FY 2006 budget responses: Subbasin planning responses only

Blue Mountain — Asotin

1994-018-05 - Asotin Enhancement/Restoration (Expense) Asotin County Conservation District

Description: Coordinate, assess, implement and monitor holistically based fish habitat cost-share programs in Asotin Creek watershed. Continue to improve on "grass roots" public and agency cooperation and collaboration for identified high priority habitat projects.

Consistency with subbasin plans

This project is consistent with the Vision and Management Plan Components in sections 7.1.1 and 7.1.2 and 7.2 Aquatic Working Hypotheses and Biological Objectives (pages 120-126). Embeddedness, riparian function, and Temperature are the major limiting factors that are addressed with this project. In the FY 07 funding cycle we will again be looking at LWD, pools, confinement and bedscour. 7.3.1 Imminent threats (pages 128 – 131), 7.3.3 Priority Protection Areas (pages 150-153), 7.3.5 Aquatic Strategy Special Topics (Pages 154-156) and 7.5 Research, Monitoring and Evaluation to fill EDT data gaps, implementation of effectiveness monitoring and data management and coordination, fund additional actions to complete basic population status monitoring are also important projects to the local technical and landowner committees. This project has and will continue to address multiple limiting factors for all freshwater lifecycles for summer steelhead, spring Chinook and bull trout within the Asotin Creek watershed.

Addresses subbasin plan priorities

The priorities for this project can be found in 7.3.2 Priority Restoration Area Strategies (pages 131 – 149). This project is working with private landowners in upper Asotin, Lower George and Charley Creeks. Reduction of embeddedness to less than 10% with current data at 18%. Continue riparian recovery and reestablishment to achieve at least 75% riparian function with current data showing 62% functioning. Decrease summer daily maximum temperatures to no more than 4 days greater than 75 degrees and show progress toward meeting the WA St. standards and TMDL goals with current data showing more than 4 days above 75 degrees. Tables 7-4 and 7-5 give specific hypotheses and strategies to help achieve restoration potentials. Please note that instream habitat shows up as a priority and will be something we will address in the FY 07 funding processes. Additional Priority Protection Area Strategies can be found in section 7.3.3 (pages 150-153).

2002-050-00 - Riparian Buffer Couse/Ten Mile (Expense) Asotin County Conservation District

Description: Implement BMP's to protect and enhance watersheds in Asotin County with ESA listed steelhead and chinook. Utilize cost-share from USDA, WCC and SFRB as match to BPA Funds to implement riparian buffers under the CREP Program (RPA Actions 152 & 153).

Consistency with subbasin plans

This project is consistent with priority protection areas in 7.3 Aquatic Strategies, specifically 7.3.1 Imminent Threats (pages 128 – 131), 7.3.3 Priority Protection Areas (pages 150-153), 7.3.5 Aquatic Strategy Special Topics (Pages 154-156) and 7.5 Research, Monitoring and Evaluation to fill EDT data gaps, implementation of effectiveness monitoring and data management and coordination, fund additional actions to complete basic population status monitoring. This project has and will continue to address multiple limiting factors for all freshwater lifecycles for summer steelhead within Asotin County.

Addresses subbasin plan priorities

This project follows the Asotin Subbasin Management Plan and emphasizes projects in high priority reaches (identified by the Ecosystem Diagnosis and Treatment model) or imminent threats that if not addressed will continue to have long-term negative impacts on ESA listed summer steelhead. Past accomplishments, coupled with a prioritized framework and local knowledge elevates the on-going restoration and protection projects identified by this projects as a high priority. In addition to being consistent with the Asotin Subbasin Plan, the projects are supported by both the local landowner steering committee and technical advisory committee, which provides the backbone for all the groundwork that the Asotin Creek Model Watershed Plan identified for complex habitat restoration and protection projects.

2002-053-00 - Assess Salmonids Asotin Cr Ws (Expense) WDFW - Olympia

Description: Evaluate the current productivity and survival rates of anadromous and resident salmonids in Asotin Creek. Develop a habitat based spring chinook reintroduction plan and determine if supplementation is required to sustain a wild steelhead population.

Consistency with subbasin plans

The Asotin Creek assessment project is consistent with the research, monitoring, and evaluation (RM&E) approach identified in the Asotin Creek Subbasin Plan to provide direct estimates of the population status for the three ESA listed Aquatic Focal Species: Steelhead trout, Chinook salmon and bull trout, (Section 1.1, "Planning Context" p. 3; and Appendix B, "Asotin Subbasin Aquatic Assessment", p. 1). The data collected will help fill the existing data gaps identified as critical needs for the viable salmonids population (VSP) attributes (Section 7.5.1, "Research, Monitoring, and Evaluation, Aquatic Habitats and Species", pp 173-174; and Appendix M, RM&E, p. 1). The data will also be used to assess species response to habitat improvement actions in the basin.

The Asotin Creek assessment project will provide baseline population status, data for focal species abundance (adults and juveniles, wild:hatchery composition), diversity (genetic characterization, life history strategies), spatial structure, and productivity (population growth rate or potential – juvenile and natural return ratio for adults). In addition, the data will facilitate implementation of the adaptive management approach (Section 7.5, p. 172), consistent with the Recommended Funding Actions (Section 7.5.1, p. 174; and Appendix M, Table 1, p. 6). The data from this project will also assist in refining management goals for each focal species (Section 7.3.6, "Aquatic strategies, Numeric Fish Population Goals", pp 156-161).

The Asotin Creek assessment project is consistent with recommendations for the Tributary RM&E plans being developed by NOAA Fisheries. This project is also necessary to address the reasonable and prudent alternatives (RPA #180) for population status monitoring (i.e., abundance, trend, distribution, and variation) required by the 2000 FCRPS Biological Opinion. In addition, the bull trout data collected will help address the needs identified in the 2002 USFWS Bull Trout Draft Recovery Plan, in which the Asotin Creek subbasin is identified as a core bull trout population.

Addresses subbasin plan priorities

The Asotin Creek assessment project implements the priorities identified in the Asotin Creek Subbasin Plan due to a limited knowledge of the three focal species (Steelhead trout, Chinook salmon and bull trout) in the Asotin Creek watershed, especially where VSP attributes are needed (Section 7.5.1, p. 173; and Appendix M, P. 1). In addition, information on "species of interest" (pacific lamprey and coho salmon) may be collected for future analysis. Baseline population status of the three focal species is a priority for future habitat improvement actions, which may be evaluated based on their effects on focal species recovery (Section 7.5, p. 172). Numerous (and conflicting) population goals were proposed by various managers (Section 7.3.6, p. 156) and by the ecosystem diagnosis and treatment (EDT) model (Section 7.3.6, Table 7-7. pp 158-159). Baseline population status may also be used for verification/correction of the EDT model for population response (Section 7.5.1, No. 8, p. 173).

The baseline data collected from the Asotin Creek assessment project for each focal species is a priority because it helps refine the fish return and management goals, and assists in the analysis of expected population outcomes as proposed in the Objective Analysis (Section 7.3.7, Tables 7-8, 7-9, p. 161) for steelhead and spring Chinook salmon. Most of the biological data referenced in the plan for the focal species (Sections 3.2.1, 3.2.2, 3.2.3, pp 29-31, Tables 3-1 and 3-3; and Appendix B) was derived from the Tucannon and Touchet Rivers. While similar in geographic location, VSP attributes of the three focal species are likely to be different from those in Asotin Creek, due to the varied habitat between the three watersheds. In addition, this project conducts priority work because the data collected can be used in an adaptive management approach (Section 7.5, p. 172).

The Asotin Creek assessment project is a priority because it addresses the reasonable and prudent alternatives (RPA #180) for population status monitoring required by the 2000 FCRPS Biological Opinion.

2002-054-00 - Protect & Restore Asotin Cr Ws (Expense) Nez Perce Tribe - Lapwai

Description: Contribute to an on-going watershed restoration effort by working in collaboration with private and federal entities to address sedimentation into stream and tributaries from road related sources on forested ground within the watershed.

Consistency with subbasin plans

The project is consistent with and implements Aquatic Restoration Strategies UA 1.1.5, Management Plan pg 132) and Aquatic Restoration Strategies SF 1.1 (Management Plan pg 143). It is listed under Strategy Categorization: Pave, decommission or relocate roads, table 7.5, pg 147 of the Management Plan, which shows its relationship to other strategies/objectives and overall benefit to the fishery and its habitat.

Addresses subbasin plan priorities

The project falls within the priority restoration areas objectives listed in table 7.2, pg 127 of the management Plan. Road decommissioning reduces sediment into streams. Sediment is listed as one of the key habitat limiting factors in all priority restoration areas, Management Plan pg 124. It falls within Working Hypotheses, table 7.1, pg 126 of the Management Plan that reduction in sediment (turbidity, percent fines and embeddedness) will increase survival of steelhead in the following life stages: a) incubation; b) subyearling rearing; c) overwintering; d) yearling rearing. Spring Chinook survival will increase in the following life stages: a) incubation; b) yearling rearing; c) fry. Strategies UA 1.1.5 and SF 1.1 signifies that decommissioning of roads is a strategy for reducing sediment into streams.

2006-005-00 - Asotin Creek Wildlife Area (Expense) WDFW

Consistency with subbasin plans

The project is consistent with subbasin plans by:

1. Continuing riparian area recovery in South Fork of Asotin creek. Objective SF4.1 page 144. Grazing is now limited in S. Fork to crossing permits only, weeds are being controlled, and passive restoration will begin in 2006.
2. Continuing riparian area recovery in George Creek and tributaries by limiting grazing, weed control, and restoration activities. Objective LG4.1 page 138.
3. Continued enrollment of project lands in CRP program page 152.
4. Protecting native grass habitats and planning for conversion of old agricultural fields into native grass page 167.
5. Funding noxious weed control projects to improve habitat function. Page 169.
6. Implementing strategies in Washington Deer and Elk Management Plans page 171,172.

Addresses subbasin plan priorities

Goals of this project, which include restoration of riparian habitats, restoration and conservation of native upland rangelands, enhancement of big game habitat, and control of noxious weeds are consistent with objectives and strategies stated above.

1984-025-00 - Ne Oregon Habitat Projects (Expense) ODFW

Description: Protect and enhance fish habitat in selected streams on private lands in the Grande Ronde Basin to improve instream and riparian habitat diversity, and increase natural production of wild salmonids.

Consistency with subbasin plans

Subbasin Plan

The Grande Ronde Subbasin Plan & Supplement (December 31, 2004) Vision Statement focuses on restoring healthy habitats for aquatic and terrestrial species (Section 5.1). A number of habitat based limiting factors are identified. This project focus on addressing these limiting factors through direct action, cooperative projects, follow-through support (i.e. technical assistance and maintenance), and monitoring to document progress and problems.

This project specifically works to address the 4 key habitat attribute identified for improvement in the Plan (Section 5.2.4.2; low flow/irrigation diversion, sediment reduction, channel condition and riparian function). Habitat projects planned and implemented under this project work to make the best aquatic habitat possible under the flow condition experienced, restore riparian and upland areas to reduce sediment, improve channel conditions to provided high flow stability and improved habitat and restore and protect riparian function. The strategies identified by the Plan in each of these attribute areas are used buy this project.

This project is part of a partnership of the CTUIR, NPT, Grande Ronde Model Watershed OWEB and others working to restore fish and wildlife habitats. Integrating these restoration efforts into the community and economic framework has been an important aspect of implementation. This cooperative framework in noted in the Plan and is encouraged by the Oregon Plan and ODFW priorities.

Addresses subbasin plan priorities

Table 5.4 of the Plan identifies priority attributes requiring attention if restoration is to be successful. Table 5.5 outlines a framework for identifying restoration priorities. The overall goal of this project is to address issues limiting restoration associated with these attributes. Table 5.6 identifies geographic priorities of the Plan. Project activities have focused on the top 4 watersheds identified.

1988-053-05 - Ne Ore Outplntg Facilities Mst (Capital) ODFW

Description: Develop the Walla Walla, Grande Ronde, and Imnaha Master Plans. Develop facility designs and costs with schedule for implementation. Construct and operate new facilities as agreed between comanagers; initially, operate for Captive and Endemic Brood.

Consistency with subbasin plans

The development of new facilities will provide immediate improvement in fish culture activities and artificial production to help achieve the goals of returning 5,000 to 12,200 spring chinook to The Grande Ronde Sub-basin (p 264. 5.2.2. Fish Production/Population Strategies).

Addresses subbasin plan priorities

CBFWA-High priority
ISRP-Fund
NWPCC-Fund
BPA-Fund
recommendation-A

1992-026-01 - Grand Ronde Model Watershed (Expense) Grande Ronde Model Watershed Prog

Description: Coordinate, plan, implement, monitor habitat restoration in T&E chinook & steelhead streams; build community participation, develop watershed planning; conduct seminars; interagency coordination in habitat restoration.

Consistency with subbasin plans

All references are to the Grande Ronde Subbasin Plan Supplement which was provided in response to comments to the original SBP submission. The Supplement, specifically the Management Plan section, more fully developed restoration strategies and priorities than did the original plan.

The GRMWP proposed FY 2006 Projects (see Goals section) address four habitat attributes/limiting factors that are discussed at length in the original SBP as well as the SBP Supplement. Those are: Fish Passage, Habitat Diversity, Key Habitat Quantity and Sediment.

The SBP highlighted fish passage, where it is blocked or impeded, as a very important element to fish population restoration because it restores habitat connectivity, has a high probability of success in a short time frame and has a relatively low risk of failure. Many of the major fish passage barriers at irrigation diversions and major culverts have already been addressed in the Grande Ronde Basin. However, there are still a few diversions and many culverts to address. The SBP did not identify specific sites due to incomplete or unverified data. Surveys and data collection are currently underway. Three of the five FY 2006 projects address fish passage. The Ladd Creek/I84 barrier is a well known and complete blockage of an entire drainage, but also will be an expensive fix (reason for not being addressed sooner). The Lower Catherine Creek/Davis site is also well known and can dramatically affect adult Chinook migration during low water years for the entire Catherine Creek drainage. Recent drought years and operational changes at the diversion have elevated the priority of this project.

Habitat diversity, key habitat quantity and sediment are limiting factors that are being addressed by the Ladd Creek Historic Channel and Lower Ladd Creek Habitat Diversity projects.

Addresses subbasin plan priorities

Please consult the following references in the Supplement for information and comparison of proposed FY 2006 projects and SBP priorities:

pp. 15-16, Tables 3-1 and 3.2 Five Highest Priority Geographic Areas
Catherine Creek (Chinook, steelhead) (Ladd Creek is a tributary) and Wildcat Creek (steelhead) are in the top five highest priority geographic areas.

pp. 17-18, Table 3.3
Lower GR, Wildcat Creek, “improving conditions in tributaries will help establish broader life history diversity”. “Identify largest tributary sediment sources”. The Wallupa culvert fails periodically causing the entire roadbed to be washed out and into Wildcat Creek.
Catherine Creek, restoration impact assessed to have “very large” affect on Chinook abundance.

p. 40, Table 5-4
Catherine Creek (Ladd Creek), priority attributes are key habitat quantity, habitat diversity, temperature, sediment and flow. The Ladd Creek Historic Channel and Habitat Diversity projects address these attributes. The re-channel project will significantly increase habitat quantity by increasing channel length and diversity. There will be lesser, but likely reductions in sediment and late season flow enhancement due to wetland creation and improved water storage. The habitat diversity project will add wood and structure to a formerly restored reach of Ladd Creek.

p. 47, Table 5.5 Framework for identifying project priorities.
Addressing fish passage barriers is “an appropriate initial strategy for the long term improvement of watershed health”

p. 50, Table 5-6
Catherine Creek ranks the third highest geographic area in terms of benefit derived from comprehensive habitat restoration.

1992-026-04 - Life Studies Of Spring Chinook (Expense) ODFW

Description: Investigate the abundance, migration patterns, survival, and alternate life history strategies exhibited by spring chinook salmon and summer steelhead from distinct populations in the Grande Ronde and Imnaha River basins.

Consistency with subbasin plans

The project is consistent with Aquatic Monitoring and Evaluation objectives 1a, 2c, and 3c (Subbasin Plan pages 276, 279-280, and 284-285). This project provides key performance measures for these three Monitoring and Evaluation objectives.

Addresses subbasin plan priorities

Research, Monitoring, and Evaluation is not prioritized in the Grande Ronde subbasin plan. However, this project is a key component to the monitoring and evaluation of the recovery of spring Chinook salmon in the Grande Ronde subbasin.

1996-080-00 - Ne Oregon Wldf Proj (Npt) (Expense) Nez Perce Tribe - Lapwai

Description: Provide funding for the Operation & Maintenance actiities on 16,500 acres of the NEOR Wildlife Mitigation Project located on the breaks of Joseph and Cottonwood Creeks, tributaries of the Grande Ronde River, in NE Oregon.

Consistency with subbasin plans

This project addresses the following goals, objectives, and strategies found in the Grande Ronde Subbasin Plan:

5.2.1.1 Goals: (pg 258) Protect high quality aquatic habitats and provide connectivity. Over 16 miles of perennial streams protected by this project – most fish-bearing.
The project addresses priority attributes for Joseph Creek by reducing sediment, improving riparian cover to mitigate for high temperatures and improve woody debris recruitment. (Pg 258).
The following aquatic strategies are addressed:
Improve density, condition, and species composition of riparian vegetation. (pg 260, 262)
Maintain woody debris by promoting BMP's for forestry (pg 260)
Manage grazing in riparian areas to improve condition (pg 261)
Promote minimum tillage practices (pg 261)
Implement integrated weed management strategies (pg 261)
Improve hydrologic function by managing for historic forest conditions (pg 263)
The project addresses four of the high priority terrestrial cover types in the subbasin: ponderosa pine, aspen, riparian wetlands, and grasslands. (pg 267-269)
The following terrestrial strategies are addressed:
Ponderosa pine: Protect extant habitat, convert back to pine type, use prescribed fire, weed control, and protect wildlife corridors (pg 267)
Quaking Aspen: Increase size & vigor of stands, conduct inventories and map stands, remove conifers in aspen stands, promote low-intensity ground fires (pg 268)
Grasslands: Weed control, restore grassland function, protect wildlife corridors, and use of bio-control on weeds (pg 268)
Wetlands (Riparian): Protect extant habitat in good condition, weed control, restore wetland function by re-planting natives, restore riparian function through livestock management, vegetation enhancement, and protect wildlife corridors (pg 268)
Winter Range: Protect unconverted winter range in good condition through easement and acquisition, implement forage improvement activities (pg 269)

Addresses subbasin plan priorities

The Grande Ronde Subbasin Plan Supplement provides the framework for prioritization of effort within the subbasin. Six priority themes were identified (pg 45) and the Precious Lands Project addresses three of those: Reduce upland erosion, restore channel condition, and restore riparian function. It also addresses the recurrent theme of habitat connectivity. The project lies in the lower portion of the watershed in what used to be private land. Proper management of these stream reaches provides habitat connectivity to mid-level and headwater areas where many fish spawn, and for returning juveniles as they migrate to the sea.

Table 5-6 in the Grande Ronde Subbasin Plan Supplement (pg 46) details the screens used for prioritizing work in the subbasin. Precious Lands is consistent with the management philosophy outlined in that Table. It builds from strength by conserving intact, good condition habitat areas, it is working to restore watershed processes through passive and active measures, and is helping to preserve or restore riparian function.

Terrestrial resources were not prioritized in the Plan or the Plan Supplement but the Precious Lands project addresses many of the resource issues and limiting factors in the subbasin plan as outlined above.

1996-083-00 - Grand Ronde Watershed Restore (Expense) Confederated Tribes Of The Umatilla

Description: Protect, enhance, and restore riparian, floodplain, and instream habitat to benefit anadromous fish with emphasis on rearing habitat and water quality. Project includes development and design, securing project partners, and working with priv. landowners.

Consistency with subbasin plans

The Grande Ronde Subbasin Plan & Supplement (December 31, 2004) contains numerous references in the Mgt Plan (Plan)(Section 5, pgs. 31-52) where the CTUIR Grande Ronde Subbasin Restoration Project can be tiered to. Habitat limiting factors are presented in Section 3.5.1.2, pgs 11-14. Sections 3.5.2, pgs. 14-18 illustrate priority areas for restoration and key limiting factors for chinook salmon and steelhead. Sections 3.6.3.1 through 3.6.1.4 (pgs 21-30) present desired conditions, anlaysis of restoration scenarios, and project outputs/findings as DFC's are achieved for various scenarios. High priority watersheds and accompanying limiting factors for both salmon and steelhead are addressed by the Project: Upper GR (upper and mid Grande Ronde, Lower Meadow Cr)-habitat diversity, key habitat quantity, sediment and temperature; Catherine Cr (mid Catherine Cr)- habitat diversity, key habitat quantity, and temperature. Several ongoing and planned efforts under the Project clearly and directly address these watersheds and limiting factors (e.g., Meadow Cr Restoration, Mainstem Grande Ronde River Enhancement, End Creek Restoration, and Ladd Creek Restoration). Specific actions to address limiting factors include: habitat prote channel restoration and floodplain activation to improve channel dimension, pattern, profile and associated instream habitat complexity, width:depth ratios, channel gradients, streambank stability, and associated hydrophytic plant communities. The GR Subbasin Plan supports active restoration and summarizes anticipated impacts of restoration actions for focal species in Section 3.6.3.1.5, pg. 30. This section notes that the Upper GR summer steelhead population "has the highest potential population increases through restoration." For spring chinook, the Plan indicates that implementation of the comp restoration package in the Catherine Creek and Upper Grande Ronde could drammatically increase chinook populations.

Addresses subbasin plan priorities

A common goal between the Plan (Section 5.0, pg. 31) and the Project is the restoration of a healthy ecosystem with abundant, productive, and diverse populations of aquatic and terrestrial species. In simple terms, the Project goal is to restore fish habitat and water conditions that support healthy, sustainable salmon and steelhead populations. Several sections of the Plan address goals, limiting factors, and priorities as presented above. Section 5.2.5, pgs 45-49, and Table 5-5 summarizes priority limiting factors, geographic areas, and strategies. The Project is focused primarily in the Upper Grande Ronde and Catherine Creek Watersheds, which are consistently prioritized in the Plan. Subbasin Plan objectives (in order of priority)(Pgs. 40-45) include: 1)low flows/irrigation diversions, 2) sediment reduction, 3) channel condition, and 4) riparian function. Past and planned habitat restoration through the Project address multiple limiting factors and priorities, particularly sediment reduction, channel condition, and riparian function through habitat protection, facilitation of natural/stable channel development, and floodplain connectivity. Key strategies addressed in the Plan (pgs. 42-44) are consistently employed on our restoration/enhancement projects (e.g, , protecting high quality habitat, re-establishing historic wet meadows, livestock grazing mgt, re-establishing riparian vegetation, relocating channelized stream reaches, improving floodplain connectivity, development of conservation easements, weed control, and wetland creation.

1998-007-02 - Grande Ronde Supp Lostine O&M/M&E (Expense) Nez Perce Tribe - Lapwai

Description: Operate adult trapping and juvenile acclimation facilities and conduct monitoring and evaluation in the Lostine River to implement the Lostine component of the Grande Ronde Basin Endemic Spring Chinook Supplementation Program (GRESP).

Consistency with subbasin plans

The Grande Ronde Management Plan includes specific adult return objectives for anadromous species (See Table 5-3, Grande Ronde Supplement, p. 35). These anadromous species objectives require a combined application of artificial production strategies, habitat protection and restoration strategies, and mitigation of deleterious out-of-subbasin effects. The application of artificial propagation measures are intended to realize anadromous fish restoration, recovery objectives, mitigation, and harvest goals in Table 5-3.

The goals of the O&M program address objective 2B in Table 5-1 of Grande Ronde supplement (page 31) through artificial production. The M&E goals address objective 1A by determining if escapement objectives have been met using key performance measures as defined in Table 63 on page 273 of the May 28, 2004 Grande Ronde Subbasin Plan. M&E goals also address objective 2A by monitoring adult returns of natural Chinook salmon and collecting genetic samples for Monitoring and Evaluation Objective 2b listed on page 279 in the May 28, 2004 Grande Ronde Subbasin Plan.

Addresses subbasin plan priorities

This project accomplishes priority work under the subbasin plan because it produces ESA listed spring Chinook salmon directly aimed at achieving goals identified in Table 5-3 (Grande Ronde Supplement, p. 35). The prioritization framework presented in section 5.2.5 of the Grande Ronde supplement aquatic strategies refers to the biological objectives presented in Table 5-1 on page 31. Two problems addressing limiting factors for anadromous fish populations are addressed; out of subbasin factors and small population size of anadromous and resident species. The subbasin plan adopted components of NPT's Monitoring and Evaluation Plan for Northeast Oregon Hatchery Imnaha and Grande Ronde Subbasin Spring Chinook Salmon (Hesse et al. 2004) in section 5.5 (page 269) of the May 28, 2004 Grande Ronde Subbasin Plan and uses key performance measures to monitor and evaluate limiting factors. These key performance measures are provided by the M&E program.

Further, artificial production from this project is agreed to and mandated under a court ordered agreement in U.S. vs. Oregon.

1998-007-03 - Grande Ronde Supp. O&M/M&E (Expense) Confederated Tribes Of The Umatilla

Description: Develop, implement, and evaluate integrated conventional and captive brood hatchery projects to prevent extinction, and stabilize populations of threatened spring chinook salmon populations in the Grande Ronde River.

Consistency with subbasin plans

Consistency:
This project is consistent with and implements the goals set forth in the Grande Ronde Subbasin Plan (Artificial Production:Current 3.2.3.4.2 pg 86-94, Artificial Production and Introduction; Ecological Consequences 3.2.3.4.4 pg 95-96, Relationship Between Naturally and Artificially Produced Populations 3.2.3.4.5 pg 96 & Management supplement 3.2.3.4.5 pg 4-11). We operate the acclimation facilities in the upper Grande Ronde and Catherine Creek that release the hatchery fish into the environment as well as monitoring and evaluating the survival, interactions, growth, release timing and overall effectiveness of the program. We also operate the adult capture facilities on these same streams to collect the broodstock needed to create the smolt releases. Again we provide monitoring and evaluation of the hatchery population as well as the natural population (survival, age structure, spawning distribution, and genetic monitoring).

Our work with summer steelhead is also consistent with the plan (Summer Steelhead Population Data and Staus 3.2.3.2 pg 64-79). Our enumeration of the summer steelhead populations in Catherine Creek and the upper Grande Ronde are vital for stray monitoring/removal, genetic monitoring, and population status monitoring.

Addresses subbasin plan priorities

This project accomplishes priority artificial production work identified in the subbasin plan (3.2.3.4.2 Artificial Production pg 86). Our project directly affects 2 of the 6 unique spring chinook populations identified in the plan (3.2.3.1 Spring Chinook Data and Status pg 49). We also complete work on 2 of the 3 focal aquatic wildlife species identified in the plan spring chinook and summer steelhead (3.2.2 Focal Species Selection. 3.2.2.1 List of species pg 47).

1998-007-04 - Grande Ronde Sp Chinook-Odf&W (Expense) ODFW

Description: Work with comanagers to implement the Grande Ronde Endemic Spring Chinook Supplementation Program (GRESCSP).

Consistency with subbasin plans

The implementation of artificial production of endemic spring chinook stocks in the Grande Ronde sub-basin will provide immediate improvement to LSRCP mitigation program to help achieve the goals of returning 5,000 to 12,200 spring chinook to the Grande Ronde Sub-basin (p 264. 5.2.2. Fish Production/Population Strategies).

Addresses subbasin plan priorities

CBFWA-High priority
ISRP-Fund
NWPCC-Fund
BPA-Fund
recommendation-A

1998-010-01 - Grande Ronde Captive Brood O&M (Expense) ODFW

Description: Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinook salmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery.

Consistency with subbasin plans

The Grande Ronde Basin Spring Chinook Salmon Captive Broodstock Program is fully consistent with the Grande Ronde Subbasin Plan and all seven points of the Northwest Power and Conservation Council's program vision. Specifically, it addresses objectives regarding factors limiting fish habitats and species of the subbasin plan (Table 5-1, Page 31, Grande Ronde Subbasin Plan Supplement).

The captive broodstock program helps achieve escapement objectives for spring Chinook salmon in the Grande Ronde Basin (Objective 1A, Supplement, page 31) . F1 generation smolts are released into natal streams of their parents and return to spawn naturally, increasing natural spawning. The program is an integral part of hatchery production in the Grande Ronde Basin and of the Northeast Oregon Hatchery Management Plan, developed cooperatively by the ODFW, CTUIR and NPT. From a mean of 1,350 wild parr captured / year we produced a mean of 265,364 F1 smolts / year and, in 2004, captive broodstock F1 generation returns comprised 48% of the returning adults in the Lostine River, 88% in Catherine Creek and 93% in Grande Ronde River. The F2 generation will form the backbone of the conventional hatchery programs being developed.

It will assist in "protecting the genetic integrity of populations that are below historical levels" (Objective 2A) by acting as a gene bank for the populations, which were in danger of extirpation. We have protected the genetic integrity of those populations and our use of matrices in which eggs from each female are fertilized by 2-4 males preserves their genetic diversity.

The program will "increase anadromous fish productivity and production, as well as life stage-specific survival through artificial production" (Objective 2B). By increasing parr-to-adult survival550x and egg-to-smolt survival 12X those seen in nature, we dramatically increase survival at all life stages, increasing production of all Chinook salmon and increasing natural production.

Addresses subbasin plan priorities

The Grande Ronde Basin Subbasin Plan did not prioritize work to be performed in the basin. However, the spring Chinook salmon is listed as threatened by the State of Oregon and under the Endangered Species Act and, as such, is listed as a focal species in the subbasin plan. The Grande Ronde Subbasin Plan Supplement provided escapement goals for each species of anadromous salmonid historically found in the basin and stated that "addressing out-of-subbasin issues combined within subbasin restoration and strategic artificial propagation is needed to achieve" these goals (Supplement, page 33). The captive broodstock program is an integral part of the referenced "strategic artificial propagation" and has been relied on for the majority of the hatchery production in the Grande Ronde Basin since 2000.

In the 2005-2007 Implementation Plan (page 34), continuing the artificial propagation safety net program for the Grande Ronde River (the Grande Ronde Captive Broodstock Program) is listed as a near-term target for Hatchery Actions as an interim measure to avoid extinction. It is also listed as a long-term target that is recommended to continue to be funded "as long as they continue to be biologically effective and necessary to reduce extinction risk."

Chinook salmon are a critical part of the vision statement for the basin, "Create a healthy ecosystem with abundant, productive, and diverse populations of aquatic and terrestrial species, which will support sustainable resource-based activities that contribute to the social, cultural, and economic well-being of the communities within the subbasin and the Pacific Northwest." Of all species, Chinook salmon is the one most associated with the resources and culture of the Pacific Northwest.

1998-010-06 - Captive Broodstock Artificial (Expense) Nez Perce Tribe - Lapwai

Description: Implement the captive broodstock project through the collection of juvenile salmon from the wild and maintaining them in captivity. The founding generation is spawned at maturity and the resulting F1 generation is released back to the parental stream.

Consistency with subbasin plans

Many of the goals, objectives, needs, and strategies detailed in the Grande Ronde Subbasin Plan are addressed by the Captive Broodstock project. In particular, the aquatic monitoring and evaluation objectives and their associated performance measures in the plan are consistent with the work elements of the Captive Broodstock project. Specific RM&E needs outlined in the subbasin plan and directly related to this project are as follows:

• "Describe status and trends in adult abundance and productivity for all focal populations…" (pg 276). Associated work element-Collect/Generate/Validate Field and Lab Data: Collect biological characteristics, abundance and timing of the adult salmon trapped at the Lostine weir.

• "Monitor focal species spawning distributions …" (pg 277). Associated work element-Collect/Generate/Validate Field and Lab Data: Conduct redd counts and carcass surveys on the Lostine River and all reference study streams. Record redd locations and document the number of live fish and their origin (hatchery or natural) during each survey.

