

SECTION 18 – Table of Contents

<u>18 Pend Oreille Subbasin Management Plan.....</u>	<u>2</u>
18.1 Summary of Pend Oreille Assessment and Limiting Factors	2
18.2 Subbasin Vision	5
18.3 Aquatic Objectives and Strategies	6
18.4 Terrestrial Objectives and Strategies	29
18.5 Appendix – Draft Bull Trout Recovery Plan for Pend Oreille Subbasin.....	45

18 Pend Oreille Subbasin Management Plan

The Pend Oreille Subbasin Management Plan was developed by the Pend Oreille 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 Pend Oreille 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.

18.1 Summary of Pend Oreille 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 Pend Oreille Subbasin, the aquatic and terrestrial assessments and inventories are described in detail in sections 14 to 17 of this document. A brief overview of the key limiting factors that are addressed in this management plan is included below.

18.1.1 Pend Oreille Aquatic Assessment and Limiting Factors

Focal species selected for the Pend Oreille Subbasin were bull trout, westslope cutthroat trout, mountain whitefish, largemouth bass, and kokanee salmon. Historically bull trout, westslope cutthroat trout, and mountain whitefish were abundant in the Pend Oreille Subbasin. Both westslope cutthroat trout and bull trout populations have been significantly reduced in numbers and distribution from the historic conditions. Kokanee are currently a key forage species in Lake Pend Oreille and are a highly sought after game fish. Largemouth bass provide an important fishery in the Pend Oreille River.

QHA modeling was used to help assess the limiting factors in the rivers and stream of the subbasin. The most significant stream habitat limiting factors for the focal species are listed in Tables 18.1-1, 18.1-2, 18.1-3, and 18.1-4. In parentheses is the number of reaches or watersheds within the Pend Oreille 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 Pend Oreille Subbasin are described in more detail in section 18.3.

Within the Pend Oreille Subbasin, fine sediment had the highest frequency of being in the most deteriorated state. For kokanee salmon, channel stability and fine sediment were the two most problematic variables.

Table 18.1-1. Stream habitat conditions that currently most deviate from the reference for mountain whitefish, Pend Oreille Subbasin. The number in parenthesis is the number of reaches or watersheds within the Pend Oreille 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 18.3.

Mountain Whitefish	
Habitat Condition	Objective
Fine Sediment (58)	1B4, 1B3
High Flow (5)	1B1
Obstructions (5)	1B1, 2B1

Table 18.1-2. Stream habitat conditions that currently most deviate from the reference for bull trout, Pend Oreille Subbasin. The number in parenthesis is the number of reaches or watersheds within the Pend Oreille 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 18.3.

Bull Trout	
Habitat Condition	Objective
Fine Sediment (53)	1B4, 1B3
Habitat Complexity (44)	1B1, 1B3
Riparian Condition (44)	1B8
Channel Stability (26)	1B1, 1B3
Low Flow (16)	1B1
High Temperature (8)	1B2, 2B1
High Flow (8)	1B1
Obstructions (6)	1B1, 2B1
Pollutants (4)	1B2, 2B1

Table 18.1-3. Stream habitat conditions that currently most deviate from the reference for kokanee, Pend Oreille Subbasin. The number in parenthesis is the number of reaches or watersheds within the Pend Oreille 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 18.3.

Kokanee	
Habitat Condition	Objective
Channel Stability (9)	1B1, 1B3
Fine Sediment (8)	1B4, 1B3
Low Flow (5)	1B1
Obstructions (4)	1B1, 2B1
Pollutants (3)	1B2, 2B1
High Flow (3)	1B1

Table 18.1-4. Stream habitat conditions that currently most deviate from the reference for westslope cutthroat trout, Pend Oreille Subbasin. The number in parenthesis is the number of reaches or watersheds within the Pend Oreille 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 18.3.

Westslope Cutthroat	
Habitat Condition	Objective
Fine Sediment (84)	1B4, 1B3
Riparian Condition (64)	1B8
Habitat Diversity (64)	1B1, 1B3
Channel Stability (40)	1B1, 1B3
Low Flow (24)	1B1
High Temperature (21)	1B2, 2B1
Obstructions (13)	1B1, 2B1
High Flow (13)	1B1
Pollutants (7)	1B2, 2B1

Although habitat variables listed in tables 18.1-1 through 18.1-4 influence native fish populations in the Pend Oreille Subbasin, other factors have influenced and contributed to the decline in native salmonids within the Subbasin. The construction of five dams on the mainstem Pend Oreille River has reduced the amount of riverine habitat and created large reaches of disjunct reservoir habitat. All five dams located on the mainstem Pend Oreille River are without fish passage facilities, thus restricting biological connectivity to limited downstream gene flow and to upstream gene flow between dams. Management objectives that have been developed to address impacts from the dams include objectives 1A1, 1A2, 1B5, 1B7, 2C1, 1C12, and 2C1.

For largemouth bass, over-winter habitat appears to be the primary limiting factor. Limiting factors for kokanee in Lake Pend Oreille include predation and an inadequate

quantity of shoreline spawning habitat. Objectives to address these limiting factors include 1C8, 1C11, 1B5 and 1B7.

Although the change in habitats has been detrimental to many native fishes, it has increased the habitat capacity within the Subbasin for nonnative fishes like largemouth bass, yellow perch, and pumpkinseed. The increase in nonnative game fishes within the subbasin has increased the diversity of the sport fishery, while possibly jeopardizing the native fish assemblage. Management plan objectives that address nonnative species impacts to focal species in the Subbasin include 1B6, 1C4, 1C2, 1C7, 1C6, and 2A2.

18.1.2 Pend Oreille Terrestrial Assessment and Limiting Factors

Wildlife in the Pend Oreille Subbasin are limited by habitat quantity and quality. Construction of the Albeni Falls Project affected approximately 6,690 acres of land and 655 acres of shallow open water in the Subbasin, resulting in loss of 28,658 HUs. In addition, the FCRPS projects had a number of secondary effects to terrestrial resources within the Pend Oreille Subbasin, including accelerated rates of industrial, agricultural, and residential development leading to loss of habitat; increased hunting pressure on wildlife; and, to a limited extent, loss of salmonid nutrients to the ecosystem.

Factors that currently limit terrestrial resources in the Pend Oreille Subbasin are dominated by loss of habitat through conversion and modification of habitat quality as a result of human land uses. Modification of forested stands through timber management and the combined effects of mining, grazing, agriculture, and residential development, including roads, are all evident in the Subbasin. Development, including agriculture, has converted a total of three percent of native habitats to other cover types.

Management plan objectives that address the losses from the construction of and inundation from Albeni Falls Dam 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 subbasin effects to terrestrial resources.

18.2 Subbasin Vision

The Pend Oreille Subbasin vision is:

We envision the Pend Oreille Subbasin being comprised of and supporting viable/sustainable diverse fish and wildlife populations and their habitat contributing to the social, cultural and economic wellbeing of the Pend Oreille subbasin and Region.

In addition to the vision, the Pend Oreille Subbasin Work Team members drafted the following guiding principles:

1. We believe 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 complimenting existing plans, policies, and planning efforts.
2. We believe the subbasin plan should be sensitive to local interests who know the area and have to live with the results and impacts of the implemented management strategies.
 3. Our subbasin plan should consider ecological, not political, boundaries.
 4. Human interests including economics and recreational interests should be addressed along with fish and wildlife needs.
 5. Our subbasin plan needs to display our concern about public health and safety issues including drinking water, flood control, levees, and dikes.
 6. The subbasin plan should promote a stewardship mentality for future generations.
 7. The subbasin plan should have a long-term versus short-term view.
 8. Wildlife and fish species and habitat should be managed in perpetuity based on ecological, biological, and adaptive management principles.
 9. The subbasin plan will address cultural and subsistence issues.
 10. Public outreach and education are essential for successful plan development and implementation.

18.3 Aquatic Objectives and Strategies

Columbia River Basin level aquatic resource objectives were developed by the Northwest Power and Conservation Council in their 2000 Fish and Wildlife Program. Subbasin planners in the IMP developed province level aquatic resource objectives that are tiered to the Columbia River Basin level goals. In addition, subbasin planners in the six subbasins in the IMP developed subbasin specific objectives and strategies, which are tiered to both the Columbia River Basin and IMP goals. Objectives and strategies also included in the research, monitoring, and evaluation plan are marked with an asterisk.

The Pend Oreille Subbasin Work Team did not rank Category 1 and 2 objectives against each other, per direction of the OC indicating that the two categories are of equal priority. Within categories 1 and 2, the province level objectives were all considered high priority; relative levels of priority were assigned by the Work Team as priority 1, 2, and 3, but it should be emphasized that all are considered high priority. The Work Team ranked the subbasin objectives in order of priority under each Province level objective, but did not rank all objectives against one another independently of the Province level objectives. Strategies were prioritized within each subbasin level objective and are listed in priority order.

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. (High, priority 1)

Subbasin Objective 1A: Assess and mitigate fisheries effects due to construction and operation of federal and federally-licensed hydropower projects, including a resident fish loss assessment.

Subbasin Objective 1A1*: By 2010, quantitatively evaluate the impacts of hydropower facility construction and operation on water level fluctuation in Lake Pend Oreille and other waterbodies in the subbasin, including effects on near-shore productivity¹. (Priority 1)

Strategy a: Write a loss assessment for Lake Pend Oreille, the lower Clark Fork River, and the Pend Oreille River above and below Albeni Falls Dam which quantifies the impacts of the construction and operation of Albeni Falls Dam on aquatic and economic resources. The study should reflect how any proposed actions would affect flood control capability relative to current hydropower facility operations.

Strategy b: Determine the increase in near-shore productivity that could be achieved by modifying the annual hydrologic cycle affecting lake levels in Lake Pend Oreille including evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.

Strategy c: Assess the effects of water level management and shoreline development on erosion and spawning gravel recruitment/quantity/quality in Lake Pend Oreille, including development of proposals to reduce erosion and maintain gravels suitable for spawning. Include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.

