (for example, competition, predation, introgression) to native species from nonnative species and stocks.

Province Level Objective 1C4:
Increase cooperation and coordination among stakeholders throughout the province.

In the San Poil Subbasin, objectives that address the topics listed in Province level objectives 1C1 – 1C4 are covered in Category 2, below.

Province Level Objective 1C5:
Meet and exceed the recovery plan goals for federally listed **threatened and endangered fish** species.

Subbasin Objective 1C1: The San Poil Subbasin is within the NE Washington Bull Trout Recovery Unit and is identified as a "Research Need Area." Determine if the San Poil Subbasin can contribute to bull trout recovery. (Priority 15) (Refer to http://pacific.fws.gov/bulltrout/recovery.htm)

Strategy a: Conduct Bull Trout distribution and habitat suitability/availability survey.

Province Level Objective 1C6:
Restore **resident fish** species (subspecies, stocks and populations) to near historic abundance throughout their historic ranges where suitable habitat conditions exist and/or where habitats can be restored.

In the San Poil Subbasin, objectives that address the topics listed in Province level objective 1C6 are covered in Category 2, below.

Columbia River Basin Level Category 2: Substitute for anadromous fish losses.

Columbia River Basin Level Goal 2A:
Restore **resident fish** species (subspecies, stocks and populations) to near historic abundance throughout their historic ranges where suitable habitat conditions exist and/or where habitats can be feasibly restored.

Province Level Objective 2A1:
Protect, enhance, restore, and increase distribution of native resident fish populations and their habitats in the IMP with primary emphasis on sensitive, native salmonid stocks.

Province Level Objective 2A2:
Maintain and enhance self-sustaining, wild populations of native game fish, and subsistence species to provide for harvestable surplus.

Province Level Objective 2A3:
Minimize negative impacts (for example, competition, predation, introgression) to native species from nonnative species and stocks.

Province Level Objective 2A4:
Increase cooperation and coordination among stakeholders throughout the province.

The following subbasin objectives address province level objectives 2A1 – 2A4:

Subbasin Objective 2A1: Manage adfluvial rainbow trout populations to support recreational, cultural and subsistence fisheries with a catch per unit effort of > 1 fish per hour. (Priority 4)

Strategy a: Artificially produce sufficient trout to fulfill management needs in a manner that will maintain the genetic integrity of local stocks.

Strategy b: Increase enforcement of fishing and hunting regulations.

Strategy c: Increase education about laws and management of natural resources.

Strategy d*: Develop and implement a scientifically defensible means of quantifying fish productivity and habitat quality (similar to HEP).

Strategy e: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 2A2: Protect and enhance redband trout and kokanee salmon populations and preserve their genetic integrity, while maintaining their subsistence and recreational fishery. (Priority 2)

Strategy a: Wherever possible use locally adapted and genetically appropriate redband trout stocks to supplement natural populations or in harvest applications where emigration can occur.

Strategy b: Develop artificial production capacity for kokanee salmon that utilizes locally adapted and genetically appropriate stocks.

Strategy c: Construct spawning channels or acclimation sites to increase natural salmonid production.

Strategy d: Prevent introgression between hatchery and wild stocks.

Strategy e*: Determine genetic distribution of resident redband trout, identify limiting factors, and develop management strategies for addressing limiting factors by 2008.

Strategy f: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Subbasin Objective 2A3: Maintain existing westslope cutthroat fishery at Long and Gold lakes. (Priority 16)

Strategy a: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Columbia River Basin Level Goal 2B:
Provide sufficient populations of fish and wildlife for abundant opportunities for Tribal trust and treaty right harvest and for non-Tribal harvest.

Province Level Objective 2B
Focus restoration efforts on habitats and ecosystem conditions and functions that will allow for expanding and maintaining diversity within, and among, species in order to sustain a system of robust populations in the face of environmental variation.

The San Poil Subbasin did not develop objectives and strategies for Province Level Objective 2B. Objectives related to habitats and ecosystem conditions and functions are listed under Objective 1B

Columbia River Basin Level Goal 2C:
Administer and increase opportunities for **consumptive and non-consumptive resident fisheries** for native, introduced, wild, and hatchery reared stocks that are compatible with the continued persistence of native resident fish species and their restoration to near historic abundance (includes intensive fisheries within closed or isolated systems).

Province Level Objective 2C1:
Artificially produce sufficient salmonids to supplement consistent harvest to meet management objectives.

Province Level Objective 2C2:
Provide both short- and long-term harvest opportunities that support both subsistence activities and sport-angler harvest.

The following subbasin objective address province level objectives 2C1 – 2C2:

Subbasin Objective 2C1: Provide for a diverse and sustainable recreational fishery at Curlew Lake. (Priority 13)

Strategy a: Continue and improve net pen program.

Strategy b: Improve water quality in Curlew Lake.

Strategy c: Offer bounty on northern pikeminnow.

Strategy d: Determine appropriateness of Tiger Muskie stocking program, including recreational and ecological impacts.

Subbasin Objective 2C2: Artificially produce enough native, genetically appropriate salmonids stocks to supplement consistent harvest to meet state and Tribal management objectives. (Priority 8)

Strategy a: Wherever possible use locally adapted redband trout to supplement natural populations or in harvest applications where emigration can occur.

Strategy b: Annually produce a minimum of 50,000 pounds of trout at the Colville Tribal Hatchery.

Strategy c: As appropriate, utilize net pens.

Strategy d: Develop artificial production capacity for kokanee salmon.

Strategy e: Prevent introgression between hatchery and wild stocks.

Columbia River Basin Level Goal 2D:
Reintroduce anadromous fish into blocked areas where feasible[1].

Province Level Objective 2D1:
Develop an anadromous fish reintroduction feasibility analysis by 2006 for Chief Joseph and by 2015 for Grand Coulee[2].

Subbasin Objective 2D1*: Complete feasibility study of potential restoration of anadromous Chinook and steelhead by 2015. (Priority 14)

Strategy a*: Conduct feasibility study.

Province Level Objective 2D2:
Develop an implementation plan within five years of feasibility determination for each facility.