• "Determine and compare relative reproductive success of hatchery and naturally produced focal species" (pg 279). Associated work element-Collect/Generate/ Validate Field and Lab Data: Collect tissue samples for DNA analysis from all adult Chinook salmon released to spawn naturally upstream of escapement weirs, unpunched carcasses above the weir and from juveniles at the Lostine screw trap. A DNA pedigree analysis will determine relative reproductive success.

• "Determine and compare adult life history characteristics between hatchery and natural fish…" (pg 282). Associated work element- Install Fish Trap/Monitoring Weir: Coordinate the installation (May) and removal (October) of the Lostine weir. As a monitoring tool, the Lostine weir provides information on the abundance and characteristics of immigrating adult salmon. Conventional, captive and natural performance can then be compared.

• "Data information archive" (pg 288). Associated work element- Manage/ Maintain Database: Assist in computer database management of all monitoring information collected on Chinook captive broodstock.

• "Coordination and implementation" (pg 289). Associated work element- Coordination: Coordinate the Captive Broodstock Artificial Propagation project with state and federal management agencies in the Grande Ronde Basin. AOP Plans, TOT Decisions, and coordinated actions. Quarterly list of meetings attended and major topics, decisions made.

Addresses subbasin plan priorities

Spring Chinook salmon are a priority and an identified focal species selected for recovery efforts (pg 47). Priority objectives that address out-of basin problems and supplementation information gaps are met in part through the Captive Broodstock project. Table 5-1 on page 31 of the GRSP supplement list these objectives that are implemented by the Captive Broodstock project: Objective 1A – Achieve escapement objectives… within 24 years. Objective 2A …carry out activities designed to improve our understanding and definition of small populations, while protecting the genetic integrity of wild populations that are below historic levels. Objective 2B -Increase anadromous fish productivity and production, as well as stage-specific survival, through artificial production. Objective 8A - Conduct coordinated spring Chinook salmon population monitoring as outlined in the Monitoring and Evaluation Plan for the Northeast Oregon Hatchery.

The intended goals and priorities of the 2000 Fish and Wildlife Program (NPPC 2000) are also furthered with the initiation of this project: 1) "Halt declining trends in salmon populations above Bonneville Dam by 2005" 2) "Restore the widest possible set of healthy naturally reproducing populations of salmon in each relevant province by 2012" 3)

"Increase total adult salmon runs above Bonneville Dam by 2025".

The Fish and Wildlife Program (FWP) calls for artificial production strategies that are implemented within an experimental, adaptive management approach and use monitoring and evaluation to resolve key program uncertainties. The objectives of the Captive Broodstock Artificial Propagation project relate specifically to Section 4 "Artificial Production Strategies" and to Section 9 "Research, Monitoring and Evaluation". Finally, projects must also plan for the dissemination of collected data, proven technology and project results (NPPC 2000). Therefore, this captive broodstock project falls within the conceptual framework, priority and strategy established in the FWP.

The objectives of the captive broodstock project are also specifically related to the action plans identified in the Biological Opinion. Co-managers, such as the Nez Perce Tribe, are expected to develop monitoring techniques to help resolve a wide range of uncertainties related to supplementation and "reform existing hatcheries and artificial production programs". Many of the monitoring and evaluation activities related to supplementation programs and designated in Actions (RPAs) 1, 9, 174, 180 and 182 of the Biological Opinion will be executed in part through the objectives of this project.

2000-021-00 - Ladd Marsh (Expense) ODFW

Description: Protect and restore wetland and riparian habitats on parcels acquired and added to the Ladd Marsh Wildlife Area.

Consistency with subbasin plans

This wetland restoration project was/is consistent with the goals, objectives & strategies in the Grande Ronde Subbasin Plan (GRSP;May 2004) and the Supplement to the GRSP (Supplement; Dec 2004). The acquisition and restoration of the project lands is consistent with the overall terrestrial habitat goals (GRSP p.267). Wetlands were identified as a priority habitat in the GRSP. The project addresses the strategies (p.268-269) of restoration of wetland function through reestablishment of native plant communities, restoration of riparian area function through vegetative enhancement and restoration of historic or near-historic stream channels. The project also addresses the priority aquatic attributes (Supplement p. 40) for the Catherine Creek watershed of key habitat quality, habitat diversity, sediment, flow and temperature. By restoring approximately 3 miles of Ladd Creek to a near-historic channel, planting woody riparian vegetation, planting herbaceous wetland vegetation, reconnecting Ladd Creek to a portion of its floodplain, adding in-channel LWD to the restored Ladd Creek channel, and reducing irrigation withdrawal by acquiring water rights with land acquisition, this project employs many of the strategies, some of which are repeated for several attributes, for low flows and irrigation diversions, sediment conditions, channel conditions and riparian conditions (Supplement p. 42-45). Further, the project, now in the Operations and Maintenance and Monitoring and Evaluation Phases, is consisitent with the M&E objectives of the GRSP and Supplement and with the Council's M&E guidelines. The project M&E plan, now in implementation, calls for the collection of biological data to determine the efficacy of restoration activities and management and allows for adaptive management based on data collected. This project is part of a larger plan to restore up to 80% of Ladd Cr. within the Grande Ronde Valley to near-historic conditions via other non-BPA funded projects.

Addresses subbasin plan priorities

The work accomplished in this project is a priority as shown in the Grande Ronde Subbasin Plan (GRSP; May 2004) and The Supplement to the GRSP (Supplement; Dec. 2004). Wetlands are shown as a priority habitat in the terrestrial section of the GRSP (p. 268); this project restored about 600 acres of valley emergent wetland habitat. The project also fits within the Prioritization Framework presented in the GRSP Supplement (p.46).

2002-073-00 - Wallowa Culvert Inventory (Expense) Nez Perce Tribe - Lapwai

Description: Prioritize on county, state, federal, and private land, culverts that either need maintenance or replacement to meet resource needs.

Consistency with subbasin plans

The project is consistent with and implements the Grande Ronde Subbasin plan. (Dec. 2004 Supplement/Mgmt Plan: Pg 11, 3.5.1.2 “The most pervasive limiting factors with High or Medium impacts for both species (Spring Chinook & Steelhead) were channel habitat conditions (key habitat quantity & habitat diversity). Culverts and other fish passage barriers were not adequately addressed through the EDT analysis. Evaluation of fish passage issues will be addressed through the management plan. Pg 36 5.2.2 – Fish Passage/Habitat Connectivity, 5.2.2.1-Goals: #2 - Utilize priority list of passage barriers developed by NPT for Wallowa County. 5.2.2.2 Objectives & Strategies – “Good information on fish passage and migration barriers was not available in time for analysis. The Nez Perce Tribe has been conducting a survey of barriers in the subbasin which has found over 90 fish passage barriers in Wallowa County (Rick Christian, NPT, Personal comm.. Dec. 17, 2004). Once passage analysis is completed, the NPT will have a priority list which will account for the amount of habitat blocked, life history stage(s) impacted and long term management objectives.” This project is also strongly supported by and consistent with the Imnaha Subbasin Management Plan: May 2004: Pg 36: Discussion: (re: habitat connectivity “Barriers to migration, both manmade and natural, currently represent limiting factors to this connectivity. “The Imnaha Aquatics Technical Team considered structural barriers to represent one of the most important and readily addressable factors currently limiting aquatic focal species in the subbasin.”

Addresses subbasin plan priorities

The project accomplishes priority work under the Imnaha Subbasin Management Plan: May 2004 and Grande Ronde subbasin plan-Dec 2004 Supplement, Management Plan, because the Prioritization Framework in the Management Plan emphasizes this type of work as a mechanism to begin replacement of fish passage barriers. In addition to sections cited above, see Pg 45, 5.2.5 Prioritization of Aquatic Strategies "Prioritization Framework" - .." The overall objective of this plan is to increase fish and wildlife population trajectories. To accomplish this effectively many things need to happen simultaneously over a long time period...Although there are no simple priorities, there are clear conservation themes that will deliver important benefits to the subbasin fish and wildlife habitat and populations in the next 10 - 15 years. This plan recommends balanced investments in the following priority themes to ensure protection of life, property, and economy. (listed as first of six themes) *Fix passage barriers due to low flows, diversions and culverts to allow fish passage into additional habitat.” It is essential to complete this project to identify and prioritize barriers for replacement/repair which have the greatest biological benefit to the watershed.

2003-031-00 - Precious Lands Wldlf Hab Expan (Capital) Nez Perce Tribe - Lapwai

Description: Expand the operation of the NE Oregon Wildlife Mitigation Project -- "Precious Lands" to protect, restore, and enhance up to 16,500 acres of additional grassland, riparian and ponderosa pine habitat to benefit fish and wildlife.

Consistency with subbasin plans

This project addresses the following goals, objectives, and strategies found in the Grande Ronde Subbasin Plan:

5.2.1.1 Goals: (pg 258) Protect high quality aquatic habitats and provide connectivity. Over 16 miles of perennial streams protected by this project – most fish-bearing.
The project addresses priority attributes for Joseph Creek by reducing sediment, improving riparian cover to mitigate for high temperatures and improve woody debris recruitment. (Pg 258).
The following aquatic strategies are addressed:
Improve density, condition, and species composition of riparian vegetation. (pg 260, 262)
Maintain woody debris by promoting BMP's for forestry (pg 260)
Manage grazing in riparian areas to improve condition (pg 261)
Promote minimum tillage practices (pg 261)
Implement integrated weed management strategies (pg 261)
Improve hydrologic function by managing for historic forest conditions (pg 263)
The project addresses four of the high priority terrestrial cover types in the subbasin: ponderosa pine, aspen, riparian wetlands, and grasslands. (pg 267-269)
The following terrestrial strategies are addressed:
Ponderosa pine: Protect extant habitat, convert back to pine type, use prescribed fire, weed control, and protect wildlife corridors (pg 267)
Quaking Aspen: Increase size & vigor of stands, conduct inventories and map stands, remove conifers in aspen stands, promote low-intensity ground fires (pg 268)
Grasslands: Weed control, restore grassland function, protect wildlife corridors, and use of bio-control on weeds (pg 268)
Wetlands (Riparian): Protect extant habitat in good condition, weed control, restore wetland function by re-planting natives, restore riparian function through livestock management, vegetation enhancement, and protect wildlife corridors (pg 268)
Winter Range: Protect unconverted winter range in good condition through easement and acquisition, implement forage improvement activities (pg 269)

Addresses subbasin plan priorities

The Grande Ronde Subbasin Plan Supplement provides the framework for prioritization of effort within the subbasin. Six priority themes were identified (pg 45) and the Precious Lands Project addresses three of those: Reduce upland erosion, restore channel condition, and restore riparian function. It also addresses the recurrent theme of habitat connectivity.

Table 5-6 in the Grande Ronde Subbasin Plan Supplement (pg 46) details the screens used for prioritizing work in the subbasin. An expansion of Precious Lands is consistent with the management philosophy outlined in that Table. It builds from strength by conserving intact, good condition habitat areas, it is working to restore watershed processes through passive and active measures, and is helping to preserve or restore riparian function.

Terrestrial resources were not prioritized in the Plan or the Plan Supplement but the Precious Lands Expansion project addresses many of the resource issues and limiting factors in the subbasin plan as outlined above.

1988-053-01 - Ne Or Hatchery Master Plan - N (Capital) Nez Perce Tribe - Lapwai

Description: Plan and develop conservation production facilities in the Imnaha and Grande Ronde rivers necessary to implement salmon recovery programs for native, ESA listed salmon.

Consistency with subbasin plans

The NEOH project responds specifically to Aquatic Objective 1A and 2B in the Imnaha Subbasin Plan.
Aquatic Objective 1A: Achieve escapement objectives show in Table 5 within 24 years (page 18). Strategies 1A1-1A5 improve focal species recruitment by addressing out of basin limiting factors, improving basin wide coordination of management efforts, implementing a common monitoring and evaluation program, ensuring adequate enforcement of conservation practices, laws, and regulations, and promoting the use of a mix of hatchery and natural production strategies (page 18 Plan, page 10 Supplement.).

Aquatic Objective 2B: Increase anadromous fish productivity and production, as well as life stage-specific survival, through artificial production (page 21). Strategies 2B1 - 2B5 incorporate the use of artificial production to improve anadromous production/productivity. Specifically, the strategies address the maximization of hatchery effectiveness in the subbasin through the continued implementation of the LSRCP and NEOH programs, and support the continuation of existing natural production strategies via artificial production programs (page 21 Plan, page 10 Supplement).

Addresses subbasin plan priorities

Limiting factors (e.g., out of basin effects, species interactions, genetic effects, fisheries management issues, research uncertainties) that were not included in the Qualitative Habitat Assessment (QHA) model were NOT prioritized in the Imnaha subbasin planning process. Increasing anadromous species' SAR, however, is recognized by planners as one of the highest priorities in the subbasin.... Further, planners felt strongly about the need to address research uncertainties (i.e., data gaps/monitoring and evaluation), as our current lack of understanding limits our ability to effectively manage imperiled focal species (page 8 - Imnaha Supplement).

Further, this project has support and agreement of co-managers ODFW, CTUIR, USFWS, and the U.S. vs. Oregon forum and is identified in the Draft 2005-2007 Implementation Plan for the Updated Proposed Action developed by U.S. Army Corps of Engineers, Bureau of Reclamation, and the Bonneville Power Administration.

1997-015-01 - Imnaha R Smolt Monitoring Npt (Expense) Nez Perce Tribe - Lapwai

Description: Quantify juvenile emigrant abundance, determine smolt survival from the Imnaha River to Lower Granite and McNary dams,quantify smolt-to-adult return rate (SAR) of wild/natural chinook salmon at Lower Granite Dam and back to the Imnaha River

Consistency with subbasin plans

This project is consistent with Imnaha Management Plan Objectives 2A3, 2B1, 2B4, 4A1 and 4A2 (pages 20-23) and Imnaha Management Plan Monitoring and Evaluation Objectives 1a, 2a, 2c, 3c (pages 76-84). The key performance measures monitored by this project are: Index of Juvenile Abundance, Juvenile Emigration Abundance, Hatchery Production Abundance, Juvenile Survival to Lower Granite and Mainstem Dams, Post-release Survival, Age-at-Emigration, Size-at-Emigration, Juvenile Emigration Timing and Mainstem Arrival Timing (Imnaha Management Plan Table 9, page 73). This project assesses juvenile survival, migration rate and arrival timing of spring Chinook and steelhead through the FCRPS as part of the larger Fish Passage Center Smolt Monitoring Program and in a collaborative effort with the Lower Snake River Compensation Plan, which is consistent with two of the assumptions listed from the monitoring and evaluation guidelines provided in the Pacific Northwest Aquatic Monitoring Partnership (Imnaha Management Plan page 68). This project also closely coordinates with comanagers to develop a long-term study plan for hydrosystem monitoring and the Monitoring and Evaluation Plan for Northeast Oregon Hatchery Imnaha and Grande Ronde Subbasin Spring Chinook Salmon and Monitoring and Evaluation Framework for Northeast Oregon Hatchery Imnaha and Grande Ronde Subbasin Steelhead, which is consistent with the third assumption listed from the PNAMP.

Addresses subbasin plan priorities

The project matches subbasin plan priorities because the Research, Monitoring and Evaluation Plan (Section 4) within the Imnaha Management Plan specifically states that two of the three main strategies identified for achieving the management objectives and improving limiting factors are to address fill data gaps and address limiting factors (page 58). The Imnaha Management Plan specifically recommends collection of juvenile emigrant abundance data (page 119) for spring Chinook and representative trapping and tagging across the entire emigration period and monitoring out-of-basin survival (page 120) for steelhead. Out-of-basin factors, including fish passage through the hydrosystem, are listed as a primary limiting factor for recruitment of anadromous spawners to the Imnaha subbasin (Imnaha Management Plan, page 19; Assessment section 1.3.1). This project is a significant part of monitoring natural production of Chinook and steelhead and evaluating the effectiveness of the hatchery programs by providing juvenile emigration information to the FPC Smolt monitoring Program and the LSRCP, which addresses the priorities of aiding in resolving management uncertainties (data gaps) and allowing for adaptive management (Imnaha Management Plan, pages 13 and 57).

1998-010-03 - Spawning distribution of Snake River fall Chinook (Expense USFWS

Description: Monitor the spawning distribution of fall chinook salmon to determine if supplemented yearling hatchery fish spawn where intended, and to document redd distribution and collect information on the spawning distribution of subyearling releases and natural f

Consistency with subbasin plans

Spawning surveys are used to determine the distribution and status of fall Chinook salmon in the Snake River. Distribution and status are fundamental elements of the Snake Hells Canyon Subbasin Assessment regarding fall Chinook salmon (3.4.2. pages 125-134, and 4.1.2. pages 196-197).

The impact of hatchery fish and hydropower operations are highlighted concerns regarding fall Chinook salmon (4.2.1. pages 196-197), but cannot be assessed without the use of spawning surveys.

The Subbasin Assessment points out the importance of carrying capacity (3.4.2. page 130) and habitat condition (3.4.2. page 132-133) to fall Chinook salmon management. Spawning survey data are key elements in the determination of carrying capacity and habitat condition.

Addresses subbasin plan priorities

Managing and monitoring fall Chinook salmon populations are high priorities throughout Snake River basin.

1998-010-04 - M&E Snake R. Fall Ch Spawning (Expense) Nez Perce Tribe - Lapwai

Description: Monitor and evaluate fish health, movement patterns, migration timing, travel times, juvenile emigration survival and adult returns through supplementation of Lyons Ferry Hatchery fall chinook salmon in the Snake and Clearwater rivers.

Consistency with subbasin plans

This project is consistent with and implements Strategies 2A2, 2A3, 2A4, 2A7, 2A8 and 2A9 of the Snake Hell's Canyon Management Plan. These strategies relate to Objective 2A (page 18) and Section 6.4 RM&E (pages 59 and 63). Objective 2A is to increase SARs of naturally produced spawning fall chinook adults to at least 3% as measured at Lower Granite Dam, to increase natural production and harvest of fish populations. This project is designed to work in tandem with the Fall Chinook Acclimation Project (FCAP) to increase natural spawning. The Assessment identified the FCRPS as a key limiting factor for Snake River fall chinook (page 193). This project assesses survival of yearling and subyearling fall Chinook through the FCRPS as well as participating in regional marking coordination and activities (through US v Oregon) that allow for run reconstruction to determine adult abundance, composition and SARs of fall Chinook at Lower Granite Dam. The project study area is covered by several subbasin plans: Snake Hell's Canyon, Snake Lower, Clearwater, Grande Ronde, Imnaha and Salmon. The principles with how this project is consistent with the Snake Hell's Canyon Subbasin Plan as described above are applicable to all of these subbasin plans.

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan, because the Prioritization Framework in the Snake Hell's Canyon Management Plan puts strategies that benefit ESA listed species and projects that benefit fish and wildlife as a high priority (page 85). Snake River fall Chinook are an ESA listed species. The FCAP project is specifically designed to increase abundance of naturally spawning populations of fall Chinook salmon in the Snake Hell's Canyon and Clearwater subbasins. This project is an integral part of monitoring and evaluating the effectiveness of the FCAP project by providing information which evaluates FCAP project effectiveness and allows for adaptive management. In addition, this project studies hydrosystem passage in relation to flow and temperature, which are three factors that the Assessment (page 202) and Supplement (page 8) rate as having the highest influence on juvenile fall Chinook.

There is little specific prioritization in the subbasin plan for RM&E projects such as this one. However, the Supplement explicitly describes (page 17) how RM&E projects directly match the subbasin plan priorities:

"These prioritized strategies often require simultaneous implementation of a suite of other strategies, such as planning or monitoring and evaluation strategies as described in the Management Plan. Research, monitoring and evaluation strategies are examples of strategies that need to be implemented before, during and after implementation strategies to guide success, increase efficiency and to learn from implementation activities. In general, these types of strategies were not prioritized because their value is dependent upon the actual implementation of restoration or protection strategies. In the Management Plan, these strategies are generally included as part of a suite of strategies, including implementation strategies, and many of them would have little value as stand alone activities."

1998-010-05 - Pittsburg Landing Fall Chinook (Expense) Nez Perce Tribe - Lapwai

Description: Enhance natural production of Snake River fall chinook above Lower Granite Dam through acclimation and final rearing of Lyons Ferry yearlings and subyearlings at two sites on the Snake River and one site on the Clearwater River.

Consistency with subbasin plans

The Hells Canyon Management Plan includes specific adult return objectives for anadromous species (See Appendix A, Hells Canyon Management Plan, p. 94). These anadromous species objectives require a combined application of artificial production strategies, habitat protection and restoration strategies, and mitigation of deleterious out-of-subbasin effects. The application of artificial propagation measures are intended to realize anadromous fish restoration, recovery objectives, mitigation, and harvest goals in Appendix A.

This project is consistent with and implements Aquatic Ecosystem Objective 2A: Increase SARs of naturally produced spawning adults to at least 4 to 6% for spring chinook, 3% for fall Chinook, and 4% for steelhead, as measured at Lower Granite Dam, to increase natural production and harvest of fish population (as identified in Appendix A).

Strategy 2A7: Maximize natural and artificial production effectiveness in the subbasin -- Continue existing and/or implement innovative hatchery production strategies in appropriate areas to support fisheries, natural production augmentation and rebuilding, reintroduction, and research (Management Plan page 18). Strategy 2A8: Monitor and evaluate effectiveness of implementation of artificial and natural production strategies including environmental strategies outlined in problems statements 8 through 15. Develop hatchery fish stocking and marking guidelines for all life stages to optimize the use of hatchery fish (Management Plan page 18).

The Clearwater Management Plan includes specific adult return objectives for anadromous species (See Table 3, Clearwater Management Plan, p. 16). These anadromous species objectives require a combined application of artificial production strategies, habitat protection and restoration strategies, and mitigation of deleterious out-of-subbasin effects. The application of artificial propagation measures are intended to realize anadromous fish restoration, recovery objectives, mitigation, and harvest goals in Table 3.

This project is consistent with and implements Biological Objective D: Utilize a mix of hatchery and natural production strategies for native, localized, and reintroduced populations to meet subbasin goals delineated in Table 3 within 25 years.

Strategy 1: Maximize hatchery effectiveness in the subbasin -- continue existing and/or implement innovative hatchery production strategies in appropriate areas to support fisheries, natural production augmentation and rebuilding, reintroduction, and research (Management Plan page 21). Strategy 2: Apply safety net hatchery intervention based on extinction risk analysis and benefit risk assessments (Management Plan page 21). Strategy 3: Implement artificial propagation measures and continue existing natural production strategies (Management Plan page 21). Strategy 4: Monitor and evaluate effectiveness of implementation of hatchery and natural production strategies (Management Plan page 21).

Addresses subbasin plan priorities

Prioritized strategies addressing aquatic limiting factors have been divided into two groups, out of subbasin priorities and in subbasin priorities. Out of subbasin priorities include both upstream and down stream factors impacting the subbasin....These factors also impact wide geographic areas (such as the Pacific Ocean) and addressing them will involve an intensive, long-term political effort in which representatives for the Snake Hells Canyon need to participate, but have little ability to lead. As a result of this dilemma, artificial production of anadromous species has served and will continue to serve to mitigate for these out of subbasin impacts, including the expected continued shortfalls in achieving the SARs called for in Objective 2 and for the cultural needs and treaty rights outlined in Objective 18 (Management Plan Supplement, page 17).

This project accomplishes priority work under the subbasin plan because it produces ESA listed fall Chinook salmon directly aimed at achieving goals identified in Appendix A (Hells Canyon Management Plan, p. 94). It is the only supplementation program in this subbasin. Further, artificial production from this project is agreed to and mandated under a court ordered agreement in U.S. vs. Oregon

This project accomplishes priority work under the subbasin plan because it produces fall Chinook salmon directly aimed at achieving goals identified in Table 3 (Clearwater Management Plan, p. 16). Further more, artificial production from this project is agreed to and mandated under a court ordered agreement in U.S. vs. Oregon.

Columbia Cascade (n/a)

Various - Columbia Cascade UPA habitat measures (Expense)

Consistency with subbasin plans

Specific Columbia Cascade projects to be implemented to meet the metric goals are also anticipated to be consistent with subbasin plans. The projects that have commenced in FY05 have demonstrated consistency with the subbasin plans.

For example, the sponsors seeking to improve fish passage access through a project such as the Chewuch Diversion project in the Methow include information to show consistency with the subbasin plan: The Methow Subbasin Plan prepared for the Northwest Power and Conservation Council (NPCC) considers species that are listed under ESA as focal species for conservation priority and the plan identifies limiting factors and conditions for the habitat requirements of these species. Artificial barriers to fish passage such as diversion dams for irrigation are identified as a major limiting habitat condition in the plan. According to the subbasin plan (p. 180) “dams constructed for irrigation purposes can reduce fish passage to spawning and rearing grounds.” The proposed Chewuch Diversion Dam renovation project intends to address this limiting habitat condition for fish passage in the Chewuch River. (The subbasin plan on p. 44 refers specifically to the Chewuch Canal Company and describes the current diversion). A fish passage project has been identified by Reclamation at the Chewuch Canal Company’s diversion dam on the Chewuch River, an important tributary stream of the Methow River. The Chewuch River provides spawning, rearing and passage habitat for Upper Columbia spring Chinook salmon (Oncorhynchus tshawytscha), Upper Columbia summer steelhead (Oncorhynchus mykiss), and bull trout (Salvelinus confluentus), species that are listed as “endangered” or “threatened” under the Endangered Species Act (ESA).
Additional links and page references to the subbasin plan are then provided for this example.

Projects to be implemented in FY06 are expected to include narrative information that demonstrate consistency with the subbasin plans.

Addresses subbasin plan priorities

The goals for the UPA projects to be implemented using these placeholder funds will address important limiting factors, and proposals will discuss how goals match with subbasin plan priorities wherever applicable.

For example, sponsors for the Chewuch diversion project discussed how the goal for removing the artificial barriers at the location matched subbasin plan priorities. The sponsors noted that artificial barriers to fish passage such as diversion dams for irrigation are identified as a major limiting habitat condition in the plan. According to the subbasin plan (p. 180) “dams constructed for irrigation purposes can reduce fish passage to spawning and rearing grounds.” The proposed Chewuch Diversion Dam renovation project intends to address this limiting habitat condition for fish passage in the Chewuch River. (The subbasin plan on p. 44 refers specifically to the Chewuch Canal Company and describes the current diversion). The Management Plan section of Methow subbasin plan describes the desired future condition for fish as “restoration of those habitats impacted in the middle and lower reaches…” (page 286). Table 54 (page 287) provides a summary list of the Methow subbasin key factors limiting fish habitat productivity—and by extension, characterizes viability concerns associated with low abundance, limited diversity, and insufficient spatial structure. More detailed information is presented for the Lower Chewuch Assessment Unit (pages 324-328), where the Chewuch Dam Renovation Project is located. Page 324:Factors Limiting Production (priority from EDT analysis) include obstructions. Page 326: Hypothesis 4 – Survival for life stages of Chinook, steelhead, and bull trout will increase by restoring proper passage conditions at barriers. Restoration Strategy 1– Remove, replace, or modify diversion dams, culverts, or other structures affecting fish passage and habitat connectivity. Since this project's goals were identified in the subbasin plan, sponsors linked the project to the subbasin plan goals and priorities.

1996-042-00 - Restore Salmon Cr Anad Fish (Expense) Colville Confederated Tribes

Description: Provide instream flows through on-farm water conservation & water leasing. Design a river pump station and an upgrade to the Salmon Lake Feeder Canal. Enhance channel habitat.Design channel restoration. Undertake NEPA. Raise funds for all of the above.

Consistency with subbasin plans

On table 2, page 14 primary limiting factors in lower salmon creek include flow and channel stability. This shouldn't come as any surprise since continuous flow in lower salmon creek has not existed for over 80 years. Consequently, riparian vegetation which would provide bank stability is virtually non-existant. During above average water years, such as occurred during 1996/1997, an estimated 600 cfs was spilling over the Conconully Reservoir Dam, and further channel widening in the lower reach of Salmon Creek.

This project, again contigent upon a favorable review of the step 1 of the Master Plan, would dramatically increase bank stability and provide flow on a regular basis and greater duration.

Addresses subbasin plan priorities

Again contingent upon a favorable review of the step 1 Master Plan, the project would be directed in constructing a low flow channel and provide flow in the lower channel of Salmon Creek. Channel stability and lack of flow are two of the five primary limiting factors identified in Table 2., page 14 of the Sub-basin plan. If flow is provided continuously in lower Salmon Creek than the other 3 primary limiting factors (habitat diversity, key habitat quantity, and obstructions) will be addressed.

1996-094-00 - Scotch Creek Wildlife Area (Expense) WDFW - Olympia

Description: Protect and maintain a self sustaining sharp-tailed grouse population, increase and enhance mule deer winter range, and enhance associated shrub-steppe habitat for other shrub-steppe/conifer forest species.

Consistency with subbasin plans

The Scotch Creek Wildlife Area (SCWA) is referenced in the Okanogan subbasin management plan, Wildlife Assessment and Inventory (6.2.1.2) as part of the lands owned and managed by WDFW in the Okanogan subbasin. The 16,560 acre wildlife area is predominantly shrubsteppe habitat and was acquired to promote recovery of sharp-tailed grouse as well as to protect/provide habitat for other shrubsteppe obligate species. The SCWA compliments and supports sharp-tailed grouse and shrubsteppe recovery efforts at the Sagebrush Flat Wildlife Area, Swanson Lakes Wildlife Area, and on the Colville Confederated Tribes Reservation (CCT). The subbasin management plan emphasizes the need to focus on Ponderosa Pine and Shrubsteppe Upland Habitats for Wildlife (Pg 8, executive summary). "Wildlife and upland terrestrial restoration should focus on Ponderosa pine habitats to benefit species such as white-headed woodpecker, Pygmy nuthatch, Gray flycatcher and Flammulated owl or shrubsteppe habitat for species such as sharp-tailed grouse, mule deer, Brewer's sparrow, and grasshopper sparrow. The management plan also identifies a need to restore riparian and wetland areas. "Riparian vegetation along lowland streams, in-channel islands, and rivers in agricultural and urban areas needs to be reestablished". Limiting factors identified in the plan include the lack of and/or availability of shrubsteppe habitat dominated by herbaceous cover (grasses and forbs), the distribution of riparian habitats dominated by deciduous shrubs (winter habitat), and habitat fragmentation. The SCWA management strategies address several critical landscape level limiting factors such as shrubsteppe habitat conversion, degradation, and fragmentation as well as species-specific limiting factors. Activities and strategies also address factors that limit local populations of sharp-tailed grouse such as quality and availability of nesting and wintering habitat.

Addresses subbasin plan priorities

The SCWA project is consistent with subbasin plan priorities. The basin-wide management plan goals and objectives are to address the limiting factors affecting the sustainability and conservation of focal species and their habitats (Pg. 86). The goal for shrubsteppe habitats is to provide sufficient quantity and quality shrubsteppe habitat to support the diversity of wildlife as represented by sustainable focal species populations. Habitat objective 1 (Pg 89)includes, "Identify sites that are currently not in shrubsteppe habitat that have the potential to be of high ecological value, if restored". The SCWA project has to date restored over 2,500 acres of agricultural conversion lands to a high quality shrubsteppe habitat that is being used heavily by sharp-tailed grouse. As the state of Washington continues to purchase lands for wildlife adjacent to the SCWA, more of this is needed. Habitat objective 3 (Pg 89) states to maintain and/or enhance habitat function by improving agricultural practices, fire management, weed control, livestock grazing practices, and road management on existing and restored shrubsteppe. Permanent ownership and protection of this shrubsteppe habatat has improved habitat function. Agricultural practices have been reduced to a small sharecrop opportunity compatible with sharp-tail recovery, livestock grazing has been removed in sharp-tail habitats, and an aggressive weed control program has eradicated Diffuse Knapweed, once nearly covering the entire wildlife area, and reduced many other noxious weed control needs. Our goals again are consistent with the vision of the subbasin plan. Similar habitat objectives for Riparian Wetlands, and Ponderosa Pine habitats outlined in the subbasin plan are consistent with the SCWA statement of work and budget.