Strategy d: Follow the Biological Opinion for Pend Oreille bull trout and its recommendations for lake levels. Include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.
(Refer to <http://pacific.fws.gov/bulltrout/recovery.htm>.)

Subbasin Objective 1A2: Develop, prioritize, and implement projects on- and off-site to fully mitigate these effects by year 2020. (Priority 2, sequential)

Strategy a: Develop, prioritize, and implement on- and off-site projects to fully mitigate these losses, including evaluation of effects of proposed

¹ Not all members of the Pend Oreille Work Team agreed with the concept of modifying winter lake levels in Lake Pend Oreille. See text for more explanation.

actions on flood control capability relative to current hydropower facility operations.

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 instream and riparian habitat to maintain functional ecosystems for resident fish, including addressing the chemical, biological, and physical factors influencing aquatic productivity. (High, ranked second priority with 1C)

Note: Habitat sub-objectives ranked high, water quality sub-objectives ranked medium, and assessment sub-objectives ranked low priority by the Work Team.

Subbasin Objective 1B1: Protect, enhance, and restore native fish habitat function to maintain or enhance ecological diversity and long-term viability of native and desirable nonnative fish species, including westslope cutthroat and bull trout, using a watershed-based approach. (High priority)

Strategy a: Develop criteria for prioritizing streams and/or stream reaches for native resident and desirable nonnative fishes, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002), and identified high quality (genetically pure) resident westslope cutthroat trout populations.

Strategy b*: Assess quality and quantity of available spawning and rearing habitat and prioritize stream reaches for protection and enhancement measures.

Strategy c: Develop and prioritize subbasin-wide habitat protection, restoration, and enhancement measures for native resident and desirable nonnative fishes.

Strategy d: Implement fish habitat protection, restoration, and enhancement measures using a variety of means including acquisition, conservation easements, landowner cooperative agreements, or other measures.

Subbasin Objective 1B2: Improve water quality to meet or exceed applicable water quality standards in the Pend Oreille Subbasin. (Medium priority)

Strategy a: Support the current effort by conservation districts, state and federal agencies to develop and implement non-point source TMDL Implementation Plans as per the IDEQ and WDOE subbasin assessments for the Priest River and Pend Oreille watersheds.

Strategy b*: Determine TDG contribution of each hydroproject in the subbasin above background level; prioritize TDG contributors based on greatest to least percentage; identify proven methods of TDG abatement; apply appropriate abatement methods to facilities according to prioritization. (Equal priority with strategy a)

Strategy c: Identify reaches of stream reaches not meeting 18°C maximum temperature; on a stream by stream and reach by reach basis, identify causes of temperature exceedance (including a determination if the condition is natural); apply corrective actions such as riparian fencing, planting of riparian vegetation, etc. where necessary and appropriate. Note: Currently, the technical ability to measure temperature within the mosaic of the stream environment, and to determine its effects on fish, is imperfect.

Strategy d*: Identify pollution sources, causes, and constituents on tributaries and mainstem Pend Oreille River; determine and implement actions necessary to eliminate or mitigate effects.

Strategy e*: Continue monitoring the water quality of Lake Pend Oreille, Clark Fork River and Pend Oreille River to insure it meets State and Federal standards.

Subbasin Objective 1B3*: Conduct watershed assessments in drainages where sediment transport/bed load issues are negatively impacting resident fish habitat by 2008. (Low priority)

Strategy a*: Conduct watershed assessment to determine sedimentation sources (natural or human caused) that are negatively impacting fish habitat.

Subbasin Objective 1B4: Develop, prioritize, and implement projects to remove or reduce sediment sources negatively influencing fish habitat, using a coordinated watershed approach with a broad coalition of partners. (Medium priority)

Strategy a: Develop criteria for prioritizing streams and/or stream reaches for sediment reduction improvements, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002) and for westslope cutthroat trout.

Strategy b*: Research and identify methods of sediment reduction, removal and/or disposal of bedload and sediment from stream reaches; implement sediment reduction methodologies on prioritized streams.

Subbasin Objective 1B5: Maintain 1.7 million square feet of clean shoreline gravel areas for kokanee spawning in Lake Pend Oreille throughout the duration of this plan. Note: Any studies should include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations. (High priority)

Strategy a: Continue to work with the USFWS to determine a pattern of lake level management reflecting the current Biological Opinion, which will enhance shoreline gravel. (High priority, equal to strategies b and c)

Strategy b: Continue to work closely with the US Army Corps of Engineers and FCRPS managers to set annual lake levels. Evaluate the effects of proposed actions on flood control capability relative to current hydropower facility operations. (High priority, equal to strategies a and c)

Strategy c*: Monitor shoreline gravel areas for quality (as shoreline spawning areas). Vary lake levels between years, if necessary, to insure cleaning and re-sorting occurs. (High priority, equal to strategies a and b)

Strategy d: Implement measures to protect and restore kokanee spawning habitats, such as the shoreline areas at the south end of Lake Pend Oreille, including acquisition through purchase, easements, or other means such as:

- Remove docks, revegetate shoreline to reduce run-off
- Minimize the disturbance to kokanee spawning from factors such as boat propwash and siltation
- Develop areas for public summer uses that will protect spawning areas (most kokanee fry are out of the gravel by July). (Medium priority)

Strategy e: Fully utilize hydrojets on barges to clean gravel-spawning beds. Treat new gravel beds at lower lake elevations. (Low priority, equal to strategy f)

Strategy f*: Evaluate the impact on near-shore productivity from barge hydrojets to clean kokanee gravel spawning beds. (Low priority, equal to strategy e)

Subbasin Objective 1B6: Control the spread (allow 0 acres) of Eurasian Watermilfoil in the subbasin. (Medium priority)

Strategy a: Support the development and implementation of better and more efficient methods of milfoil management.

Strategy b*: Continue to inventory and map locations of milfoil occurrence.

Strategy c*: Evaluate the impact of extended dewatering and exposure to freezing temperatures on milfoil shoots.

Subbasin Objective 1B7: Increase bass over-winter habitat in the Pend Oreille River above Albeni Falls Dam from its current 45 ha to >300 ha to provide an improved sport fishery. (High priority)

Strategy a: Evaluate the costs and effects of raising the river level above Albeni Falls Dam to flood some of the rivers floodplain and provide over-winter habitat for warm water fish, including effects to kokanee spawning areas, and effects to flood control capability.

Subbasin Objective 1B8: Enhance, conserve and protect riparian habitats to the extent that they are intact and functional. (High priority)

Strategy a: Use acquisition and/or conservation easements or other measures in riparian areas to prevent degradation.

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 Pend Oreille Subbasin, objectives that address Province Level objectives 1C1-1C4 are addressed under Category 2, below. The 1C objectives are high, ranked second priority with 1B.

Province Level Objective 1C5:

Meet and exceed the recovery plan goals for federally-listed threatened and endangered fish species.

Subbasin Objective 1C1: Restore bull trout to a harvestable surplus (that is, create and maintain a sport fishery) in the Pend Oreille Subbasin by 2030. Targets: Lake Pend Oreille: capable of providing 1,000 fish annually based on historic harvest rates of the 1960s through 1980s. Pend Oreille River: to be determined. Priest Lake: to be determined. (Priority 2)

Strategy a: Establish connectivity for bull trout throughout the Subbasin. (High priority, equal to strategy b)

Strategy b*: Evaluate fish passage for Priest Lake Dam, Boundary Dam, Albeni Falls Dam, Box Canyon Dam, Cabinet Gorge Dam, Noxon Dam and Thompson Falls Dam, utilizing ongoing studies where available, and implement passage mechanisms where appropriate. (High priority, equal to strategy a)

Strategy c: Protect and increase the amount of available stream spawning and rearing habitat used by bull trout. (Priority 2)

Strategy d: Determine the harvestable surplus of the strongest bull trout stocks. (Priority 3)

Strategy e*: Continue research into limiting factors of the kokanee and bull trout populations. (Priority 4)

Strategy f: Reduce threats to bull trout in the Pend Oreille Subbasin by maintaining a strong forage base. (Priority 5)

Strategy g: Coordinate bull trout and other native fish species restoration activities with Canada, particularly with regard to the Salmo watershed. (Priority 6, equal to h and i)

Strategy h: Provide additional enforcement and education to protect bull trout. (Priority 6, equal to g and i)

Strategy i*: Study to see if the bull trout are utilizing the larger than anticipated lake whitefish population in Lake Pend Oreille. (Priority 6, equal to g and h)

Subbasin Objective 1C2: Research the effects of lake trout competition on bull trout and cutthroat trout in Priest Lake by 2015; implement corrective measures in accordance with recovery/restoration objectives. (Priority 5)

Strategy a*: Significantly reduce lake trout with liberal harvest limits and other means, such as large commercial trapnets.

Subbasin Objective 1C3: In Lake Pend Oreille reduce competition and predation by lake trout on bull and cutthroat trout by reducing lake trout abundance to <4000 adults, if feasible. (Priority 4)

Strategy a: Evaluate methods for determining population estimates, including the use of large commercial trap nets and hydroacoustics; determine the number of lake trout in Lake Pend Oreille and their bioenergetic food demands; and if lake trout abundance or population structure is resulting in unacceptable predation or other risks to native and desirable nonnative fish, research methods to reduce the energetic demand or competitive impact of the lake trout population. For example, determine if the consumption rate of an “old-growth” lake trout population is less than the consumption of a faster growing, younger (harvested) population or determine methods of direct lake trout removal.

Subbasin Objective 1C4: Remove 90 percent or more of the lake trout from Upper Priest Lake and prevent re-establishment through the Thorofare. (Priority 3)

Strategy a: Continue to suppress lake trout in Upper Priest Lake using nets or other appropriate gear, install and evaluate an array of strobe lights across the Thorofare to prevent lake trout immigration, monitor the effectiveness of these actions, and develop new approaches if these measures are not successful.