42.1.2 Prioritization of Aquatic Objectives and Strategies

A detailed discussion of the methods used to prioritize the objectives and strategies is found in Section 1.2. In the San Poil Subbasin, the members of the Subbasin Work Team contributed to the development of ranking criteria which were based largely on the criteria in the Council's 2000 Fish and Wildlife Program. The IMP OC finalized the ranking criteria, but each Work Team was offered the option of adding additional subbasin specific criteria to the ranking. In the San Poil Subbasin, the Work Team decided to add the following subbasin specific criteria:

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[1] OC notes that "where feasible" is actual language from Council's Program.

[2] At this time the WDFW has no formal agency position, pro or con, on possible reintroduction and/or establishment of anadromous Chinook or steelhead above Grand Coulee Dam. Consideration for re-establishment of anadromous salmonid stocks above Grand Coulee Dam should be carefully evaluated in light of local habitat conditions, and potential impacts upon existing resident fish substitution programs currently in place to partially mitigate for the loss of historic anadromous fish resources.

- Terrestrial subbasin specific criteria – Is the objective/strategy mandated by the Northwest Power Act?
- Aquatic subbasin specific criteria – Does the objective/strategy enhance redband/rainbow trout and their habitats?

The Work Team rated the criteria for each objective from one to ten. An average ranking was calculated for each respondent for each objective, and then an overall Work Team average was calculated. Strategies were rated high, medium and low. These categories were converted to numeric values: 3, 2, and 1 respectively. The average ranking for each strategy was calculated for each respondent and for the Work Team as a whole.

The Work Team discussed the preliminary prioritization results for the objectives and strategies at the sixth Work Team meeting, and based on a consensus decision agreed to the final prioritization of the objectives and strategies.

The final prioritization of the aquatic objectives for the San Poil Subbasin is displayed in Table 42.3-1.

Table 42.3-1. Ranking of aquatic objectives in the San Poil Subbasin, with the limiting factor(s) that the objective was designed to address.

Objectives in Priority Order	Strategies in Priority Order	Limiting Factor(s) Addressed
(1) Begin implementation of habitat strategies for addressing identified limiting factors for all focal species and native fishes by 2005. **Objective 1B2**	**Strategy a:** Conduct riparian habitat restoration, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species. **Strategy b:** Improve water quality on Curlew Lake. **Strategy c:** Return marine derived nutrients to systems consistent with prudent disease and fish health practices. **Strategy d:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin. **Strategy e:** Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road densities to desired levels in accordance with existing land management plans. **Strategy f:** Construct spawning channels or acclimation sites to increase natural salmonid production.	Riparian habitat, water quality, nutrients, sediment
(2) Protect and enhance redband trout and kokanee salmon populations and preserve their genetic integrity, while maintaining their subsistence and recreational fishery. **Objective 2A2**	**Strategy a:** Wherever possible use locally adapted and genetically appropriate redband trout stocks to supplement natural populations or in harvest applications where emigration can occur. **Strategy b:** Develop artificial production capacity for kokanee salmon that utilizes locally adapted and genetically appropriate stocks. **Strategy c:** Construct spawning channels or acclimation sites to increase natural salmonid production. **Strategy d:** Prevent introgression between hatchery and wild stocks. **Strategy e*:** Determine genetic distribution of resident redband trout, identify limiting factors, and develop management strategies for addressing limiting factors by 2008. **Strategy f:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.	Nonnative species, loss of anadromous life history
(3) Enhance, conserve, and protect riparian habitats to the extent that 80% of each stream's riparian areas remain intact and functional. **Objective 1B3**	**Strategy a:** Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species. **Strategy b:** Conserve and protect intact or restored riparian areas. **Strategy c:** Limit livestock from riparian areas and replant	Riparian habitat

Objectives in Priority Order	Strategies in Priority Order	Limiting Factor(s) Addressed
	native riparian plants where needed. **Strategy d:** Use vegetation enhancements, annual seeding and water retention in backwater areas to increase near-shore fish production, increase shoreline stability, and reduce erosion. **Strategy e:** Protect and restore cottonwood galleries. **Strategy f:** Implement weed control. **Strategy g:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin.	
(4) Manage adfluvial rainbow trout populations to support recreational, cultural and subsistence fisheries with a catch per unit effort of > 1 fish per hour. **Objective 2A1**	**Strategy a:** Artificially produce sufficient trout to fulfill management needs in a manner that will maintain the genetic integrity of local stocks. **Strategy b:** Increase enforcement of fishing and hunting regulations. **Strategy c:** Increase education about laws and management of natural resources. **Strategy d*:** Develop and implement a scientifically defensible means of quantifying fish productivity and habitat quality (similar to HEP). **Strategy e:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin.	Loss of anadromous life history, loss of lotic habitat, habitat degradation
(5) Protect and maintain flows adequate for all life stages of focal and native fish species in all intermittent, ephemeral, and perennial streams. **Objective 1B7**	**Strategy a:** Implement water conservation, storage, recharge and reclamation projects. **Strategy b:** Develop minimum in-stream flows, and target flows, for fish-bearing streams within the San Poil River subbasin that meet the biological requirements of salmonid fishes.	In-stream flows
(6) Maintain and/or achieve stream temperatures below 18^{o} C for all streams that support salmonid fish populations. **Objective 1B4**	**Strategy a:** Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species. **Strategy b:** Conserve and protect intact or restored riparian areas. **Strategy c:** Limit livestock from riparian areas and replant native riparian plants where needed. **Strategy d*:** Develop minimum in-stream flows for fish-bearing streams within the San Poil River subbasin that meet the biological requirements of salmonid fishes. **Strategy e:** Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.	Water temperature