2000-001-00 - Anadromous Fish Habitat & Pass (Expense) Colville Confederated Tribes

Description: This project is the implementation of a plan to restore 40-miles of historical anadromous fish habitat (summer steelhead) by improving land management practices and conducting restoration activities that accelerate recovery of Omak Creek watershed.

Consistency with subbasin plans

With an average volumetric measurement exceeding 40% fine sediment (< 1/4 inch diameter) in residual pools, the habitat rehabilitation efforts should be focused towards identifying sediment sources and addressing them to reduce delivery of this material to water ways (defined by a bed and bank). I exhale with relief, seeing that sediment is the primary limiting factor idenitified in Omak Creek in the Sub basin plan (Table 2, page 14).

The land purchase would also increase channel stability and elevate the water table in the lower reach, where water flowed subsurface during the summer of 2004.

We need to continue to monitor the locally-adapt broodstock program and modify the program (run timing, life history (1 year in freshwater), reproductive success, kelt reconditioning etc.) to improve production and survival. Possibly incorporate broodstock from other tributaries into the program (i.e. Bonaparte Creek, Tunk Creek, etc.).

Addresses subbasin plan priorities

See above

2003-022-00 - Monitor/Eval Okanogan Basin Pr (Expense) Colville Confederated Tribes

Description: The CCT are currently proposing and implementing a focused array of salmon and steelhead propagation initiatives in an effort to rebuild anadromous, naturally-produced salmon runs and increase harvest opportunities. An M&E program is necessary.

Consistency with subbasin plans

The need for data either for evaluating actions, or trends or for simply providing information by whgich to better apply limiting resource can not be over stated. Reliable, consistent, and long-term data is rare in the Okanogan and simple basic information does not exist for some tributaries. The need for this project in the Okanogan Basin is required in all AUs throughout this subbasin in order to address data gaps such as outlined on page 27, 31, 35, 38, 41, 48, 58.
One of the primary limiting factors for several tributary a=watershed was considered a lack of knowledge and this project would eliminate this a reference of this is on page 52. LEVEL OF CERTAINTY: See Okanogan Level of Proof (LOP) Appendix F for details on ratings for each attribute. Also see the Master Attribute Rating Table for additional comments associated with LOP for individual reaches.THis project was specifically developed to help improve the level of proof in EDT and this is extensively needed in the Okanogan subbasin. See below.

Addresses subbasin plan priorities

This is the actual text from the subbasin plan and comes from page 9 under priority theme 5. "Continue Research, Monitoring, and Evaluation. To put into practice effective
adaptive management and make informed decisions, an on-going and disciplined commitment to research, monitoring and evaluation is a required theme. Because of the considerable lack of knowledge in the Okanogan, continued research monitoring and evaluation efforts are needed to answer even the most basic questions about fish and wildlife population status, trends, habitat conditions and life history assumptions. Evaluation of new and existing monitoring data, remote sensing data, and information from areas outside the Okanogan subbasin (e.g., mainstem, ocean and estuary) will also provide a mechanism to determine if progress is being made toward achieving the priority themes and objectives contained in this management plan. To track progress and inaugurate an adaptive management process, the management plan will rely upon a sound monitoring framework and plan outlined under the Okanogan Basin Monitoring and Evaluation Program (OBMEP). This program, in its first year of implementation, has been developed concurrently with Bonneville's pilot studies in the Wenatchee, John Day and Salmon River systems with guidance provided by the Pacific Northwest Aquatic Monitoring Partnership, the Coordinated Systemwide Monitoring and Evaluation Projects, and the federal Research Monitoring and Evaluation Program. The program is being developed in consultation with Canadian officials, and various federal, state and tribal monitoring programs and experts at the local level."

2003-023-00 - Chief Joseph Dam Hatchery (Capital) Colville Confederated Tribes

Description: Project will acclimate existing summer chinook production near historic habitat, increase production for the Okanogan and upper middle Columbia rivers, initiate production of late-arriving fall chinook, and initiate a local chinook brood stock.

Consistency with subbasin plans

The CJDHP is integral to the Okanogan sub-basin plan.

The Vision for the Okanogan Sub-basin Plan includes: "The Okanogan subbasin will support self-sustaining, harvestable, and diverse populations of fish and wildlife and their habitats, which in turn, supports the economies, customs, cultures, subsistence, and recreational opportunities within the basin." The CJDHP will be a key feature in restoring the CCT's ceremonial and subsistence fishery.

A prioritized "theme" of the sub-basin plan is the "Judicious Use of Artificial Production and Supplementation". "... it is indisputable that without the important contributions of production programs, few viable anadromous fish stocks would exist in the Upper Columbia. It is also evident that without the judicious use of artificial production as a strategy in this subbasin plan, many other populations of fish could be forced to extinction."

The sub-basin plan's Artificial Production Species Summary includes:
"Summer/Fall Chinook: Summer Chinook are artificially propagated and released into the Okanogan subbasin as an integrated recovery program to support the conservation of the natural population and consider surplus fish for recreational and tribal ceremonial and subsistence fisheries. The Colville Tribes have proposed to expand the conservation aspects of this program to increase the abundance, productivity, and diversity of summer/fall Chinook in the subbasin.
Spring Chinook: Spring Chinook are artificially propagated and released in the Okanogan subbasin as an interim, isolated harvest program to support tribal ceremonial and subsistence fishing and provide information for a proposed, long-term integrated recovery program."

"Because of the ecological context of the Okanogan subbasin and the socio-economic needs of the Colville Tribes, recreational constituencies and local communities, artificial propagation programs are necessary to mitigate for subbasin losses and to conserve the species..."

Addresses subbasin plan priorities

The subbasin plan includes objectives and strategies that are addressed by the CJDHP:
"Hypothesis 1: Artificial production (supplementation) provides an increase in fish population numbers and is required to meet tribal trust responsibilities, provide harvestable surplus for people of this region, and to aid in salmon and steelhead recovery efforts because of population decreases caused by habitat loss, main-stem Columbia River dams, and downriver harvest activities. (Hatchery activities should be consistent with approved Hatchery Genetic Management Plans and the artificial production section of this plan)
Objective 1-1. Provide tribal and selective recreational harvest opportunities for summer/fall Chinook, summer steelhead, sockeye salmon, and spring Chinook were feasible.
Strategy 1-1A. Build summer/fall Chinook acclimation ponds at strategic locations and release artificial production from these sites annually.
Strategy 1-1B. Increase or maintain artificial production capacity at levels necessary to meet management needs, maintain new and existing acclimation sites, and support existing and new scatter plantings.
Strategy 1-1C. Monitor adult salmonid returns annually, determine a baseline, and evaluate trends.
Objective 1-2. Increase the number of spawning summer/fall Chinook in this AU by 50%
Strategy 1-2A. Build summer/fall Chinook acclimation ponds at strategic locations and release artificial production from these sites annually."

"With implementation of the CJD Hatchery Program, the run of early-arriving summer/fall Chinook is expected to

increase by 3,000 – 15,000 fish while the later-arriving portion of the run is expected to increase by 3,000 – 14,000 Chinook. In time, the natural-origin run of summer/fall Chinook should increase with the increased utilization of the historical spawning habitat and planned improvements to mainstem passage."

Under the Phase I program, between 1,600 and 5,600 adult spring Chinook are expected to be available

2006-001-00 - McIntyre Dam - Feasibility study (was 29016) (Expense) Colville Confederated Tribes

Consistency with subbasin plans

Thankfully McIntyre Dam is specifically identified as a barrier to anadromous salmonids in the Okanogan River.

Addresses subbasin plan priorities

McIntyre Dam is listed as a primary limiting factor to anadromous salmonid populations in the Okanogan River. While conducting "The Evaluation of an Experimental Re-introduction of Sockeye Salmon into Skaha Lake (BPA 20001300)", it was estimated that habitat conditions upstream of McIntyre Dam would provide spawning habitat for an estimated 9,000 pairs of sockeye salmon. By providing access at McIntyre Dam, it is suspected that summer chinook and summer steelhead would also benefit.

1996-040-00 - Coho Restoration Mid-Columbia (Expense) Confederated Tribes And Bands Of T

Description: Determine the feasibility of re-establishing a naturally spawning coho population and a significant fall fishery for coho within the mid-Columbia, while keeping adverse ecological impacts within acceptable limits,

Consistency with subbasin plans

The mid-Columbia coho reintroduction project is consistent with, and supports the vision and goals of both the Wenatchee and Methow subbasin plans. The vision for the Wenatchee Subbasin includes restoring extirpated fish and wildlife and natural habitats that perpetuate native fish wildife and fish populations into the foreseeable future. The vision for the Methow subbasin is to support self-sustaining, harvestable, and diverse populations of fish and wildlife. These visions will only be achieved through continued restoration of species historically present, including coho salmon.

The goals and ecological objectives of the both subbasin plans are consistent with coho restoration in mid-Columbia tributaries. Wenatchee Subbasin goal #3 to "Restore, maintain, or enhance fish and wildlife populations to sustainable and harvestable levels, while protection biological integrity and genetic diversity of the species", clearly supports continued restoration of coho salmon in the mid-Columbia. Coho reintroduction also achieves the other five goals of the plan through maintaining and restoring biological diversity, enhancing and restoring significant culturally related resources, and to supporting the restoration of fish populations.

Addresses subbasin plan priorities

Coho stocks (Oncorhynchus kisutch), historically abundant in mid-Columbia tributaries, became extirpated in the early 1900's and have since been reintroduced through ongoing efforts by the Yakama Nation. One of the specific goals and priorities is to advance the vision of the Wenatchee Subbasin Plan by restoring extirpated fish and wildlife. Re-establishment of coho salmon is also a specific goal in the Methow Subbasin Plan "The goal for coho salmon includes re-establishment of run sizes that provide for species recovery, mitigation of hydro-system losses, and harvestable surpluses". BPA Project #1996-040-00 is the only project currently working towards these goals in mid-Columbia tributaries.

In both the Wenatchee and Methow subbasin plans, Coho salmon are listed as a focal species. As a focal species, much of the prioritized habitat restoration actions are aimed at supporting continued restoration of coho populations. Coho salmon prefer and occupy different habitat types than the other focal species, selecting slower velocities and greater depths. Habitat complexity and off-channel habitats such as backwater pools, beaver ponds, and side channels are important for juvenile rearing making coho good biological indicators for habitat recovery prioritized in the subbasin plan.

1996-040-00 - Coho Restoration Mid-Columbia (Expense) Confederated Tribes And Bands Of T

Description: Determine the feasibility of re-establishing a naturally spawning coho population and a significant fall fishery for coho within the mid-Columbia, while keeping adverse ecological impacts within acceptable limits,

Consistency with subbasin plans

This project is one component of the Mid-Columbia Coho Restoration Project (1996-035-01) that the Yakama Nation has overall responsibility for and the tribal restoration programs would apply to the Wenatchee and Methow subbasins.

Addresses subbasin plan priorities

1996-040-00 - Coho Restoration Mid-Columbia (Expense) Confederated Tribes And Bands Of T

Description: Determine the feasibility of re-establishing a naturally spawning coho population and a significant fall fishery for coho within the mid-Columbia, while keeping adverse ecological impacts within acceptable limits,

Consistency with subbasin plans

The U.S. Fish & Wildlife Service is a "subcontractor" to the Yakama Nation located outside of the subbasin. This section is best completed by the principal project sponsor (Yakama Nation).

Addresses subbasin plan priorities

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2003-039-00 - Monitor Repro In Wenat/Tuc/Kal (Expense) WDFW - Olympia

Consistency with subbasin plans

The Wenatchee subbasin plan envisions that integrated hatchery production will continue for spring Chinook salmon in the basin (e.g., pp. 27, 223). This project attempts to answer a fundamental critical uncertainty associated with all of the artificial propagation programs in the Wenatchee Subbasin. In particular, supplementation has been identified as a concept in which hatchery production can contribute to the rebuilding and recovery of anadromous stocks. However, little is known about the reproductive ability of spring Chinook hatchery fish when they spawn in the natural environment. The need for the research is specifically identified in the Wenatchee Subbasin Plan (Management Plan, Section 7.8.16, Near-term Opportunities pg. 305; Management Plan Supplement, Artificial Production pg. 26).

In addition, the redd surveys and biological data collected as part of this project are consistent with the monitoring goals described in the Monitoring Strategy of the Subbasin plan (p. 337).

Addresses subbasin plan priorities

Artificial propagation goals and potential impacts to natural populations are expected to continue under the Wenatchee Subbasin Plan. However, the efficacy of these programs in meeting the goals stated in the Plan is not clear. The focal species for this project (spring Chinook) currently listed as endangered under the ESA, and is also a focal species in the Plan. The plan identifies monitoring the reproductive success of naturally spawning hatchery fish and evaluating the integrated hatchery model as important questions (pp. 27, 223, 256, 305, 351). Conclusions from this project will fill a critical data gap that will drive future hatchery program reform in the Wenatchee and elsewhere.

In addition to the subbasin plan, the Independent Scientific Advisory Board identified monitoring the natural reproductive success of hatchery fish as a key research question (ISAB Supplementation report 2003 p. 117 – available at http://www.nwcouncil.org/library/isab/isab2003-3.htm).

The 2005-2007 Implementation Plan for the Federal Columbia River Power System also identifies hatchery effectiveness monitoring as a high priority (Section E – Hatchery RM&E Actions, p. 62).

2005-001-00 - Estuary RME Pilot (Expense) Pacific Northwest National Laborator

Consistency with subbasin plans

Project 2005-001-00 is not related to a subbasin plan, except that the subbasin plan for the Lower Columbia stated the Sandy River delta was an area of "special biological significance" (p. A-38). However, the work is directly related to UPA implementation.

In the 2005-2007 Implementation Plan for the FCRPS ESA Updated proposed Action (May 2005), the Action Agencies stated that to address their UPA commitments they would continue to fund the status monitoring, action effectiveness, and uncertainties research related to estuary studies listed in Table 24. On page 57, Table 24 includes the following reference:

Estuary Pilot RME Project (BPA 2005-001-00) – Determine presence through time of subyearling Chinook salmon at the Sandy River delta in the tidal freshwater reach of the Columbia River and integrate these results with data from other selected estuary monitoring studies.

In addition, the UPA Implementation Plan (p. 54) says the Action Agencies' near- and long-term activities will include development of an estuary pilot status monitoring and participation in regional coordination activities, as well as research to monitor the presence of juvenile salmonids in the upper reaches of the estuary.

Therefore, Project 2005-001-00 addresses specific UPA implementation activities.

Addresses subbasin plan priorities

Project 2005-001-00 is not related to a subbasin plan. See linkage to the UPA Implementation Plan under the box for Subbasin Planning – Consistency.

2001-025-00 - Rattlesnake Cr Salmonid Prod (Expense)

Description: Address a unique opportunity to document habitat conditions and fish population status within the Rattlesnake Creek watershed prior to major habitat restoration activities and before Condit Dam removal and the reintroduction of anadromous salmonids.

Consistency with subbasin plans

Consistency: This project is highly consistent with the White Salmon Subbasin plan. Filling data gaps is a goal stated on page XVI of the plan. Additionally, filling physical and biological data gaps (such as stream habitat, fish life history, productivity, limiting factors, and current stable isotope ratios) are essential to most of the strategies and assessment opportunities outlined in section 6.2.1. This project funds us to collect and analyze data that is critical to addressing many of the objectives and strategies outlined in pages 162-170. Collecting information prior to a large restoration effort (i.e., removal of Condit Dam and related habitat restoration) is a critical component to assessing whether goals are being met. Example quotes are: “population monitoring is needed to assess if biological goals are being met”, “assess resident trout contribution to anadromy”, and “assess species interactions between rainbow and steelhead...”. Our PIT-tagging and population estimates will help address these components. Another quote from the Key Assumptions: “lack of salmon carcasses has decreased food and the survival of juvenile salmonids”. The stable isotope component of this project will help address this assumption. Another quote: “Place wood in streams to restore habitat”. Our comprehensive wood survey, habitat measurements, and fish population estimates address this component. To meet the needs listed under Section 7, page 188: “Monitoring, Evaluation, and Adaptive Management”, pre-treatment data is needed to monitor and evaluate the effect of treatments. For these reasons this project is clearly consistent with the subbasin plan.

Addresses subbasin plan priorities

Priority: As quoted in the Subbasin Plan, section 5.1, page141: “Rattlesnake Creek, a major tributary to the White Salmon, has been extensively studied to assess its’ before dam removal habitat condition, and has been proposed for ongoing study after dam removal to gauge the effects and speed of anadromous fish re-introduction efforts.” Because many of the attributes being studied are inherently variable, there is measurable increase in the ability to detect change with each year of sampling prior to re-introduction.

Three quotes in section 2.2.4, page XVI indicate that the Rattlesnake Creek study is a priority: 1) “another prime strategy is to carry out the necessary evaluations to fill data gaps and key uncertainties with population monitoring, physical habitat monitoring, road analysis, and in-stream water monitoring”, 2) “restoration and rehabilitation actions with highest certainty were projects in Rattlesnake and Indian creeks”, and 3) “monitoring and evaluation strategy is needed to guide adaptive management.” The first stage in this process is collecting accurate information prior to re-introduction to be able to detect change and prioritize restoration based on scientific information.

Supporting Rattlesnake Creek as a main priority in the Subbasin is a quote on page 154: “Current sampling by USGS supports that Rattlesnake Creek is a good producer of rainbow trout. Therefore, it makes sense that steelhead would perform well in these geographic areas if rainbow trout are currently performing well. Rattlesnake Creek has the most significant restoration opportunity.”

2001-027-00 - Western Pond Turtle Recovery (Expense) WDFW - Olympia

Description: Protect existing WPT population through habitat improvements, expand WPT population through "head start " program and continue reintroductions at USFWS Pierce National Wildlife Refuge.

Consistency with subbasin plans

Consistency

The project is consistent with the objectives and strategies of the Columbia Gorge Mainstem Subbasin Plan (05/28/04). Section 5.2.5 (page 92) identifies three primary strategies: continue the “head start” program to augment populations; improve nesting and foraging habitat through habitat development and reduce predation by introduced species (ie. bullfrogs). Project objectives for 2006 funding include work tasks for each of these strategies and therefore is consistent with the Columbia River Mainstem Subbasin Plan.

In the Wind River Subbasin Plan the western pond turtle is a focal wildlife species identified in section 3.3.5 (page J-39). Section 5.11.5 (page J-178) outlines strategies that are consistent with the current 2006 proposal including habitat improvement and predator control.

In the Big White Salmon River Subbasin Plan the western pond turtle is identified as a focal species, section 4.4.3 (page 23). The current funding request for 2006 is consistent with the Plan’s objectives to manage the species in accordance with the Washington State Recovery Plan for the Western Pond Turtle.

Addresses subbasin plan priorities

Priorities

This project accomplishes priorities identified primarily in the Columbia Gorge Mainstem Subbasin Plan (05/8/04). In section 1.2.2 (page 15), Biological Objectives and Strategies, continuation of the “head start” program is considered an “urgent need”. Improvement of nesting and foraging habitat through pond and meadow development are considered a “high priority need”. Finally, the reduction of predators, such as the bullfrog, is considered a “high priority need”. Each of these three objectives is currently a part of the 2006 proposal and is consistent with the Columbia Gorge Mainstem Subbasin Plan.

In the Wind River Subbasin Plan limiting factors for western pond turtles are identified in section 5.11.5 (page J-178). Non native vegetation displacement of riparian habitat will be address in the proposal through enhancement efforts to create optimal habitat for western pond turtles. Predation by non-native species will be a part of activities in 2006 with the planned control of bullfrogs at select wetland sites.

2003-065-00 - Bull Trout In Bonneville Reser (Expense) WDFW - Olympia

Consistency with subbasin plans

This project is consistent with the following subbasin recommendations:
--Klickitat River Subbasin Plan: Section 4.6.1, p112 (Table 18), bull trout identified as Focal Species. Section 4.6.4, p122, P2, ". . not enough is known about bull trout in Klickitat Subbasin to confidently state the life forms present". P1, paraphrased, life forms coexist sympatrically and one may give rise another. Section 6.5.3, Research, Monitoring, Evaluation, p360, specifically calls for presence/absence research into juvenile/adfluvial populations with two goals; 1) limiting factors analysis, 2) comparative genetic analysis to other regional stocks
--Columbia Gorge Mainstem Subbasin Plan: Section 3.2.1, p 23, P1, bull trout recognized as species of significance (Table 6, p113). Section 3.2.1, p24, Resident Salmonids, describes historical accounts of bull trout presence within multiple subbasin watersheds and Bonneville Reservoir yet scientific body of knowledge is insufficient to inform decisions on resource management in the subbasin.
--Klickitat Subbasin Anadromous Fishery Master Plan: Section 3.2.3, p28-29, documents existing resident and fluvial life stages and calls for future work on life history and genetic characteristic assessments, and evaluations of potential reintroduction.

Addresses subbasin plan priorities

Numerous subbasin plans determine focal species by their ESA listed status while others identify them by geographic, economic or cultural significance. The Klickitat River Subbasin plan is the only plan that specifically lists bull trout as a focal species while the Columbia Gorge Mainstem Subbasin Plan lists the bull trout as a species of significance. Lower Mid Columbia Subbasin plan (section 5.1.2, p150) designates species based upon the amount and types of existing information as does the Big White Salmon Subbasin plan (section 4.6.1, p68) . This distinct lack of knowledge therefore precludes bull trout from being specifically listed as a priority within subbasin plans that rely upon existing data and research. This critical lack of available science by which management decisions are guided therefore escalates the level of priority for initial baseline research although not specifically stated within the subbasin plans themselves.

1993-040-00 - Fifteenmile Creek Habitat Impr (Expense) ODFW

Description: Provide for continued operation and maintenance of all completed fish habitat treatment measures within the Fifteenmile basin. Provide continued education & demonstration of BMP to landowners throughout the basin.

Consistency with subbasin plans

This project addresses the objectives of the sub-basin plan most specifically associated with riparian recovery. These actions are consistent with the plans prioritized framework by addressing the first two conditions needed to achieve the desired biological performance under the objectives for aquatic species (Section 5.2, pg. 11):

"1. Development of a fully functional floodplains and riparian vegetation throughout the watershed.
2. Restoration of large woody debris to recreate presettlement habitat characteristics in approximately 40 miles of stream.
3. Restoration of summer flows throughout the watershed by about 50% of the presettlement condition. At the mouth, this would correspond to at least 7 cfs in August, with corresponding improvements in other months. Flow restoration would provide corresponding improvements in stream temperature."

By installing and maintaining riparian exclusion fencing, off-channel water systems, and maintenance of suitable riparian vegetation, this project is directly addressing number Objective 1 from above. This project further supports objective 2 by providing future woody debris for natural recruitment into the floodplain, and by providing the necessary anchor structures to minimize movement of any new habitat work. The project is a natural step to achieving the desired condition described in objective 3, by increasing the floodplains ability to safely capture, store, and regulate runoff and moderate stream temperatures.

This project provides a monitoring and evaluation component that addresses the needs identified in the sub-basin plan in Section 5.6, page 52. This project is limited in scope on this component, and should be expanded in out years to further comply with the management plans recommendations.

Addresses subbasin plan priorities

This project specifically addresses the highest priorities in the subbasin plan in accordance with section 5.3, "Prioritized Strategies-- Aquatic Species" (pg. 14), by targeting riparian/ floodplain restoration throughout the Fifteenmile Creek watershed for the purpose of restoring habitat for listed stocks of Mid-Columbia winter steelhead. This has been the primary focus since the inception of this project and remains the focus by providing proper maintenance of implemented components to maximize effectiveness and protect the investment to date.

2001-020-00 - 15 Mile Cr Riparian Fence/Surv (Expense) ODFW

Description: Construct approximately 30 miles of riparian protection fence over a three year period along Fifteenmile Creek and it's tributaries. Conduct a phyical stream of 90 miles of privatly owned stream in the Fifteenmile Subbasin.

Consistency with subbasin plans

This project addresses the objectives of the sub-basin plan most specifically associated with riparian recovery. These actions are consistent with the plans prioritized framework by addressing the first two conditions needed to achieve the desired biological performance under the objectives for aquatic species (Section 5.2, pg. 11):

"1. Development of a fully functional floodplains and riparian vegetation throughout the watershed.
2. Restoration of large woody debris to recreate presettlement habitat characteristics in approximately 40 miles of stream.
3. Restoration of summer flows throughout the watershed by about 50% of the presettlement condition. At the mouth, this would correspond to at least 7 cfs in August, with corresponding improvements in other months. Flow restoration would provide corresponding improvements in stream temperature."

By installing and maintaining riparian exclusion fencing, off-channel water systems, and maintenance of suitable riparian vegetation, this project is directly addressing number Objective 1 from above. This project further supports objective 2 by providing future woody debris for natural recruitment into the floodplain, and by providing the necessary anchor structures to minimize movement of any new habitat work. The project is a natural step to achieving the desired condition described in objective 3, by increasing the floodplains ability to safely capture, store, and regulate runoff and moderate stream temperatures.

Addresses subbasin plan priorities

This project specifically addresses the highest priorities in the subbasin plan in accordance with section 5.3, "Prioritized Strategies-- Aquatic Species" (pg. 14), by targeting riparian/ floodplain restoration throughout the Fifteenmile Creek watershed for the purpose of restoring habitat for listed stocks of Mid-Columbia winter steelhead. This has been the primary focus since the inception of this project.

2001-021-00 - 15 Mile Creek Riparian Buffers (Expense) Wasco County Soil & Water Conserv

Description: Implements ripairan buffer program using cost share provided by USDA, state of Oregon, and private landowners

Consistency with subbasin plans

The Fifteenmile Riparian Buffer project is consistent with the Fifteenmile Subbasin Plan. Aquatic Biological objectives include increasing capacity of habitat for steelhead production (section 5.2 page 9). This project to establish riparian buffers addresses two of the four conditions necessary to meet the biological objectives (page 11): 1. Development of fully functional floodplains and riparian vegetation throughout the watershed and 2., Restoration of large woody debris to recreate pre-settlement habitat characteristics in approximately 40 stream miles where key habitat and habitat diversity are most severely reduced.

Addresses subbasin plan priorities

The Fifteenmile Riparian Buffer Project implements the highest priority restoration strategy identified in the subbasin plan. As noted in section 5.3.1 of the plan, page 14., under Riparian/Floodplain Restoration, “Of any one restoration strategy, wide-spread implementation of riparian buffers on private lands produced the greatest increase in steelhead capacity and abundance when modeled by the EDT Scenario Builder”. Included in the Riparian Buffer Plans developed under this project are establishment of riparian vegetation including groundcover, shrub, and tree components; fencing, and off-stream water developments.

1988-053-03 - Hood River Production M&E - Ws (Expense) Warm Springs Tribe

Description: Implement, monitor, and evaluate actions outlined in the Hood River and Pelton Ladder Master Plans pertaining to smolt production, acclimation, and habitat. Coordinate Pelton Ladder production.

Consistency with subbasin plans

The Hood River M&E Project is consistent with the subbasin plan. The strategies listed in the subbasin plan for each anadromous species are directly reflected in the design of the M&E Project. The spring chinook salmon objectives (p.182-184) include achieving escapement goals of 125 natural origin fish, natural smolt production of 20,000, maintaining a locally adapted and naturally spawning population, increasing the smolt to adult survival, and providing harvest opportunities to the tribes and sport fishers. These objectives direct the activities of the M&E Project. For example run forecasts are estimated to anticipate the harvest opportunities and provide a basis for broodstock collection. Acclimating and volitionally releasing smolts in the subbasin address the population objective. Spawning surveys are conducted to monitor natural spawning activity in the West Fork, and creel surveys are done to monitor the tribal harvest when the fishery is open. The subbasin plan specifically mentioned reintroducing spring chinook to the Hood River (p.183). The M&E Project is part of this effort. The subbasin plan also gave reference to the Hood River Program Review and the many models used to estimate carrying capacity (p.183). It has been these reviews, plans, and models that have aided in developing the M&E Project.

The summer steelhead objectives (p. 184-185) include achieving and maintaining a spawning population of 600. The M&E Project addresses this population objective by acclimating and volitionally releasing smolts in the West Fork Hood River adjacent to ideal steelhead spawning habitat. When possible, spawning surveys have been conducted to better understand the distribution of the spawning activity.

The winter steelhead objectives (p.186-187) include achieving and maintaining a spawning population of 1,100. The M&E Project addresses this population objective by acclimating and volitionally releasing smolts in the Hood River subbasin.

Addresses subbasin plan priorities

The M&E Project is designed to take a basinwide approach to fish recovery. All species are considered, habitat is considered crucial, and adaptive management is employed. The M&E Project in addition to the other projects that make up the HRPP, use the best science available to make decisions.

The spring chinook strategies (p. 194) in 6.3 Prioritized Strategies include: improving smolt to adult survival by disease control, controlling smolt size, incorporating naturally produced fish in the broodstock, and considering moving production so that rearing takes place in basin. These strategies are both directly and indirectly supported and addressed by the M&E Project. Smolt lengths, weights, and health are monitored for both migrants and non-migrants. Spawning surveys return the disposition of the fish that are successfully spawning in river. Generally, the M&E Project provides information for the comparison and background for these strategies.

The summer steelhead strategies (p. 193) in 6.3 Prioritized Strategies are focused on habitat and genetic integrity. The M&E Project generally supports these issues, and the Harvest and Hatchery Supplementation Strategies (p.194-195) include the use of supplementation to achieve the population goals.

The winter steelhead strategies (p. 194) in 6.3 Prioritized Strategies are focused on habitat and genetic integrity, similar to the summer steelhead. The M&E Project generally provides support to these issues, and the Harvest and Hatchery Supplementation Strategies (p.194-195) include the use of supplementation to achieve the population goals.

Section 6.5 Research, Monitoring, and Evaluation includes strategies that monitor harvest (p.202), natural production

(p. 203), wild and hatchery characteristics (p.204), physical habitat (p. 207), and wild and hatchery fish health (p. 207). All of these activities include work encompassed by the M&E Project. In addition PIT tagging is listed as monitoring work that should be included. The M&E Project started PIT tagging the winter steelhead non-migrants and expanded PIT tagging activities are planned for FY 06.

1988-053-04 - Hood River Production M&E-Odfw (Expense) Warm Springs Tribe

Description: Monitor and evaluate actions taken to re-establish spring chinook salmon, and improve wild production of summer and winter steelhead, in the Hood River subbasin. Data will be used to develop, and refine, management objectives for the HRPP.

Consistency with subbasin plans

The Hood River Subbasin Plan (HRSP) identifies various strategies for benefiting fisheries within the Hood River Subbasin (HRS). An effective monitoring and evaluation (M&E) project is required to assess how specific strategies identified in the HRSP, when implemented, contribute to the HRSP's biological fish objectives. The ability to effectively monitor and evaluate BPA funded fisheries projects in the HRS was identified by the subbasin's co-mangers (ODFW and CTWSRO) as a critical component of the HRSP.
This project is consistent with goals, objectives, and strategies for implementing Section 6 (Hood River Subbasin Management Plan, pages 175-209) of the HRSP; as defined in Sections 6.1 through 6.4 (pages 175-200). Specifically, this project addresses strategies defined in Section 6.5 (Research, Monitoring, and Evaluation; pages 200-209) of the HRSP. As stated in this projects proposed FY 2006 Statement of Work, the primary components of this project are referenced as follows in the HRSP: 1) estimate salmonid harvest and escapements (pages 202-203), 2) estimate subbasin smolt salmonid production (pages 203-204), and 3) monitor selected life history, biology, and fish health parameters for salmonid populations (pages 204-207). The need for implementing this work is also defined and addressed on the aforementioned pages of the HRSP.