Subbasin Objective 1C5: Pursue the objectives in the U.S Fish and Wildlife Service Draft Bull Trout Recovery Plan (2002). The goal of the bull trout recovery plan is to ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species’ native range, so that the species can be delisted. The current draft goals and objectives for the Northeast Washington Recovery Unit (USFWS 2002) and the Clark Fork River Recovery Unit (USFWS 2002) are listed in the Appendix at the end of this section. If these objectives should change in the future, the Subbasin plan should be adjusted accordingly. (Priority 1)

Strategy a: Follow the USFWS Draft Bull Trout Recovery Plan (2002), until superseded by Final Plan and supplemented by state recovery plans, to prioritize restoration projects.

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. (High, ranked third priority):

Subbasin Objective 1C6: Improve the genetic purity of Gerrard rainbow trout in Lake Pend Oreille by infusing pure strain fish from Kootenai Lake, B.C. into the gene pool. (Priority 5)

Strategy a: Once the forage base can sustain additional predators (maintaining appropriate predator:prey balance), stock pure Gerrard rainbow trout into Lake Pend Oreille; ensure all disease concerns are addressed before importing fish.

Subbasin Objective 1C7: By 2020 restore kokanee populations in Lake Pend Oreille to allow sustainable harvest of 750,000 fish/year, as long as this activity does not adversely impact native fish. (Priority 1, equal to 1C9)

Strategy a*: Continue to vary the winter lake level so as to increase the amount, and quality of, spawning gravel on the shores of Lake Pend Oreille; monitor shoreline spawning substrate; and monitor kokanee abundance through hydroacoustics and trawling, to determine response to lake level changes.

Strategy b*: Research factors that may influence lake productivity, such as the effect of the altered hydrologic cycle of the lake (no slowly receding shoreline allowing annual growth of wetland vegetation down to typical low pool) and take corrective actions. Evaluate the impacts of controlling Lake Pend Oreille level to more “natural” curves.

Strategy c*: Develop methods to monitor predator abundance and balance predator and kokanee populations.

Strategy d*: Determine the ecological role of lake whitefish in limiting Mysis shrimp abundance (their primary food) and potential benefits to zooplankton.

Strategy e*: Determine the cause of shoreline sedimentation and erosion that is placing sediments on the kokanee gravels.

Subbasin Objective 1C8: By 2010 balance predator (lake trout, rainbow trout, bull trout)/prey (kokanee) populations in Lake Pend Oreille (1:10 biomass ratio). (Priority 3)

Strategy a*: Develop monitoring methods, annually monitor predator and prey biomasses, and recommend fishing regulation changes or active predator reduction methods to restore predator:prey balance if needed.

Subbasin Objective 1C9: Improve the stocking program for kokanee in Lake Pend Oreille so that it contributes 375,000 kokanee to the harvest annually. (Priority 1, equal to 1C7)

Strategy a*: Monitor survival of each age classes of hatchery kokanee and compare to wild survival rates to determine why hatchery kokanee have not contributed more to the recovery of the fishery in Lake Pend Oreille; based on these findings, develop fish culture techniques that will improve kokanee survival.

Subbasin Objective 1C10: As prey base improves in Lake Pend Oreille, restore the rainbow trout fishery to a sustainable harvest of >4,000 fish/year. (Priority 4)

Strategy a*: Model rainbow trout population and test regulation changes designed to improve the quality of the sport fishery.

Strategy b: Use appropriate management tools to restore Gerrard rainbow trout to numbers consistent with what can be supported by the prey base.

Subbasin Objective 1C11*: By 2010, gain a better understanding of the kokanee food habits, potential competition with Mysis shrimp, and the ecological role of lake whitefish in reducing shrimp abundance. (Priority 2)

Strategy a*: Conduct study to better understand kokanee food habits, particularly with regard to Mysis shrimp and the ecological role of lake whitefish in reducing shrimp abundance. Study should include estimation of lake whitefish abundance and quantification of their foraging effects on Mysis shrimp.

Strategy b*: Examine the over-winter growth of kokanee in Lake Pend Oreille and compare to grow rates in Priest Lake, Coeur d'Alene Lake and Spirit Lake.

Subbasin Objective 1C12. Improve bass fishery above Albeni Falls Dam. (Unintentionally omitted from ranking)

Strategy a: Create 250+ acres of bass over-winter habitat above Albeni Falls Dam by building impoundments or other structures.

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.

Note: While only a small portion of the Pend Oreille Subbasin was in the range of anadromous fish, any area within the Subbasin could be used as off-site resident fish substitution area for other FCRPS projects.

The following subbasin objectives address province objectives 2A1 – 2A4. Province level objectives 2A1 – 2A4 were all ranked high, first priority.

Subbasin Objective 2A1: Protect, enhance, or restore stable, viable native fish populations. (Priority 1)

Strategy a: Develop criteria for prioritizing streams and/or stream reaches for habitat improvements, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002), and implement projects to meet recovery plan objectives.

Strategy b: Produce via aquaculture, genetically appropriate native salmonids (for example, westslope cutthroat trout) for restoring populations.

Subbasin Objective 2A2: Manage nonnative species, including brook trout, in a way that minimizes negative impacts to native species. (Priority 2)

Strategy a: Utilize chemical, mechanical, or other means to control populations of undesirable fish for the purpose of enhancing native fish species populations.

Strategy b: Eliminate creel limit of eastern brook trout in the Lower Pend Oreille Subbasin.

Strategy c: Utilize sport fishing regulation mechanisms to target management efforts, which will assist in minimizing nonnative fish species impacts upon native species.

Subbasin Objective 2A3: Enhance the native westslope cutthroat trout population so that it can sustain a sport fishery in the Pend Oreille River and its tributaries by 2020. (Priority 3)

Strategy a*: Determine 1) the status of westslope cutthroat trout in Pend Oreille River, 2) limiting factors on the species, and 3) westslope cutthroat genetic purity and prospects for recovery.

Strategy b*: Identify key westslope cutthroat trout tributary habitat and develop a plan for protection and restoration.

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. (High, ranked fourth priority)

Subbasin Objective 2B1: Where opportunity exists, implement habitat restoration, protection, and enhancement projects that benefit multiple resources on a watershed basis to improve habitats and populations benefiting both tribal and non-tribal utilization.

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. (High, ranked second priority)

Province Level Objective 2C2:

Provide both short and long-term harvest opportunities that support both subsistence activities and sport-angler harvest. (High, ranked second priority)

Subbasin Objective 2C1: Increase the amount of harvestable largemouth bass in Box Canyon Reservoir from the current levels of 6 pounds per acre to 12 pounds per acre by 2010, as long as this activity does not adversely impact native fish.

Strategy a: Operate and maintain a largemouth bass hatchery.

Strategy b: Construct and place artificial cover structures to increase the amount of largemouth bass fry winter cover.

Columbia River Basin Level Goal 2D:

Reintroduce anadromous fish into blocked areas where feasible².

Province Level Objective 2D1:

Develop an anadromous fish re-introduction feasibility analysis by 2006 for Chief Joseph and by 2015 for Grand Coulee³. (High, ranked third priority)

Province Level Objective 2D2:

Develop an implementation plan within five years of feasibility determination for each facility. (High, ranked third priority)

Subbasin Objective 2D1: Most of the Pend Oreille Subbasin is upstream of the natural upper limit of anadromous salmon, therefore this objective will have limited impact on the waters of the Pend Oreille Subbasin.

18.3.1 Prioritization of Aquatic Objectives and Strategies

Not all members of the Pend Oreille Work Team agreed with the objectives and strategies as written. A minority report was requested by Jim Carney, who is concerned about the proposal to fluctuate winter water levels in Lake Pend Oreille. His concern is that there are potential negative downstream impacts which need to be evaluated and addressed.

² OC notes that “where feasible” is actual language from Council’s Program.

³ 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.

A detailed discussion of the methods used to prioritize the objectives and strategies is found in Section 1.2. In the Pend Oreille Subbasin, the members of the Subbasin Work Team delegated the task of conducting preliminary prioritizations to several individual Work Team members. These individuals prioritized either a portion of the objectives or the strategies and distributed their preliminary ranking to the rest of the Work Team prior to the sixth Work Team meeting. 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 and strategies for the Pend Oreille Subbasin is displayed in Table 18.3-1.

Table 18.3-1. Summary of Aquatic Resources Objective Ranking for Pend Oreille Subbasin. Category 1 objectives are ranked separately from Category 2 objectives. Both categories are of equal importance.

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
1st Priority**		
Category 1		
Province Level Objective 1A: Fully mitigate fish losses related to construction and operation of federally-licensed and federally operated hydropower projects.		
<p>(1) Subbasin Objective 1A1*: By 2010, quantitatively evaluate the impacts of hydropower facility construction and operation on water level fluctuation in Lake Pend Oreille, and other waterbodies in the subbasin, including effects on near-shore productivity.</p>	<p>Strategy a: Write a loss assessment for Lake Pend Oreille, the lower Clark Fork River, and the Pend Oreille River above and below Albeni Falls Dam which quantifies the impacts of the construction and operation of Albeni Falls Dam on aquatic and economic resources. The study should reflect how any proposed actions would affect flood control capability relative to current hydropower facility operations.</p> <p>Strategy b: Determine the increase in near-shore productivity that could be achieved by modifying the annual hydrologic cycle affecting lake levels in Lake Pend Oreille including evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations</p> <p>Strategy c: Assess the effects of water level management and shoreline development on erosion and spawning gravel recruitment/quantity/quality in Lake Pend Oreille, including development of proposals to reduce erosion and maintain gravels suitable for spawning. Include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.</p> <p>Strategy d: Follow the Biological Opinion for Pend Oreille bull trout and its recommendations for lake levels. Include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.</p>	<p>Lack of information, hydropower construction and operation impacts to aquatic habitat</p>
<p>(2) Subbasin Objective 1A2: Develop, prioritize, and implement projects on- and off-site to fully mitigate these effects by year 2020.</p>	<p>Strategy a: Develop, prioritize, and implement on- and off-site projects to fully mitigate these losses, including evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.</p>	<p>Hydropower construction and operation impacts to aquatic habitat</p>
2nd Priority**		