Objectives in Priority Order	Strategies in Priority Order	Limiting Factor(s) Addressed
	Strategy f: Enforce water right allocations (both WDOE and Tribes). **Strategy g:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin.	
(7) Inventory all barriers in San Poil Subbasin by 2005 and begin implementing necessary passage improvements associated with man made barriers by 2006. **Objective 1B1***	**Strategy a:** Remove identified barriers at 20% per year over 5 years, where prudent. Work team note: Many barriers have already been identified and prioritized by agencies and tribes and removal should not be held up until others are inventoried. **Strategy b*:** Inventory and prioritize barrier removal. **Strategy c*:** Develop minimum in-stream flows for fish-bearing streams within the San Poil River Subbasin that meet the biological requirements of salmonid fishes. **Strategy d:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin. **Strategy e:** Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.	Fish passage barriers
(8) Artificially produce enough native, genetically appropriate salmonids stocks to supplement consistent harvest to meet state and Tribal management objectives. **Objective 2C2**	**Strategy a:** Wherever possible use locally adapted redband trout to supplement natural populations or in harvest applications where emigration can occur. **Strategy b:** Annually produce a minimum of 50,000 pounds of trout at the Colville Tribal Hatchery. **Strategy c:** As appropriate, utilize net pens. **Strategy d:** Develop artificial production capacity for kokanee salmon. **Strategy e:** Prevent introgression between hatchery and wild stocks.	Loss of anadromous life history, loss of lotic habitat, habitat degradation
(9) Enhance and maintain streambed embeddedness at between 20% and 30% on all streams with known salmonids populations. **Objective 1B5**	**Strategy a:** Conduct riparian habitat restoration, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species. **Strategy b:** Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road densities to desired levels in accordance with existing land management plans. **Strategy c:** Install in-stream structures that improve habitat complexity (i.e. Vortex rock weirs, drop log structures, root wads, habitat boulders, etc.). **Strategy d:** Limit livestock from riparian areas and replant native riparian plants where needed.	Sediment

Objectives in Priority Order	Strategies in Priority Order	Limiting Factor(s) Addressed
	Strategy e: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.	
(10) Expand stable littoral zones along the San Poil arm of Lake Roosevelt to contribute to the Upper Columbia Subbasin objective of stabilizing 10% of the reservoir surface area. **Objective 1A1**	**Strategy a:** Use vegetation enhancements, annual seeding and water retention in backwater areas to increase near-shore fish production, increase shoreline stability, and reduce erosion. **Strategy b:** Conserve and protect intact or restored riparian areas. **Strategy c:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.	Productivity, rearing habitat in Lake Roosevelt
(11) Reduce width to depth ratios to < 10 for all streams within the Subbasin. **Objective 1B6**	**Strategy a:** Conduct riparian habitat restoration, increase canopy cover, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for all focal species. **Strategy b:** Install in-stream structures that improve habitat complexity (Vortex rock weirs, drop log structures, root wads, habitat boulders, etc.). **Strategy c:** Conserve and protect intact or restored riparian areas. **Strategy d:** Limit livestock from riparian areas and replant native riparian plants where needed. **Strategy e:** Decommission roads wherever possible and develop road abandonment plans for federal, state and Tribal lands to reduce road densities to desired levels in accordance with existing land management plans. **Strategy f:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.	Stream channel instability
(12) Assess and implement nutrient enrichment program for Lake Roosevelt and tributaries. **Objective 1A2***	**Strategy a:** Return marine derived nutrients to systems consistent with prudent disease and fish health practices. **Strategy b:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin.	Loss of anadromous life history, nutrients
(13) Provide for a diverse and sustainable recreational fishery at Curlew Lake. **Objective 2C1**	**Strategy** a**:** Continue and improve net pen program. **Strategy b:** Improve water quality in Curlew Lake. **Strategy c:** Offer bounty on northern pikeminnow. **Strategy d:** Determine appropriateness of Tiger Muskie stocking program, including recreational and ecological impacts.	Water quality, habitat degradation
(14) Complete feasibility study of potential	**Strategy a*:** Conduct feasibility study.	Loss of anadromous life history

Objectives in Priority Order	Strategies in Priority Order	Limiting Factor(s) Addressed
restoration of anadromous Chinook and steelhead by 2015. **Objective 2D1***		
(15) The San Poil Subbasin is within the NE Washington Bull Trout Recovery Unit and is identified as a "Research Need Area." Determine if the San Poil Subbasin can contribute to bull trout recovery. **Objective 1C1**	**Strategy a:** Conduct Bull Trout distribution and habitat suitability/availability survey.	Lack of information
(16) Maintain existing westslope cutthroat fishery at Long and Gold Lakes. **Objective 2A3**	**Strategy a:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.	Loss of fishing opportunities as a result of loss of anadromous life history and habitat degradation

* = Objectives and strategies that are included in the RM&E plan.

42.1.3 Discussion of Aquatic Priorities

The objectives that were ranked the highest priority in the San Poil Subbasin are those that address habitat issues and redband/rainbow trout. The top priority objective is a broad, overarching objective to address habitat-limiting factors. As described above, the San Poil Subbasin has experienced a wide array of habitat problems in the mainstem San Poil River and tributary streams. This objective would cover a variety of habitat improvement projects that may be needed in the San Poil Subbasin. This priority is in alignment with the Council's 2000 Fish and Wildlife Program which is "a habitat-based program, rebuilding healthy, naturally producing fish and wildlife populations by protecting, mitigating, and restoring habitats and the biological systems within them, including anadromous fish migration corridors."

The second top priority objective is specific to redband trout and kokanee salmon, which are native, focal species in the San Poil Subbasin. This objective includes strategies that will increase the numbers of these fishes in the Subbasin through both artificial production and natural production. The strategies under this objective also place a priority on locally adapted and genetically appropriate fishes. These strategies are in alignment with the Council's 2000 Fish and Wildlife Program, which calls for "artificial production and other non-natural interventions to be consistent with the central effort to protect and restore habitat and avoid adverse impacts to native fish and wildlife species."

The next eleven objectives on the priority list address specific habitat issues that have been identified in the San Poil Subbasin, except for objectives 2A1, 2B2, and 2B1. Again, the focus is on habitat protection and restoration.

Objective 2A1 (ranked fourth out of 16) addresses adfluvial rainbow trout, an important recreational, cultural, and subsistence fishery in this subbasin. This objective includes strategies that would increase adfluvial rainbow trout through both artificial production and protection of existing fisheries.

Objective 2B2 (ranked eighth out of 16) is for artificial production of native, genetically appropriate salmonids. This objective is necessary given that the impacts of development of the hydropower system in this subbasin cannot be fully mitigated through habitat protection and restoration. The Council's 2000 Fish and Wildlife Program acknowledge that, "there is an obligation to provide fish and wildlife mitigation where habitat has been permanently lost due to hydroelectric development. Artificial production of fish may be used to replace capacity, bolster productivity, and alleviate harvest pressure on weak, naturally spawning resident and anadromous fish populations."