Addresses subbasin plan priorities

The Hood River Subbasin Plan identifies a strong M&E program as a critical component to achieving the biological fish objectives for the Hood River subbasin; which is consistent with recommendations made by the subbasins co-managers (ODFW and CTWSRO). This project is primarily designed to monitor indigenous populations of juvenile and adult salmonids relative to their response to strategies (i.e., work) implemented under the umbrella of the HRSP; as defined, in part, in Sections 6.1 through 6.4 of the HRSP. The HRSP identifies the associated activities required to implement this work as critically import, not only with respect to monitoring strategies relative to their contribution towards achieving the subbasin's biological fish objectives, but also with respect to 1) improving program efficiency and 2) providing the information required to manage indigenous populations of fish in a biologically sound manner(pages 201-202).

1988-053-06 - Hood R Prod O&M - Pge (Expense) Portland General Electric

Description: Re-establish a self-sustaining spring chinook salmon population in the Hood River subbasin. Broodstock will be collected from Hood River. Broodstock held at the Parkdale Facility. Incubation and rearing completed at Round Butte Hatchery-Pelton Ladder

Consistency with subbasin plans

The activities and tasks for the Pelton Ladder Project are consistent with the Hood River Subbasin Plan. This facility works toward goals set by the HRPP. This project is intertwined with other parts of the HRPP to create a program that adaptively manages fish and improves natural habitat conditions in the basin. The Pelton Ladder Project provides support and out of basin rearing for the supplementation of spring chinook to the HRPP. The spring chinook objectives (p. 182-184) include increasing smolt to adult survival rates for hatchery fish and providing harvest opportunities. The activities of the Pelton Ladder Project follows through with the actions of the Parkdale Fish Facility (PFF), so that smolts are returned, ready for acclimation and volitional release into the Hood River subbasin. The Harvest and Hatchery Supplementation Strategies (p. 194-195) consist of many recommendations that are tasks and activities directly and indirectly concerning the work of the PFF and the Pelton Ladder Project. This work is based on the Hood River Master Plan that was drafted in 1991. Program changes to the HRPP are anticipated in the next couple of years. The work as outlined here is consistent with the subbasin plan utilizing the strategies of the HRPP.

Addresses subbasin plan priorities

The goals of this project match the subbasin plan priorities. The operation, maintenance, and rearing of the Hood River fish at Round Butte Hatchery and Pelton Ladder support the larger Hood River Production Program (HRPP). The HRPP is broadly prioritized in several sections of the subbasin plan. Activities and tasks of this project are part of section 6.3 Prioritized Strategies, including the aspects mentioned above.

1988-053-07 - Hood R Prod O&M - Ws/Odfw (Expense) Warm Springs Tribe

Description: Restore depressed populations of StS & StW and re-establish a self-sustaining ChS population in the Hood River subbasin. Broodstock will be collected at the Powerdale Facility. Broodstock will be held and spawned at the Parkdale Fish Facility.

Consistency with subbasin plans

The activities and tasks for the PFF and OSH are consistent with the Hood River Subbasin Plan. Both facilities work towards goals set by the HRPP. This project is intertwined with other parts of the HRPP to create a program that adaptively manages fish and improves natural habitat conditions in the basin. Much of the subbasin plan biological objectives (p. 178-188; section 6.2) consist of goals that rely on the activities and data produced by the PFF. The spring chinook objectives (p. 182-184) include increasing smolt to adult survival rates for hatchery fish and providing harvest opportunities. The summer steelhead objectives (p. 184-186) include maintaining the genetic integrity of the run. PFF uses genetic data prior to spawning summer steelhead. The activities of OSH follows through with the actions of the PFF so that smolts are then returned, ready for acclimation and volitional release. The winter steelhead objectives (p. 186-187) also have a goal of maintaining the genetic integrity of the run. Similar strategies are used with the winters as with the summers. The Harvest and Hatchery Supplementation Strategies (p. 194-195) consist of many recommendations that are tasks and activities directly and indirectly concerning the work of the PFF.

Addresses subbasin plan priorities

The PFF and OSH projects are a part of the larger HRPP. The HRPP is broadly prioritized in several sections of the subbasin plan. Activities and tasks of the PFF and OSH are part of section 6.3 Prioritized Strategies, including the aspects mentioned above.

1988-053-07 - Hood R Prod O&M - Ws/Odfw (Expense) Warm Springs Tribe

Description: Restore depressed populations of StS & StW and re-establish a self-sustaining ChS population in the Hood River subbasin. Broodstock will be collected at the Powerdale Facility. Broodstock will be held and spawned at the Parkdale Fish Facility.

Consistency with subbasin plans

This project is consistent with several components of the Hood River Subbasin Plan. The Hood River Production Project (HRPP) is specifically mentioned throughout the Subbasin Plan as a high priority for implementation. The operation of the Powerdale Fish Facility (PFF) is the primary data and broodstock collection site for the HRPP, and is tiered to several other HRPP projects (1988-053-06, 1988-053-04, 1988-053-03, 1988-053-07, 2003-054-00). The Assessment section of the plan relies heavily upon information collected from the operation of the PFF and discusses this information throughout the document. Section 3.2.3 Aquatic Focal Species Population Delineation and Characterization, starting on page 29, provides information collected from the PFF. Some examples of specific information collected from the project include: 1) Steelhead, chinook life history. 2) Steelhead, chinook abundance and productivity. 3) Steelhead, chinook carrying capacity. 4) Steelhead genetics. Seection 6.1. Vision for the Hood River Subbasin "hatchery supplementation or methods that are compatible with naturally reproducing fish and wildlife populations will be used", page 176. The HRPP is primarily responsible for implementing hatchery supplementation in the subbasin. The HRPP is specifically mentioned in the Management Plan as being needed to accomplish a variety of objectives associated with section 6.2.1 Aquatic Species, starting on page 178. Bull Trout Objectives page 179, Coastal Cutthroat Trout Objectives page 181, Spring Chinook Salmon Objectives page 182, Summer Steelhead Objectives page 184, Winter Steelhead Objectives, page 186, Harvest and hatchery Supplementation Strategies, page 194, all specifically require continual operation of the PFF.

Addresses subbasin plan priorities

The Hood River Subbsin Plan places priority on the implementation on the HRPP in multiple locations. The HRPP is a suite of projects designed to restore fisheries in the Hood River Subbasin, therefore the plan does not list specific projects under the HRPP. Successful operation of the Powerdale Fish Facility (PFF), however, is required to accomplish project objectives for most HRPP projects. Section 6.3 Prioritized Strategies specifically mentions the HRPP in several locations. Summer Steelhead Strategies page 193, Winter Steelhead Strategies page 194, Spring Chinook Strategies page 194, and finally Harvest and Hatchery Supplementation Strategies 194.

1988-053-XX - Hood River Production Facilities Modifications/New Const BPA

Consistency with subbasin plans

This is a change in the location of incubation and rearing, but not the main goals of the Hood River Production Program, consistent with Subbasin Plans. See other 1988-053-xx Projects for specifics.

Addresses subbasin plan priorities

See other 1988-053-xx for general program goals. This specific action is consistent with the goal of moving artificial production to be fully self-contained within the Hood River basin.

1998-021-00 - Hood River Fish Habitat (Expense) Warm Springs Tribe

Description: Implement habitat improvement actions that will support wild fish and supplementation efforts within the Hood River subbasin as approved by the NPPC and supported by the BPA Environmental Impact Statement for the Hood River Production Program (HRPP).

Consistency with subbasin plans

The EDT model suggested that limiting factors to chinook and steelhead include: habitat quantity, channel stability, habitat complexity, streamflows, and sediment (p.175 Hood River Subbasin Management Plan). The Hood River Habitat Project (HR Habitat Project) aims to address all of these key factors. The Hood River Subbasin Plan incorporates the goals of the Hood River Watershed Action Plan (p.177). The HR Habitat Project has in the past and will in the future utilize the Hood River Watershed Action Plan as a framework to guide project selection.

The HR Habitat Project is designed to implement projects that address many of the factors that effect the objectives stated in 6.2.1 (pp.183-187 Biological Objectives: Aquatic Species). The EDT model showed that current habitat is limiting to the chinook and steelhead populations in the Hood River. Specifically, streamflows, habitat complexity, and sediment are factors that affect anadromous fish populations in the Hood.

Specific projects and general actions that need to be implemented to achieve the objectives outlined in the previous sections are stated in the Prioritized Strategies: Aquatic Species section (6.3.1 pp.190-191). The HR Habitat Project has used the Hood River Habitat Plan, the Restoration Plan, the Watershed Action Plan, and will use the Subbasin Plan to guide individual project selection. Partners and cost-sharing are incorporated when available and/or necessary. Restoring streamflow, eliminating passage barriers, improving and monitoring water quality, and increasing channel complexity are strategies that will be addressed in the FY 2006 Hood River Habitat Project.

Addresses subbasin plan priorities

Regarding the Hood River Subbasin Plan priorities, the FY 2006 Hood River Habitat Project addresses issues that are specifically listed in the Prioritized Strategies (6.3 pp.190-195). The following specific projects will comprise the Hood River Habitat Project. The East Fork Irrigation Passage and Pipe project is mentioned on p.192 as the first issue listed in the Protection and Improvement of Water Quality. Monitoring pesticide concentrations and research for improving pesticide application practices are listed third on p.192 in the same section. The Tony Creek diversion is specifically mentioned in the bull trout strategies (p.193). This project will not only benefit bull trout but also listed steelhead. The implementation of the West Fork Large Wood Placement is also specifically addressed in the spring chinook strategies (p.194). A key spawning and rearing section of the West Fork was identified and preliminary design work has been completed. This project will also benefit summer steelhead spawning, incubation, and rearing.

1988-115-35 - Klickitat - Design and construct (Expense) Confederated Tribes And Bands Of T

Consistency with subbasin plans

This project is consistent with the stated overall Subbasin Goals (section 2.4, p v), Biological Objectives (Section 2.5, p v) and Major Findings and Conclusions (Section 2.6, p v-vii). It is also consistent with 6.5.3 Fish, pages 354-355. Appendix F addresses the many elements of this project (Appendices A & B). It is consistent with Appendix F pages 6 and 7 regarding program goals.

Addresses subbasin plan priorities

This project informs and helps accomplish work identified in 1) the Management Plan as 'Primary' (pages 333-352); and, 2) in the Subbasin Supplement 'Prioritized Habitat Strategies to Address Key Limiting Factors Identified Geographically' table as 'High' (pages 10-13)

1988-120-35 - Klickitat Mgmt, Data, Habitat (Expense) Confederated Tribes And Bands Of T

Description: This proposal provides support for Yakama Nation policy, management and administrative activities related to all YKFP operations in the Klickitat River Basin, including all M & E, O & M and Design and Construction activities.

Consistency with subbasin plans

This project is consistent with the stated overall Subbasin Goals (section 2.4, p v), Biological Objectives (Section 2.5, p v) and Major Findings and Conclusions (Section 2.6, p v-vii). Information collected, analyzed and modeled through the project address Assessment findings identified in the subbasin plan on a reach by reach basis from pages 150-227. They also address Key Findings found between pages 243 and 273. In Chapter 6.5.3 in the Subbasin Plan numerous elements are identified (pages 354-362). In addition, many of the individual action items are identified and addressed in Appendix F, Chapter 4 "Multi-species Proposed Actions and Risks" (pages 34-93).

Addresses subbasin plan priorities

This project informs and helps accomplish work identified in 1) the Management Plan as 'Primary' (pages 333-352); and, 2) in the Subbasin Supplement 'Prioritized Habitat Strategies to Address Key Limiting Factors Identified Geographically' table as 'High' (pages 10-13)

1995-063-35 - Klickitat Fishery Ykfp M & E (Expense) Confederated Tribes And Bands Of T

Description: Collect and integrate baseline information on habitat, demographics and life history to design comprehensive enhancement plans. Monitor production, harvest, gentic and ecological impacts of Klickitat programs to guide adaptive management.

Consistency with subbasin plans

This project is consistent with the Klickitat Subbasin Plan's stated overall Subbasin Goals (section 2.4, p. v), Biological Objectives (Section 2.5, p. v), and Major Findings and Conclusions (Section 2.6, pp. v-vii). Information collected, analyzed, and modeled through the project address Assessment findings identified in the subbasin plan on a reach by reach basis from pages 130-227. They also address Key Findings found between pages 243 and 273. In Chapter 6.5.3 (pages 354-362) in the subbasin plan, numerous elements are identified which apply to this monitoring and evaluation project. The most detailed related information can be found under 'Natural Production Monitoring'(pages 354-358) and 'Ecological Interactions Monitoring'(pages 358-362). In addition, many of the individual action items are identified and addressed in Appendix F (Klickitat Anadromous Fishery Master Plan), Chapters 4-10 (pages 34-93) and the 'Summary of Data Collection and Reporting Strategies' (pages 169-176).

Addresses subbasin plan priorities

This project informs and helps accomplish work identified in 1) the Management Plan as 'Primary' (pages 333-352); and, 2) in the Subbasin Supplement 'Prioritized Habitat Strategies to Address Key Limiting Factors Identified Geographically' table as 'High' (pages 10-13); and, 3) Fish Habitat Priorities for Research, Monitoring, and Evaluations, pages 7-9 in the Supplement.

1997-013-35 - Klickitat Fishery Ykfp O & M (Expense) Confederated Tribes And Bands Of T

Consistency with subbasin plans

N/A

Addresses subbasin plan priorities

N/A

1997-056-00 - Klickitat Watershed Enhance (Expense) Confederated Tribes And Bands Of T

Description: Improve habitat and riparian conditions for steelhead, coho with cattle exclosure fencing, land aquistions, large woody debris, enhance pool formation, capture spawning gravels, revegetation of riparian areas, augment summer flows, reduce sediment.

Consistency with subbasin plans

This project is consistent with the stated overall Subbasin Goals (section 2.4, p v), Biological Objectives (Section 2.5, p v) and Major Findings and Conclusions(Section 2.6, p v-vii). Depending on the geographical location of specific projects within KWEP, actions address Assessment findings identified in the subbasin plan on a reach by reach basis from pages 150-227. They also address Key Findings found between pages 243 and 273. In Appendix F, KWEP actions are integrated into a multi-project framework whose Goals can be located in Sections 2.2.1 and 2.2.2 primarily(Appendix F pgs 10-12). Specific actions relate to Proposed Actions and Risks identified in Chapters 5 and 6, pages 47-74.

Addresses subbasin plan priorities

This project accomplishes work identified in 1) the Management Plan as 'Primary' (pages 333-352); and, 2) in the Subbasin Supplement 'Prioritized Habitat Strategies to Address Key Limiting Factors Identified Geographically' table as 'High' (pages 10-13).

1999-024-00 - Bull Trout Assessment Col Gorg (Expense) WDFW - Olympia

Description: This project will provide critical information to determine status of bull trout populations in the Wind, Little White Salmon, White Salmon, and Klikitat subbasins and to develop and implement required mgmt actions to restore & maintain healthy population

Consistency with subbasin plans

This project was consistent with the following subbasin recommendations:
--Klickitat River Subbasin Plan: Section 4.6.1, p112 (Table 18), bull trout identified as Focal Species. Section 4.6.4, p122, P2, ". . not enough is known about bull trout in Klickitat Subbasin to confidently state the life forms present". P1, paraphrased, life forms coexist sympatrically and one may give rise another. Section 6.5.3, Research, Monitoring, Evaluation, p360, specifically calls for presence/absence research into juvenile/adfluvial populations with two goals; 1) limiting factors analysis, 2) comparative genetic analysis to other regional stocks
--Columbia Gorge Mainstem Subbasin Plan: Section 3.2.1, p 23, P1, bull trout recognized as species of significance (Table 6, p113). Section 3.2.1, p24, Resident Salmonids, describes historical accounts of bull trout presence within multiple subbasin watersheds and Bonneville Reservoir yet scientific body of knowledge is insufficient to inform decisions on resource management in the subbasin.
--Klickitat Subbasin Anadromous Fishery Master Plan: Section 3.2.3, p28-29, documents existing resident and fluvial life stages and calls for future work on life history and genetic characteristic assessments, and evaluations of potential reintroduction.

Addresses subbasin plan priorities

Numerous subbasin plans determine focal species by their ESA listed status while others identify them by geographic, economic or cultural significance. The Klickitat River Subbasin plan is the only plan that specifically lists bull trout as a focal species while the Columbia Gorge Mainstem Subbasin Plan lists the bull trout as a species of significance. Lower Mid Columbia Subbasin plan (section 5.1.2, p150) designates species based upon the amount and types of existing information as does the Big White Salmon Subbasin plan (section 4.6.1, p68) . The Wind River and Little White Salmon subbasin plans both state "Bull trout do not occur within the subbasin.", Section 3.2, Focal Fish Species, P2. Although the Big White Salmon Plan does not include bull trout as a Focal Species nor does it state their lack of existence within the watershed.
Yet, listed within Appendix A, Focal Fish Species, Section 5, of the The Lower Columbia River Province Plan, December 2004, which incorporates subbasins from the Estuary up to and including all Columbia River Gorge Tributaries such as the Wind, White Salmon, and Little White Salmon, there exists an extensive section of information regarding bull trout life histories, distribution, genetic diversity, etc., etc., etc. It is within this section many inferences are made to historical distribution with the Province and the lack of extant information to currently ascertain the exact abundance and distribution.
This distinct lack of knowledge therefore precludes bull trout from being specifically listed as a priority within subbasin plans that rely upon existing data and research, or, are focused on species of increased geographic, economical, or cultural significance. This critical lack of available science by which management decisions are guided therefore escalates the level of priority for initial baseline research although not specifically stated within the subbasin plans themselves.

1998-019-00 - Wind River Watershed (Expense) Underwood Conservation

Description: Restore habitat within the Wind River subbasin to support healthy populations of wild steelhead

Consistency with subbasin plans

Consistency. The project implements the recovery goal for summer steelhead by conducting habitat improvement work identified as Habitat Measures (Mgt Plan, pages J-146-157) and Habitat Actions (Mgt Plan, page J-161 – J-162) in the Wind Subbasin Plan. Habitat Measures include improvement of instream habitats, riparian areas, water quality, passage, and assessment of the effectiveness of these measures. Habitat is being actively improved by addition of LWD, riparian thinning to accelerate tree growth, and tree planting. This work addresses concerns of hatchery fish on wild fish outlined in Section 5.5.2 page J-156. Snorkel surveys, electrofishing, redd and carcass surveys and smolt trapping all are tracking the distribution and density of wild spawned Chinook in the upper reaches of the subbasin. Hemlock Lake and Dam are listed as items of concern in Table 31 in Section 5.4.3. The project continues to monitor the effects of Hemlock Lake and Dam on juvenile and adult steelhead passage.

This project addresses Sections 5.9 and 5.10, pg. J-171 of the management plan in the Subbasin plan, which call for investigations of Ecological Interactions and Monitoring, Research, and Evaluation, respectively. Research conducted through the Wind River Restoration effort is consistent with the need to address Critical Uncertainty Research defined in Section 7.8 of the Lower Columbia Province Plan.

Addresses subbasin plan priorities

Priority. This work addresses concerns and questions on water temperature and links between habitat conditions and salmonid population performance outlined in Section 3.4.3 page J-53 and section 3.5, page J-57, respectively. The project is consistent with, and implements measures and questions outlined in Section 1 Pg J-4 – J-6 regarding information on preserving life-histories, monitoring success of restoration, and evaluating effects of Hemlock Lake. This project focuses on several Prioritized Measures for the Wind River Subbasin defined in Section 5.4.3, Numbers: 3, 4, 5, 6, 7, 8, and 10. This work addresses several Habitat Actions from the Mgt. Plan Table 32 of Wind River Subbasin Plan: “Wind 2. Floodplain restoration”, “Wind 8. Technical Assistance to and involvement of Landowners”, and “Wind 11. Increase voluntary participation”. Priority work includes: floodplain restoration by vegetation planting, weed removal, and planning for habitat structures in the Middle Wind River (reaches 5a and 5c), which are included as Group B (Tier 2) reaches.

This project examines the links between fish and habitat, limiting factors, and the effects of restoration and ecological change. The project establishes baseline data to detect change in fish populations and their habitat. This project enables a measure of success of priority restoration actions by preservation or active measures outlined in pages J-147 – J-162. Accomplishes priority work by focusing restoration efforts on “limiting factors and threats” identified in the Mgt Plan (pages J-141), and by focusing efforts on priority areas (Mgt Plan pages J-139 through J-145).

1991-061-00 - Swanson Lake Wildlife Mitigation (Expense) WDFW - Olympia

Description: Protect and maintain a self sustaining sharp-tailed grouse population, establish sage grouse in viable numbers, increase mule deer use of the project site, and enhance associated shrub-steppe habitat for other shrub-steppe obligate species.

Consistency with subbasin plans

Swanson Lakes Wildlife Area (SLWA) is predominantly composed of shrub-steppe habitat, and was acquired to promote recovery of sharp-tailed grouse, as well as to protect/provide habitat for other shrub-steppe obligate species. SLWA is addressed in Appendix C, "Swanson Lake," to the Crab Creek sub-basin plan. This appendix contains its own Assessment, Management Plan, and R,M & E Plan. Shrub-steppe obligate species including Columbian sharp-tailed grouse, and their limiting factors, are discussed in the main body of the sub-basin plan, under Overview, Terrestrial/Wildlife Resources (pp 24-38). The opening paragraph of this section is as follows: "Many of the wildlife species found in the Crab Creek Subbasin...are listed by the state of Washington or the U.S. government as sensitive, threatened, endangered or as candidates for listing. The presence, distribution, and abundance of these species has been affected by habitat losses due to several factors including hydropower, agriculture, irrigation, urbanization, road construction, legal and illegal wildlife harvest, livestock grazing, and introduction of noxious weeds." Shrub-steppe habitat's past, present and desired future status in the sub-basin is outlined in the main body of the plan under Assessment, Wildlife Assessment (pp 83-86). The management strategies for SLWA address several of the above-listed limiting factors for shrub-steppe habitat and its obligate wildlife species, including quality and availability of nesting and wintering habitat within the shrub-steppe.

Addresses subbasin plan priorities

The Swanson Lakes Wildlife Area project is consistent with sub-basin plan priorities. The basin-wide management plan goals and objectives are to address the limiting factors affecting the sustainability and conservation of focal species and their habitats. SLWA is addressed in its own appendix to the sub-basin plan, Appendix C, "Swanson Lake," with comprehensive comprehensive Assessment, Management, and R,M & E Plan. Shrub-steppe is listed in sub-basin plan as the dominant terrestrial habitat (Wildlife Assessment, Shrubsteppe, pg 76.)This paragraph also notes that shrub-steppe has been altered, converted, and fragmented, compared to its historic condition. The desired future condition of shrub-steppe in the sub-basin is listed in the plan, under Wildlife Assessment, Shrubsteppe (pg 85): "The general recommended future condition of sagebrush dominated shrubsteppe habitat includes expansive areas of high quality sagebrush with a diverse understory of native grasses and forbs (non-native herbaceous vegetation less than 10 percent). More specific desired conditions include large unfragmented multi-structured patches of sagebrush with shrub cover varying between 10 and 30 percent. Good-condition shrubsteppe habitat has very little exposed bare ground, and supports mosses and lichens (cryptogammic crust) that carpet the area between taller plants. Similarly, subbasin land managers will manage diverse shrubsteppe habitats to protect and enhance desirable shrub species such as bitterbrush while limiting the spread of noxious weeds and increaser native shrub species such as rabbitbrush." The SLWA management strategies are working to improve the project's shrub-steppe to the recommended future condition, which will promote the recovery and protection of all SLWA's shrub-steppe obligate species, including sharp-tailed grouse.

1995-028-00 - Assessment Of Fishery Improvem (Expense) WDFW - Olympia

Description: Restore/enhance the failed recreational fishery for resident species in Moses Lake, once the premier fishery for resident game fish in the Columbia Basin, in lieu of lost recreational anadromous fisheries.

Consistency with subbasin plans

The following objectives and strategies from the Upper Columbia and Crab Creek subbasin plans relate to this project's objectives:

Upper Columbia

- Objective 3, strategy a; page 34-18 – Enhance native and focal species.
- Objective 2, strategy b; page 34-18 – Use locally adapted stocks.
- Objective 3, strategy d; page 34-18 – Artificial production for harvest needs.
- Objective 4, strategy a; page 34-18 – Maintain production programs/net pens.
- Objective 6, strategy a; page 34-19 – Artificial production for harvest needs.
- Objective 6, strategy b; page 34-19 – Preserve and enhance net pen operations.
- Objective 7, strategy c; page 34-19 – Monitor entrainment.
- Objective 15, strategy c; page 34-22 - Develop minimum in-stream flows.
- Objective 17, strategy b; page 34-22 – Implement the assessment.

Crab Creek - Assessment Unit 3 - Moses Lake

- Hypothesis 1, objective 1; page 177 – maintain current status of fish populations
- Hypothesis 1, objective 2; page 177 – species/habitat interactions
- Hypothesis 3, objective 1; page 177 – manage impacts to fish

The Moses Lake project is consistent with both the Crab Creek and Upper Columbia Subbasin plans.

Addresses subbasin plan priorities

The project 'Factors Affecting the Recreational Fishery of Moses Lake, Washington' (Project ID 1995-028-00) can be directly related to at least two sub-basin plans. The Upper Columbia Sub-Basin Plan section 29.2.1.4 (page 29-5) states that Moses Lake was originally placed in the Upper Columbia Summary but for planning purposes Moses Lake was put in the Crab Creek sub-basin plan. However, the Moses Lake project is mitigation for the Upper Columbia Basin even though it is geographically distinct.

Within the Upper Columbia Sub-Basin Plan 21.1 Current management Directions (page 68) it states that in areas where anadromous fisheries have been extripated and recovery is not feasible, substitution with non-native gamefishes may be an option. The Moses Lake Project was originally funded as off-site mitigation for fisheries lost as a result of federal hydroelectric power projects.

The sub-basin vision also states the importance of the economic well being of the Pacific Northwest. The resident fishery of Moses Lake generates a considerable amount of funds and the loss of this fishery would negatively impact the economic well being of the region.

Within the Crab Creek Sub-basin plan it is stated within the Resident Fish Management Program (page 141)that the WDFW manages an extensive resident fishery. The majority of these fisheries are for non-native resident fishes and are provided as a source of off-site mitigation for lost anadroumous fishing opportunities (page 162).

Both sub-basin plans demonstrate the need to maintain or improve the integrity of the native stocks while providing quality resident fishing opportunities in areas that have recently been inundated or have lost native stocks. Understanding the interaction between native and non-native fishes will allow us to better preserve native fishes in areas of concern within both sub-basins.

2006-003-00 - Desert Wildlife Area (Expense) WDFW

Consistency with subbasin plans

This project is not adequately covered in the current draft for the Crab Creek Subbasin. However, this project was adequately covered in the original Crab Creek Subbasin Summary. Do to inadequate funding for work on the subbasin plan this project was not covered but will be in a final. Within the current draft plan there is some recognation for the value of the subbasin for breeding watefowl. This project would help replace sone of the lost functions of interior riparian wetlands. This is a similar project to one identified on the Columbia National Wildlife Refuge. This project is supported by BPA funds. It is associated with the Washington Wildlife Mitigation Agreement. Original project justification was for lost of HUs for mallard and minks.

Addresses subbasin plan priorities

The project will align with goals of the Crab Creek Subbasin Plan if funding is made available to complete the plan. The project was designed to compensate for losses of wetland habitat and associated wildlife (e.g., Mallard and mink) resulting from creation of Columbia River hydro-electric reservoirs.

1994-042-00 - Trout Creek O&M (Expense) ODFW

Description: Operation and Maintenance of instream and riparian habitat improvement; Monitoring and Evaluation of basin SSt smolt production and habitat recovery; coordination for basin long range plan; resulting in increased native salmonid and wildlife production.

Consistency with subbasin plans

This project is consistent with most if not all of the, management strategies specific to habitat complex including: In-channel strategies, sub-watershed strategies, Operation and Policy strategies, Research and Evaluation Strategies, (Management Plan pages 29-31, 92)

These strategies relate to biological and habitat objectives for the Lower Eastside Deschutes Assessment Habitat Unit (Management Plan pages 21-24)

This project is consistent with the research, needs for the Deschutes Subbasin (Table Mp-1, page MP-92), and with the monitoring and evaluation needs for the Deschutes Subbasin (Table Mp-2,page MP 93).

Addresses subbasin plan priorities

This project accomplishes high priority work in the highest ranked priority area in the Deschutes Subbasin plan (Executive Summary page, 12).

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These strategies relate to biological and habitat objectives for the Lower Eastside Deschutes Assessment Habitat Unit (Management Plan pages 21-24)

This project is consistent with the research, needs for the Deschutes Subbasin (Table Mp-1, page MP-92), and with the monitoring and evaluation needs for the Deschutes Subbasin (Table Mp-2,page MP 93).

Addresses subbasin plan priorities

This project accomplishes high priority work in the highest ranked priority area in the Deschutes Subbasin plan (Executive Summary page, 12).

1994-054-00 - Bull Trout Life History Project (Expense) ODFW

Description: Provide essential scientific information for the protection, management and recovery of bull trout populations in Oregon and the Pacific Northwest..

Consistency with subbasin plans

Our project and specifically work planned for 2006 integrates a number of recommendations and priorities from the Grande Ronde, Walla Walla, Umatilla, John Day, and Deschutes subbasins, where our study sites are located. We have organized these according to our project objectives. Because of considerable overlap we have combined them in this section and the priorities section.

Objective: Characterize the fine-scale genetic population structuring of bull trout within the Grande Ronde and John Day subbasins.

"Ongoing research and monitoring is required to 1) understand the genetic
structure of local populations, quantify spawning site fidelity, and straying rates;…"
GRSP sup.-44

"The nature and intensity of metapopulation interactions should inform management decisions and restoration strategies. Similarities and differences between populations should be determined and the rate of movement between populations monitored"
John Day SP-319

Objective: determine appropriate methods to assess population abundance by estimating the number of migratory bull trout that move upstream to spawn, the number of redds produced, and the total number of mature bull trout in Mill Cr. (Walla Walla subbasin).

"The USFWS (2002) acknowledge that additional bull trout life history information is needed to establish bull trout abundance, growth rate and productivity… in the Walla Walla recovery unit."
Wall Walla SP AD4-12

Objective: Determine the seasonal movements of sub-adult and adult fluvial bull trout in Mill Creek, a tributary to the Walla Walla River

On Mill Creek, there must be effective up- and down-stream passage at the Bennington Diversion Dam, and either Yellowhawk Creek or lower Mill Creek must be restored to provide a functional, two-way movement corridor between Mill Creek and the Walla Walla River.
Walla Walla SP-14

The project objective will help establish current bull trout movement above and below Bennington Dam to Yelllowhawk Creek and lower Mill Creek.

Addresses subbasin plan priorities

Our project and specifically work planned for 2006 integrates a number of recommendations and priorities from the Grande Ronde, Walla Walla, Umatilla, John Day, and Deschutes subbasins, where our study sites are located. We have organized these according to our project objectives. Because of considerable overlap we have combined them in this section and the priorities section.
Objective: Determine the seasonal movements of fluvial bull trout of the Lostine River and relationships to water temperatures and flow diversions.

"Ongoing research and monitoring is required to… 3) improve the understanding of (bull trout) distribution and movement…"

Grande Ronde SP sup.-44

"Identify flow deficient stream reaches caused by irrigation withdrawals"
"improving in-stream flows to improve water temperatures for bull trout."
GR SP sup.-46,48

The Lostine bull trout population was selected for this objective because of management concerns about water temperatures and diversions in the lower Lostine and Walllowa rivers and their potential effects on bull trout movement and distribution.