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
Category 1		
<p>Province Level Objective 1B: Protect and restore instream and riparian habitat to maintain functional ecosystems for resident fish, including addressing the chemical, biological, and physical factors influencing aquatic productivity.</p> <p>Province Level Objective 1C1 – 1C5: 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. Maintain and enhance self-sustaining, wild populations of native game fish, and subsistence species, to provide for harvestable surplus. Minimize negative impacts (e.g., competition, predation, introgression) to native species from nonnative species and stocks. Increase cooperation and coordination among stakeholders throughout the province. Meet and exceed the recovery plan goals for federally listed threatened and endangered fish species.</p>		
<p>(1) Subbasin Objective 1B1: Protect, enhance, and restore native fish habitat function to maintain or enhance ecological diversity and long-term viability of native and desirable nonnative fish species, including westslope cutthroat and bull trout, using a watershed-based approach.</p> <p>Subbasin Objective 1B5: Maintain 1.7 million square feet of clean shoreline gravel areas for kokanee spawning in Lake Pend Oreille throughout the duration of this plan. Note: Any studies should include evaluation of effects of proposed actions on flood control capability relative to current hydropower facility operations.</p> <p>Subbasin Objective 1B7: Increase bass over-winter habitat in the Pend Oreille River above Albeni Falls Dam from its current 45 ha to >300 ha to provide an improved sport fishery.</p> <p>Subbasin Objective 1B8: Enhance, conserve and protect riparian habitats to the extent that they are intact and functional.</p> <p>Subbasin Objective 1C5: Pursue the objectives in the U.S Fish and Wildlife Service Draft Bull Trout Recovery Plan (2002). The goal of the bull trout recovery plan is to ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species' native range, so that the species can be delisted.</p>	<p>Subbasin Objective 1B1 Strategy a: Develop criteria for prioritizing streams and/or stream reaches for native resident and desirable nonnative fishes, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002), and identified high quality (genetically pure) resident westslope cutthroat trout populations.</p> <p>Strategy b*: Assess quality and quantity of available spawning and rearing habitat and prioritize stream reaches for protection and enhancement measures.</p> <p>Strategy c: Develop and prioritize subbasin-wide habitat protection, restoration, and enhancement measures for native resident and desirable nonnative fishes.</p> <p>Strategy d: Implement fish habitat protection, restoration, and enhancement measures using a variety of means including acquisition, conservation easements, landowner cooperative agreements, or other measures.</p> <p>Subbasin Objective 1B5: Strategy a: Continue to work with the USFWS to determine a pattern of lake level management reflecting the current Biological Opinion, which will enhance shoreline gravel. (High priority, equal to strategies b and c)</p> <p>Strategy b: Continue to work closely with the US Army Corps of Engineers and FCRPS managers to set annual lake levels. Evaluate the effects of proposed actions on flood control capability relative to current hydropower facility operations. (High priority, equal to strategies a and c)</p> <p>Strategy c*: Monitor shoreline gravel areas for quality (as shoreline spawning areas). Vary lake levels between years, if necessary, to insure cleaning and re-sorting occurs. (High priority, equal to strategies a and b)</p> <p>Strategy d: Implement measures to protect and restore kokanee spawning habitats, such as the shoreline areas at the south end of</p>	<p>Habitat degradation, loss of opportunities for fishing, riparian habitat degradation, loss of native bull trout populations.</p>

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
	<p>Lake Pend Oreille, including acquisition through purchase, easements, or other means such as:</p> <ul style="list-style-type: none"> • remove docks, revegetate shoreline to reduce runoff • Minimize the disturbance to kokanee spawning from factors such as boat propwash and siltation • Develop areas for public summer uses that will protect spawning areas (most kokanee fry are out of the gravel by July). <p>Strategy e: Fully utilize hydrojets on barges to clean gravel-spawning beds. Treat new gravel beds at lower lake elevations. (Low priority, equal to strategy f)</p> <p>Strategy f*: Evaluate the impact on near shore productivity from barge hydrojets to clean kokanee gravel spawning beds. (Low priority, equal to strategy e)</p> <p>Subbasin Objective 1B7: Strategy a: Evaluate the costs and effects of raising the river level above Albeni Falls Dam to flood some of the rivers floodplain and provide over-winter habitat for warm water fish, including effects to kokanee spawning areas, and effects to flood control capability.</p> <p>Subbasin Objective 1B8: Strategy a: Use acquisition and/or conservation easements, or other measures in riparian areas to prevent degradation.</p> <p>Subbasin Objective 1C5: Strategy a: Follow the USFWS Draft Bull Trout Recovery Plan (2002), until superceded by Final Plan and supplemented by state recovery plans, to prioritize restoration projects.</p>	
<p>(2) Subbasin Objective 1B2: Improve water quality to meet or exceed applicable water quality standards in the Pend Oreille Subbasin.</p> <p>Subbasin Objective 1B4: Develop, prioritize, and implement projects to remove or reduce sediment sources negatively influencing fish habitat, using a coordinated watershed approach with a broad coalition of partners.</p> <p>Subbasin Objective 1B6: Control the spread (allow 0 acres) of Eurasian</p>	<p>Subbasin Objective 1B2: Strategy a: Support the current effort by conservation districts, state and federal agencies to develop and implement non-point source TMDL Implementation Plans as per the IDEQ and WDOE subbasin assessments for the Priest River and Pend Oreille watersheds.</p> <p>Strategy b*: Determine TDG contribution of each hydroproject in the subbasin above background level; prioritize TDG contributors based on greatest to least percentage; identify proven methods of TDG abatement; apply appropriate abatement methods to facilities according to prioritization.</p> <p>Strategy c: Identify reaches of stream reaches not meeting 18°C maximum temperature; on a stream by stream and reach by reach</p>	<p>Water quality, sediment, nonnative invasive plants, loss of fishing opportunities</p>

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
<p>Watermilfoil in the subbasin.</p> <p>Subbasin Objective 1C1: Restore bull trout to a harvestable surplus (i.e., create and maintain a sport fishery) in the Pend Oreille Subbasin by 2030. Targets: Lake Pend Oreille: capable of providing 1,000 fish annually based on historic harvest rates of the 1960s through 1980s. Pend Oreille River: to be determined. Priest Lake: to be determined.</p>	<p>basis, identify causes of temperature exceedance (including a determination if the condition is natural); apply corrective actions such as riparian fencing, planting of riparian vegetation, etc. where necessary and appropriate. Note: Currently, the technical ability to measure temperature within the mosaic of the stream environment, and to determine its effects on fish, is imperfect.</p> <p>Strategy d*: Identify pollution sources, causes, and constituents on tributaries and mainstem Pend Oreille River; determine and implement actions necessary to eliminate or mitigate effects.</p> <p>Strategy e*: Continue monitoring the water quality of Lake Pend Oreille, Clark Fork River and Pend Oreille River to insure it meets State and Federal standards.</p> <p>Subbasin Objective 1B4: Strategy a: Develop criteria for prioritizing streams and/or stream reaches for sediment reduction improvements, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002) and for westslope cutthroat trout.</p> <p>Strategy b*: Research and identify methods of sediment reduction, removal and/or disposal of bedload and sediment from stream reaches; implement sediment reduction methodologies on prioritized streams.</p> <p>Subbasin Objective 1B6: Strategy a: Support the development and implementation of better and more efficient methods of milfoil management.</p> <p>Strategy b*: Continue to inventory and map locations of milfoil occurrence.</p> <p>Strategy c*: Evaluate the impact of extended dewatering and exposure to freezing temperatures on milfoil shoots.</p> <p>Subbasin Objective 1C1: Strategy a: Establish connectivity for bull trout throughout the subbasin. (High priority, equal to strategy b)</p> <p>Strategy b*: Evaluate fish passage for Priest Lake Dam, Boundary Dam, Albeni Falls Dam, Box Canyon Dam, Cabinet Gorge Dam, Noxon Dam and Thompson Falls Dam, utilizing ongoing studies where available, and implement passage mechanisms where appropriate. (High priority, equal to strategy a)</p> <p>Strategy c: Protect and increase the amount of available stream spawning and rearing habitat used by bull trout.</p> <p>Strategy d: Determine the harvestable surplus of the strongest bull trout stocks.</p>	

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
	<p>Strategy e*: Continue research into limiting factors of the kokanee and bull trout populations.</p> <p>Strategy f: Reduce threats to bull trout in the Pend Oreille Subbasin by maintaining a strong forage base.</p> <p>Strategy g: Coordinate bull trout and other native fish species restoration activities with Canada, particularly with regard to the Salmo watershed.</p> <p>Strategy h: Provide additional enforcement and education to protect bull trout.</p> <p>Strategy i*: Study to see if the bull trout are utilizing the larger than anticipated lake whitefish population in Lake Pend Oreille. (Priority 6, equal to g and h)</p>	
<p>(3) Subbasin Objective 1B3*: Conduct watershed assessments in drainages where sediment transport/bed load issues are negatively impacting resident fish habitat by 2008.</p> <p>Subbasin Objective 1C4: Remove 90% or more of the lake trout from Upper Priest Lake and prevent re-establishment through the Thorofare.</p>	<p>Subbasin Objective 1B3*: Strategy a*: Conduct watershed assessment to determine sedimentation sources (i.e., natural or human caused) that are negatively impacting fish habitat.</p> <p>Subbasin Objective 1C4: Strategy a: Continue to suppress lake trout in Upper Priest Lake using nets or other appropriate gear, install and evaluate an array of strobe lights across the Thorofare to prevent lake trout immigration, monitor the effectiveness of these actions, and develop new approaches if these measures are not successful.</p>	Lack of information, sediment, stream instability, nonnative fishes
<p>(4) Subbasin Objective 1C3: In Lake Pend Oreille reduce competition and predation by lake trout on bull and cutthroat trout by reducing lake trout abundance to <4000 adults, if feasible.</p>	<p>Subbasin Objective 1C3: Strategy a: Evaluate methods for determining population estimates, including the use of large commercial trap nets and hydroacoustics; determine the number of lake trout in Lake Pend Oreille and their bioenergetic food demands; and if lake trout abundance or population structure is resulting in unacceptable predation or other risks to native and desirable nonnative fish, research methods to reduce the energetic demand or competitive impact of the lake trout population. For example, determine if the consumption rate of an "old-growth" lake trout population is less than the consumption of a faster growing, younger (harvested) population or determine methods of direct lake trout removal.</p>	Nonnative fish impacts
<p>(5) Subbasin Objective 1C2: Research the effects of lake trout competition on bull trout and cutthroat trout in Priest Lake by 2015; implement corrective measures in accordance with recovery/restoration objectives.</p>	<p>Subbasin Objective 1C2: Strategy a*: Significantly reduce lake trout with liberal harvest limits and other means, such as large commercial trapnets.</p>	Nonnative fish impacts
3rd Priority**		