Objective 2B1 calls for providing a diverse and sustainable recreational fishery at Curlew Lake. This objective ranked 13 out of 16 since the fishery of Curlew Lake is not a native fishery and has not been affected by construction or operation of the FCRPS.

The third lowest priority in the San Poil Subbasin is a feasibility study of anadromous fish restoration. Although anadromous fish restoration is a high priority for the Upper Columbia United Tribes, the Work Team recognized that since the San Poil Subbasin is upstream of

both Chief Joseph and Grand Coulee dams, anadromous fish restoration might be some time in the future. This objective is compatible with the Council's assumption that, "restoration of anadromous fish into areas blocked by dams should be actively pursued where feasible."

The lowest ranked objectives are those that address westslope cutthroat trout in Long and Gold lakes, and bull trout recovery. The Long and Gold lakes fishery was ranked as a low priority because westslope cutthroat trout are not native to the San Poil Subbasin. This species was stocked into these lakes where they provide fishing opportunities. Bull trout recovery was a low priority in this subbasin because bull trout have not been found in this subbasin and it is unlikely that they will be found here. A bull trout objective was included in the management plan only because the San Poil Subbasin was identified as a part of the Northeast Washington Recovery Unit as a Research Needs Area in the draft USFWS Bull Trout Recovery Plan.

The Council's 2000 Fish and Wildlife Program prioritize habitat protection and restoration, native species, and long-term objectives. The San Poil Subbasin aquatic management plan places habitat restoration and native species at the top of the priority list. Therefore, the objectives in the San Poil Subbasin Management Plan are a logical subset of Council's overall Columbia River Basin objectives.

42.4 Terrestrial Objectives and Strategies

The Columbia River Basin and Province level objectives for terrestrial resources are presented below. These objectives were prioritized by the OC at the Province level, and are presented in order of priority. The Subbasin Work Team prioritized the subbasin objectives and the ranking is given in parenthesis after each objective. Strategies are presented beneath the objectives in order of priority. Objectives and strategies also included in the research, monitoring, and evaluation plan are marked with an asterisk.

Columbia River Basin Level Category 1:

A primary overarching objective of the Columbia River Basin 2000 Fish and Wildlife Program is the completion of mitigation for the adverse effects to wildlife caused by the development and operation of the hydrosystem.

Provincial Priority 1: **Columbia River Basin Level Goal 1A:**
Complete the current Wildlife Mitigation Program for construction and inundation losses of federal hydrosystem as identified in Appendix C, Table 11-4 of the Columbia River Basin 2000 Fish and Wildlife Program.

> **Province Level Objective 1A**:
> Fully mitigate for construction and inundation losses incurred from the Chief Joseph Dam, Grand Coulee Dam, and Albeni Falls projects per the requirements of the Northwest Power Act and the current Wildlife Mitigation Program (Appendix C, Table 11-4 of the Columbia River Basin 2000 Fish and Wildlife Program) by 2015. This includes developing and implementing projects within the IMP that protect, enhance, or restore Habitat Units for HEP evaluation species and habitats as specified in the construction loss assessments for Chief Joseph, Grand Coulee, and

Albeni Falls dams (Kuehn and Berger 1992; Creveling and Renfrow 1986; Martin et al. 1988); coordinated planning; provision of adequate funding for long-term Operations and Maintenance (O&M); and effectiveness monitoring of projects.

San Poil Subbasin Objective 1A: Fully mitigate for terrestrial resource losses incurred from construction and inundation of the Grand Coulee Project per the requirements of the Northwest Power Act. Complete the compensation mitigation for construction losses at Grand Coulee Dam for wildlife and wildlife habitat consistent with the HEP loss assessment by year 2015. (These requirements will be met in coordination with the Spokane and Upper Columbia subbasins which also are influenced by Lake Roosevelt).

Objective 1A is the overall top priority objective within this Subbasin. The sub-objectives listed below have also been prioritized.

Objective 1A1: Protect, enhance, or restore secure riverine island Canada goose nest sites to address riverine island/bar habitat losses resulting from construction of the Grand Coulee Project. (Priority 9)

Objective 1A2: Protect enhance, or restore mourning dove habitat to address riparian and agricultural habitat losses resulting from construction of the Grand Coulee Project. (Priority 8)

Objective 1A3: Protect, enhance, or restore mule deer habitat to address shrub-steppe and river break habitat losses resulting from construction of the Grand Coulee Project. (Priority 6)

Objective 1A4: Protect, enhance, or restore riparian forest habitat to address habitat losses resulting from construction of the Grand Coulee Project. (Priority 4)

Objective 1A5: Protect, enhance, or restore riparian shrub habitat to address habitat losses resulting from construction of the Grand Coulee Project. (Priority 3)

Objective 1A6: Protect, enhance, or restore ruffed grouse habitat to address riparian/hardwood forest habitat losses resulting from construction of the Grand Coulee Project. (Priority 5)

Objective 1A7: Protect, enhance, or restore sage grouse habitat to address shrub-steppe habitat losses resulting from construction of the Grand Coulee Project. (Priority 1)

Objective 1A8: Protect, enhance, or restore sharp-tailed grouse habitat to address grasslands, shrub-steppe, and riparian draw habitat losses resulting from construction of the Grand Coulee Project. (Priority 2)

Objective 1A9: Protect, enhance, or restore white-tailed deer habitat to address seral forest habitat losses resulting from construction of the Grand Coulee Project. (Priority 7)

The following strategies apply to Objective 1A and sub-objectives 1A1-1A9. They are listed in priority order.

Strategy a: Maintain wildlife habitat values, HUs, for the life of the project on existing and newly acquired mitigation lands through adequate long-term Operations and Maintenance (O&M) funding.

Strategy b*: Develop management plans that address road closure, cattle, soil, vegetation and unwanted species, fire and fuels, nonnative wildlife, etc.

Strategy c: Protect habitat through fee title acquisition, conservation easements, lease, or management plans.

Strategy d*: Evaluate effectiveness of mitigation by monitoring and evaluating species and habitat responses to mitigation actions.

Provincial Priority 2: **Columbia River Basin Level Goal 1B:**
Quantify the operational effects of federal hydrosystem projects on terrestrial resources, develop mitigation plan in coordination with other resource mitigation and resource planning efforts, and implement projects to mitigate the impacts, including maintenance and monitoring.