Objective: Employ an EMAP probabilistic sampling design to characterize the status, trends, and distribution of adult bull trout populations in the Columbia Plateau Province.

"Incorporate GRTS/EMAP and GIS-based sampling framework."
John Day SP-321

"The ability to accurately assess bull trout population status, trend, and distribution is central to conservation efforts for the species, however. A coordinated approach to conduct such assessment is needed, but currently, monitoring activities to assess population status, trends and distribution are not part of any overall framework."
Walla Walla SP-33

Our project objective is specifically to evaluate the use of the EMAP sampling design as a possible bull trout population monitoring framework.

1994-054-00 - Bull Trout Life History Project (Expense) ODFW

Description: Provide essential scientific information for the protection, management and recovery of bull trout populations in Oregon and the Pacific Northwest..

Consistency with subbasin plans

This project is consistent with the Deschutes Subbasin plan biological objectives to restore and maintain bull trout (MP-11). Without this project there will be no information about the status of bull trout in the lower Deschutes subbasin. Continued monitoring of bull trout escapement and population trends is listed as a Research and Evaluation Strategy for lower Deschutes, Warm Spring and Shitike Creek complexes (MP-14, 16, 18). Continued spawning surveys and brook trout monitoring is recommended in Warm Spring R. and Shitike Creek complexes (MP-16, 18).

Addresses subbasin plan priorities

This project helps achieve priority work detailed in the subbasin plan by establishing baselines from which bull trout recovery may be measured. The results of this project will achieve cost effective methods of monitoring the status of bull trout in the lower Deschutes subbasin. We can then assess the response of bull trout populations to projects identified as high priority in the subbasin plan.

1998-028-00 - Implement Trout Cr Watershed R (Expense) Jefferson County Soil & Water

Description: Development of a comprehensive watershed assessment and long-range action plan for long-term protection and enhancement of fish and wildlife habitat in the Trout Creek watershed.

Consistency with subbasin plans

This project is consistent with most if not all of the, management strategies specific to habitat complex including: In-channel strategies, sub-watershed strategies, Operation and Policy strategies, Research and Evaluation Strategies, (Management Plan pages 29-31, 92)

These strategies relate to biological and habitat objectives for the Lower Eastside Deschutes Assessment Habitat Unit (Management Plan pages 21-24)

Addresses subbasin plan priorities

This project accomplishes high priority work in the highest ranked priority area in the Deschutes Subbasin plan (Executive Summary page, 12).

2002-016-00 - Lamprey Abundance (Expense) Warm Springs Tribe

Description: The project will determine lamprey species composition and larval distribution in the Deschutes R. and tributaries. Adult abundance will be estimated in the Deschutes R.

Consistency with subbasin plans

This project is consistent with the Deschutes Subbasin Plan biological objective to restore and maintain Pacific lamprey (Management Plan page11). Without this project there will be no information about the status of Pacific lamprey within the lower Deschutes River subbasin.

Research and evaluation strategies for the lower Deschutes River, Warm Springs River and Shitike Creek complex include:

- Continued monitoring of Pacific lamprey population trends, determining specific life-history requirements and habitat use (Management Plan pages 14, 16, & 18);
- Monitoring harvest of Pacific lamprey to determine population trends and escapement levels (Management Plan page 14);

In miscellaneous small Deschutes tributaries (including lower White River below White River Falls) a research and evaluation strategy is to determine if lamprey are present (Management Plan page 20).

Pacific lamprey are also identified in the Deschutes Subbasin Plan as a focal species.

Addresses subbasin plan priorities

This project helps achieve priority work detailed in the Deschutes Subbasin Plan by establishing baselines for which Pacific lamprey recovery can be measured. The results of this project will achieve cost effective methods for monitoring the status of Pacific lamprey in the lower Deschutes subbasin. This information will also assist managers in protecting and increasing distribution and population abundance of Pacific lamprey populations (Management Plan pages 16, 18, & 31).

2002-019-00 - Wasco Riparian Buffers (Expense) Wasco County Soil & Water Conserv

Description: Implement riparian buffer systems using cost share provided by USDA, State of Oregon, and private landowners (RPA Action 152).

Consistency with subbasin plans

Project is consistent with the Deschutes Subbasin Plan. Establishment of riparian buffer systems address key limiting factors for summer steelhead and redband trout in the Deschutes subbasin below Pelton Dam (Deschutes Subbasin Management Plan Supplement, Section A.1 page S-2 and S-3.

Addresses subbasin plan priorities

This project addresses five of seven identified high priority strategies (Deschutes Subbasin Management Plan Supplement section C.2. pages S-12, S-14, S-15), including (1) Restoration of riparian ecosystem habitat complexity and species diversity (component 1 & 2), (2) connect favorable habitats (components 5, 6, & 7), (3) Increase interaction of rivers and floodplains (component 1 & 2), (4) Increase instream habitat complexity (component 1 & 2), (5) Increase water infiltration, retention and soil stability, and native vegetation on uplands (components 4-8).

The project meets the Prioritization Criteria set forth in Deschutes Subbasin Management Plan Supplement Section D.1 pages S-17 to S-18. It meets all four Tier I criteria, Tier II Criteria 1.1, 2.1, 2.2, 2.3, 2.4, 2.5 (14-15 year leases), 2.6, and 3.1 through 3.7.

1984-021-00 - John Day Habitat Enhancement (Expense) ODFW

Description: Establish long term riparian, fish habitat and tributary passage improvement on private lands within the John Day Subbasin.

Consistency with subbasin plans

As noted throughout the John Day subbasin plan, the John Day basin is renowned for its spring chinook salmon and summer steelhead populations. Two of the last remaining intact wild populations of anadromous fish in the Columbia River Basin, though now considerably reduced from their historic abundance. The management plan defines 10 broad restoration strategies, of these, 7 strategies pertain to the BPA Fish Habitat Program specifically (Strategies C-I page 6).The Fish Habitat program provides benefits to all of the focal species within the John Day Basin, (page 285-288). As stated in the subbasin plan (page 94) "the recent increases have been attributed to improvements in fish habitat". In the last two years (2003-2004) the fish habitat program has protected 1240 acres of which 80% is riparian habitat and 20 % is upland habitat. Since 1984 when the project was initiated, up through the current date, the program has protected approximately 3700 acres of fish habitat, primarily through the use of fencing and offsite water developments.

Addresses subbasin plan priorities

The primary goal of "The John Day Basin Fish Habitat Enhancement Project" is to access, create, improve, protect, and restore riparian and instream habitat for anadromous salmonids, thereby maximizing opportunities for natural fish production within the basin. This project provides for implementation of Program Measure 703 (C)(1), Action Item 4.2 of the Northwest Power and Conservation Council's, Columbia River Basin Fish and Wildlife Program (NPCC, 1987), which continues to be implemented as offsite mitigation for mainstem fishery losses caused by the Columbia River hydro-electric system.

The expected results of the John Day Fish Habitat Enhancement Program is to enhance production of indigenous wild stocks of spring chinook and summer steelhead within the subbasin through habitat protection, enhancement and fish passage improvement. The work conducted by the fish habitat program is on private lands and requires considerable time spent developing landowner trust and continued cooperation with the program throughout the 15 year lease or agreement periods. The project uses a passive approach to regeneration of habitat, by incorporating riparian exclosure fencing as the primary method to restore degraded streams to a more natural system. Individual projects help contribute to and complement the ecosystem and basin-wide watershed restoration efforts that are undertaken by state, federal, watershed councils and tribal agencies. In a cooperative effort to support the largest remaining wild runs of spring chinook salmon and summer steelhead in NE Oregon. The project accomplishes priority work under the subbasin plan, based on the framework in the management plan that puts fish habitat as the highest priority in all three geographic areas (Pg 7-8). Management plan also states that high priority should be placed on projects that protect and improve focal species habitat (Pg 286). The fish habitat programs main focus has been on the highest ranking priority areas.

1993-066-00 - Oregon Fish Screens Project (Capital) ODFW

Description: Protect wild anadromous and resident fish species by installing 20 replacement fish screening devices in irrigation diversion located in critical spawning and rearing areas in the John Day basin and 1 unscreened and 5 replacements in the Walla Walla.

Consistency with subbasin plans

There are 10 restoration strategies listed in the John Day subbasin plan (page 6) of which Strategy A: Improve fish passage and Strategy B: Install fish screens on water diversions, are the top 2 strategies. This project is consistent with and implements these strategies (Section 5.2.2.4, page 244) (Strategy A, page 252) by removing and or replacing existing barriers with fish friendly alternatives that minimize stresses on traveling fish. (Strategy B, page 255) Replace existing screens that don't meet current screening criteria, install screens on both ditch and pump diversions that are currently unscreened to eliminate or reduce fish entrainment at these withdrawals.

Addresses subbasin plan priorities

This project accomplishes priority work, as stated in the subbasin plan (page 248) by Improving Fish Passage and Fish Screening. The technical teams, for the plan, frequently rated these two strategies at a “Very High” or “High” priority for the subbasin. Priorities rankings for each of the three sub-geographic areas can be found in the plan on page 249, Tables 70 & 71, page 250, Tables 72 & 73 and page 251, Tables 74 & 75. A map (Figure 51) of the Relative Priority of Strategy A: Fish Passage is on page 254 and a map (Figure 52) of Relative Priority of Strategy B: Fish Screens is on page 256. These priorities are consistent with our current project goals.

1998-016-00 - Escapement/Productivity Spring (Expense) ODFW

Description: Monitor natural escapement and productivity of John Day River Basin spring chinook and summer steelhead. Estimate SAR, egg-to-smolt survival, smolt abundance, and adult and parr distribution for chinook and SAR and spawner escapement for steelhead.

Consistency with subbasin plans

This project accomplishes RM&E work associated with two aquatic focal species stated in the plan—summer steelhead and spring Chinook (pages 63, 71-103 in the Plan). These two species are the target species of our studies. Although the draft Subbasin Plan fails to list our project as a current RM&E study in the basin (which I plan to have changed), our data is used frequently within the plan (e.g. see smolt estimates on page 101, Figures 16 & 17 on pages 95-96, Table 33 empirical data on page 99). We are the only project that conducts basin-wide monitoring of the two aquatic focal species, summer steelhead and spring Chinook, and their habitats in the John Day Basin.

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan, because we address many of the stated research needs in the management plan. For example, on page 314 the plan states that the decline in spring Chinook populations in Granite Creek should be an area of study. Our monitoring of redd counts in this area has identified this decline in the population. Also, the identification and rate of hatchery straying adults in the basin (page 316) was identified by our surveys. On page 317, the plan states that parameters for evaluating population status and trends should continue. This project collects all of the parameters mentioned on page 317 for two focal species--spring Chinook and Steelhead. We also collect viable salmonids population parameters (page 317, e.g. abundance, age & sex structure, fecundity, survival estimates) that are stated as important for TRT recovery goals and measurements. On page 321, the plan states a monitoring need of incorporating GRTS/EMAP and GIS-based sampling frameworks. Our monitoring efforts for steelhead spawning ground surveys and juvenile rearing habitat are based on this spatially-balanced, probabalistic sampling approach.

1998-017-00 - Gravel Push-Up Dam Removal Low (Expense) Monument Soil & Water Conservatio

Description: Modify irrigation pumping stations by replacing above-ground suction screens with sub-surface collectors. Eliminate flow modification, migration impediments, and vegetation disruption and destruction inflicted during construction of gravel push-up dams.

Consistency with subbasin plans

This project directly implements Strategy A, Action 2 (Improve Irrigation Diversions, p. 252 of the Final Draft of the John Day Subbasin Plan) by removing push-up dams that pose seasonal barriers to movement of juvenile salmonids. It implements Strategy B, Action 1 (Screening of Irrigation Diversions, p.255) by incorporating NOAA-approved screens into all diversion improvements. It also allows for Riparian Habitat Improvement(Strategy E, p. 263) by eliminating the regular disturbance to riparian areas associated with heavy equipment access and maintenance of push-up dams and eliminating exposed artificial side channels that serve diversions and are prone to accelerated warming in low flow periods.

Addresses subbasin plan priorities

Replacing diversions on Cottonwood Creek is a primary forcus of our work in 2003-6 as Cottonwood Creek was identified as the watershed with the greatest restoration potential in the North Fork Basin by both EDT and the subbasin technical team. Passage Improvements, Fish Screening (both directly addressed by this project) and Riparian Habitat Improvement (which we achieve by reducing areas impacted by push-ups and heavy equipment) received priority ratings of high or very high for Cottonwood Creek. In general, restoration work on the mainstem North Fork was given a moderate level of priority in the Subbasin Plan, with screening and riparian habitat improvement among the highest priorities for this area (Relative priorities are summarized on p.250). This project rates high according to the criteria for benefit to focal species, technical soundness and socio-economic appropriateness laid out in the Prioritization Framework (see p. 285)

1998-018-00 - John Day Watershed Restoration (Capital) Warm Springs Tribe

Description: Implement protection and restoration actions to improve water quality, water quantity, and fish habitat, eliminate passage barriers for anadromous and resident fish.

Consistency with subbasin plans

This program directly addresses all but the Land Acquisiton stadigies listed in the subbasin plan. Below are just a few examples.
Stratigie A: Passage barriers
Strategy C: Flow Restoration
Strategy D: In-Stream Activities
Strategy E: Riparian Habitat Improvements
Strategy H: Upland Improvement Projects
Strategy I: Education/Outreach
The activities included in the program are rated among the highest priorities in the subbasin plan and address all aspects of those stratigies.

Addresses subbasin plan priorities

This program addresses priorities set forth in the subbasin plan and is consistant with the prioritization frame work listed. The program can answer yes to all questions listed in Set1 of the prioritization framework. The program can also answer yes to all of Set2, and yes to all of Set3 on page 285 of the subbasin plan.

1998-022-00 - Pine Creek/Wagner Management (Expense) Warm Springs Tribe

Description: Operations and Maintenance, Monitoring and Evaluation of Pine Creek Ranch.

Consistency with subbasin plans

4 Inventory of Existing Activities
Tribal Mitigation Properties, p. 202
"The Confederated Tribes of the Warm Springs Reservation of Oregon manage three fish and wildlife mitigation properties in the John Day Subbasin. The 33,557-acre Pine Creek Conservation Area is in and near the Pine Creek watershed on the lower mainstem John Day River"

"Legally binding agreements are in place between BPA and the Tribes to achieve "the protection, mitigation, and enhancement of wildlife habitat permanently to help fulfill BPA's duties under the Northwest Power Act." These agreements call for the Tribes to prepare site-specific management plans for each property, and for BPA to "provide a reasonable amount of additional funds for operation and maintenance to help the Tribe ensure the habitat's natural characteristics and mitigation qualities are developed and self-sustaining." The Tribes will manage these properties for fish and wildlife habitat in perpetuity.""

Tribal Wildlife Habitat and Watershed Management Plans, p. 209

Table 62. Monitoring programs in the John Day Subbasin, p. 216
Comment: Table 62 includes monitoring activities on the Pine Creek Conservation Area

5 Management Plan
5.1 Vision for the Subbasin, p. 224
Tribal management of the Pine Creek Conservation Area will provide healthy and productive fish and wildlife habitat, supporting traditional resource-based activities such as hunting and fishing that are of importance to the social, cultural, and economic well-being of the subbasin and the region.

Subbasin Biological Objectives & Habitat Objectives, p. 236-242
The Pine Creek Conservation Area is directly relevant to achieving these objectives by improving spawning and rearing habitat for steelhead and redband trout, and migratory habitat for Chinook salmon.

Subbasin Habitat Objectives, p. 242
Watershed restoration on the Conservation Area directly or indirectly addresses each identified Habitat Objective.

Addresses subbasin plan priorities

5 Management Plan
Restoration Strategies and Priorities, p. 249
In Lower JDR Muddy Creek, Passage, Fish Screening, Flow Restoration, and Protect Existing Habitat are Very High Priority Strategies. Riparian and Upland Habitat Improvements are High Priority Strategies.

The Lower JDR Muddy Creek 5th field was assigned the 3rd highest (of 7) overall priority restoration category for 5th fields in the lower and middle John Day.

Project Prioritization Framework, p. 285
The Prioritization Framework was intended by subbasin planners to be applied only to new fisheries restoration projects. However, the Pine Creek Conservation Area clearly meets the following criteria:

Set 1: Benefits to Focal Species
1. The project addresses a direct threat to focal species
True: Prior to acquisition, habitat for steelhead and redband trout in Pine Creek was chronically dewatered for irrigation.

2. The project improves habitat quality for focal species in priority areas.
5. The project benefits terrestrial wildlife as well as aquatic species.

Set 2: Technical Soundness

1. The project relies on sound principles established by research and/or local experience.
2. The project addresses the need for monitoring and evaluation.

Set 3: Socio-Economic Integration

1. The project complements local efforts/organizations.
2. The project has community and/or landowner support.
3. The project integrates with economic uses of the watershed.
4. The project promotes awareness and education about watershed functions.
5. The project creates benefits that are long-term and self-sustaining.

Terrestrial Species, p. 288
The Pine Creek Conservation Area can contribute to objectives in focal habitat types, especially Shrub-Steppe, Interior Grassland, and Western Juniper and Mountain Mahogany Woodlands.

Research Needs, p. 314
The Conservation Area contributes to the research need of evaluating restoration potential of the lower subbasin.

1999-010-00 - Pine Hollow/Jackknife Habitat (Expense) Sherman Soil & Water Conservation

Description: Implement practices to reduce erosion and flooding, allowing natural recovery of riparian vegetation and channel type in Pine Hollow and Jackknife Canyons. Future phases will focus on replanting or protecting critical areas in the stream corridor.

Consistency with subbasin plans

This project is consistent with the strategies/objectives set forth in the management plan and prioritization framework outlined in the John Day Subbasin Plan. This project impacts three limiting factors outlined in the John Day Plan on pages 242-244. Flow, Sediment Load, and Temperature are the affected limiting factors. For each of the three factors, Upland Improvements are listed as a restoration strategy to improve upon those factors. The projects that are implemented in this project are those that improve upland function and watershed health. As described in the Upland Improvement Strategy Definitions on page 273-274 of the John Day Plan, definition H1 describes the use of water developments and pasture fencing as tools in livestock grazing management. The description of H6 cites numerous erosion and runoff control practices that have been used in this project as beneficial in improving watershed hydrology and in sedimentation reduction.

Addresses subbasin plan priorities

The Pine Hollow watershed is ranked in the top third of the Lower and Middle Mainstem John Day for restoration priority. Steelhead use the Pine Hollow system to spawn, and yearly REDD surveys are conducted in Pine Hollow to track its production. The highest ranking strategies for Pine Hollow are Flow Restoration, Riparian Habitat Improvements, and Upland Improvements on page 249. On Page 248 it is stated that there were six strategies that the coordination team ranked as “very high” or “high” priorities within the 43 HUC5s in the subbasin. Upland Improvements are one of those strategies that ranked very-high to high. On page 286 in the prioritization framework, it is stated that projects that benefit local species, are technically sound, and provide socio-economic integration should rank highest for funding. This project addresses components of all three of those criteria.

2000-015-00 - Oxbow Ranch Management (Expense) Warm Springs Tribe

Description: Acquire the remaining 540.0 acres of the Oxbow Ranch, protect, enhance, and maintain a total of 1,022 acres of riverine, meadow, and forest habitat on the Middle Fork John Day River.

Consistency with subbasin plans

The Oxbow Conservation Area is located in the upper Middle Fork John Day River subbasin, within the Camp Creek 5th Field HUC, which was rated as a high restoration priority region in the John Day Basin and the highest within the Middle Fork subbasin. It is consistent with the subbasin plan in most areas. The Oxbow project prioritizes protection of existing habitat, passage restoration, riparian habitat improvement, fish screens, upland restoration, flow monitoring and improvement -much the same as the subbasin plan.
The Oxbow Project is consistent with the John Day Subbasin plan sharing aquatic focal species, priority strategies, 5.2.2.5 Project Prioritization Framework (all sets and specific criteria), and similar terrestrial species objectives for ponderosa pine, mixed conifer, interior grassland, and herbaceous wetlands.

Addresses subbasin plan priorities

The Oxbow Conservation Area Project accomplishes priority work under the John Day Subbasin plan through through the project being located in one of the highest priority locations in the subbasin, and because the project's goal and objectives are much of the same of the subbasin plan, only on a much smaller scale. Anadromous Fish and wildlife habitat protection and restoration is much of the focus of the Oxbow project.

2000-031-00 - Enhance North Fork John Day Rim (Expense) Confederated Tribes Of The Umatilla

Description: Increase production of indigenous wild stocks of spring chinook salmon and summer steelhead within the North Fork of the John Day River Subbasin.

Consistency with subbasin plans

It is consistent with & implements Strategy D, Activity D3 (p. 260); Strategy E, Activities E1 & E2 (p. 263), E3 (pp. 263-4) & E4 (p. 264); Strategy G, Activity G2 (p. 270); Strategy H, Activities H1 & H3 (p. 273); Strategy I, Activities I1, I2, I3, I4 & I5 (p. 278); Strategy J, Activity J1 (p. 281); & Terrestrial Species under Herbaceous Wetlands, Objective 2, Strategies 2-5 (pp. 303-4); Upland Aspen Forest, Objective 3, Strategies 1-3 (pp. 307-8). These strategies relate to the following objectives listed in Table 69. (pp. 245- 7): improve channel stability, increase role & abundance of LWD; increase pool habitat, maintain & improve quality & quantity of spawning areas; decrease gradient; restore sinuosity; restore channel/floodplain connectivity; restore off-channel areas; trap sediment on the floodplain; moderate stream temperatures through improvement of width-to-depth ratios, increased shade & floodplain reconnectivity; manage subbasin fisheries for wild fish production; enhance base flows; moderate peak flows; restore natural hydrographic conditions; minimize direct mortality & stress to fish; minimize factors that lead to fluctuations in dissolved oxygen; minimize rates of erosion from uplands; maintain riparian management objectives; provide adequate habitat components for focal species; create physical & educational conditions that provide for growth of fish & wildlife and enjoyment of natural resources; bring the stream channel in balance with water & sediment supplied by the watershed; & the following objectives listed under Terrestrial Species: restore, enhance &/or create wetland habitat where feasible (pp. 303-4); & target the enhancement, restoration & protection of upland aspen forest (pp. 307-8). Project implementations consistent with the strategies and objectives above include constructing riparian/floodplain livestock exclusion fencing & off-stream water sites, planting native vegetation, treating noxious weeds & conducting public outreach.

Addresses subbasin plan priorities

The project accomplishes priority work because it improves habitat for focal species, summer steelhead, spring Chinook, redband trout (p63), great blue heron & American beaver (Table 22., p64; Set 1.5), p286). The project implements enhancements in the North Fork Subbasin & Upper Camas Creek, Lower Camas Creek, Cottonwood Creek & Lower NF JDR Geographic Areas, 3 of these 4 areas are restoration priority areas in the Management Plan (pp 231-2; Set 1.2) p285); the Lower NF JDR Geographic Area provides habitat for focal species, but is not identified as priority & landowner interest is high (Set 1.3), p285); the project utilizes CTUIR's Walla Walla Basin Fish Habitat Enhancement Project's Monitoring Protocol, a practical, & cost-effective monitoring & evaluation strategy (Set 2.2), p286); the project has established partnerships with local organizations, such as NRCS, Grant County, Monument & Umatilla County SWCD's, & Grant & Umatilla County FSA's to partner & cost share on habitat projects. The CTUIR holds a seat on the watershed council & works closely with the watershed council coordinator to identify projects & funding opportunities (Set 3.1), p286); the project conducts outreach efforts to obtain input, identify landowner & agency concerns, provide educational opportunities, & promote habitat restoration & protection (Set 3.2), pp 286-7); the project frequently hires local subcontractors from within Umatilla & Grant Counties. Materials & fuel are purchased locally. Storage & tree refrigeration units are rented from locals (Set 3.3), p287); the watershed council promotes CTUIR's habitat improvement efforts, resulting in landowners providing feedback & contacting CTUIR for assistance, schools & interest groups requesting outreach, & contractors contacting CTUIR to bid on jobs (Set 3.4), p287); the project implements passive, natural recovery processes & integrates restoration efforts with other entities to achieve large scale, self sustaining benefits (3.5), p287).

2001-041-01 - Forrest Ranch Management (Expense) Warm Springs Tribe

Description: Acquire approximately 4,295 acres of land, 12.2 miles of streams, 25.2 cfs of senior water rights, and structures on the Middle Fork and upper mainstem John Day Rivers known as the Forrest Ranch.

Consistency with subbasin plans

The project is consistent with and implements the majority of the restoration strategies supported in the Subbasin Management Plan. The following strategies are currently being implemented or are planned for the near future. Subbasin plan strategies are referenced by page number.

Strategies

A: Improve fish passage pg 252

Removal or replacement of culverts and channel reconnection projects

B: Install Fish Screens on Water Diversions pg 255

Fish screen replacement in coordination with ODFW

C: Flow Restoration pg 257

In-stream water right leases

Irrigation efficiency projects

Floodplain aquifer recharge

D: In-Stream Activities pg 260

Large woody debris placement

Channel restoration

Bank protection/stabilization

In-stream log weirs and other structures

E: Riparian Habitat Improvements pg 263

Management of riparian grazing

Exclosure fencing

Riparian hardwood planting

Floodplain restoration

Vegetation management, dike removal

Beaver relocation and encourage establishment

G: Protect Existing High Quality Habitat Areas pg 270

Project is land acquisition for habitat protection

Entering 150 acres into CREP program

H: Upland improvement projects pg 273

Use of spring grazing techniques in uplands

Protect and enhance wet meadow areas

Conduct invasive juniper treatments, native grass seeding, shrub and tree planting, noxious weed treatment

Close upland roads and ensure good erosion control

I: Education/Outreach pg 278

Outreach to natural resource agencies USFS, ODFW, NRCS, OWRD, OSU extension, soil and water districts, local city and county governments, schools, fair booths, open house presentations, youth groups

Demonstrate irrigation efficiency projects, noxious weed control, grazing techniques, and planting techniques.

J: Manage recreational fisheries to protect wild stocks pg 281

Stock public fishing pond with sterile trout

Monitor anadromous fish redds and pool counts

Addresses subbasin plan priorities

The project accomplishes very high and high priority work contained in the subbasin plan. The project is also located in the highest geographic priority areas for restoration in the Upper Mainstem and Middle Fork John Day Rivers. The Subbasin plan is referenced by page number.

Restoration Priority Areas Table 64 pg 232

Middle Fork Tract

 Located in Camp Creek geographic area – priority fish species are spring Chinook, steelhead, and bull trout Mainstem Tract
 Located in Strawberry Creek geographic area – priority fish species are spring Chinook, steelhead, bull trout, and is a cutthroat area

Restoration Strategies Table 74 Upper Mainstem and South Fork John Day River Priority Rankings pg 251
Strawberry Cr. 5th field HUC is ranked the highest restoration priority out of the 14 HUCs for the Upper Mainstem and South Fork John Day River.

Very high strategies of the subbasin plan being implemented in the program are the following:
Fish Passage, Fish Screening, Flow Restoration, In-stream Activities, Riparian Habitat Improvements, Protect Existing Habitat, Upland Improvements, Education and Outreach, Manage Recreation and Tribal Fisheries.

Restoration Strategies Table 72 Middle Fork Priority Rankings pg 250
Camp Creek 5th field HUC is ranked the highest restoration priority out of the 5 HUCs for the Middle Fork John Day River.

Very high strategies of the subbasin plan being implemented in the program are the following:
Passage, Flow Restoration, In-stream Activities, Riparian Habitat Improvements, Protect Existing Habitat, Education and Outreach

High-ranking strategies of the subbasin plan being implemented in the program are the following:
Fish Screening, Upland Improvements

2002-015-00 - Watershed Council Sherman Co (Expense) Sherman Soil & Water Conservation

Description: One watershed council coordinator and two planner/designers will provide support to five watershed councils in Sherman County. All future conservation projects will be based on watershed plans and individual ranch plans developed by these positions.

Consistency with subbasin plans

This project is consistent with the strategies/objectives set forth in the management plan and prioritization framework outlined in the John Day Subbasin Plan. The upland portion of this project impacts three limiting factors outlined in the John Day Plan on pages 242-244. Flow, Sediment Load, and Temperature are the affected limiting factors. The CREP portion of this project additionally impacts Channel Stability and Habitat Diversity / Key Habitat. The strategies listed on page 245-247 that are effective for improving the five limiting factors described above are Upland Improvements, Riparian Habitat Improvements, and Protecting Existing Habitat. As described in the Upland Improvement Strategy Definitions on page 273-274 of the John Day Plan, definition H1 describes the use of water developments and pasture fencing as tools in livestock grazing management. The description of H6 cites numerous erosion and runoff control practices that have been used in this project as beneficial in improving watershed hydrology and in sedimentation reduction. As described in the Riparian Habitat Improvement Strategy Definitions on page 263-266 of the John Day Plan, definition E1 cites grazing management as important in riparian improvement. The description of E2 and E3 cites vegetation management and flood plain restoration as other keys in riparian improvement. Strategy G listed on pages 270-272 cites that Protecting Existing High Quality Habitat Areas is important. CREP projects accomplish all three of these riparian functions in addition to protecting existing habitat through use exclusion for up to 15 years per contract.

Addresses subbasin plan priorities

This project provides technical assistance and coordination in order to implement Upland and Riparian Habitat Improvement projects on 5 watersheds in the John Day Subbasin and 2 watersheds in the Deschutes Subbasin. Page 249 shows the priority rankings by watersheds for the Lower and Middle Mainstem John Day River. Two Watersheds (Pine Hollow and Lower JDR Ferry Canyon) ranked in the upper half for restoration potential. The other three (Grass Valley Canyon, Lower JDR Scott Canyon, and Lower JDR McDonald Ferry) ranked in the bottom half for restoration. Technical assistance and project coordination for CREP and Upland Habitat projects have been provided as a result of this project in all five of the watersheds listed.

The highest ranking strategies for Sherman County Watersheds are Protecting Existing Habitat (Number 1 of 10), Riparian Habitat Improvements (Number 4 of 10), and Upland Improvements (Number 6 of 10) as shown on page 249. On Page 248 it is stated that there were six strategies that the coordination team ranked as “very high” or “high” priorities within the 43 HUC5s in the subbasin. Upland Improvements, Riparian Habitat Improvements, and Protection of Existing Habitat are among those strategies that ranked very-high to high. On page 286 in the prioritization framework, it is stated that projects that benefit local species, are technically sound, and provide socio-economic integration should rank highest for funding. This project addresses components of all three of those criteria.

2002-033-00 - John Day Recovery Monitoring (Expense) Warm Springs Tribe

Description: Update salmonid reproduction goals, compile data to develop predictive models to guide future restoration efforts, compile data that presents historical riparian condition, investigate missing bull trout status information.

Consistency with subbasin plans

This program is directly tied to the following:
C3: Floodplain Aquifer Recharge Projects
In nearby subbasins (primarily the Walla Walla), projects are redirecting spring runoff into fields and/or recharge basins where it can soak in to floodplain aquifers that are anticipated to sustain late summer base flows. Similar efforts may be applicable in parts of the John Day Subbasin. Similar results may also be achieved by channel/floodplain restoration projects under strategies D and E.
D3: Bank protection/stabilization
In areas where chronic bank erosion problems exist, efforts to re-form banks to resist erosion and enhance in-stream habitat may be warranted. These efforts may include sloping back cut banks, installing rock barbs to redirect flows from banks to scouring pools, bioengineering of eroding surfaces, root wad and juniper revetments and other forms of bank protection. Such alternatives to traditional rock rip-rap are valuable options to address landowner needs in a manner that simultaneously improves fish habitat.
F1: Remediation of Mine-related Discharges
In the upper North Fork and Granite Creek areas, there is a 150-year legacy of hardrock mining. At several sites, mine wastes have contaminated surface waters. In the past this has resulted in documented fish kills, and is believed to be associated with sub-lethal stress in fish as well. Efforts to clean up these sites should be given high priority.
D3: Bank protection/stabilization
In areas where chronic bank erosion problems exist, efforts to re-form banks to resist erosion and enhance in-stream habitat may be warranted. These efforts may include sloping back cut banks, installing rock barbs to redirect flows from banks to scouring pools, bioengineering of eroding surfaces, root wad and juniper revetments and other forms of bank protection. Such alternatives to traditional rock rip-rap are valuable options to address landowner needs in a manner that simultaneously improves fish habitat.