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
Category 1		
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.		
<p>(1) Subbasin Objective 1C7: By 2020 restore kokanee populations in Lake Pend Oreille to allow sustainable harvest of 750,000 fish/year, as long as this activity does not adversely impact native fish.</p> <p>Subbasin Objective 1C9: Improve the stocking program for kokanee in Lake Pend Oreille so that it contributes 375,000 kokanee to the harvest annually.</p>	<p>Subbasin Objective 1C7: Strategy a*: Continue to vary the winter lake level so as to increase the amount, and quality of, spawning gravel on the shores of Lake Pend Oreille; monitor shoreline spawning substrate; and monitor kokanee abundance through hydroacoustics and trawling, to determine response to lake level changes.</p> <p>Strategy b*: Research factors that may influence lake productivity, such as the effect of the altered hydrologic cycle of the lake (i.e., no slowly receding shoreline allowing annual growth of wetland vegetation down to typical low pool) and take corrective actions. Evaluate the impacts of controlling LPO level to more “natural” curves.</p> <p>Strategy c*: Develop methods to monitor predator abundance and balance predator and kokanee populations.</p> <p>Strategy d*: Determine the ecological role of lake whitefish in limiting Mysis shrimp abundance (their primary food) and potential benefits to zooplankton.</p> <p>Strategy e*: Determine the cause of shoreline sedimentation and erosion that is placing sediments on the kokanee gravels.</p> <p>Subbasin Objective 1C9: Strategy a*: Monitor survival of each age classes of hatchery kokanee and compare to wild survival rates to determine why hatchery kokanee have not contributed more to the recovery of the fishery in Lake Pend Oreille; based on these findings, develop fish culture techniques that will improve kokanee survival.</p>	Loss of fishing opportunity
<p>(2) Subbasin Objective 1C11*: By 2010, gain a better understanding of the kokanee food habits, potential competition with Mysis shrimp, and the ecological role of lake whitefish in reducing shrimp abundance.</p>	<p>Subbasin Objective 1C11*: Strategy a*: Conduct study to better understand kokanee food habits, particularly with regard to Mysis shrimp and the ecological role of lake whitefish in reducing shrimp abundance. Study should include estimation of lake whitefish abundance and quantification of their foraging effects on Mysis shrimp.</p> <p>Strategy b*: Examine the over-winter growth of kokanee in Lake Pend Oreille and compare to grow rates in Priest Lake, Coeur d’Alene Lake and Spirit Lakes.</p>	Loss of fishing opportunity

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
(3) Subbasin Objective 1C8: By 2010 balance predator (lake trout, rainbow trout, bull trout)/prey (kokanee) populations in Lake Pend Oreille (1:10 biomass ratio).	Subbasin Objective 1C8: Strategy a*: Develop monitoring methods, annually monitor predator and prey biomasses, and recommend fishing regulation changes or active predator reduction methods to restore predator:prey balance if needed.	Loss of fishing opportunity, nonnative species impacts
(4) Subbasin Objective 1C10: As prey base improves in Lake Pend Oreille, restore the rainbow trout fishery to a sustainable harvest of >4,000 fish/year.	Subbasin Objective 1C10: Strategy a*: Model rainbow trout population and test regulation changes designed to improve the quality of the sport fishery. Strategy b: Use appropriate management tools to restore Gerrard rainbow trout to numbers consistent with what can be supported by the prey base.	Loss of fishing opportunity
(5) Subbasin Objective 1C6: Improve the genetic purity of Gerrard rainbow trout in Lake Pend Oreille by infusing pure strain fish from Kootenai Lake, B.C. into the gene pool.	Strategy a: Once the forage base can sustain additional predators (maintaining appropriate predator:prey balance), stock pure Gerrard rainbow trout into Lake Pend Oreille; ensure all disease concerns are addressed before importing fish.	Loss of fishing opportunity
Priority unknown. Subbasin Objective 1C12: Improve bass fishery above Albeni Falls Dam.	Subbasin Objective 1C12: Strategy a: Create 250+ acres of bass over-winter habitat above Albeni Falls Dam by building impoundments or other structures.	Loss of fishing opportunity
1st Priority**		
Category 2		
<p>Province Level Objective 2A1 – 2A4: 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. Maintain and enhance self-sustaining, wild populations of native game fish, and subsistence species, to provide for harvestable surplus. Minimize negative impacts (e.g., competition, predation, introgression) to native species from nonnative species and stocks. Increase cooperation and coordination among stakeholders throughout the province.</p>		
(1) Subbasin Objective 2A1: Protect, enhance, or restore stable, viable native fish populations. Subbasin Objective 2B1: Where opportunity exists, implement habitat restoration, protection, and enhancement projects that benefit multiple resources on a watershed basis to improve habitats and populations benefiting both Tribal and non-Tribal utilization.	Subbasin Objective 2A1 Strategy a: Develop criteria for prioritizing streams and/or stream reaches for habitat improvements, including prioritization of identified core recovery areas for bull trout as noted within the USFWS Draft Bull Trout Recovery Plan (2002), and implement projects to meet recovery plan objectives. Strategy b: Produce via aquaculture, genetically appropriate native salmonids (e.g. westslope cutthroat trout) for restoring populations.	Loss of fishing opportunity, habitat degradation

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
(2) Subbasin Objective 2A2: Manage nonnative species, including brook trout, in a way that minimizes negative impacts to native species.	Strategy a: Utilize chemical, mechanical, or other means to control populations of undesirable fish for the purpose of enhancing native fish species populations. Strategy b: Eliminate creel limit of eastern brook trout in the Lower Pend Oreille Subbasin. Strategy c: Utilize sport fishing regulation mechanisms to target management efforts, which will assist in minimizing nonnative fish species impacts upon native species.	Nonnative species impacts
(3) Subbasin Objective 2A3: Enhance the native westslope cutthroat trout population so that it can sustain a sport fishery in the Pend Oreille River and its tributaries by 2020.	Strategy a*: Determine 1) the status of westslope cutthroat trout in Pend Oreille River, 2) limiting factors on the species, and 3) westslope cutthroat genetic purity and prospects for recovery. Strategy b*: Identify key westslope cutthroat trout tributary habitat and develop a plan for protection and restoration	Loss of fishing opportunity
2nd Priority**		
Category 2		
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.		
(1) Subbasin Objective 2C1: Increase the amount of harvestable largemouth bass in Box Canyon Reservoir from the current levels of 6 pounds per acre to 12 pounds per acre by 2010, as long as this activity does not adversely impact native fish.	Strategy a: Operate and maintain a largemouth bass hatchery. Strategy b: Construct and place artificial cover structures to increase the amount of largemouth bass fry winter cover.	Loss of fishing opportunity
3rd Priority**		
Category 2		
Province Level Objective 2D1: Develop an anadromous fish re-introduction feasibility analysis by 2006 for Chief Joseph and by 2015 for Grand Coulee		
Province Level Objective 2D2: Develop an implementation plan within 5 years of feasibility determination for each facility.		
(1) Subbasin Objective 2D1: Most of the Pend Oreille subbasin is upstream of the natural upper limit of anadromous salmon, therefore this objective will have limited impact on the waters of the Pend Oreille Subbasin.	No strategies identified	Loss of anadromous life history
4th Priority**		
Category 2		
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.		

Objectives in Priority Order	Strategies	Limiting Factor(s) Addressed
(1) Subbasin Objective 2B1: Where opportunity exists, implement habitat restoration, protection, and enhancement projects that benefit multiple resources on a watershed basis to improve habitats and populations benefiting both Tribal and non-Tribal utilization.	No strategies identified	Loss of fishing opportunity, loss of anadromous life history

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

** = Note that Category 1 and Category 2 were considered of equal priority and were not ranked relative to each other. Within each category, the Work Team considered all objectives to be high priority, but provided relative rankings of 1st, 2nd, 3rd, and 4th priority. Refer to meeting notes of Work Team Meeting 6, March 16, 2004, for further details on prioritization.

18.3.2 Discussion of Aquatic Priorities

The Pend Oreille Subbasin Work Team did not rank Category 1 and 2 objectives against each other, per direction of the OC indicating that the two categories are of equal priority. Within categories 1 and 2, the province level objectives were all considered high priority; relative levels of priority were assigned by the Work Team as priority 1, 2, and 3, but it should be emphasized that all are considered high priority. The Work Team ranked the subbasin objectives in order of priority under each Province level objective, but did not rank all objectives against one another independently of the Province level objectives. Strategies were prioritized within each subbasin level objective and are listed in priority order.

In Category 1, the top priority is the mitigation for fish losses related to construction and operation of the hydropower system. This is rated as a top priority because the development and operation of the hydrosystem has resulted in losses of numbers and diversity of native resident fish in the Pend Oreille Subbasin. These losses have not been mitigated to date.