Province Level Objective 1B:
Quantitatively assess and mitigate operational impacts of the Chief Joseph Dam, Grand Coulee Dam, and Albeni Falls projects per the requirements of the Northwest Power Act and the current Wildlife Mitigation Program. Complete assessment of operational impacts by 2008; develop mitigation plan by 2010; implement initial mitigation by 2015; incorporate formal methods for review and update of effects assessment and mitigation plan on a three-year cycle, to respond to changes in operation and to effectiveness of mitigation actions.

San Poil Subbasin Objective 1B*: Quantitatively assess operational impacts of the Grand Coulee Project on terrestrial resources by year 2008. This category is the second priority overall for the San Poil Subbasin. The sub-objectives have been prioritized as well.

Objective 1B1*: Quantitatively assess operational impacts of the Grand Coulee Project on terrestrial resources by year 2008. (Priority 10)

Strategy a*: Conduct the assessment and include, but not limit to, fluctuation zone, loss of nutrients in watershed from loss of salmon, recreational effects to terrestrial resources, BPA transmission lines, etc.

Objective 1B2*: Develop mitigation plan and begin implementation of mitigation by year 2010. (Priority 11)

Columbia River Basin Level Category 2:

In consideration of the primary overarching objectives of the Columbia River Basin 2000 Fish and Wildlife Program, provide: 1) sufficient populations of wildlife for abundant opportunities for Tribal trust and treaty right harvest and for non-Tribal harvest; 2) recovery of wildlife species affected by the development and operation of the hydrosystem that are listed under the Endangered Species Act; and 3) a Columbia River ecosystem that sustains an abundant, productive, and diverse community of fish and wildlife.

Provincial Priority 3: **Columbia River Basin Level Goal 2**:
Mitigate for wildlife losses that have occurred through secondary effects of hydrosystem development, including assessment, development of mitigation plan in coordination with other resources and resource managers, implementation, maintenance, and monitoring.

Province Level Objective 2A:
Mitigate for wildlife losses that have occurred through secondary effects of hydrosystem development by protecting, enhancing, restoring, and sustaining populations of wildlife for aesthetic, cultural, ecological, and recreational values. Objective includes assessment of secondary impacts, development of mitigation plan in coordination with other resources and resource managers, implementation, maintenance, and monitoring. Because the secondary effects of hydrosystem development are tightly intermingled with the effects of other activities in the province, this objective also incorporates other actions to maintain or enhance populations of federal, state, and Tribal species of special concern, and other native and desirable nonnative wildlife species, within their present and/or historical ranges in order to prevent future declines and restore populations that have suffered declines or been extirpated.

Objective 2A1: Maintain bald eagles at or above present levels, and secure bald eagle breeding habitat including active and alternate nest trees, preferred breeding sites, and perch and roost trees. (Protect within current applicable laws and regulations.) (Priority 12)

Strategy a: Enforce current laws and regulations.

Strategy b: Implement management recommendations.

Strategy c*: Identify and map current and/or potential winter perching and foraging habitat.

Strategy d*: Continue and increase annual monitoring.

Objective 2A2: Increase sharp-tailed grouse populations within the Intermountain Province and associated subbasins to a minimum of 800 grouse by 2010; over the long-term, improve and maintain the habitats necessary to support self-sustaining, persistent populations of grouse, estimated to consist of a minimum of 2,000 birds. (This objective shared with Lake Rufus Woods, Spokane, and Upper Columbia subbasins.) (Priority 13)

Strategy a: Protect and create habitat.

Strategy b: Translocate birds.

Strategy c*: Continue and increase monitoring.

Strategy d: Protect and maintain genetic diversity.

Objective 2A3: Increase sage grouse populations within the Lake Rufus Woods and San Poil subbasins to a minimum of 500 grouse by 2015. (Priority 12)

Strategy a: Protect and create habitat.

Strategy b: Translocate birds.

Strategy c: Protect and maintain genetic diversity.

Strategy d*: Continue and increase monitoring.

Objective 2A4: Maintain or enhance populations of federal, state, and Tribal species of special concern, and other native and desirable nonnative wildlife species, within their present and/or historical ranges within the San Poil Subbasin in order to prevent future declines and restore populations that have suffered declines. (Priority 16)

Strategy a*: Assess feasibility of translocating extirpated/historic species.

Strategy b: Implement translocations as appropriate.

Strategy c*: Monitor translocations.

Objective 2A5: Maintain or increase golden eagle populations at or above 2004 levels. (Priority 15)

Strategy a*: Determine limiting factors for golden eagle populations in the San Poil Subbasin by 2006.

Strategy b*: Continue and increase monitoring.

Strategy c*: Develop, prioritize, and implement projects and/or research to address identified golden eagle limiting factors by 2007.

Province Level Objective 2B:
Mitigate for wildlife losses that have occurred through secondary effects of hydrosystem development by protecting, enhancing, restoring, and sustaining native wildlife habitat function to maintain or enhance ecological diversity and security for native and desirable nonnative wildlife species. Objective includes assessment of secondary impacts, development of mitigation plan in coordination with other resources and resource managers, implementation, maintenance, and monitoring. Because the secondary effects of hydrosystem development are tightly intermingled with the effects of other activities in the province, this objective also incorporates other actions to identify, maintain, restore, and enhance priority habitats (wetlands, riparian areas, upland forests, steppe and shrub-steppe, cliffs and rock outcrops, caves, grasslands, and other priority habitats) including their structural attributes, ecological functions, and distribution and connectivity across the landscape to optimize conditions required to increase overall wildlife productivity of desired species assemblages. Strategies may include land acquisition, conservation easements, management contracts, and/or partnerships with other landowners.

Province Objective 2B1: Identify and implement strategies and opportunities for restoring the diversity, block size, and spatial arrangement of habitat types needed to sustain target wildlife species at ecologically sound levels.

Province Objective 2B2: Restore the connectivity of habitat types needed to sustain wildlife populations at the landscape level. Encourage and support the implementation of all forest practices, including road building and maintenance, as specified in the WDNR and IDL Forest Practices Rules and Subbasin Forest Plans for all National Forests within the Subbasin.