Addresses subbasin plan priorities

This program will address questions being raised by NOAA as well as addressing priorities A,C,D,E,F,H

2002-034-00 - Wheeler Co Riparian Buffers (Expense) Wheeler County Soil & Watershed C

Description: This project will implement a riparian buffer program using cost share funding from USDA, State of Oregon and private landowners.

Consistency with subbasin plans

The project is consistent with and implements Restoration Strategies: (E) - Riparian Habitat Improvements, (G) - Protecting Existing High Quality Habitat and (I) - Educaton & Outreach (Management Plan [MP] p263,270 & 278). These strategies directly relate to the Objectives for Summer steelhead (MP p238)and Redband trout (MP p240).
The project incorporates Habitat Objectives that address Limiting Factors (MP p242-243). The limiting factors that the project addresses include: Habitat Diversity/Key Habitat, Sediment Load and Temperature. The John Day Subbasin Plan links Restoration Strategies and Habitat Objectives (MP p245, Table 69) These restoration strategies, listed above, are important functions of the project that will address the limiting factors of: HABITAT DIVERSITY/KEY HABITAT by maintaining riparian management objectives, providing adequate habitat components necessary for focal species, increasing role and abundance of wood and large organic debris in the streambeds, increasing pool habitat, maintaining and improving quality and quantity of spawning grounds, restoring channel and floodplain connectivity; SEDIMENT LOAD by minimizing unnatural rates of erosion from upland and adjacent areas, trapping sediment on the floodplain as appropriate, bringing the stream channel in balance with the water and sediment as supplied by the watershed; and TEMPERATURE by moderating extreme stream temperatures through improvement of width-to-depth stream ratio, increased shade and floodplain connectivity.

Addresses subbasin plan priorities

The goals of the Riparian Buffer Specialist position are to provide CREP outreach, education and assistance to landowners interested in creating riparian area buffers. By incorporating riparian stream buffers the project accomplishes priority restoration strategies under the John Day Subbasin Plan (MP p248) including: Riparian Habitat Improvement, Protection of Existing Habitat and Education and Outreach. The Restoration Strategies were ranked (MP p249, table 71) out of the ten listed as priority restoration strategies, four that the project directly addresses were ranked #1, # 4 and #8 (1 being high).
In the John Day Subbasin Plan, the priorities of the various restoration strategies are mapped by fourth field HUCs for the basin. In the project area, Strategy E - Riparian Habitat Improvements ranked "high" with one fourth-field HUC as "very high" (266); Strategy G - Protecting Existing High Quality Habitat Areas, one is ranked "very high", five are "high" and two are "medium" (p272). Strategy I - Education & Outreach ranks "medium" (p280).
Lower Mainstem & Middle John Day Priority Rankings (MP p249, table 70) list four major tributaries in the project area as priority habitat: Bridge Creek (overall highest); Butte Creek (second); Service Creek (fourth); and Kahler Creek (tied for fourth). These priority streams rank Riparian Habitat Improvements, Protecting Existing Habitat as high or very high. Education and Outreach is also consistency listed but ranked as moderate.

2002-035-00 - Gilliam Co Riparian Buffers (Expense) Gilliam County Road Department

Description: Plan and implement riparian buffer program using USDA, Oregon and private landowner costshare

Consistency with subbasin plans

The Gilliam County Buffer Program is consistant with Biological Objectives and Priortized Strategies (section 5.2) of the John Day Subbasin plan. Habitat conditions that will benefit one species will likely benefit any of the species within our area and may allow another focal species to use that specific habitat area. An example is, decreasing high water temerature for stealhead could also benefit bull trout.

Addresses subbasin plan priorities

Prioritized strategies are presented in section 5.2.1 of the subbasin plan. Long-term goals are to achieve site potential within 50 years and meet measurable objectives at 10 year intervals. Overall watershed health is the key biological objective, recognizing that many of the biological variables interact with each other in ways that have significant impacts on the subbasin.

1994-044-00 - Sagebrush Flat Wl Mitigation (Expense) WDFW - Olympia

Description: Protect, and enhance shrub-steppe habitat necessary to maintian and expand viable populations of pygmy rabbits, sage grouse, sharp-tailed grouse and other shrub-steppe obligate species.

Consistency with subbasin plans

This project is consistant with the Guiding Principles (pp. 17-22), Environmental Conditions (pp.76-95) and implements strategies to help achieve the Biological and Habitat Objectives described in the Subbasin Recovery Goals, Objectives and Strategies (pp. 193-205) of the Upper-Middle Mainstem Subbasin Plan. Four of the UMM's focal species for shrub-steppe occur on the Sagebrush Flat Wildlife Area: pygmy rabbit, sage thrasher, sage grouse, and sharp-tailed grouse (pp.211-213). The goal of the Sagebrush Flat Wildlife Area Project is to protect, and enhance shrub-steppe and other habitats necessary to maintian and expand viable populations of pygmy rabbits, sage grouse, sharp-tailed grouse and other shrub-steppe obligate species. The project is dominated by shrub-steppe habitat which is identified in the UMM as a focal habitat type (pp.84-85). Also identified in the UMM as a focal habitat type is riparian wetland type (pp 84-85). While this habitat type comprises a small percentage of the total acreage of the Sagebrush Flat Wildlife Area, it is critically important to a number of species and in particular sharp-tailed grouse. Other focal species occuring on the Wildlife Area include the willow flycatcher and red-winged blackbird.

Addresses subbasin plan priorities

This project accomplishes priority work wihin the subbasin by addressing the limiting factors and recommended future conditions as described in section 4.2, Environmental Conditions (pp 89-95) of the UMM. The UMM also identifies the landscapes containing and surrounding the Wildlife Area as Class 1 and Class 2 Conservation Priorities (pp. 89-90). In addition to the UMM, the project is supported by state and county plans including the: Washington State Recovery Plan for the Pygmy Rabbit; Washington State Management Plan for the Sage Grouse; Washington State Recovery Plan for the Sage Grouse; Washington State Management Plan for the Sharp-tailed Grouse; Management of Washington's Priority Habitats: Riparian and the Douglas County Habitat Conservation Plan.

1994-069-00 - Spawning Habitat Model - Snake (Expense) US DOE

Description: Develop a production potential estimate for fall chinook salmon in the Hanford Reach, and evaluate whether the Hanford Reach functions as a healthy alluvial river.

Consistency with subbasin plans

While there is a general strategy in the Lower Columbia River Mainstem Subbasin Plan to rebuild and maintain healthy fall Chinook populations including ESA population of Snake River fall Chinook salmon, specific strategies, objectives, or priority action items for the Hanford Reach are excluded from the Lower Columbia River Mainstem Subbasin Plan. Consequently, there does not exist a management plan that describes critical uncertainties and research needs upon which to prioritize this project. Continued implementation of this project will provide information that can be used to rectify this serious deficiency in the sub-basin plan.
The proposed project is consistent with the Council's 2000 Fish and Wildlife Program and the 2003 Mainstem Amendments to the Program. The Program (as amended) recommends protection and restoration of mainstem habitat conditions (e.g., as those found in the Hanford Reach) be implemented to protect and restore healthy alluvial river reaches (p. 25 of the Program, and p. 11-12 of the Amendment). Specifically, research should identify, protect, enhance, and restore the functions of alluvial rivers like those found in the Hanford Reach. This continues to be the primary goal of this project.

Addresses subbasin plan priorities

In conclusion, continuation of this project is a high priority consistent with the recommendations set forth in the Councils Fish and Wildlife Program (as amended) and also within the Action Agencies ESA commitments documented in the 2005-2007 Implementation Plan.

1994-018-07 - Habitat For Fall Chinook, Stee (Garfield sediment reduction Pomeroy Soil & Water

Description: Coordinate, implement, and monitor conservation practices for the reduction of sediment from the uplands of Garfield County and enhance habitat in the riparian zones of the streams to improve water quality for Steelhead and Chinook Salmon.

Consistency with subbasin plans

The project is consistent with and implements Aquatic Strategies for the Lower Snake Subbasin Plan (Management Plan pages 115 thru 127)and the Tucannon Subbasin Plan (Management Plan page 136
7.3 Aquatic Strategies
The following two categories of aquatic strategies were developed for the Lower Snake Subbasin:
· strategies to address imminent threats throughout the subbasin,
· strategies for priority restoration/protection areas
All are considered equally important for implementation. Activities such as riparian planting and upland infiltration enhancement are not considered active restoration actions. Passive restoration takes advantage of natural processes and out-of-stream activities to achieve instream habitat enhancement. Examples includes planting riparian vegetation, implementing conservation easements, increasing upland infiltration (e.g. direct seed/no-till), use of sediment basins, developing alternative livestock watering facilities, and water conservation. Note that this is the definition of passive restoration for the terms of this subbasin plan, and may not be consistent with the typical conception of what constitutes passive restoration.
Although passive restoration is a valuable approach in many cases, it will take longer to show measurable results. These results may be achieved only in part during the 10 to 15 year time-frame of this plan.
The following three categories of aquatic strategies were developed for the Tucannon Subbasin:
· strategies to address imminent threats throughout the subbasin
· strategies for priority restoration areas
· strategies for priority protection areas.
The explanation of these strategies is very similar to the one for the Lower Snake.

Addresses subbasin plan priorities

The prioritization of projects is show in the following tables of the two separate subbasin plans and will be utilized as stated.
Section 7.3.2 Priority Restoration/Protection Area Strategies for the Lower Snake Subbasin
Strategies developed for the priority restoration/protection geographic areas in the Lower Snake are provided in Table 7-4.(pg 115 thru 127) This table lists the working hypotheses, associated biological objectives, and associated strategies for each geographic area.

Section 7.3.3 Priority Protection Areas for the Tucannon Subbasin are shown (Tucannon Subasin plan pg. 155-158

2002-006-00 - Bull Trout Movement:Tucannon (Expense) USFWS

Description: Determine spatial and temporal distribution of migratory bull trout in the Tucannon River and Lower Snake River. Estimate “take” and identify passage limitations in the Snake River resulting from the hydropower system.

Consistency with subbasin plans

This project helps meet meet Reasonable and Prudent Measures, and Conservation Recommendations associated with the Lower Snake River dams in the 2000 FCRPS Biological Opinion, and to increase understanding of bull trout movements within the Tucannon River drainage. Page 5 of the Lower Snake Mainstream Subbasin Plan states, "... the Council, BPA, NOAA-Fisheries and USFWS will use adopted subbasin plans to help meet requirements under the 2000 Federal Columbia River System Biological Opinion (BiOp) at the subbasin and/or province level."

There are no specific strategies or objectives related to BiOp actions in the Lower Snake or Tucannon Subbasin Plans.

Addresses subbasin plan priorities

Consistency: There are no specific strategies or objectives related to BiOp actions in the Lower Snake or Tucannon Subbasin Plans.

Priorities: There are no provisions that prioritize BiOp actions in the Lower Snake or Tucannon Subbasin Plans.

Page 5 of the Lower Snake Mainstream Subbasin Plan states, "... the Council, BPA, NOAA-Fisheries and USFWS will use adopted subbasin plans to help meet requirements under the 2000 Federal Columbia River System Biological Opinion (BiOp) at the subbasin and/or province level."

2002-006-00 - Bull Trout Movement:Tucannon (Expense) USFWS

Description: Determine spatial and temporal distribution of migratory bull trout in the Tucannon River and Lower Snake River. Estimate “take” and identify passage limitations in the Snake River resulting from the hydropower system.

Consistency with subbasin plans

WDFW response: This project is not specifically mentioned in subbasin plans.
This project helps meet Reasonable and Prudent Measures, and Conservation Recommendations associated with the Lower Snake River dams in the 2000 FCRPS Biological Opinion, and to increase understanding of bull trout movements within the Tucannon River basin. Page 5 of the Lower Snake River mainstem Subbasin Plan states, "... the Council, BPA, NOAA-Fisheries and USFWS will use adopted subbasin plans to help meet requirement under the 2000 Federal Columbia River System Biological Opinion (BiOp) at the subbasin and/or province level."

There are no specific strategies or objectives related BiOp actions in the Lower Snake or Tucannon Subbasin plans.

On page 159, line 27-29, the Tucannon Subbasin Plan states, "...project proponents can use the draft Bull Trout Recovery Plan to demonstrate that their project is consistent with the draft plan and will benefit bull trout, which will provide greater support for their projects." Chapter 24 of the draft Bull Trout Recovery Plan identifies recovery goals and objectives. On page 59 of that plan, lines 5-6, it specifically identifies "...connectivity (as represented by the migratory life history form and functional habitat..." as on of four elements to consider when evaluating the viability of a bull trout population. The first objective of our bull trout radio telemetry study is to "determine the spatial distribution, migration timing, and movements of adult migratory bull trout in the Tucannon and Snake rivers."

Addresses subbasin plan priorities

WDFW response:
There are no specific strategies or objectives related to the BiOp actions in the Lower Snake or Tucannon Subbasin plans.

There are no provisions that prioritize BiOp actions in the Lower Snake or Tucannon subbasin plans.

Page 5 of the Lower Snake Mainstem Subbasin Plan state, "...the Council, BPA, NOAA-Fisheries and USFWS will use adopted subbasin plans to help meet requirements under the 2000 Federal Columbia River System Biological Opinion (BiOp) at the subbasin and/or province level."

Page 64, line 21-36 of the draft Bull Trout Recovery Plan (USFWS 2004)states:
"A primary research need is a complete understanding of the role that the mainstem Snake River should play in recovery of bull trout. Fluvial bull trout probably comprised a strong component of local populations throughout the Snake River Washington Recovery Unit, including areas in which bull trout are believed to be extirpated or persist in core populations with very low densities..."

Our radio telemetry project specially addresses the above mentioned "primary research need" by documenting the spatial distribution, migration timing, and movements of migratory bull trout in the Tucannon and Snake rivers.

Furthermore, priority for this project is specifically identified in at least two locations within the Actions Needed section of Chapter 24 of the draft Bull Trout Recovery Plan. On page 80, lines 31-33 and page 81, lines 1-4, item 1.4.3 (Identify study needs related to habitats for foraging, migrating, and overwintering in Snake River reservoirs).
"Determine research needs associated with the operation of Lower Monumental Dam, Little Goose, and Lower Granite dams and with movement of bull trout from tributary streams into, and through, associated reservoirs. Conduct research on identified topics and then implement feasible remedies."

On page 90, lines 6-18, subsection 5.2.2, this exact project is specifically recommended.

2002-027-00 - Hydrodynamics & Water Quality (Expense) US DOE

Description: The objective of this work is to apply state-of-the-art computer models that can describe the complex hydrodynamic and water quality environment in the lower Snake River, and to relate that information to migrating salmon.

Consistency with subbasin plans

Lower Snake Mainstem Subbasin, May 2004 Version, Section 3.7.5 Mainstem Snake River, pg 51-52 "The assessment term considered this area [mainstem] for further assessment work. It was decided that there were not enough resources to do a credible job on the tributaries and to also take on the task of re-summarizing the extensive empirical data that has been gathered on the mainstem. … Given that the mainstem amendment has a vision, set of biological objectives, and strategies, it is recommended by the assessment team that the management plan development group defer to the Mainstem Amendment. The general guidance given in the mainstem amendment should serve as the basis and support for projects, proposals, and funding based in the mainstem." The mainstem amendment was posted to the federal register on August 6, 2003 (volume 68, number 151, page 46667-8) and a complete listing can be found at http://www.nwcouncil.org/fw/program/mainstem, Council Document 2003-11.

We feel that this project addresses the following objectives and strategies for the mainstem (pg 6): 1) system water management, and 2) reservoir elevations, operational requirements and habitat conditions to protect resident fish and wildlife, 3) water quality conditions, and 4) research, monitoring, and evaluation.

Addresses subbasin plan priorities

The Lower Snake Mainstem Subbasin plan does not discuss specific mainstem priorities, but instead defers to the Mainstem Amendment. The mainstem amendment lists numerous recommendations and then groups these recommendations into broad categories. In the previous Lower Snake Subbasin Summary, August 2001, Fish and Wildlife Needs, Fish, Reservoirs, pg 161 the following need was brought forth "Determine the relation between flow and water temperature in the lower Snake River reservoirs and passage survival of juvenile anadromous salmonid smolts. These investigations should address the effects of flow augmentation and spill." We believe the spirit of this priority is also voiced in several of the specific recommendations presented in http://www.nwcouncil.org/library/recommend/mainstem/. Since only non-specific guidance for the mainstem in provided in the (draft) 2004 Subbasin Summary, specific recommendations cannot be identified. We do feel, however, that this project is still addressing critical Lower Snake Subbasin priorities and needs, and that the non-specific guidance for the Lower Snake Subbasin mainstem is being met through this project.

1994-018-06 - Tucannon Stream And Riparian R (Expense) Columbia Conservation District

Description: Restore, protect, & enhance fish habitat, riparian, & upland areas to address FWP measure 7.6, habitat goal, policies, & objectives.

Consistency with subbasin plans

Project proposal is consistent with and implements Plan Section 7.2 Aquatic Working Hypotheses, Biological Objectives and 7.3 Strategies addressing the three management categories identified in the Plan, Priority Restoration, Priority Protection and Imminent Threats as referenced on Management Plan pgs. ES 6-7, 7.3 Aquatic Strategies pg. 136, 7.3.1 Imminent Threats pgs. 136-138, 7.3.2 Priority Restoration Strategies, Working Hypotheses and Biological Objectives Table 7-4 pgs. 139-154, 7.3.3 Priority Protection Areas pgs. 155-158 and 7.3.5 Aquatic Special Topic-Instream Flow pgs. 159-160.
In numerous cases implementing a given Strategy addresses various Working Hypotheses, Biological Objectives and crossover between the three categories of restoration, protection and imminent threats: Objective PM 1.1-Reduce Embeddedness, Strategy PM 1.1.1 pg. 140; Objective PM 4.1-Continue Riparian Recovery, Strategy 4.1.1 pg. 144; Objective PM 5.1-Decrease Temperatures, Strategy PM 5.1.1 pg. 146; Objective MT3.1-Riparian Recovery, Strategy (see strategies for Objective PM 4.1 pg. 149). This approach to linkages and consistency occurs though out the process. Variances between Strategies, Objectives and Geographic Areas where appropriate to address different resource needs as identified by technical and citizen review and input.
The Snake River Salmon Recovery Planning process has adopted implementation Strategies as identified in the Subbasin Plan in their entirety and then expanded upon them to achieve Viable Salmonid Population (VSP). The Salmon Recovery Plan will be delivered to the Washington State Governor's Salmon Recovery Office in June 2005, then forwarded onto National Marine Fisheries Service (NMFS) for inclusion in their Snake River ESU Recovery Plan. NMFS has identified and emphasized the importance of continued recovery efforts across their Major Spawning Aggregate (MSA) and Minor Spawning Aggregate (mSA) to ensure Spatial Structure (Population Dispersal and Abundance).

Addresses subbasin plan priorities

Project proposal accomplishes priority Strategy implementation utilizing Plan Prioritization Framework developed from EDT analysis and empirical knowledge. Implementation focuses on Priority Species, Geographical Areas, Biological Objectives and Strategies. The Snake River Recovery Planning process has adopted the Subbasin Plan Biological Objectives and Strategies in their planning process, expanding on them to meet National Marine Fisheries Service (NMFS) Viable Salmonid Population (VSP) criteria. NMFS has also provided Major Spawning Aggregate (MSA) and Minor Spawning Aggregate (mSA) designations for the Washington component of Snake River ESU Recovery Planning. These NMFS designations match the Priority Restoration and Protection Areas as identified in the Subbasin Plan while identifying the importance in continuing with recovery work efforts in both MSA's and mSA's to ensure Spatial Structure (Population Dispersal and Abundance). Planning documents identify numerous instream habitat diversity Strategies as priority actions for recovery efforts, however the District acknowledges that current funding authorization doesn't allow for implementation until the next provincial review cycle.

2000-019-00 - Tucannon River Spring Chinook (Expense) WDFW - Olympia

Description: Complete modifications to Lyons Ferry Hatchery to conduct spring chinook captive broodstock program. Rear and spawn broodstock, raise their progeny and release 150,000 smolts into the Tucannon River to rebuild spring chinook run and prevent extinction.

Consistency with subbasin plans

This Captive Brood Program is listed in the Tucannon Subbasin Summary under 6.2.1 Aquatic Species Protection, Plans, and Permits (pg. 117) and 7.3.8 Additional Fish Enhancement Efforts (pg. 166) in order to reduce the risk of extinction of the Tucannon River Spring Chinook population. It is also listed in greater detail in Appendix B (Tucannon Subbasin Aquatic Assessment) under section 4.4.4.2 Population Characteristics Consistent with VSP (pg. 42) and SaSI Status (pg. 46) and Hatchery Assessment (pg. 50). It is also a priority in Appendix M. Identified RM&E Opportunities in the Tucannon Subbasin (Table 1).

Addresses subbasin plan priorities

One of the Guiding Principles of the Subbasin Management Plan is to enhance species populations to a healthy level. This captive brood program enables a short term boost to the Tucannon River spring chinook population to increase population numbers while habitat improvement is being conducted to prevent the extinction of this ESA listed stock.

1983-435-00 - Umatilla Hatchery O&M - Ctuir (Expense) Confederated Tribes Of The Umatilla

Description: Acclimate juvenile salmon and steelhead prior to release in the Umatilla Basin. Collect, hold, and spawn steelhead, coho, and chinook salmon and provide eggs to ODFW and other hatcheries for incubation, rearing, and later release in the Umatilla Basin.

Consistency with subbasin plans

This project is directly related to four artificial production strategies recommended in the Umatilla/Willow Subbasin Plan. Strategies 1 - 4 (section 5.3.2.5, page 5-44) identify several actions specific to this project. These include the acclimation and release of juvenile salmon and steelhead and the out planting of fall Chinook adults to supplement natural spawning.

Acclimating juvenile spring Chinook directly relates to Strategy 1: Continue to supplement the recently reintroduced spring Chinook population with a hatchery program utilizing Carson stock brood returning to the Umatilla River to provide for natural production and harvest (page 5-44).

Acclimating fall Chinook relates to Strategy 2: Continue to supplement the recently reintroduced fall Chinook population with a hatchery program utilizing upriver bright brood returning to the Umatilla River and Priest Rapids Hatchery to provide for natural production and harvest (page 5-44).

Providing temporary holding for up to 1,000 fall Chinook adults for out planting directly relates to Action 2.3; Strategy 2 (page 5-44).

Acclimating coho salmon relates to Strategy 3: Continue to supplement the recently reintroduced coho population with a hatchery program utilizing early run stock brood from Bonneville Hatchery to provide for natural production and harvest (page 5-44).

Acclimating summer steelhead salmon relates to Strategy 4: Continue to supplement the indigenous summer steelhead population with a hatchery program utilizing native stock brood returning to the Umatilla River to enhance natural production and provide harvest opportunity (page 5-44).

Holding and spawning adult spring Chinook, fall Chinook, coho, and summer steelhead are also directly related to Strategies 1-4. Adults are collected from approved broodstock sources, eggs are taken and transferred to Umatilla and other hatcheries for incubation and rearing, and the progeny are later transferred back to project facilities for acclimation and release.

Addresses subbasin plan priorities

The Draft Umatilla/Willow Subbasin Plan identifies the need to enhance the artificial production program in the subbasin (section 5.3.1, Aquatic Approach and Methods, page 5-4, and 5.3.2, Aquatic Objectives and Strategies, Hatchery Program; page 5-5). This project is identified in the Subbasin Plan as an integral part of the Umatilla artificial production program (section 5.3.2.5, Artificial Production; page 5-43).

1983-435-00 - Umatilla Hatchery O&M - Ctuir (Expense) Confederated Tribes Of The Umatilla

Description: Acclimate juvenile salmon and steelhead prior to release in the Umatilla Basin. Collect, hold, and spawn steelhead, coho, and chinook salmon and provide eggs to ODFW and other hatcheries for incubation, rearing, and later release in the Umatilla Basin.

Consistency with subbasin plans

The U.S. Fish & Wildlife Service is a "subcontractor" to the CTUIR located outside of the subbasin. This section is best completed by the principal project sponsor (CTUIR).

Addresses subbasin plan priorities

The U.S. Fish & Wildlife Service is a "subcontractor" to the CTUIR located outside of the subbasin. This section is best completed by the principal project sponsor (CTUIR).

1983-436-00 - Umatilla Passage O&M (Expense) Westland Irrigation

Description: Provide Operations and Maintenance services of fish passage and satellite facilities in the Umatilla Basin.

Consistency with subbasin plans

The project is consistent with and supports Aquatic Biological Objectives and Strategies 5.3.2 Natural Production objectives 3 and 5 and Flow and Passage objective 12 (Management Plan page 5-5). In addition, the project is consistent with numeric population goals for returning adults of steelhead and salmon relative to the maintenance of Phase I and II flow enhancement projects as the project workers routinely perform tasks associated with the operation of Phases I and II (Management Plan page 5-6).

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan as identified in the Management Plan 5.3.2.1 Natural Production Objectives and Strategies, priority 1: Maintenance of Phases I and II of the Umatilla Basin Project, and priority 14: Maintain Passage Efficiency Through Ongoing O & M Activities (Management Plan pages 5-8 and 5-10). In addition, the project supports an integral part of the artificial production program by providing O & M at the juvenile acclimation and adult holding and spawning satellite facilities (Management Plan page 5-43).

1987-100-01 - Umatilla Anad Fish Hab - Ctuir (Expense) Confederated Tribes Of The Umatilla

Description: Increase natural production potential of existing summer steelhead and re-introduce chinook salmon and coho salmon in the Umatilla River Basin.

Consistency with subbasin plans

Project conforms with the following sections of the Umatilla/Willow Subbasin Plan:
1. Section 5.3.2 Aquatic Objectives and Strategies - Qualitative management objectives 3, 4, & 5.
   Flow and Passage objective 12.
   Fisheries objective 13.
   Collaboration & Communication objectives 14, 15, & 16.
2. Section 5.4.2 Wildlife Objectives and Strategies:
   Biological Objective 2 - Strategies 1, 2, 3, 4, and 5.
   Biological Objective 3 - Strategies 1, 2, 3, 4, and 5.
3. Section 5.5 Consistency with CWA and ESA Requirements.
4. Section 5.6 Research Monitoring and Evaluation:
   Tier 3 monitoring and Reach Scale Sampling carried out

Addresses subbasin plan priorities

Project goals focus on improvements for the Meacham and Birch Creek tributaries to the Umatilla River. The Subbasin Plan identifies Meacham Creek as the top priority tributary to the Umatilla River for the threatened species of summer steelhead, spring chinook salmon, coho salmon, and bull trout as well as an important tributary for fall chinook salmon. The Subbasin Plan estimates that Birch Creek supports 20 percent of the summer steelhead population in the Umatilla watershed and supports a substantive resident redband trout population. Project goals reinforce the Subbasin Plans recommendations for increased cooperation and collaboration among environmental protection entities.

1987-100-02 - Umatilla Anad. Fish Hab - Odfw (Expense) ODFW

Description: Protect and enhance coldwater fish habitat on private lands in the Umatilla River basin in a manner that achieves self-sustaining salmonid populations and their associated habitat by utilizing natural stream functions to the fullest extent.

Consistency with subbasin plans

Program activities are consistent with, and implement Management Strategies 5, 6, 7, 8, 11, 12 and 13 described in the Umatilla/Willow Subbasin Plan (Management Plan: pages 5-8 and 5-9). These Strategies relate directly to Management Objectives 1, 2, 4, 10 and 12 (Management Plan: pages 5-4 and 5-5) and are aimed at addressing limiting factors for Threatened Mid-Columbia steelhead, including: water temperature, flow, channel stability, sediment, habitat quantity, habitat diversity, and obstructions (Management Plan: pages 5-29 through 5-37).

Addresses subbasin plan priorities

The Program accomplishes priority work under the Subbasin Plan by developing and implementing projects in 8 of 18 Priority GA's identified within the prioritization framework of the Plan: i.e., upper Meacham Creek - GA # 38, Birch Creek Watershed GA #s 12, 15, 13, 14, 19, 18 & 17 (Management Plan: pages 5-29 through 5-37). All GA's are highly ranked for steelhead protection and/or restoration.

1988-022-00 - Umatilla Fish Passage Ops (Expense) Confederated Tribes Of The Umatilla

Description: Operate passage facilities, flow enhancement measures, trap facilities and hauling equipment to maximize juvenile and adult migrant survival in Umatilla and Walla Walla basins.

Consistency with subbasin plans

The project is consistent with objectives number 1,3,6,10,11,and 12 listed under the Aquatic Objectives and Strategies (section 5.3.2-pages 5.4-5.5)section of the subbasin plan. The following is a lists of project metrics related to the above identified Aquatic Objectives and Strategies Objective 1 - Collect and provide data on adult returns to Threemile Dam. Objective 3 - Haul surplus hatchery adult salmon to the Umatilla Basin to supplement natural spawning. Objective 6 -collect and transport broodstock for basin artificial production programs. Objective 10 - oversite and coordination of the Umatilla Basin Project flow enhancement effort has occurred annually to provide increased flows during critical migration periods. Objective 11 - oversite and coordination of the Umatilla Basin Project flow enhancement effort has occurred annually to provide increased flows during critical migration periods. Objective 12 - Operate and monitor passage facilities, including screen sites, juvenile bypasses, traps, and adult ladders annually to increase survival of juvenile and adult migrants.

Addresses subbasin plan priorities

Section 5.3.2.1 Natural Production Objectives and Strategies (Pages 5.7-5.10)lists 14 strategies in priority order. Project metrics address priority numbers 1,13,and 14. The project metrics also address section 5.3.2.4 Passage Problems (Pages 541-543)and the brood stock component of strategies 1-4 listed under section 5.3.2.5 Artificial Production (Pages 543-544).

1989-024-01 - Eval Um Juvenile Sal Out Migra (Expense) ODFW

Description: Determine migration patterns, evaluate health, estimate abundance and survival of outmigrating juvenile salmonids in the Umatilla River; investigate effect of environmental variables on fish migration and video-document passage at Three Mile Falls Dam.

Consistency with subbasin plans

This project is consistent with and implements Management Objectives 1, 2, 3, 5, 7, 10, 12, 14, 15 and 16 as described in the Umatilla/Willow Subbasin Plan (Management Plan: pages 5-4 thru 5-6). This is accomplished through Research, Monitoring and Evaluation (RM&E) of juvenile outmigration performance, abundance, survival, and life history characteristics of hatchery and natural salmonids in the lower Umatilla River. Program activities are consistent with and directly address RM&E Objectives 1c, 2a, 2b, 3b, 5a, 7a, 10a, 12a, 12b, 14a, 15a, 15b, and 16a as presented in the Auqatic RM&E Plan (Appendix H: pages H1 to H31). In addition, this project addresses Aquatic Management Strategies 1 and 13 (Management Plan: pages 5-8 and 5-9) through monitoring of Flow Enhancement Effectiveness and Passage Conditions in the lower river and the impacts on juvenile migrants. The effectiveness of Artificial Propagation Strategies 1, 2, 3 and 4 (Management Plan: pages 5-44 and 5-45) is also addressed through juvenile outmigrant monitoring.