Habitat restoration and protecting native resident fish were considered to be of equal importance, and second in priority in Category 1. Habitat restoration objectives were generally ranked as higher priority than water quality objectives. Research objectives were lower than habitat or water quality objectives.

Objectives that addressed nonnative resident sport fishes were ranked third priority within Category 1.

In Category 2, the top priority is to 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; maintain and enhance self-sustaining, wild populations of native game fish, and subsistence species, to provide for harvestable surplus; minimize negative impacts (for example, competition, predation, introgression) to native species from nonnative species and stocks; and increase cooperation and coordination among stakeholders throughout the province. These objectives were ranked higher than the others in this category because they address native fishes and habitats. Artificial production of fish, anadromous reintroduction, and terrestrial habitat improvements were rated lower, although they are all considered high priority.

18.4 Terrestrial Objectives and Strategies

Columbia River Basin-level terrestrial resource objectives were developed by the Council in their 2000 Fish and Wildlife Program. Subbasin planners in the IMP developed province level terrestrial resource objectives that are tiered to the Columbia River Basin level goals. In addition, subbasin planners in the six subbasins in the IMP developed subbasin specific objectives and strategies, which are tiered to both the Columbia River Basin and IMP goals.

The Province level objectives were prioritized by the OC. Subbasin objectives and strategies were prioritized by the Subbasin Work Team during the fifth and sixth meetings. These objectives are presented below with the prioritization is given after the objective. The strategies are also listed in priority order beneath each objective. Objectives and strategies also addressed 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.

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.

Pend Oreille Subbasin Objective 1A: Fully mitigate wildlife habitat losses associated with the construction and inundation of the Albeni Falls Project per the requirements of the Council's 2000 Fish and Wildlife Program and Northwest Power Act. Complete the compensation mitigation consistent with the HEP loss assessment (Appendix C, Table 11-4 of the Columbia River Basin 2000 Fish and Wildlife Program) and the Albeni Falls Dam Wildlife Mitigation Project Operating Guidelines by year 2015. (These requirements will be met in coordination with the Coeur d'Alene Subbasin.) (Highest priority)

Sub-objectives 1A1 through 1A8 and 1A9 are all high priority under this objective, not prioritized individually.

Objective 1A1: Protect, enhance, or restore bald eagle breeding Habitat Units to address coniferous and deciduous forest and forested wetland habitat losses resulting from construction of Albeni Falls Project.

Objective 1A2: Protect, enhance, or restore bald eagle wintering Habitat Units to address coniferous and deciduous forest habitat losses resulting from construction of Albeni Falls Project.

Objective 1A3: Protect, enhance, or restore black-capped chickadee Habitat Units to address deciduous forest habitat losses resulting from construction of Albeni Falls Project.

Objective 1A4: Protect, enhance, or restore Canada goose Habitat Units to address floodplain meadow, shoreline, open water and herbaceous wetland habitat losses resulting from construction of Albeni Falls Project.

Objective 1A5: Protect, enhance, or restore mallard Habitat Units to address floodplain meadow, scrub-shrub, open water, and herbaceous wetland habitat losses resulting from construction of Albeni Falls Project.

Objective 1A6: Protect, enhance, or restore muskrat Habitat Units to address herbaceous wetland and open water habitat losses resulting from construction of Albeni Falls Project.

Objective 1A7: Protect, enhance, or restore white-tailed deer Habitat Units to address scrub-shrub wetland habitat losses resulting from construction of Albeni Falls Project.

Objective 1A8: Protect, enhance, or restore redhead Habitat Units to address open water and near-shore floating aquatic weed bed habitat losses resulting from construction of Albeni Falls project.

Strategy a (for Objectives 1A1-1A8): Identify and protect habitat through fee title acquisition, conservation easements, lease, or management agreements. The Council defines protection as any action that protects habitat in perpetuity. (Priority 1)

Strategy b (for Objectives 1A1-1A8)*: Develop management plans consistent with Columbia Basin Fish and Wildlife Authority (CBFWA) Guidelines for Enhancement, Operation, and Maintenance Activities for Wildlife Mitigation Projects (CBFWA Wildlife Managers 1998). Management plans will address roaded and non-roaded access, livestock, habitat connectivity (to other lands managed for wildlife), soil, vegetation enhancement and management of unwanted species, fire and fuels, nonnative wildlife, and monitoring. (Priority 3)

Strategy c (for Objectives 1A1-1A8)*: Identify and evaluate sites for potential use in mitigation, including a) opportunities for

enhancement and restoration on federal, state, and Tribal lands, and b) opportunities for cooperative restoration and enhancement efforts with private landowners, when habitat protections can be demonstrated to be permanent. (Priority 4)

Objective 1A9: Maintain wildlife habitat values (Habitat Units) for the life of the project on existing and newly acquired mitigation lands through adequate long-term Operations and Maintenance (O&M) funding.

Strategy a: Ensure long-term protection, enhancement, and monitoring of habitat units through secured funding for O&M. (Priority 2)

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.

Pend Oreille Subbasin Objective 1B*: Quantitatively assess and mitigate operational impacts of Albeni Falls Project on terrestrial resources in the Pend Oreille Subbasin by year 2015.

Objective 1B1*: Complete the assessment of operational effects on terrestrial resources by year 2008. (Priority 2)

Strategy a*: Conduct the assessment and consider the fluctuation zone, hydrologic alterations (based on current hydropower facility operations), loss of nutrients in watershed from loss of salmon, identify recreational effects to terrestrial resources, BPA transmission lines, habitat connectivity, and erosion. (Priority 1)

Objective 1B2: Complete development of mitigation plan by year 2010 and complete the implementation of initial mitigation by year 2015. (Priority 3)

Objective 1B3*: Perform 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. (Priority 4)

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.

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.

The following two Province level objectives (2A and 2B) are lower in priority than 1A and 1B, but were not prioritized relative to each other by the OC. Sub-objectives under these two province level objectives were prioritized by the Subbasin Work Team, and are presented below with the priority shown in parentheses after each Subbasin objective. Strategies under the objectives are presented in order of priority beneath each objective.

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: Increase the Selkirk woodland caribou herd to 75 animals or more by 2010, with the intent to meet ESA delisting criteria by 2020. (Priority 15)

Objective 2A2: Maintain bald eagle populations at or above present levels (2004) within the Pend Oreille Subbasin. (Priority 7)

Strategy a: Identify, map, and provide long-term protection to current and/or potential winter perching, nesting, and foraging habitat.

Objective 2A3: Restore a self-sustaining population of grizzly bears in the Selkirk Recovery Zone that meets the *Grizzly Bear Recovery Plan* goals (USFWS objective) (Table 18.4-1). (Priority 8)

Table 18.4-1. Grizzly Bear Recovery Plan goals

Criterion	Targets (achieved for three consecutive years)
Female with cubs	At least 6 females with young observed per year
Mortality Limit	Maximum of 0.50 bears killed per year
Female Mortality Limit	Maximum of 0.15 female bears killed per year
Distribution of females with young	Females with young observed in at least 7 of 10 Bear Management Units

Objective 2A4*: Identify, prioritize, and implement habitat improvements that address limiting factors in order to restore or maintain viable lynx populations in the Pend Oreille Subbasin. (Priority 16)

Objective 2A5: Restore and sustain state threatened and endangered species, tribal and state species of special concern, federal candidate species, BLM and USFS sensitive species, and USFS indicator species, including the following: wolverine, fisher, otter, northern flying squirrels, northern bog lemming, pygmy shrew, Townsend’s big-eared bat (and other members of the bat guild), peregrine falcon, northern goshawk, osprey, great-blue heron, common loon, pygmy nuthatch, flammulated owl, boreal owl, great gray owl, northern pygmy owl, pileated woodpecker, white-headed woodpecker, three-toed woodpecker, upland sandpiper, yellow warbler, northern alligator lizard, ring-necked snake, rough-skinned newts, tailed frog northern leopard frog, long-toed salamander, and Coeur d’Alene salamander. (Priority 17)

Objective 2A6: Protect, restore, enhance, and sustain populations of big game species such as black bear, elk, mountain goat, moose mountain lion, mule deer, and white-tailed deer. (Priority 9)

Objective 2A7: Protect, restore, enhance, and sustain populations of waterfowl, upland game, and furbearers under traditional levels of recreational and subsistence use. (Priority 11)

Objective 2A8: Maintain or enhance neo-tropical migrant bird populations relative to current levels within present use areas and identify limiting factors for these populations within the Pend Oreille Subbasin. (Priority 13)

Objective 2A9: Maintain or enhance populations of cavity nesting species relative to current levels within present use areas and identify limiting factors within the Subbasin. (Priority 18)

Strategy a (for Objectives 2A1-2A11)*: Identify limiting factors for species/guilds, and identify relationships to indicator species/habitats analyzed in HEP loss assessments.

Strategy b (for Objectives 2A1-2A11)*: Use current subbasin Plan Assessment to determine current distribution and population status of species/guild and define target species/guilds; supplement with additional inventory as needed.

Strategy c (for Objectives 2A1-2A11): Develop and implement mitigation to address limiting factors for species/guilds, with consideration of benefits that can be acquired through acquisition of HUs for indicator species/habitats used in HEP loss assessments.

Objective 2A10: Maintain or enhance amphibian and reptile populations relative to current levels within present use areas and identify limiting factors within the subbasin. (Priority 12)

Objective 2A11: Maintain or enhance invertebrate populations relative to current levels within present use areas and identify limiting factors for these populations within the subbasin. (Priority 14)

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 Level 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 Level 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 Washington Department of Natural Resources (WDNR) and the Idaho Department of Lands (IDL) Forest Practices Rules and Subbasin Forest Plans for all National Forests within the Subbasin.