San Poil Subbasin Objective 2B: Protect, enhance, and restore native wildlife habitat function to maintain or enhance ecological diversity and security for native wildlife species. Emphasize maintenance and improvement of identified priority habitats (rocks/cliffs, upland forest, steppe and shrub-steppe, riparian, and wetland) to provide cover, forage, and food for desired wildlife species.

Objective 2B1 (Rock/cliff/talus/caves): Ensure no net loss of habitat suitability of rocks/cliffs/talus/caves within San Poil Subbasin. Target species

that use this habitat include: golden eagle, bushy-tailed woodrat, bats, lemmings, and other species closely associated with this habitat. (Priority 21)

Strategy a: Implement actions to protect occupied habitat.

Strategy b: Restore and protect large core areas with connectivity and ensure ecological diversity.

Strategy c*: Inventory existing habitat.

Objective 2B2 (**Steppe and Shrub-Steppe):** Protect, enhance, and restore steppe and shrub-steppe habitats within the Subbasin to ensure no net loss of habitat. Target species include: sage grouse, sharp-tailed grouse, mule deer, and other species closely associated with this habitat. (Priority 18)

Strategy a: Protect/maintain existing habitat by controlling invasion or encroachment of weeds.

Strategy b*: Inventory existing and historic habitat.

Strategy c: Create and re-establish habitat for threatened and endangered plants.

Strategy d*: Monitor habitat.

Strategy e: Restore, create, and protect large core areas with connectivity and ensure ecological diversity.

Strategy f: Restore, create, and protect open ponderosa pine/larch stands with old, big, and mature trees.

Objective 2B3 (Wetlands and Riparian): Protect, restore, and enhance wetland and riparian habitats in the San Poil Subbasin in cooperation with the Colville Confederated Tribes, USFS, and other landowners. Target species include beaver, bald eagle, Canada goose, mourning dove, long-eared owl, yellow warbler, ruffed grouse, white-tailed deer, and other species closely associated with these habitats. (Priority 17)

Strategy a: Restore, create, and protect large core areas with connectivity and ensure ecological diversity.

Strategy b: Conserve and protect intact or restored riparian areas.

Strategy c: Protect/maintain existing habitat by controlling invasion or encroachment of weeds.

Strategy d: Create and re-establish habitat for threatened and endangered plants.

Strategy e: Protect, restore, and ensure connectivity of cottonwood galleries and mature riparian vegetation types.

Strategy f: Limit livestock from riparian areas and replant native riparian plants were needed.

Strategy g*: Inventory existing and historic habitat.

Strategy h*: Continue existing surveys and habitat monitoring.

Strategy i*: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil Subbasin.

Strategy j: Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.

Objective 2B4 (Upland Forest): Protect, restore, and enhance upland forest habitats in the San Poil Subbasin through partnerships with the Colville Confederated Tribes, USFS, and other landowners. Target species include mule deer, northern flicker, ruffed grouse, white-tailed deer, and other species closely associated with this habitat. (Priority 19)

Strategy a: Protect/maintain existing habitat by controlling invasion or encroachment of weeds.

Strategy b: Create and re-establish habitat for threatened and endangered plants.

Strategy c: Restore, create, and protect large core areas with connectivity and ensure ecological diversity.

Strategy d: Restore, create, and protect open ponderosa pine/larch stands with old, big, and mature trees.

Strategy e*: Inventory existing and historic habitat.

Strategy f*: Monitor habitat.

Objective 2B5 (Mule deer habitat): Reverse long-term mule deer population decline by providing for a 25-year increasing trend in the quantity

and quality of mule deer habitats, particularly winter and spring habitats. (Priority 20)

Strategy a: Secure and enhance winter and spring ranges; protect from human development.

Strategy b: Manage forests for a variety of successional stages to meet mule deer habitat needs on a site-specific basis; use fire and forest management to increase quality and quantity of shrubs and mature forest cover.

Strategy c*: Identify specific factors limiting/affecting mule deer populations in the San Poil Subbasin.

Strategy d: Control noxious weeds and restore native grasses and forbs where noxious weeds have impacted mule deer habitat.

Strategy e: Manage motorized traffic in critical mule deer spring and winter ranges.

Strategy f: Increase the area of aspen stands.

Strategy g: Modify state and Tribal hunting regulations to help increase mule deer populations.

Strategy h: Improve enforcement of state and Tribal hunting regulations.

42.4.1 Prioritization of Terrestrial Objectives and Strategies

A detailed discussion of the methods used to prioritize the objectives and strategies is found in Section 1.2. In San Poil Subbasin, the members of the Subbasin Work Team contributed to the development of ranking criteria, which were based largely on the criteria in the Council's 2000 Fish and Wildlife Program. The IMP OC finalized the ranking criteria, but each Work Team was offered the option of adding additional subbasin specific criteria to the ranking. In the San Poil Subbasin, the Work Team decided to add the following subbasin specific criteria:

- Terrestrial subbasin specific criteria – Is the objective/strategy mandated by the Northwest Power Act?
- Aquatic subbasin specific criteria – Does the objective/strategy enhance redband/rainbow trout and their habitats?

The Work Team rated the criteria for each objective from one to ten. An average ranking was calculated for each respondent for each objective, and then an overall Work Team average was calculated. Strategies were rated high, medium and low. These categories were converted to numeric values: 3, 2, and 1 respectively. The average ranking for each strategy

was calculated for each respondent and for the Work Team as a whole.

The Work Team discussed the preliminary prioritization results for the objectives and strategies at the sixth Work Team meeting, and based on a consensus decision agreed to the final prioritization of the objectives and strategies.

The final prioritization of the terrestrial objectives for the San Poil Subbasin is displayed in Table 42.4-1.

Table 42.4-1. San Poil Subbasin Terrestrial objectives and strategies in priority order, with limiting factors addressed.