Addresses subbasin plan priorities

This project accomplishes priority work through monitoring and evaluation of 10 of the 16 Management Objectives identified in the Umatilla/Willow Subbasin Plan (pages 5-4 thru 5-6). This project also estimates smolt abundance for ESA listed Mid-Columbia River summer steelhead.

The Management Objectives and Framework were not prioritized in the May 28th draft of the Umatilla/Willow Subbasin Plan. An addendum has since been completed, which includes the prioritization process, however it is awaiting review and currently unavailable.

1989-035-00 - Umatilla Hatchery O&M - Odfw (Expense) ODFW

Description: Umatilla Fish hatchery produces the majority of the fish production for the purposes of rehabiliting chinook salmonand enhancing steelhead populations in the Umatilla River.

Consistency with subbasin plans

Artificial production and fish transferred from other hatcheries provide coho, fall and spring chinook, and steelhead for the Umatilla sub-basin natural production, harvest, and recovery efforts.

Addresses subbasin plan priorities

The goals of Umatilla hatchery production and fish releases are consistent with draft Umatilla/Willow Sub-basin Plan (5.3.2.5 Artificial Production pp 411-413).

1990-005-00 - Umatilla Hatchery - M&E (Expense) ODFW

Description: Evaluate juvenile rearing, marking, tagging, adult survival, stock life history, fish health, mass marking, straying, sport fishing and catch contribution for salmon and steelhead reared in oxygen supplemented and standard raceways at Umatilla Hatchery.

Consistency with subbasin plans

The Umatilla Hatchery M&E Project is an integral part of the Umatilla Subbasin Plan. The project is consistent with management objectives 1, 3, 5, 7, 8, 9, 13, 14, 15, & 16 in the draft Umatilla/Willow Subbasin Plan (pp. 5-4 to 5-6). The project contributes to objectives in the following manner:

Objective 1: Monitor the status and trends of Chinook salmon and steelhead populations

Objective 3: Compare productivity, abundance, and life history aspects of hatchery and natural salmonids

Objective 5: Analyze hatchery reintroduction contributions to diversity and productivity of natural populations

Objective 7: Monitor smolt production, smolt to adult return and hatchery adult return goals

Objective 8: Use research and monitoring results to achieve optimal effectiveness of Umatilla hatchery programs

Objective 9: Monitor for negative impacts to natural fish populations

Objective 13: Evaluating contribution to fisheries by performing statistical creel survey and through CWT recovery analyses

Objective 14: Planning, coordinating and performing RM&E activities

Objective 15: Using local and regional RM&E protocols to exchange information

Objective 16: Performing collaborative assessments, surveys, tagging, data analysis and results dissemination

Included in the Umatilla Subbasin Plan was a comprehensive research, monitoring, and evaluation plan for Umatilla River summer steelhead and spring Chinook salmon developed jointly by ODFW and CTUIR (Appendix H). The 2005 scope of work for the Umatilla Hatchery M&E Project was structured after this plan and included all portions of the RM&E plan currently implemented and funded. We are currently prioritizing ongoing and new objectives in the RM&E plan and expect the FY2006 statement of work to continue to include all ongoing M&E activities in the plan. The Umatilla Hatchery M&E Project will continue to be guided by the RM&E plan in the future as new objectives are approved and funded.

Addresses subbasin plan priorities

There is no specific priority framework for management within the draft Umatilla/Willow Subbasin Plan currently available. The plan is based on geographic areas, and the Hatchery M&E project covers many of these geographic areas. The Umatilla Hatchery program is the foundation for spring and fall Chinook reintroduction and summer steelhead supplementation efforts in the Umatilla Subbasin. The Hatchery M&E Project is a critical component of the hatchery program used to monitor its performance, success, and guide future management activities through the adaptive management process.

1990-005-01 - Umatilla Basin Nat Prod M&E (Expense) Confederated Tribes Of The Umatilla

Description: Monitor and evaluate natural spawning, rearing, migration, survival, life histories, age and growth characteristics, and genetic characteristics of adult salmon and steelhead and their natural progeny in the Umatilla River Basins.

Consistency with subbasin plans

The Umatilla Subbasin Plan outlines a number of management actions that will occur in priority tributaries based on the limiting factors analysis derived from the Umatilla Subbasin EDT model. These various habitat actions will occur in concert with a variety of harvest and hatchery actions, and against the back-drop of natural variability in the system. The Umatilla Subbasin Plan states clearly that monitoring and evaluation is the foundation of adaptive management of Umatilla fish and wildlife (pages 5-1 through 5-2). The management plan section outlines the suite of actions that will occur, and the RM&E plan identifies the technical approach to monitoring and evaluating the impacts of those actions on managed stocks. UNPMEP is a fully integrated component of those actions, and of the BPA mitigation program as a whole. The RM&E section of the Umatilla Subbasin Plan, and the more recent Comprehensive Chinook and Steelhead RM&E plan provide details on the integration with the Umatilla Subbasin Plan. Pages 5-4 through 5-6 of the Management Plan chapter of the Subbasin Plan discuss the specific RM&E objectives required to conduct adaptive management of the Umatilla ecosystem's. Pages H-96 through H-103 of the RM&E section describes connections between specific RM&E objectives, methods, and the life-history phases that are targeted; specifically abundance, productivity, life history diversity, survival, movement, harvest mortality, ecosystem and habitat status. The UNPMEP statement of work is a direct expression of the RM&E requirements described in the subbasin plan. UNPMEP work elements target core management uncertainties required to conduct adaptive management, and have been well integrated with the NPCC Fishery Program, BPA RM&E Plan, NOAA Recovery Planning, and the Umatilla Subbasin Plan. What remains is the fiscal support needed to effectively inform managers within this landscape of increasing management actions and biological complexities.

Addresses subbasin plan priorities

The Umatilla Subbasin co-management community has long recognized the importance and utility of an adaptive management approach. The co-management community meets regularly in the context of its Umatilla Management Monitoring and Evaluation Oversight Committee to transfer information between scientists and managers, and to efficiently manage fisheries resources. These activities, and the resultant success of the Umatilla program, would not be possible without sound science. UNPMEP operates within every priority habitat in the subbasin, and is responsible to tribal, county, state, and federal managers for the information it collects. Pages 5-11 through 5-38 of the Umatilla Subbasin Plan describe the priority habitat actions planned for the priority geographic areas, and describes the species and life-history phases these are hypothesized to benefit. UNPMEP is a priority project because its goals and objectives are to test the impacts of the priority management actions on focal species using sound science. The RM&E section of the plan describes the methods by which this will be accomplished. Managers have repeatedly highlighted the priority of scientific information in the development and implementation of their restoration programs, and the UNPMEP has been tailored to the specific management uncertainties that local and regional entities (including NPCC, ISRP, ISAB, and BPA) have identified. The Umatilla Subbasin represents a unique combination of major hindrances to salmonid production, and a unique combination of intensive mitigation actions that have brought the Umatilla forward as a model for collaborative salmonid restoration. UNPMEP is a priority RM&E project in the province due in part to the extensive increases in production it has documented, and the unique restoration program it continues to facilitate.

1990-092-00 - Wanaket Wildlife Area (Expense) Confederated Tribes Of The Umatilla

Description: Protect, enhance, and mitigate for wildlife habitats impacted by the McNary Hydroelectric Project. Achieve NPPC wildlife mitigation objectives in a cost effecient manner with in-kind habitats located on-site where original habitat inundation occurred.

Consistency with subbasin plans

Wanaket Wildlife Area provides existing mitigation, on-site and in-kind, for loses to wildlife habitat resulting from the construction of McNary Dam. The area is listed in the Umatilla?Willow Subbasin Plan (Draft- May 28, 2004) as an area with "high" protected status, meaning it already has management in place that limits the amount of human activity on the land (pg 4-5 and 4-6). In addition, it provides shrub-steppe habitat, a focal habitat type and provides habitat for burrowing owl and loggerhead shrike. Biological Objective 1, strategy 1 calls for administratively or legislatively protecting shrub-steppe habitat at a medium or high level (pg 5-75). Biological Objective 2 strategy 2 (pg 5-76) calls for modifying livestock grazing practices to reduce impacts on shrub-steppe vegetation and decrease the spread of noxious weeds. No livestock grazing is allowed at Wanaket Wildlife Area.

Wanaket is valuable open water and marsh habitat for migratory birds. Under the herbaceous wetland focal habitat, Biological Ojective 1, Strategy 2 (pg 5-86) calls for protecting herbaceous wetlands at high administrative level.

Addresses subbasin plan priorities

Administratively protecting shrub-steppe habitat and resting it from livestock grazing are strategy priority 1. Wanaket Wildlife Area consists of shrub-steppe and wetland habitat and already has the highest level of administrative protection and no livestock grazing. This makes it a high priority area for wildlife and wildlife habitat under the subbasin plan.

Administratively Protecting wetland habitat is also strategy priority 1.

1994-026-00 - Pacific Lamprey Population Sta (Expense) Confederated Tribes Of The Umatilla

Description: Assess status and survival limitations of Pacific lamprey in the Umatilla, Walla Walla, John Day, Tucannon, Grande Ronde basins. Implement and monitor restoration plan developed for the Umatilla River.

Consistency with subbasin plans

This project is consistent with and implements Aquatic Assessment 1.2.8 of taxa of interest (p. 1-14-18)), Focal Species Characterization and Status (3.2)of Species Designated as Threatened, Endangered or Sensitive (3.2.1.1, pgs 3-68-74), Species Designated by Columbia Plateau Tribes as Having Cultural or Religious Values (3.2.1.4, pgs. 3-85-86), Focal Species Population Data, Life History, and Distribution (3.2.3.2, pgs. 3-140-142). These elements relate to Aquatic Management Plan (Section 1.4.1, pgs 1-25-7))as follows:
1) Population and Environmental Status: Monitor the status and trends Pacific lamprey throughout the Umatilla Basin.
2) Natural Production: Maintain and enhance natural production, productivity, abundance, throughout the Umatilla Basin by understanding passage requirements.
3) Hatchery Program: Enhance natural production, productivity, abundance, life history characteristics of lamprey throughout the Umatilla Basin using supplementation.
4) Fisheries: Maintain and enhance tribal and non-tribal lamprey fisheries compatible with production, population, and conservation objectives.
5) Collaboration and Communication: Maximize effectiveness of Umatilla Subbasin RM&E projects with collaborative study planning and implementation, synthesis of results, and results dissemination.

Addresses subbasin plan priorities

Our 2006 goals match subbasin management priorities as follows:
1) Population and Environmental Status. Our study monitors the status and trends of larval and adult lamprey in the Umatilla basin. Our efforts include understanding the adult migrants, outmigrants and larval residents.
2) Natural Production: Through our outplanting efforts, we are enhancing the natural production, productivity, and abundance of lamprey throughout the Umatilla Basin.
3)Hatchery Program: Through our broodstock program, we maintain, augment, and enhance natural production, productivity, abundance, life history characteristics and genetic diversity of lamprey throughout the Umatilla Basin.
4)Flow and Passage: Our efforts to track the movement of lamprey in the Umatilla will allow us to understand more about flow requirements and passage success of Pacific lamprey. Specifically our goals are to: determine the passage success of adult Pacific lamprey at Three Mile Dam and irrigation diversions on the Umatilla River; document the rate and route of migration; and
quantitatively assess the spawning habitat selection of adult lamprey.
5)Fisheries: Our outplanting efforts enhance tribal and non-tribal lamprey fisheries compatible with production, population, and conservation objectives.
6)Collaboration and Communication: Through our involvement with the Lamprey Technical Group, and public forums, we involve a variety of stakeholders in our work. In addition, our written reports, including annual reports and publications, allow us to disseminate results.

1995-060-01 - Iskuulpa Watershed Project (Expense) Confederated Tribes Of The Umatilla

Description: Protect and enhance watershed resources to provide benefits for eight HEP Target Species and anadromous and resident salmonids.

Consistency with subbasin plans

This project is consistent with the subbasin plan, by implementing numerous strategies listed under multiple objectives. In many cases, one strategy is listed under multiple objectives. Strategies being implemented in the Iskuulpa Watershed Project include, placement of large woody debris in streams, purchase of grazing leases and rest from livestock grazing, fee title acquisition, planting native vegetation in riparian zones, and mapping focal habitats using aerial imagery and GIS. The following highlight just a few of the objectives and strategies adressed from the Umatilla/Willow Subbasin Plan (Draft - May 28, 2004).

Iskuulpa Creek is listed in the subbasin plan as an area with "high" protected status, meaning it already has management in place that limits the amount of human activity on the land (pg 4-5 and 4-6).

Aquatic Habitat
Pg 5-27 to 5-29. Priority Geographic Area: GA32, Iskuulpa Creek from Bachelor Canyon to headwaters. Species, steelhead and spring Chinook, Management strategies; place large woody debris and plant riparian zones.

Terrestrial Habitat
Pg 5-63. General Objective 1, Strategy (S)1 - Refine and field-truth data on location, size, and distribution of focal habitat types.

Pg 5-81 to 5-82. Interior Grassland, Biological Objective (BO) 1, S1 -Protect functional grassland on private lands through fee title acquisition. BO 2, S2 -modify livestock grazing.

Pg 5-90. Riparian wetlands, BO 3, S 3. Rest from livestock grazing. BO 3, S4 - Plant native vegetation.

Addresses subbasin plan priorities

Iskuulpa Creek has a high level of administrative protection, making it a high priority for fish and wildlife habitat under the subbasin plan.

Steelhead and spring Chinook are focal species. Placement of large woody debris and planting riparian zones are on the priority list.

All above examples for terrestrial habitat are listed as strategy priority 1.

2002-026-00 - Morrow County Riparian Buffers (Expense) Morrow Soil & Water Conservation D

Description: Implements ripairan buffer program using cost share provided by USDA, State of Oregon, and private landowners.

Consistency with subbasin plans

Umatilla/Willow Subbasin Plan. Riparian Wetlands. There is a very limited amount of this habitat in the subbasin, (approximately 1440 acres). It has been stated that less than 1% of the subbasin's riparian wetlands are currently classified as being in medium or high level protected status. The aim of this project is to actively increase this amount of protection. This project addresses Biological Objective 1 (objective Priority 1), Strategy 1; Biological Objective 2 (Objective Priority 1), Strategy 1-5; Biological Objective 3 (Priority 2), Strategy 1-5, pages 5-88 thru 5-90.

Eligibility for Conservation Reserve Enhancement Program (CREP)has been amended increasing landowner interest and willingness to participate in the program.

Addresses subbasin plan priorities

Umatilla/Willow Subbasin Plan. Riparian Wetlands. There is a very limited amount of this habitat in the subbasin, (approximately 1440 acres). It has been stated that less than 1% of the subbasin's riparian wetlands are currently classified as being in medium or high level protected status. The aim of this project is to actively increase this amount of protection. This project addresses Biological Objective 1 (objective Priority 1), Strategy 1; Biological Objective 2 (Objective Priority 1), Strategy 1-5; Biological Objective 3 (Priority 2), Strategy 1-5, pages 5-88 thru 5-90.

2002-030-00 - Salmonid Progeny Markers (Expense) Confederated Tribes Of The Umatilla

Description: A chemical progeny mark would be developed and tested to evaluate natural reproductive success of supplemented steelhead . The mark would be administered to female parents and would be detectable in the otolith of their progeny.

Consistency with subbasin plans

The relative reproductive success of hatchery-reared endemic steelhead and their naturally-reared cohorts is a critical uncertainty associated with strategies for the restoration, mitigation and enhancement of salmon and steelhead the Umatilla River Basin and abroad. Determining the reproductive success of hatchery fish spawning in the wild has been listed as important research need identified by ISRP, ISBA, subbasin plans, and RPAs in the draft NMFS Biological Opinion as a critical uncertainty (Subbasin Plan; section 1.4.3, page 1-29; Appendix H, Umatilla Basin RM&E Plan, Management Objective 3, Assumption 3e, 3g, 5a, M&E Objective 3e, 3g and 5a, pages H-2 and H-3). The development of the progeny mark will provide a useful and cost effective tool to determine the reproductive success of hatchery and naturally produced steelhead spawning in the wild without the need for expensive and detailed genetic pedigree analysis. Pedigree analysis is a valuable tool but requires the handling of every single adult fish at the interception point. In the case of the Umatilla River, that would mean the physical handling of thousands and thousands of adult salmon and steelhead including the non-target species given the logistics at the adult trap and thus can only be deployed on the smaller tributary scale. The progeny mark would allow sub-sampling of the adult returns and related progeny which will reduce costs and associated handling stress on target and non-target species and will need to be tested along side a pedigree type analysis (Subbasin Plan, Appendix, pages H-10, H-21 and H-77). Determining the reproductive success of hatchery fish in the wild and reducing stress to returning adult salmon and steelhead are goal consistent with the current subbasin plan and will aid in the adaptive management of the Umatilla Basin Fish Restoration Project (Subbasin Plan, Section 2.5, page 2-7 and Section 5.6 page 5-88, evaluating management strategies).

Addresses subbasin plan priorities

The management strategy of releasing hatchery salmon and steelhead into streams and rivers for the express purpose of spawning naturally has been a controversial issue in the Pacific Northwest and a critical uncertainty. The benefits and risks of hatchery fish spawning in the wild have been modeled, discussed, and theorized from a variety of perspectives and with a variety of untested assumptions. Developing a cost effective tool to evaluate reproductive success of hatchery fish spawning in the wild will provide a way to test current management strategies and assumptions used extensively in the Umatilla River Basin Restoration Program and elsewhere in the Pacific Northwest. (Subbasin Plan; section 1.4.3, page 1-29; Appendix H, Umatilla Basin RM&E Plan, Management Objective 3, Assumption 3e, 3g, 5a, M&E Objective 3e, 3g and 5a, pages H-2, H-3 H-10, H-21 and H-77; Section 2.5, page 2-7 and Section 5.6 page 5-88, evaluating management strategies).

2002-037-00 - Freshwater Mussels In River (Expense) Confederated Tribes Of The Umatilla

Description: Conduct freshwater mussel surveys to assess their status and test for geographical genetic differences among the western pearlshell mussel, Margaritifera falcata.

Consistency with subbasin plans

This project is consistent with and implements Aquatic Assessment 1.2.8 of taxa of interest (p. 1-13-14), Focal Species Characterization and Status (3.2)of Species Designated as Threatened, Endangered or Sensitive (3.2.1.1, pgs 3-68-74), Species Recognized as Rare or Significant to the Local Area (3.2.1.2, pgs. 3-76-77)Designated as Threatened, Endangered or Sensitive (3.2.1.1, pgs 3-68-74), Species Designated by Columbia Plateau Tribes as Having Cultural or Religious Values (3.2.1.4, pgs. 3-85-86), Focal Species Population Data, Life History, and Distribution (3.2.3.2, pgs. 3-140-142). These elements relate to Aquatic Management Plan (Section 1.4.1, pgs 1-25-7))as follows:
1) Population and Environmental Status: Monitor the status and trends of freshwater mussels in the Umatilla basin.
2) Natural Production: Maintain and enhance natural production, productivity, abundance, throughout the Umatilla Basin by understanding life history requirements.
3) Collaboration and Communication: Maximize effectiveness of Umatilla Subbasin RM&E projects with collaborative study planning and implementation, synthesis of results, and results dissemination

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan as freshwater mussels are listed as a taxa of interest under the Aquatic Assessement of Focal Species and Rationale (Section 1.2.8, pages 1-13 – 1-18) because of their cultural and ecological importance in the subbasin. Our accomplishments between 2003-2005, and our goals for 2006 are consistent with the subbasin priorities as we continue to monitor the status and trends of mussel populations and obtain vital information on the production, productivity, abundance and life history and genetics of these organisms.

1996-011-00 - Juv Screens & Traps Wallawalla (Expense) Confederated Tribes Of The Umatilla

Description: Provide safe passage for salmonid fish at several irrigation diversion dams and associated irrigation canals within the Walla Walla River Basin.

Consistency with subbasin plans

In the May 2004 version of the Walla Walla Subbasin Plan, the Hofer and Mill Creek (Gose Street) adult fish passage obstructions are listed under section 7.3.1 “Management Plan - Imminent Threats and Passage Barriers” (pages 147-150). The Old Lowden and Bergevin-Williams ditch screening problems are listed on page 148 under the same section. These are located in the mainstem Walla Walla River area described as “sites of significant water withdrawals along the reach without having screening or screening believed to be ineffective”. The management plan and project selection methodology state clearly that imminent threats should be addressed wherever anadromy occurs, beginning with priority geographic areas. The listed passage facilities all deal with passage concerns that pass fish into or through priority geographic areas as suggested by the Subbasin Planning Team.

Addresses subbasin plan priorities

In the Final Addendum of the Walla Walla Subbasin Plan (Nov 2004), under Section 1.3 “Strategic Project Prioritization Framework” (pages 9-10), adult passage obstructions and inadequately screened water diversions are termed as top priority imminent threats to acquatic focal species in the Walla Walla Basin. The addendum references imminent threat projects that are listed in the May 2004 version of the Subbasin Plan. Among the priority projects that are listed in section 7.3.1 “ Imminent Threats and Passage Barriers” in the May 2004 Subbasin Plan are the project sites that are included in this proposal. The plan further emphasizes the priority of improving adult passage at Hofer and Gose Street due to the extremely low location in which they occur in the basin (page 150). The impacts from impeded obstruction at these locations is cited as affecting fish production in the entirety of both sub-watersheds. These passage issues deal with systems that pass fish to or through priority geographic areas as identified by the Walla Walla Subbasin EDT model. Imminent threats associated with priority geographic areas are described as the highest priority projects in the Walla Walla Subbasin Plan.

1996-046-01 - Walla Walla River Basin Fish H (Expense) Confederated Tribes Of The Umatilla

Description: Protect and restore habitat critical to the recovery of weak or reintroduced populations of salmonid fish in the Walla Walla Basin thereby promoting natural ecological function and improved water quality and quantity.

Consistency with subbasin plans

The Acquatic portion of the Walla Walla Subbasin Plan is essentially a "habitat plan". Therefore virtually all of the acquatic section of the subbasin plan addresses at some level information consistent with the direction and goals of this habitat project. Following is a list of areas within the document that specifically identify priority river/stream reaches, limiting factors and restoration strategies that are consistent with the proposed and past actions of this project. This list is, however, by no means an exhaustive source of information that will be referenced by the project to determine project direction for the above mentioned reasons.

Page 45, Limiting Habitat Attributes for each Watershed;
Page 48, Table 3-4, Restoration Potential for Chinook etc.
Pages 59 and 60, Restoration Priority Geographic Areas
Page 62, Priority Areas for Protection from EDT Analysis
Page 71, Acquatic Species of Interest
Page 96, Impacted Life Stages
Page 160, Acquatic Working Hypotheses and Biological Objectives
Page 149, Table 7-4, Salmonid Fish Passage Obstructions, etc.
Page 168-171, Priority Protection Areas

Addresses subbasin plan priorities

Projects are prioritized and selected by referring to the Walla Walla Subbasin Plan. Further consideration is given to project size (large projects provide greater restoration potential), landowner interest and cooperation, number of species present, location relative to other restoration efforts, access, cost-share, and anticipated long-term benefit to target species. Whenever possible, passive riparian restoration approaches are taken to minimize ground/stream disturbance and cost. Where more extensive engineering is needed to meet limiting factors, projects are designed by the project leader biologist with assistance from the CTUIR hydrologist and other professionals as necessary.

Habitat projects funded within the scope of this project are implemented on private lands within the Walla Walla River Basin. Consequently, project success hinges on volunteer participation of private landowners. All CTUIR habitat projects are protected under long-term (minimum 15 years) or perpetual Conservation Easements. Landowner easements are designed to protect the resource, the landowner, the investments of CTUIR, and the project's funding sources (primarily Bonneville Power Administration).

Several specific portions of the Walla Walla River Subbasin Plan that will provide key guidance to the project in out-years are as follows:

Page 45, Limiting Habitat Attributes for each Watershed;
Page 48, Table 3-4, Restoration Potential for Chinook etc.
Pages 59 and 60, Restoration Priority Geographic Areas
Page 62, Priority Areas for Protection from EDT Analysis
Page 71, Acquatic Species of Interest
Page 96, Impacted Life Stages
Page 160, Acquatic Working Hypotheses and Biological Objectives
Page 149, Table 7-4, Salmonid Fish Passage Obstructions, etc.
Page 168-171, Priority Protection Areas

1998-020-00 - Walla Walla R. Habitat Assess. (Expense) WDFW - Olympia

Description: Determine fish passage, rearing, spawning conditions, and limiting factors for steelhead and for potential reintroduction of chinook salmon, and assess steelhead and bull trout distribution, abundance, and genetic composition in the Walla Walla watershed

Consistency with subbasin plans

This project is consistent with the subbasin plan for the Walla Walla, although the subbasin plan mentions it was to focus RM&E efforts but not provide full RM&E details(Sec 7.6, pg 205). The plan does specify the need to focus RM&E efforts on critical data needs to fill EDT data gaps and establish baseline habitat conditions, for monitoring Viable Salmonid Pop.(VSP) attributes for recovery, for implementation and effectiveness monitoring (7.6.1, pg 206). Appexdices M and N of the plan emphasize the need to fill EDT gaps and establish baseline habitat conditions (Sec 7.6.1, pg 206, and Sec. 1.1,pg 1 of N). Appendix M, sec 1.1, pg 2 number 8 (and Appendix N, pg 1)indicates monitoring must address critical uncertainties such as adult abundance and other metrics. Verifying EDT habitat attributes was emphasized as a data need (Sec. 7.6.1, pg 206, & Appendix M, sec 1.1, pg 1. Section 7.6.1, pg 206 and 207 discuss funding needed for RM&E such as habitat inventories to collect data on EDT attributes, VSP monitoring, basic population status monitoring, and RM&E that resolves uncertainty regarding population abundance and management goals. This project establishs baseline conditions through habitat inventory, temperature and flow monitoring. It also establishes baseline conditions and status and trend monitoring for fish distribution and abundance. It also addresses critical uncertainties such as abundance and distribution of bull trout and steelhead through use of spawner surveys and juvenile fish sampling or genetic characteristics. Appendix C - Aquatic Assessment for the subbasin plan was derived from much of the data provided from this project, as was the Walla Wall basin portion of the WA State salmon Recovery plan for SE WA.

Addresses subbasin plan priorities

The goals for this project are to monitor and assess salmonid populations and habitat conditions in the basin before and during reintroduction of spring chinook or supplementation of steelhead, as well as monitor and assess native salmonid limiting factors and population abundance/distribution, and to provide the information to managers to guide fish habitat restoration efforts within the subbasin. The objectives are as follows: 1)Assess habitat conditions for anadromous and resident salmonids in the Washington portion of the Walla Walla subbasin. 2)Determine salmonid distribution and relative abundance in the WA portion of the subbasin. 3)Identify genetic stocks of steelhead and bull trout in the Walla Walla subbasin. 4) Compile and disseminate results and conclusions to guide fish management and watershed restoration and planning. These goals and objectives match subbasin priorities because most of the monitoring efforts are in priority protection or restoration areas of the subbasin, which the subbasin plan emphasizes for priority actions. The goals and objectives of this project also match the subbasin plan priorities for RM&E actions because they address critical uncertainties or data gaps for EDT, VSP and stock status as well as provide baseline information regarding fish habitat conditions and fish stocks. Trend and status monitoring, or monitoring for baseline conditions and stock status are necessary for measuring habitat and population responses to watershed restoration actions and progress towards population recovery. Additionally, the goals and objectives provide information to address imminent threats (barriers or dewatering or some other issue that is human caused and car cause direct mortalities of fish) identified as very high priorities in the subbasin plan. This project has identified many barriers or other imminent threats that had not been previously documented so they can be addressed by other projects. e.g. - documented the effects of current management actions/conditions (dewatering & passage barriers)in Mill Creek to focus restoration.

2000-026-00 - Rainwater Wildlife Area Operat (Expense) Confederated Tribes Of The Umatilla

Description: Protect, enhance, and mitigate wildlife habitat impacted by McNary and John Day hydroelectric projects. Project includes O&M to protect existing habitat values, enhancements to increase habitat quantity and quality, and M&E to assess project benefits.

Consistency with subbasin plans

The project is consistent with the Walla Walla Subbasin Plan (December 2004) by providing protection of fish and wildlife habitats in the headwater of the Touchet River Watershed, and implementing numerous stratgies listed under multiple objectives (Section 7.3.2, pgs 151-167). Strategies employed under the Rainwater Management Plan include habitat conservation of key headwater habitat in the South Fork Touchet River Watershed, instream and riparian/flooplain habitat restoration and enhancement, removal of roads located in floodplains that contribute sediment to fish bearing streams, planting native vegetation, and control of noxious weeds.

Addresses subbasin plan priorities

The Rainwater Wildlife Area is a priority in the subbasin as it provides protection in a key headwater reach of the South Touchet Watershed. In addition, the wildlife area is prioritized to mitigate wildlife losses associated with the McNary and John Day hydroelectric facilities on the Columbia River, providing off-site, primarily in-kind mitibation. Rainwater is specifically mentioned in the Plan as an example of needed protection efforts and the opportunity provide dual benefits for both fish and wildlife resources. Key priority habitat-related actions identified in the plan to address limiting factors such as habitat quality and quantity and water quality include: H-1: Active Instream Habitat Scenario (LWD, Boulder/Pool), H-2: Passive Instream Habitat Scenario (Riparian) – Improve riparian zone habitat, and function by fencing and planting riparian zones and modifying detrimental land use activities, including problematic roads, H-3: Modify channel and flood-plain function, H-4: Protect High Quality Habitat – e.g. Rainwater, H-5: Restore upstream or headwater attributes to improve downstream conditions (Uplands Scenario) (Subbasin Plan, Final Addendum, Nov 2004, Section 1.1.5.3, Habitat, pgs 5-7).

2000-033-00 - Walla Walla River Fish Passage (Expense) Confederated Tribes Of The Umatilla

Description: Increase survival of migrating juvenile and adult salmonids in the Walla Walla Basin by operating passage facilities, trapping facilities, and transport equipment to provide adequate passage conditions.

Consistency with subbasin plans

The project is consistent with the passage improvement strategies identified in Section 1.1.5.2 (page 5)of the Final Addendum to the Walla Walla Subbasin Plan that address the imminent threats presented by obstructions and unscreened diversions. The following project work elements address the strategies identified in Section 1.1.5.2: monitoring passage conditions, coordinating passage facility operations, and provide technical expertise related to development of physical passage facilities, traps, and related flow enhancement plans. In addition, the Final Addendum to the Walla Walla Subbasin Plan (Section 7.6.1 Aquatic Habitats and Species, Pg 206) which is to fund additional actions to complete basic population status monitoring needs for the subbasin is consistent with the project work element; enumeration of adult migration at Nursery Bridge Dam. The above mentioned work elements are aimed at identifying ongoing and potential passage concerns in the Walla Walla basin and counting the number of adult returns to the headwaters of the Walla Walla River.

Addresses subbasin plan priorities

The Final Addendum to the Walla Walla Subbasin Plan (Section 1.3 - Strategic Prioritization Framework, page 9) identifies aquatic habitat and species project prioritization for the Walla Walla Subbasin based on four general tiers of priority: The first priority on that list is address imminent threats to Endangered Species Act (ESA) listed aquatic focal species, regardless of
where they occur in the Walla Walla Subbasin. Imminent threats include three types: a) passage obstructions, b) fish screens, and c) dry stream reaches.

2000-038-00 - NEOR WW Hatchery Design and Construct (Capital) Confederated Tribes Of The Umatilla

Description: Add incubation/juvenile rearing capabilities to the existing S. Fk. Walla Walla brood facility to produce spring chinook salmon for release in the Walla Walla River Basin.