Objective 2B1: Fully mitigate for all FERC hydropower terrestrial resources effects within the Pend Oreille Subbasin in-kind and in-place when possible. Complete all mitigation requirements consistent with approved and active guidelines, agreements, and applicable federal (FERC) licenses. (Priority 6)

Objective 2B2*: Identify, maintain, restore, and enhance priority habitats (wetlands, riparian areas, upland forests, steppe and shrub-steppe, cliffs and rock outcrops) within the Pend Oreille Subbasin, including their structural attributes, ecological functions, and distribution and connectivity across the landscape. (Priority 5)

Strategies for Objectives 2B1 through 2B2:

Strategy a: Acquire land management rights to identified native wildlife habitats of concern through fee title acquisition, lease, conservation easement, or management plan.

Strategy b: Develop management plans to enhance and/or restore native habitats. Management plans should address roaded and non-roaded access, livestock, nonnative plant and animal species; soils, and vegetation management activities to improve habitat quality.

Strategy c: Implement management plans and conduct implementation and effectiveness monitoring to ensure that objectives are being met.

Strategy d: Improve enforcement of existing state and Tribal hunting regulations and modify regulations where needed to improve success of achieving wildlife management objectives.

Objective 2B3: 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 10)

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

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

Strategy c: 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 d: Increase the area of aspen stands.

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

Strategy f: Restore grasses and forbs where noxious weeds have impacted mule deer habitat.

Strategy g: Develop, prioritize, and implement projects and/or research to address identified limiting factors for mule deer.

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

Strategy i*: Continue funding to complete WDFW cooperative Mule Deer Project.

Objective 2B4*: 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. (Priority 19)

Objective 2B5: 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. (Priority 20)

18.4.1 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 Pend Oreille Subbasin, the members of the Subbasin Work Team delegated the task of conducting preliminary prioritizations to several individual Work Team members. These individuals prioritized either a portion of the objectives or the strategies and distributed their preliminary ranking to the rest of the Work Team prior to

the sixth Work Team meeting. 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 and strategies for the Pend Oreille Subbasin is displayed in Table 18.4-1.

Table 18.4-1. Summary of prioritization of terrestrial objectives and strategies for Pend Oreille Subbasin, with the limiting factors each objective addresses

Objectives in priority order	Strategies	Limiting Factor(s) Addressed
Provincial Priority 1 – Mitigate for construction and inundation losses		
<p>Objective 1A: Fully mitigate wildlife habitat losses associated with the construction and inundation of the Albeni Falls Project per the requirements of the Council’s 2000 Fish and Wildlife Program and Northwest Power Act. Complete the compensation mitigation consistent with the HEP loss assessment (Appendix C, Table 11-4 of the Columbia River Basin 2000 Fish and Wildlife Program) and the Albeni Falls Dam Wildlife Mitigation Project Operating Guidelines by year 2015. (These requirements will be met in coordination with the Coeur d’Alene Subbasin.)</p>	<p>(Refer to strategies for sub-objectives 1A1 – 1A9)</p>	<p>Terrestrial resource losses incurred from construction and inundation of the Albeni Falls Dam.</p>
<p>(Highest priority) Objective 1A1: Protect, enhance, or restore bald eagle breeding Habitat Units to address coniferous and deciduous forest and forested wetland habitat losses resulting from construction of Albeni Falls Project. Objective 1A2: Protect, enhance, or restore bald eagle wintering Habitat Units to address coniferous and deciduous forest habitat losses resulting from construction of Albeni Falls Project. Objective 1A3: Protect, enhance, or restore black-capped chickadee Habitat Units to address deciduous forest habitat losses resulting from construction of Albeni Falls Project. Objective 1A4: Protect, enhance, or restore Canada goose Habitat Units to address floodplain meadow, shoreline, open water and herbaceous wetland habitat losses resulting from construction of Albeni Falls Project. Objective 1A5: Protect, enhance, or restore mallard Habitat Units to address floodplain meadow, scrub-shrub, open water, and herbaceous wetland habitat losses resulting from construction of Albeni Falls Project. Objective 1A6: Protect, enhance, or restore muskrat Habitat Units to address herbaceous wetland and open water habitat losses resulting from construction of Albeni Falls Project. Objective 1A7: Protect, enhance, or restore white-tailed deer Habitat Units to address scrub-shrub wetland habitat losses resulting from construction of Albeni Falls Project. Objective 1A8: Protect, enhance, or restore redhead Habitat Units to address open water and near-shore floating aquatic weed</p>	<p>Strategy a (for Objectives 1A1-1A8) (Priority 1): Identify and protect habitat through fee title acquisition, conservation easements, lease, or management agreements. The Council defines protection as any action that protects habitat in perpetuity.</p> <p>Strategy b (for Objectives 1A1-1A8)* (Priority 3): Develop management plans consistent with Columbia Basin Fish and Wildlife Authority (CBFWA) Guidelines for Enhancement, Operation, and Maintenance Activities for Wildlife Mitigation Projects (CBFWA Wildlife Managers 1998). Management plans will address roaded and non-roaded access, livestock, habitat connectivity (to other lands managed for wildlife), soil, vegetation enhancement and management of unwanted species, fire and fuels, nonnative wildlife, and monitoring.</p> <p>Strategy c (for Objectives 1A1-1A8)* (Priority 4): Identify and evaluate sites for potential use in mitigation, including a) opportunities for enhancement and restoration on federal, state, and tribal lands, and b) opportunities for cooperative restoration and enhancement efforts with private landowners, when habitat</p>	<p>Terrestrial resource losses incurred from construction and inundation of the Albeni Falls Dam.</p>

Objectives in priority order	Strategies	Limiting Factor(s) Addressed
<p>bed habitat losses resulting from construction of Albeni Falls project.</p> <p>Objective 1A9: Maintain wildlife habitat values (Habitat Units) for the life of the project on existing and newly acquired mitigation lands through adequate long-term Operations and Maintenance (O&M) funding.</p>	<p>protections can be demonstrated to be permanent.</p> <p>Strategy a (for Objective 1A9) (Priority 2): Ensure long-term protection, enhancement, and monitoring of habitat units through secured funding for Operations and Maintenance.</p>	
Provincial Priority 2 – Quantify and mitigate for operational impacts		
<p>(2) Complete the assessment of operational effects on terrestrial resources by year 2008. Objective 1B1*</p>	<p>Strategy a *: Conduct the assessment and consider the fluctuation zone, hydrologic alterations (based on current hydropower facility operations), loss of nutrients in watershed from loss of salmon, identify recreational effects to terrestrial resources, BPA transmission lines, habitat connectivity, and erosion.</p>	<p>Lack of data on operational impacts</p>
<p>(3) Complete development of mitigation plan by year 2010 and complete the implementation of initial mitigation by year 2015. Objective 1B2</p>	<p>Strategy a: Develop and implement mitigation plan for operational effects.</p>	<p>Need for mitigation operational impacts.</p>
<p>(4) Perform 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. Objective 1B3*</p>	<p>Strategy a: Implement three-year review and update of mitigation plan.</p>	<p>Adaptive management, changing conditions</p>
Provincial Priority 3 –Mitigate for secondary effects of FCRPS and other subbasin effects		
<p>(5) Identify, maintain, restore, and enhance priority habitats (wetlands, riparian areas, upland forests, steppe and shrub-steppe, cliffs and rock outcrops) within the Pend Oreille Subbasin, including their structural attributes, ecological functions, and distribution and connectivity across the landscape. Objective 2B2*</p>	<p>Strategy a: Acquire land management rights to identified native wildlife habitats of concern through fee title acquisition, lease, conservation easement, or management plan.</p> <p>Strategy b: Develop management plans to enhance and/or restore native habitats. Management plans should address roaded and non-roaded access, livestock, nonnative plant and animal species; soils, and vegetation management activities to improve habitat quality.</p> <p>Strategy c: Implement management plans and conduct implementation and effectiveness monitoring to ensure that objectives are being</p>	<p>Secondary effects of FCRPS and other subbasin effects to priority habitats</p>

Objectives in priority order	Strategies	Limiting Factor(s) Addressed
	met. Strategy d: Improve enforcement of existing state and tribal hunting regulations and modify regulations where needed to improve success of achieving wildlife management objectives.	
(6) Fully mitigate for all FERC hydropower terrestrial resources effects within the Pend Oreille Subbasin in-kind and in-place when possible. Complete all mitigation requirements consistent with approved and active guidelines, agreements, and applicable federal (FERC) licenses. Objective 2B1	Refer to strategies a–d for Objective 2B1 , above	Other subbasin effects, specifically FERC hydropower impacts
(7) Maintain bald eagle populations at or above present levels (2004) within the Pend Oreille Subbasin. Objective 2A2	Strategy a (for Objective 2A2): Identify, map, and provide long-term protection to current and/or potential winter perching, nesting, and foraging habitat.	Secondary effects of FCRPS and other subbasin effects to bald eagles
(8) Restore a self-sustaining population of grizzly bears in the Selkirk Recovery Zone that meets the <i>Grizzly Bear Recovery Plan</i> goals (USFWS objective). Objective 2A3	Strategy a (for Objectives 2A1-2A11)*: Identify limiting factors for species/guilds, and identify relationships to indicator species/habitats analyzed in HEP loss assessments. Strategy b (for Objectives 2A1-2A11)*: Use current subbasin Plan Assessment to determine current distribution and population status of species/guild and define target species/guilds; supplement with additional inventory as needed. Strategy c (for Objectives 2A1-2A11): Develop and implement mitigation to address limiting factors for species/guilds, with consideration of benefits that can be acquired through acquisition of HUs for indicator species/habitats used in HEP loss assessments.	Secondary effects of FCRPS and other subbasin effects to grizzly bears
(9) Protect, restore, enhance, and sustain populations of big game species such as black bear, elk, mountain goat, moose mountain lion, mule deer, and white-tailed deer. Objective 2A6	Refer to strategies a-c for Objectives 2A1-2A11 , above.	Secondary effects of FCRPS and other subbasin effects to big game species.
(10) 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	Strategy a: Secure and enhance winter and spring ranges; protect from human development.	Secondary effects of FCRPS and other subbasin effects to mule