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
Provincial Priority 1 – Mitigate for construction and inundation losses		
(1) Protect, enhance, or restore sage grouse Habitat Units to address shrub-steppe habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A7**	**Strategy a**: Maintain wildlife HUs for the life of the project on existing and newly acquired mitigation lands through adequate long-term Operations and Maintenance (O&M) funding. **Strategy b*:** Develop management plans that address road closure, cattle, soil, vegetation and unwanted species, fire and fuels, nonnative wildlife, etc. **Strategy c:** Protect habitat through fee title acquisition, conservation easements, lease, or management plans. **Strategy d***: Evaluate effectiveness of mitigation by monitoring and evaluating species and habitat responses to mitigation actions.	Inundation of shrub-steppe habitat by the Grand Coulee Project.
(2) Protect, enhance, or restore sharp-tailed grouse Habitat Units to address grasslands, shrub-steppe, and riparian draw habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A8**	**Strategies a – d** as noted for 1A7, above.	Inundation of sharp-tailed grouse habitat by the Grand Coulee Project.
(3) Protect, enhance, or restore riparian shrub Habitat Units to address habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A5**	**Strategies a – d** as noted for 1A7, above.	Inundation of riparian shrub habitat by the Grand Coulee Project.
(4) Protect, enhance, or restore riparian forest Habitat Units to address habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A4**	**Strategies a – d** as noted for 1A7, above.	Inundation of riparian forest habitat by the Grand Coulee Project.
(5) Protect, enhance, or restore ruffed grouse Habitat Units to address riparian/hardwood forest habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A6**	**Strategies a – d** as noted for 1A7, above.	Inundation of ruffed grouse habitat by the Grand Coulee Project.
(6) Protect, enhance, or restore mule deer Habitat Units to address shrub-steppe and river break habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A3**	**Strategies a – d** as noted for 1A7, above.	Inundation of mule deer habitat by the Grand Coulee Project.
(7) Protect, enhance, or restore white-tailed deer Habitat Units to address seral forest habitat	**Strategies a – d** as noted for 1A7, above.	Inundation of white-tailed deer habitat by the Grand Coulee Project.

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
losses resulting from construction of the Grand Coulee Project. **Objective 1A9**		
(8) Protect enhance, or restore mourning dove Habitat Units to address riparian and agricultural habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A2**	**Strategies a – d** as noted for 1A7, above.	Inundation of mourning dove habitat by the Grand Coulee Project.
(9) Protect, enhance, or restore secure riverine island Canada goose nest sites to address riverine island/bar habitat losses resulting from construction of the Grand Coulee Project. **Objective 1A1**	**Strategies a – d** as noted for 1A7, above.	Inundation of island habitat by the Grand Coulee Project.
Provincial Priority 2 – Quantify and mitigate for operational impacts		
(10) Quantitatively assess operational impacts of the Grand Coulee Project on terrestrial resources by year 2008. **Objective 1B1***	**Strategy a*:** Conduct the assessment and include, but not limit to, fluctuation zone, loss of nutrients in watershed from loss of salmon, recreational effects to terrestrial resources, BPA transmission lines, etc.	Lack of data on operational impacts
(11) Develop mitigation plan and begin implementation of mitigation by year 2010. **Objective 1B2***	**Strategy a:** Develop and implement plan.	Need to mitigate operational impacts
Provincial Priority 3 – Mitigate for secondary FCRPS effects and other subbasin effects		
(12) Increase sage grouse populations within the Lake Rufus Woods and San Poil subbasins to a minimum of 500 grouse by 2015. **Objective 2A3**	**Strategy a:** Protect and create habitat. **Strategy b:** Translocate birds. **Strategy c*:** Protect and maintain genetic diversity. **Strategy d:** Continue and increase monitoring.	Secondary effects of FCRPS and other subbasin effects to sage grouse population.
(13 Increase sharp-tailed grouse populations within the Intermountain Province and associated subbasins to a minimum of 800 grouse by 2010; over the long-term, improve and maintain the habitats necessary to support self-sustaining, persistent populations of grouse, estimated to consist of a minimum of 2,000 birds. (This objective shared with Lake Rufus Woods, Spokane, and Upper Columbia subbasins.) **Objective 2A2**	**Strategy a:** Protect and create habitat. **Strategy b:** Translocate birds. **Strategy c*:** Continue and increase monitoring. **Strategy d:** Protect and maintain genetic diversity.	Secondary effects of FCRPS and other subbasin effects to sharp-tailed grouse population.

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
(14) Maintain bald eagles at or above present levels, and secure bald eagle breeding habitat including active and alternate nest trees, preferred breeding sites, and perch and roost trees. (Protect within current applicable laws and regulations.) **Objective 2A1**	**Strategy a:** Enforce current laws and regulations. **Strategy b:** Implement management recommendations. **Strategy c*:** Identify and map current and/or potential winter perching and foraging habitat. **Strategy d*:** Continue and increase annual monitoring.	Secondary effects of FCRPS and other subbasin effects to bald eagles.
(15) Maintain or increase golden eagle populations at or above 2004 levels. **Objective 2A5**	**Strategy a*:** Determine limiting factors for golden eagle populations in the San Poil Subbasin by 2006. **Strategy b*:** Continue and increase monitoring. **Strategy c*:** Develop, prioritize, and implement projects and/or research to address identified golden eagle limiting factors by 2007.	Secondary effects of FCRPS and other subbasin effects to golden eagles
(16) Maintain or enhance populations of federal, state, and Tribal species of special concern, and other native and desirable nonnative wildlife species, within their present and/or historical ranges within the San Poil Subbasin in order to prevent future declines and restore populations that have suffered declines. **Objective 2A4**	**Strategy a*:** Assess feasibility of translocating extirpated/historic species. **Strategy b:** Implement translocations as appropriate. **Strategy c*:** Monitor translocations.	Secondary effects of FCRPS and other subbasin effects to species of special concern
(17) (Wetlands and Riparian) Protect, restore, and enhance wetland and riparian habitats in the San Poil Subbasin in cooperation with the Colville Confederated Tribes, USFS, and other landowners. Target species include beaver, bald eagle, Canada goose, mourning dove, long-eared owl, yellow warbler, ruffed grouse, white-tailed deer, and other species closely associated with these habitats. **Objective 2B3**	**Strategy a:** Restore, create, and protect large core areas with connectivity and ensure ecological diversity. **Strategy b:** Conserve and protect intact or restored riparian areas. **Strategy c:** Protect/maintain existing habitat by controlling invasion or encroachment of weeds. **Strategy d:** Create and re-establish habitat for threatened and endangered plants. **Strategy e:** Protect, restore, and ensure connectivity of cottonwood galleries and mature riparian vegetation types. **Strategy f:** Limit livestock from riparian areas and replant	Secondary effects of FCRPS and other subbasin effects to wetland and riparian habitat