Objectives in priority order	Strategies	Limiting Factor(s) Addressed
2B3	<p>Strategy b: Manage motorized traffic in critical mule deer spring and winter ranges.</p> <p>Strategy c: 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.</p> <p>Strategy d: Increase the area of aspen stands.</p> <p>Strategy e: Modify state and tribal hunting regulations to help increase mule deer populations.</p> <p>Strategy f: Restore grasses and forbs where noxious weeds have impacted mule deer habitat.</p> <p>Strategy g: Develop, prioritize, and implement projects and/or research to address identified limiting factors for mule deer.</p> <p>Strategy h: Improve enforcement of state and tribal hunting regulations.</p> <p>Strategy i*: Continue funding to complete WDFW cooperative Mule Deer Project.</p>	deer habitats
(11) Protect, restore, enhance, and sustain populations of waterfowl, upland game, and furbearers under traditional levels of recreational and subsistence use. Objective 2A7	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to waterfowl, upland game, and furbearers
(12) Maintain or enhance amphibian and reptile populations relative to current levels within present use areas and identify limiting factors within the subbasin. Objective 2A10	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to amphibians and reptiles
(13) Maintain or enhance neo-tropical migrant bird populations relative to current levels within present use areas and identify limiting factors for these populations within the Pend Oreille	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to neo-

Objectives in priority order	Strategies	Limiting Factor(s) Addressed
Subbasin. Objective 2A8		tropical migrant birds
(14) Maintain or enhance invertebrate populations relative to current levels within present use areas and identify limiting factors for these populations within the subbasin. Objective 2A11	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to invertebrate populations
(15) Increase the Selkirk woodland caribou herd to 75 animals or more by 2010, with the intent to meet ESA de-listing criteria by 2020. Objective 2A1	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to Selkirk woodland caribou
(16) Identify, prioritize, and implement habitat improvements that address limiting factors in order to restore or maintain viable lynx populations in the Pend Oreille Subbasin. Objective 2A4*	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to lynx
(17) Restore and sustain state threatened and endangered species, tribal and state species of special concern, federal candidate species, BLM and USFS sensitive species, and USFS indicator species. Objective 2A5	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to TES species
(18) Maintain or enhance populations of cavity nesting species relative to current levels within present use areas and identify limiting factors within the subbasin. Objective 2A9	Refer to strategies a-c for Objectives 2A1-2A11 , (see priority 8, above)	Secondary effects of FCRPS and other subbasin effects to cavity nesting species
(19) 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. Objective 2B4*	No specific strategies identified.	Secondary effects of FCRPS and other subbasin effects to target wildlife habitat
(20) 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. Objective 2B5	No specific strategies identified.	Secondary effects of FCRPS and other subbasin effects to habitat connectivity

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

18.4.2 Discussion of Terrestrial Prioritization

The ranking of the terrestrial objectives directly reflects the priorities established in the Council's 2000 Fish and Wildlife Program. The overall top priority terrestrial objective for the Pend Oreille Subbasin is to fully mitigate for terrestrial resource losses incurred from construction and inundation of the Albeni Falls Dam per the requirements of the Northwest Power Act (Pend Oreille Objective 1A, and nine sub-objectives). This objective was ranked the highest priority due to connection to direct effects of FCRPS. These impacts and resulting mitigation are the sole responsibility of the FCRPS. This includes all protection, restoration, enhancement, O&M, and monitoring.

Development of federal hydropower system projects resulted in direct loss of wildlife habitats due to construction of project facilities and inundation of project reservoirs. The Albeni Falls Wildlife Protection, Mitigation, and Enhancement Plan Final Report (Martin et al. 1988) provides the Habitat Evaluation Procedures (HEP) assessment of wildlife and wildlife habitat losses for construction of the project. The results of this study were amended into the Council's Fish and Wildlife Program in 1987 and specify the number of habitat units to be provided in compensation for the construction losses. The study also identified potential mitigation areas. Mitigation for the construction losses is directed by the Albeni Falls Interagency Work Group, which includes the Coeur d'Alene Tribe, Kalispel Tribe, Kootenai Tribe of Idaho, IDFG, USFWS, USACOE, NRCS, and USFS. Priority mitigation focus areas were established with consideration for in-place and in-kind opportunities, threat to wetland habitats in primary impact areas, location relative to other management areas, and availability of protection opportunities (Albeni Falls Interagency Work Group Operating Guidelines and Guiding Principles for Mitigation Implementation 1998).

The Subbasin Work Team did not assign individual priorities to the wildlife HEP species, as it was agreed that most habitat management projects address multiple wildlife species. The strategy addressing maintenance of wildlife-habitat values was rated highly as it is critical that mitigation parcels be managed and maintained over the long term in order to provide the anticipated benefits and achieve the mitigation objectives.

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 Pend Oreille 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, and then update the mitigation plan on a three-year cycle.

The third priority in the IMP is to mitigate for secondary effects of the hydrosystem development in combination with other subbasin effects to terrestrial resources. In this category of objectives, the Pend Oreille Subbasin Work Team ranked increasing priority habitats and mitigating for the non-federal hydropower impacts as the highest priorities. Mitigating for secondary losses to bald eagle and grizzly bear, two federally-listed threatened species, were the next highest priorities. Other, lower priority, species or habitats included mule deer, big game, waterfowl, and furbearers.

18.5 Appendix – Draft Bull Trout Recovery Plan for Pend Oreille Subbasin

The following information was taken from the USFWS Draft Bull Trout Recovery Plan (2002). Pend Oreille Aquatic Objective 1C5 is to pursue the objectives in this Recovery Plan so that the species can be delisted. Included in this document are the goals and objectives from the Recovery Plan, with the understanding that the Recovery Plan is still in draft. If the Recovery Plan changes when finalized, then the objectives of this Subbasin Management Plan will be adjusted accordingly.

The goal of the USFWS Draft Bull Trout Recovery Plan (2002) is to ensure the long-term persistence of self-sustaining, complex, interacting groups of bull trout distributed throughout the species' native range, so that the species can be delisted.

To achieve this goal the following objectives have been identified for bull trout in the **Northeast Washington Recovery Unit**:

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

Recovery criteria identified for the **Northeast Washington Recovery Unit** are the following (USFWS, 2003):

1. Bull trout will be distributed among at least nine local populations in the Northeast Washington Recovery Unit.

Local populations under a recovered condition include: Slate Creek, Indian Creek, Sullivan Creek (including Sullivan Lake and tributaries), Mill Creek, Cedar Creek (Pend Oreille County), Tacoma Creek, Ruby Creek, Calispell Creek, and the LeClerc Creek complex (including Fourth of July Creek, East Branch LeClerc Creek, and West Branch LeClerc Creek).

2. Estimated abundance of bull trout among all local populations in the Northeast Washington Recovery Unit will be between 1,575 and 2,625 migratory adults.

Recovered population estimates for individual local population are: Indian Creek 50 to 100 adults, Slate Creek 25 to 75 adults, Mill Creek 50 to 150 adults, Cedar Creek 150 to 250 adults, Ruby Creek 100 to 200 adults, Tacoma Creek 150 to 350 adults, Calispell Creek 50 to 100 adults,

Sullivan Creek (including Sullivan Lake and tributaries) 600 to 850 adults, and LeClerc Creek 400 to 550 adults.

3. Adult bull trout exhibit a stable or increasing trend for at least two generations at or above the recovered abundance level within the Pend Oreille Core Area.

The development of a standardized monitoring and evaluation program, which would accurately describe trends in bull trout abundance, is identified as a priority research need.

4. Specific barriers to bull trout migration in the Northeast Washington Recovery Unit will have been addressed.

The Northeast Washington Recovery Unit Team has identified that the primary impediment to bull trout recovery is the fragmentation of habitat within the system by hydroelectric facilities. The Northeast Washington Recovery Unit Team recommends that to achieve recovery in the Pend Oreille Core Area, connectivity needs to be restored at Albeni Falls, Box Canyon, and Boundary dams.

Recovery criteria for the Northeast Washington Recovery Unit were established to assess whether recovery actions are resulting in the recovery of bull trout. The Northeast Washington Recovery Unit Team expects that the recovery process will be dynamic and will be refined as more information becomes available. While removal of bull trout as a species under the Endangered Species Act (delisting) can only occur for the entity that was listed (Columbia River distinct population segment), the criteria listed above will be used to determine when the Northeast Washington Recovery Unit is fully contributing to recovery of the population segment.

To achieve this goal the following objectives have been identified for bull trout in the **Clark Fork River Recovery Unit:**

Lake Pend Oreille is considered to be a primary core area for the Clark Fork Recovery Unit. In Lake Pend Oreille, 13 relatively complete basin-wide redd counts were conducted between 1983 and 2000. These counts found an average of 657 redds in 18 streams (range 412 to 881). The 2000 redd count located 740 redds. Five drainages (Grouse, Gold, Granite, Trestle, and Lightning creeks) consistently support over 25 redds, with the strongest (Gold and Trestle creeks) normally exceeding 100 redds each. Johnson Creek also exceeded the 25 redd level in two of the 4 years between 1997 and 2000.

In the Lake Pend Oreille Core Area, at least 6 local populations must contain more than 100 adult bull trout. In addition, adult populations will exceed 2,500 fish in Lake Pend Oreille.

Trend criteria will be met when the overall bull trout population in the Clark Fork Recovery Unit is accepted, under contemporary standards of the time, to be stable or increasing, based on at least 10 years of monitoring data.

Connectivity criteria will be met when functional fish passage is restored or determined to be unnecessary to support bull trout recovery at Milltown, Thompson Falls, Noxon Rapids, Cabinet Gorge, and Priest Lake dams and when dam operational issues are satisfactorily addressed at Hungry Horse, Bigfork, Kerr, and Albeni Falls dams (as identified through license conditions of the FERC and the Biological Opinion of the USFWS. In the Priest Recovery Subunit, fish passage needs must be fully evaluated at Priest Lake Dam (FERC license), and year round fish passage must be provided if determined biologically necessary.