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
	native riparian plants were needed. **Strategy g*:** Inventory existing and historic habitat. **Strategy h*:** Continue existing surveys and habitat monitoring. **Strategy i*:** Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the San Poil subbasin. **Strategy j:** Acquire water rights/water banking or develop increased water storage in headwater areas of sub-watersheds to regulate and maintain in-stream flows.	
(18) (**Steppe and Shrub-Steppe)** Protect, enhance, and restore steppe and shrub-steppe habitats within the Subbasin to ensure no net loss of habitat. Target species include: sage grouse, sharp-tailed grouse, mule deer, and other species closely associated with this habitat. **Objective 2B2**	**Strategy a:** Protect/maintain existing habitat by controlling invasion or encroachment of weeds. **Strategy b*:** Inventory existing and historic habitat. **Strategy c:** Create and re-establish habitat for threatened and endangered plants. **Strategy d*:** Monitor habitat. **Strategy e:** Restore, create, and protect large core areas with connectivity and ensure ecological diversity. **Strategy f:** Restore, create, and protect open ponderosa pine/larch stands with old, big, and mature trees.	Secondary effects of FCRPS and other subbasin effects to steppe and shrub-steppe habitats
(19) (Upland Forest) Protect, restore, and enhance upland forest habitats in the San Poil Subbasin through partnerships with the Colville Confederated Tribes, USFS, and other landowners. Target species include mule deer, northern flicker, ruffed grouse, white-tailed deer, and other species closely associated with this habitat. **Objective 2B4**	**Strategy a:** Protect/maintain existing habitat by controlling invasion or encroachment of weeds. **Strategy b:** Create and re-establish habitat for threatened and endangered plants. **Strategy c:** Restore, create, and protect large core areas with connectivity and ensure ecological diversity. **Strategy d:** Restore, create, and protect open ponderosa	Secondary effects of FCRPS and other subbasin effects to upland forest habitats

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
	pine/larch stands with old, big, and mature trees. **Strategy e*:** Inventory existing and historic habitat. **Strategy f*:** Monitor habitat.	
(20) (Mule deer habitat) Reverse long-term mule deer population decline by providing for a 25-year increasing trend in the quantity and quality of mule deer habitats, particularly winter and spring habitats. **Objective 2B5**	**Strategy a:** Secure and enhance winter and spring ranges; protect from human development. **Strategy b:** Manage forests for a variety of successional stages to meet mule deer habitat needs on a site-specific basis; use fire and forest management to increase quality and quantity of shrubs and mature forest cover. **Strategy c*:** Identify specific factors limiting/affecting mule deer populations in the San Poil Subbasin. **Strategy d:** Control noxious weeds and restore native grasses and forbs where noxious weeds have impacted mule deer habitat. **Strategy e:** Manage motorized traffic in critical mule deer spring and winter ranges. **Strategy f:** Increase the area of aspen stands. **Strategy g:** Modify state and Tribal hunting regulations to help increase mule deer populations. **Strategy h:** Improve enforcement of state and Tribal hunting regulations.	Secondary effects of FCRPS and other subbasin effects to mule deer habitats
(21) (Rock/cliff/talus/caves) Ensure no net loss of habitat suitability of rocks/cliffs/talus/caves within San Poil Subbasin. Target species that use this habitat include: golden eagle, bushy-tailed woodrat, bats, lemmings, and other species closely associated with this habitat. **Objective 2B1**	**Strategy a:** Implement actions to protect occupied habitat. **Strategy b:** Restore and protect large core areas with connectivity and ensure ecological diversity. **Strategy c*:** Inventory existing habitat.	Secondary effects of FCRPS and other subbasin effects to rock /cliff/talus/caves

* = Objectives and strategies that are included in the RM&E plan.

42.4.2 Discussion of Terrestrial Priorities

The prioritization of the terrestrial objectives is directly linked to the priorities established in the Council's 2000 Fish and Wildlife Program, and to the Province level priorities established by the OC.

The overall top priority terrestrial objective for the San Poil Subbasin is to fully mitigate for terrestrial resource losses incurred from construction and inundation of the Grand Coulee Project per the requirements of the Northwest Power Act. Within this objective, there are nine sub-objectives that have been prioritized. The objectives addressing sage and sharp-tailed grouse were ranked at the top of the list because they are listed as threatened species within the State of Washington. Riparian habitat losses (riparian shrub, riparian forest, and riparian hardwood) were ranked as third, fourth, and fifth priority because of the importance of these habitat types to a wide array of species. Mule deer and white-tailed deer habitat were ranked sixth and seventh priority. There is considerable concern about mule deer populations in the Subbasin, and these species are particularly important for cultural and subsistence purposes to the Tribes. Mourning dove habitat and goose nesting islands were the lowest ranked objectives in this group of objectives. However, it should be noted that habitat acquisition to mitigate for the construction and inundation losses is the most important overall objective in the Subbasin and in the Province as a whole.

The next level of priority is quantifying and mitigating for the operational impacts of the FCRPS per the requirements of the Northwest Power Act. In the San Poil Subbasin, no assessment of operational impacts has been conducted. Therefore, this is the first priority in this category of objectives. Once the impacts have been identified the next priority will be to develop a mitigation plan and to implement the mitigation plan. The objective is to begin mitigation for operational impacts by 2010.

The third priority in the IMP is to mitigate for secondary effects of the hydrosystem development. In this category of objectives, the San Poil Subbasin Work Team ranked increasing sage and sharp-tailed grouse as the highest priority. Bald eagles, as a federally listed threatened species, are the next priority. Golden eagles and other species of special concern were the next on the priority list.

In the category of mitigating for secondary effects on habitat, wetlands and riparian habitats were considered top priority in the San Poil Subbasin because of their importance to so many types of wildlife. In addition, riparian and wetland habitat are considered to be high priority habitat types in the Council's 1995 Fish and Wildlife Program. Steppe and shrub-steppe habitats were the next highest priority because sage grouse, sharp-tailed grouse, and mule deer are associated with that habitat type and these are species of concern in the San Poil Subbasin. These habitat types are also considered to be high priority habitat types in the Council's 1995 Fish and Wildlife Program.

Prioritization of strategies includes emphasis for those strategies that maintain and protect existing habitats, as well as enforcement of regulations and funding to guarantee that habitat values are maintained.