Consistency with subbasin plans

The Final Addendum to the Walla Walla Subbasin Plan (Section 1.3 - Strategic Prioritization Framework, page 12) identifies the need for artificial production projects that address critical factors which limit fish abundance or achievement of numeric objectives in one or more of the priority restoration or protection areas. EDT outputs for spring Chinook indicate a high potential for natural juvenile production but adult return potential from natural production alone does not come close to meeting tribal goals for adult natural production and harvest. This out-of-subbasin low survival issue suggests that overall juvenile abundance may be a critical factor limiting achievement of numeric goals and that a hatchery project may be needed in order to reach the identified adult goals.

Addresses subbasin plan priorities

The Final Addendum to the Walla Walla Subbasin Plan (Section 1.3 - Strategic Prioritization Framework, page 9) identifies aquatic habitat and species project prioritization for the Walla Walla Subbasin based on four general tiers of priority: The second priority on that list is to address habitat or artificial propagation factors that are currently impacting survival or abundance of fish species in priority restoration and protection areas. In addition, projects that target limiting factors that have the greatest effect on production of focal species will receive higher priority (Final Addendum to the Walla Walla Subbasin Plan, Section 1.3 - Strategic Prioritization Framework, page 12).

2000-039-00 - Walla Walla River Basin Monito (Expense) Confederated Tribes Of The Umatilla

Description: Monitor and evaluate natural spawning, rearing, migration, survival, age and growth characteristics and life histories of adult salmon and steelhead and their natural progeny in the Walla Walla River Basin.

Consistency with subbasin plans

The Walla Walla Subbasin Plan outlines a number of management actions that will occur in priority tributaries based on the limiting factors analysis derived from the Walla Walla Subbasin EDT model. These various habitat actions will occur in concert with a variety of harvest and hatchery actions, and against the back-drop of natural variability in the system. The Walla Walla Subbasin Plan embraces an adaptive approach by presenting habitat goals and biological objectives in the form of "working hypotheses". The hypotheses relate potential management actions to changes in fish abundance and production quantitatively and qualitatively, and require RM&E to validate or invalidate the efficacy of those actions (pg. 127-188). The strategies, methods, and techniques for studying the working hypotheses are described in the plan body (204-207), and in the final RM&E plan submitted to the council (AD3). In fact the first 3 RM&E needs described in the plan relate to establishing baseline data, and monitoring changes in biological attributes through time in association with management actions. The attributes required to address these questions are described in detail on page AD3-41 onward. This project monitors and evaluates biological attributes in all priority reaches for all focal species in the Walla Walla Subbasin; specifically abundance, productivity, growth, distribution, diversity, habitat and ecosystems. These metrics are directly linked to the evaluation of status, trends, and project effectiveness throughout the Walla Walla Subbasin Plan. The WWNPMEP statement of work is a direct expression of the RM&E requirements described in the subbasin plan. WWNPMEP work elements target core management uncertainties required to conduct adaptive management, and have been well integrated with the NPCC Fishery Program, BPA RM&E Plan, NOAA Recovery Planning, and the Walla Walla Subbasin Plan.

Addresses subbasin plan priorities

The Walla Walla Subbasin co-management community has long recognized the importance and utility of an adaptive management approach. The co-management community meets regularly in the context of its Walla Walla Technical Working Group to transfer information between scientists and managers, and to efficiently manage fisheries resources. These activities, and the resultant success of the Walla Walla program, would not be possible without sound science. WWNPMEP conducts scientific activities within every priority habitat in the subbasin, and is responsible to tribal, city, county, state, and federal managers for the information it collects. It is a priority that status, trend, project effectiveness information be conveyed to managers. Pages 126 through 188 of the Walla Walla Subbasin Plan describe the priority habitat actions planned for the priority geographic areas, and describes the species and life-history phases these are hypothesized to benefit. Pages AD3-31 through AD3-81 describe the specific priority attributes, methods, and techniques that will be used to monitor and evaluate priority actions in the system. WWNPMEP is a priority project because its goals and objectives are to test the impacts of the priority management actions on focal species using sound science. The RM&E section of the plan describes the methods by which this will be accomplished. The Walla Walla Subbasin represents a unique combination of major hindrances to salmonid production, and a unique combination of intensive mitigation actions that have brought the Walla Walla forward as a model for collaborative salmonid restoration. WWNPMEP is a Columbia Basin-wide priority RM&E project due in part to the extensive increases in production it aims to document over the coming ten to twenty years, and the unique restoration program it continues to facilitate.

1985-062-00 - Yakima Screen Evaluation (Expense) Pacific Northwest National Laborator

Description: Evaluate the biological and hydrologic effectiveness of juvenile fish passage facilities constructed at irrigation diversion dams, canals and ditches to allow the passage of migrating fishes. Evaluate sites with respect to NMFS passage criteria.

Consistency with subbasin plans

Key Findings (i.e., limiting factors) in the Yakima Subbasin Management Plan for the mid-elevation Yakima, low-elevation tributaries, and mid-elevation Naches are that inadequately screened diversions divert and kill fish (chapter 4, pages 53, 57, and 64). The biological objectives and strategies for these limiting factors are to continue with screening improvements and monitoring. This project is consistent with these biological objectives and strategies by ensuring screen facilities are operated and maintained in a way that provides safe and efficient passage of fish.

Addresses subbasin plan priorities

The second priority of the Tier 1 habitat limiting factors listed on page 11 of the Yakima Subbasin Management Plan Supplement is listed as Obstruction/Entrainment (passage), with "diversion dams and canal headworks" one of the cause of limitations. This project provides regular evaluation of screening facilities at the canal headworks, with immediate reporting to the responsible agencies of any problems found that would be harmful to fish.

1988-115-25 - Ykfp - Design & Construction (Capital) Confederated Tribes And Bands Of T

Description: Design/Construction: 1. Klickitat: O & M facility and Lyle Trap

Consistency with subbasin plans

This project is consistent with guiding principles 1 and 2 on p. 3 of the Yakima Subbasin Supplement (Nov. 26, 2004). Also, Table 1 on p. 6 of the supplement identifies Interior Riparian Wetlands as a key limiting factor in the Yakima subbasin.

Addresses subbasin plan priorities

The first primary strategy listed in Table 3 on p. 17 of the supplement states that implementing hydrologic restoration measures within wetlands is a priority measure. This project is also consistent with prioritized strategies to address flow (Table 9, p. 26), habitat quantity (Table 11, p. 28), habitat diversity (Table 12, p. 29), and temperature (Table 13, p. 30) of the subbasin supplement.

1988-115-25 - Ykfp - Design & Construction (Capital) Confederated Tribes And Bands Of T

Description: Design/Construction: 1. Klickitat: O & M facility and Lyle Trap

Consistency with subbasin plans

This project is consistent with the subbasin plan in that is contributes to ensuring successful hatchery operations for fish supplementation. The wellfield monitoring is needed to perfect water rights required for hatchery operation, and is therefore consistent with the subbasin plan.

Addresses subbasin plan priorities

Achievement of the goal will successfully contribute to the subbasin plan priorities of fish supplementation and enhancement, by ensuring a reliable groundwater supply is available for successful hatchery operations.

1988-115-25 - Ykfp - Design & Construction (Expense) Confederated Tribes And Bands Of T

Description: Design/Construction: 1. Klickitat: O & M facility and Lyle Trap

Consistency with subbasin plans

The research, monitoring and evaluation, and administrative oversight activities that would be supported by the modular facility are critical to achievement of the biological objectives set forth in the Yakima Subbasin Management Plan Supplement at p.15. The activities provide the information basis for adaptive management directed at enhancing and restoring self-sustaining, naturally reproducing populations of salmonids in the Yakima Subbasin.

Addresses subbasin plan priorities

The Management Plan Supplement to the Yakima Subbasin Plan assigns priority to habitat actions that address Tier 1 limiting factors as noted at p, 24 and the following pages. Population and performance response strategies that are identified in the supplement at p.26 are all considered to be priority activities. Monitoring and evaluation activities are crucial to the support of habitat restoration monitoring (addressing Tier 1 limiting factors) and to assessing population performance and response strategies.

1988-120-25 - Ykfp Management, Data, Habitat (Expense) Confederated Tribes And Bands Of T

Description: This proposal supports the Yakama Nation's (YN) policy, management and administrative activities related to YKFP operations in the Yakima and Klickitat River Subbasins, including all M & E, O & M and Design and Construction activities..

Consistency with subbasin plans

See tables 7 through 22 on pages 25-35 of Yakima subbasin supplement, Nov. 26, 2004. The tables identify strategies for addressing limiting factors in terms of habitat, population performance and response, and institutional capacity. MD&H activities are essential to implementation of the strategies in which the YKFP plays a role, See 3.3.1 p. 35 titled "The role of supplementation and its relationship to habitat actions", 3.3.2 p. 36 Population management in the Yakima Subbasin and the YKFP. In particular regard to management, the YKFP goals are specifically set out in Section 3.3.3, Management, of the management plan supplement on p. 39.

Addresses subbasin plan priorities

The strategies referenced in tables 7 through 22 on pages 25-35 of Yakima subbasin supplement, are included in the supplement because they are considered to have priority in addressing limiting factors. The MD&H activities are crucial to the successful implementation of the priority strategies and are themselves also considered to be priority activities for subbasin plan implementation purposes.

1991-057-00 - Yakima Basin Screen Fabrication Phase II (Capital) WDFW - Olympia

Description: YSS fabricates and installs fish screens and all miscellaneous metalwork for Yakima Basin Phase II screen projects. New fish screens prevent loss of juvenile anadromous and resident fish in gravity irrigation diversions.

Consistency with subbasin plans

This project is consistent with and implements Aquatic Strategies 10 & 16 of the Management Plan (More than 500 unscreened diversions continue to reduce production potential by entraining migrating fish, particularly in tributaries. Screening and passage projects are considered high priority actions to increase salmonid abundance and intrinsic population productivity). And (Work Cooperatively with BPA to design irrigation diversions that will remain stable and functioning over long time periods).

Addresses subbasin plan priorities

1991-075-00 - Yakima Fish Screens Cons Bor (Capital) US Bureau of Reclamation

Description: Install new fish screens at all significant diversions in the Yakima River Basin to keep juvenile salmon and steelhead from being diverted and lost in canals during outmigration. Improve adult upstream passage at selected sites.

Consistency with subbasin plans

The project is consistent with and implements the aquatic habitat objectives and strategies described in the Management Plan and the Management Plan Supplement to the Yakima Subbasin Plan.

Table 3.5.4 of the Management Plan lists key findings, objectives and strategies. A key finding is that "Loss of side channels and springs has reduced habitat diversity and temperature spatial diversity." The cause is "Conversion to Drain/Irrigation ditch has eliminated side channel." The biological objective is to "Restore physical and access characteristics of all ditches which were side channels." Another key finding is that "Inadequate screening diverts and kills fish." The cause is that "Numerous smaller diversions remain unscreened and impinge and kill fish. Some larger diversion screens do not meet current standards...." The biological objective is to "Screen all diversions over the next 10 years, especially those in Lower tribs with good rearing access."

Table 10 on page 27 of the Supplement states the following objectives (in part)-"Replace/redesign diversion dams in tributaries to allow passage and prevent entrainment. Screen all unscreened diversions and upgrade inadequate screening. Reconnect side channel and springbrook habitats in the mainstem and tributary floodplains....." The implementable strategies noted in Table 10 include "Continue long term restoration and removal of obstructions to spawning habitat, side channels and lower ends of tributaries. Replace/rebuild existing diversion dams based on prioritization from WDFW/YN/YTAHP." One of the objectives noted in Table 11 on page 28 of the supplement is to "Protect and restore off channel habitats wherever possible." The stated implementable strategy in Table 11 is to "Restore and protect side channels and springbrooks."

Construction of the Fogarty Ditch Fish Screen, combined with the barrier removals and other channel improvements, will prevent fish entrainment in the irrigation ditch and will open about 3.5 miles of Fogarty Ditch and Sorenson Creek for off-channel rearing habitat.

Addresses subbasin plan priorities

The project accomplishes priority work under the Subbasin Plan because screening and restoration of side channels are high priority activities. Pages 8 and 9 of the Supplement to the Management Plan discuss Tier 1 Limiting Factors which are described as having "the most impact on aquatic species production potential within the subbasin and should be addressed first." The supplement goes on to state "For aquatic species, the limiting factors that should be addressed first are low flows; obstruction to fish migration and entrainment; diminished habitat quantity, quality, and diversity; high temperatures; altered sediment transport; and degraded channel stability." In the discussion of Obstructions on page 9, the Supplement states that "Screening and passage projects are considered high priority actions to increase salmonid abundance and intrinsic population productivity."

1992-062-00 - Lower Yakima Valley Riparian/W (Expense) Confederated Tribes And Bands Of T

Description: Continue implementation of YN Wetlands/Riparian Restoration Project by protecting and restoring native floodplain habitats along anadromous fish-bearing waterways in the agricultural area of the Yakama Reservation (~2,500 acres/year).

Consistency with subbasin plans

This project is consistent with and implements Tier 1 habitat strategies described in the Yakima Subbasin Plan Suppliment. This project is located in Assessment Units 2 (Mid-Yakima Floodplain) and 3(Low Elevation Tributaries). Activities occur in the Satus and Toppenish Creek, and Yakima River floodplain areas.

The strategies listed below, all within the "immediately implementable" category, address Tier 1 limiting factors.

Terrestrial Habitat Strategies -
Interior Riparian Wetlands (Table 6, page 22) Strategies 1-6. These address hydrologic and habitat improvement through protection and restoration using techniques that mimic or restore normative conditions.

Aquatic Habitat -
Flow (Table 9, page 26) Strategies 1-5. Purchases easements and water rights and works toward restoration of normative hydrologic conditions.

Obstructions and entrainment (Table 10, page 27-28) Strategies 1,3,7. Uses restoration techniques that restore fish passage through channel and wetland habitats.

Key Habitat Quantity (Table 11, page 28-29) Strategies 1-3, 5-6. Protects and restores floodplain habitats, side channels and wetlands at a large scale.

Habitat Diversity (Table 12, page 29) Strategies 1-10. Hydrology and habitat characteristics associated with these activities meet, very clearly, all of the strategies outlined in this table.

Temperature (Table 13, page 30) Strategies 1-8. Restoring hydrology and habitat conforms with temperature strategies outlined in the report.

Sediment Load (fine) (Table 14, page 31) Strategies 1-2. Floodplain habitat restoration involves on-farm improvements, road closures, etc. These reduce the sediment loads entering the waterways.

Channel Stability (Table 15, page 31-32) Strategies 1-6, 9. Habitat restoration improves channel stability.

Predation (Table 16, page 32) Strategies 4-6. Diverse habitats reduce predation.

Eutrophication (Table 18, page 33) Strategies 1-4. Our techniques reduce eutrophication.

Chemical (Table 21, page 34) Strategy 2. Water monitoring is completed with channel restoration

Addresses subbasin plan priorities

All of the strategies listed above are considered to be Tier 1 activites in the Yakima Subbasin Plan Suppliment. The project area is within the highest priority areas listed for all of the strategies listed above.

1994-059-00 - Yakima Basin Environmental Edu (Expense) Eco-Northwest

Description: Provides training for teachers and students which allows them the opportunity to participate in the maintainance and restoration of their local watershed through integrated, hands-on curriculum that meets the essential learnings mandated by the state.

Consistency with subbasin plans

The Yakima Basin Environmental Education Program is fully consistant with and supportive of the 2004 Yakima Subbasin Plan. Education at all levels is essential to the successful implementation of the Plan and the resotration of fish and wildlife populations. The Progarm assists students and the general public gain a greater understanding of natural processes, fish and wildlife habitat requirements, life cycles, the importance of key ecosystems, such as wetlands, streams, and lakes. The Program also promotes and assists students and others in participating in habitat restoration projects. The importance of education is recognized by the Yakima Subbasin Summary, prepared pursuant to the 2000 Fish and Wildlife Program. Specifically, Goal 4 states: "Increase the information and knowledge needed to restore and manage fish and wildlife and their habitats."

Addresses subbasin plan priorities

Program goals are consistant with and surpportive of the priorities contained in the 2004 Yakima Subbasin Plan. The Program assists students and the general public gain a greater understanding of the requirements for priority fish and wildlife species, such as steelhead and bald eagles, as well as priority habitats, such as wetlands, riparian zones, and streams.

1995-033-00 - O&M Yakima Basin Fish Screens (Expense) US Bureau of Reclamation

Description: Provide for operation & maintenance of BPA owned anadromous fish protective and trapping facilities within the Yakima River Basin. Facilities include several irrigation diversion fish screens and one major adult fish trapping complex.

Consistency with subbasin plans

Page 12 of the Executive Summary of the Yakima Subbasin Plan explains how unscreened diversions have significant negative effects on salmon productivity. Screened diversions need to be maintained so that they operate properly. For all intents and purposes an improperly maintained screen that is operated out of criteria becomes an unscreened diversion by stalling fish in screen forebays and/or entraining fish into canals. Pages 12 and 13 describe how several stocks of fish (spring and fall chinook, steelhead, sockeye, and coho) have been reduced or extirpated in the Yakima Subbasin. Part of this population reduction was caused by unscreened or improperly maintained and operated diversions that entrained fish into canals where they never completed their life cycle. This project works towards continued optimal maintenance and operation of fish screens to reduce or eliminate fish entrainment into canals. Yakima Subbasin Plan chapter 4, section 3, pages 17-23, 33-37, and 39-40 reference protection and restoration key findings, objectives, and strategies for several fish species and stocks that are focal species which migrate through the Yakima mainstem and its tributaries. They have a life history that involves migrating downstream and, thus, they become subject to possible entrainment into canals. Proper operation and maintenance of fish screens preclude these focal species from being entrained into or unnecessarily delayed at canal diversions.

Addresses subbasin plan priorities

The project accomplishes priority work under the Yakima Subbasin Plan because the Prioritization Framework in the Management Plan puts work for these species as a high priority.

1995-063-25 - Ykfp - Monitoring And Evaluation (Expense) Confederated Tribes And Bands Of T

Description: Monitors YKFP in terms of natural production, harvest , ecological and genetic impacts, guides adaptive management within the project and provides detailed information on supplementation to the region.

Consistency with subbasin plans

Please refer to Tables 7-22 on pp. 25-35 of the Subbasin Supplement. Please refer to Tables 7-22 on pp. 25-35 of the Subbasin Supplement. The tables identify strategies for addressing limiting factors in terms of habitat, population performance and response, and institutional capacity. M&E activities are essential to implementation of many of the strategies, and in fact informed the development of some of the strategies. The M&E project activities are integral to habitat and population performance and response strategies, and are wholly consistent with the subbasin plan. See also section 3.3.4 Research at p. 40 of the supplement which addresses the relationship of research activities to institutional capacity in the basin.

Addresses subbasin plan priorities

The strategies listed in Tables 7-22 on pp. 25-35 of the Subbasin Supplement address key limiting factors in the Yakima Subbasin. The inclusion of each strategy reflects the participating planners' determination that the strategy should be pursued. As noted, the M&E activities are integral to the effective implementation of many of the strategies, particularly with regard to population performance and response, and must be characterized as high priority activities for purposes of the FY 2006 budget development, as well as for development of budgets in the out years.

1995-063-25 - Ykfp - Monitoring And Evaluation (Expense) Confederated Tribes And Bands Of T

Description: Monitors YKFP in terms of natural production, harvest , ecological and genetic impacts, guides adaptive management within the project and provides detailed information on supplementation to the region.

Consistency with subbasin plans

This YKFP partially or wholly addresses the first 2 of the 3 key limiting factors in the Yakima Subbasin Plan Supplement (page 4) 1) habitat, 2) population performance and response, and 3) institutional efficiency. Section 3.2.2, Page 26, Table 8 identifies Objectives and the Implementable Strategies of population performance and response. The Objectives are: "Restore existing populations to their former range, maintain genetic, and spatial diversity. Improve understanding of population dynamics and the negative and positive effects of artificial population management (production hatchery, supplementation programs, physical transfer of fish). Manage appropriate populations for harvest and all populations for sustainability over the long term. Reduce competitive effects with non-native and hatchery reared fish. Restore extirpated populations." Strategies include: "Continue YKFP supplementation experiments and habitat restoration.": "Monitor population productivity, abundance, and life history and habitat restoration.": "Continue and enhance the YKFP programs for spring and fall chinook, coho reintroduction, kelt reconditioning." and others.
Page 42, Section 3.4 states, "Institutional strategies should also integrate ongoing and new supplementation strategies. Coordinating habitat restoration and protection actions in tandem or in sequence with supplementation strategies is advisable to achieve desired biological, cultural, and economic benefits."
Section 3.3 addresses the hatchery programs and the YKFP
Section 3.3.3 addresses the management of the YKFP
Section 3.3.4 addresses YKFP research

Addresses subbasin plan priorities

The YKFP is highlighted as one of the most important strategies to address the key limiting factors in the subbasin plan (see above). On Page 3; the 7th of 8 guiding principles for the Yakima Subbasin Plan states, "The science and art of restoring ecosystems is still evolving; therefore, programs and actions must be monitored and evaluated for effectiveness and may be altered as necessary." The YKFP uses new information to adaptively manage the project. However it is also important to recognize that the learning benefits provided by the YKFP transcend the Yakima subbasin. One of the original intents of the YKFP was to generate information about critical uncertainties so that the information could be used throughout the region.

1995-063-25 - Ykfp - Monitoring And Evaluation (Expense) Confederated Tribes And Bands Of T

Description: Monitors YKFP in terms of natural production, harvest , ecological and genetic impacts, guides adaptive management within the project and provides detailed information on supplementation to the region.

Consistency with subbasin plans

This project is one component of the YKFP Monitoring and Evaluation project (1995-063-25) that the Yakama Nation has overall responsibility for and the tribal restoration programs would apply to the Yakama subbasin.

Addresses subbasin plan priorities

1995-064-25 - Ykfp Policy/Plan/Technical (Expense) WDFW - Olympia

Description: Manage policy and technical oversight of the Yakima/Klickitat Fisheries Project via the project's Policy Group and Scientific and Technical Advisory Group as dilineated in the agreed-upon project management structure.

Consistency with subbasin plans

This YKFP partially or wholly addresses the 3 key limiting factors in the Yakima Subbasin Plan Supplement (page 4) 1) habitat, 2) population performance and response, and 3) institutional efficiency. Section 3.2.2, Page 26, Table 8 identifies Objectives and the Implementable Strategies of population performance and response. The Objectives are: “Restore existing populations to their former range, maintain genetic, and spatial diversity. Improve understanding of population dynamics and the negative and positive effects of artificial population management (production hatchery, supplementation programs, physical transfer of fish). Manage appropriate populations for harvest and all populations for sustainability over the long term. Reduce competitive effects with non-native and hatchery reared fish. Restore extirpated populations.” Strategies include: “Continue YKFP supplementation experiments and habitat restoration.”: “Monitor population productivity, abundance, and life history and habitat restoration.”: “Continue and enhance the YKFP programs for spring and fall chinook, coho reintroduction, kelt reconditioning.” and others. Page 42, Section 3.4 states, “Institutional strategies should also integrate ongoing and new supplementation strategies. Coordinating habitat restoration and protection actions in tandem or in sequence with supplementation strategies is advisable to achieve desired biological, cultural, and economic benefits.”
Section 3.3 addresses the hatchery programs and the YKFP
Section 3.3.3 addresses the management of the YKFP
Section 3.3.4 addresses YKFP research

Addresses subbasin plan priorities

The YKFP is highlighted as one of the most important strategies to address the key limiting factors in the subbasin plan (see above). On Page 3; the 7th of 8 guiding principles for the Yakima Subbasin Plan states, “The science and art of restoring ecosystems is still evolving; therefore, programs and actions must be monitored and evaluated for effectiveness and may be altered as necessary.” The YKFP uses new information to adaptively manage the project. However it is also important to recognize that the learning benefits provided by the YKFP transcend the Yakima subbasin. One of the original intents of the YKFP was to generate information about critical uncertainties so that the information could be used throughout the region.

1996-035-01 - Satus Creek Watershed Restorat (Expense) Confederated Tribes And Bands Of T

Description: Enhance and protect summer steelhead spawning and rearing habitat by restoring the ecological function of the Satus Creek watershed.

Consistency with subbasin plans

Please refer to the Yakima Subbasin Management Plan supplement
http://www.nwcouncil.org/fw/subbasinplanning/yakima/plan/Supplement.pdf
The strategies below, all within the "implementable" category, address Tier 1 limiting factors (see list of factors in Table 2, p. 11), and each strategy is directed at one or more Assessment Units (AUs). The Satus Creek watershed is part of AU #3 (low elevation tributaries).
Table 8, p. 26 (population performance), strategy 2 (monitoring). Satus Creek steelhead are an independent population according to NMFS recovery criteria. This project has provided most of what is known about performance of this steelhead population.
Table 9, p. 26 (flow), strategies 3 and 4 (floodplain protection and restoration)
Table 10, p. 27 (obstructions), strategy 1 (reconnect side channels)
Table 11, p. 28 (key habitat quantity), strategies 1 (side channels), 3 (floodplains), 4 (forest roads)
Table 12, p. 29 (habitat diversity), strategies 1 (side channels), 3 (floodplains), 8 (easements), 9 (riparian restoration)
Table 13, p. 30 (temperature), strategies 1 (riparian restoration), 2 (side channels)
Table 14, p. 30 (fine sediment), strategies 2 (road improvements), 4 (tech assistance), 5 (revegetation)
Table 15, p. 31 (channel stability), strategies 2 (channel constrictions), 4 (riparian restoration), 7 (revegetation)

Addresses subbasin plan priorities

A subbasin plan supplement was submitted November 26, 2004 in response to the Council's request for clearer linkages among limiting factors, objectives and strategies. The long list of key findings, objectives and strategies in Chapter 4 of the original Subbasin Plan breaks down into three broad categories of limiting factors: (1) Habitat limiting factors, (2) Population performance and response limiting factors, and (3) Institutional limiting factors. The first and second categories of limiting factors are discussed here. Objectives and strategies under Category 2, the population performance and response limiting factors are listed in Table 8 of the supplement.
The Ecosystem Diagnosis and Treatment (EDT) model provided the necessary framework to categorize, summarize, and prioritize habitat limiting factors. Level 3 EDT environmental parameters were selected because the level 3 categories of limiting factors succinctly summarize the key habitat factors limiting the biological potential of focal species. At the level 3 scale, the EDT model defines sixteen environmental parameters that impede the biological performance and response potential of salmonids.
Utilizing the results of the EDT model, local expert knowledge, the Subbasin Plan Assessment (Chapter 2), and other tools and resources, the limiting factors were divided into three tiers based on severity of impact to focal species, number of focal species affected, and on geographic extent of the factors. Within each tier the limiting factors are also listed in general priority. The seven Tier 1 limiting factors (Tables 9-15 of the Supplement) have the most impact on aquatic species production potential within the subbasin and should be addressed first. Only Tier 1 limiting factors, objectives and strategies, and only those strategies shown as "implementable" (i.e. capable of being carried out without first resolving a key uncertainty or other contingency) are discussed here.

1997-013-25 - Yakima/Klickitat Fisheries Pro (Expense) Confederated Tribes And Bands Of T

Description: To implement and test supplementation-based measures in order to increase natural production and harvest opportunities. Supplementation measures will be evaluated using a systematic, experimental program. Test feasibility of coho reintroduction.

Consistency with subbasin plans

Refer to table 8 0n page 26 of the Yakima Subbasin Supplement November 26, 2004. See section 3.3.2 Population Managment in the Yakima Subbasin and YKFP, pp 36-39 of Subbasin Supplement. See also Section 3.3.5 Facilities and Equipment on p. 40-41.

Addresses subbasin plan priorities

See section 3.2.2 under prioritized management strategies of the Yakima Subbasin Supplement, November 26, 2004. See section 3.3.2 Population Managment in the Yakima Subbasin and YKFP, pp 36-39 of Subbasin Supplement. See also Section 3.3.5 Facilities and Equipment on p. 40-41.

1997-051-00 - Yakima Basin Side Channels (Expense) Confederated Tribes And Bands Of T

Description: Protect, restore and reestablish access to productive off-channel rearing habitats, and protect and reconnect floodplains associated with the mainstem Yakima and Naches Rivers.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements Aquatic Habitat Objectives and Strategies described in 3.2.2 of the Yakima Subbasin Supplemental Management Plan (YSSMP) pages 24-25 (11-26-04), specifically the implementable strategies listed in Tables 9,11-13,and 15-16. The project addresses objective and implementable strategies (Supplemental Management Plan pages 25-32) as follows:

--"Work with cooperating landowners, tribes, and public agencies through purchase, easement, and land-use agreements to protect intact floodplain habitats and to secure lands for restoration. [AUs-All] [Species-All]." 9-Strategies to address flow, 11-Strategies to address key habitat quantity. 12 Strategies to address habitat diversity (pgs 27-29, YSSMP, 2004).
--"Restore and protect sidechannels and springbrooks. [AUs 1-4,6] [Species All]." 11-Strategies to address key habitat quantity, 12-Strategies to address habitat diversity, 13-Strategies to address temperature(pgs 28-30, YSSMP, 2004).
--"Purchase of properties/easements to allow restoration or protect existing function. [AUs-All] [Species All]" and "Riparian restoration asssociated with all the above strategies. [AUs All] [Species All]" 12-Strategies to address habitat diversity (pg 29, YSSMP, 2004).
--"Restoration of riparian zone and reduce chronic bed instability through revegetation and restoration of natural flow regime. [AUs-All] [Species All]" 15-Strategies to address channel stability (pg 31, YSSMP, 2004).
--"Implement habitat restoration programs. [AUs-1,2,3 and 4] [Species All]. 16-Strategies to address predation (pg 32, YSSMP, 2004).

Addresses subbasin plan priorities

Priority:
The project accomplishes priority work under the subbasin plan because the Plan lists the acquisition, protection, and restoration of key habitat under several implementable strategies throughout the Aquatic Habitat section of the Plan (pgs 24-42). This project is of the highest priority and supports all other actions including artificial and natural production, institutional efficiency, and management.

1998-033-00 - Upper Toppenish Creek Watershed (Expense) Confederated Tribes And Bands Of T

Description: Moderate flow regime in Toppenish Creek by increasing the retentiveness of natural soil water storage areas, such as headwater meadows and floodplains, following prioritized plan generated by FY98-99 watershed assessment.

Consistency with subbasin plans

This project is consistent with and implements Tier 1 (top priority) habitat limiting factors as described in the Yakima Subbasin Plan Supplement
http://www.nwcouncil.org/fw/subbasinplanning/yakima/plan/Supplement.pdf
The strategies below, all within the "implementable" category, address Tier 1 limiting factors (see list of factors in Table 2, p. 11), and each strategy is directed at one or more Assessment Units (AUs). The Toppenish Creek watershed is part of AU #3 (low elevation tributaries).
Table 8, p. 26 (population performance), strategy 2 (monitoring). Toppenish Creek steelhead are an independent population according to NMFS recovery criteria. This project has provided most of what is known about performance of this steelhead population.
Table 9, p. 26 (flow), strategies 1, 3, 4 and 5 (flow increases, floodplain protection and restoration). Project staff, in conjunction with YN Tribal Council, have implemented instream minimum flows throughout the irrigated portions of the Toppenish Watershed. The project's ongoing efforts to reconnect side channels and bring the stream into better connection with the floodplain are consistent with the strategies in table 9.
Table 10, p. 27 (obstructions), strategy 1 (reconnect side channels)
Table 11, p. 28 (key habitat quantity), strategies 1 (side channels), 3 (floodplains), 4 (forest roads)
Table 12, p. 29 (habitat diversity), strategies 1 (side channels), 3 (floodplains), 8 (easements), 9 (riparian restoration)
Table 13, p. 30 (temperature), strategies 1 (riparian restoration), 2 (side channels)
Table 14, p. 30 (fine sediment), strategies 2 (road improvements), 4 (tech assistance), 5 (revegetation)
Table 15, p. 31 (channel stability), strategies 2 (channel constrictions), 4 (riparian restoration), 7 (revegetation)

Addresses subbasin plan priorities

A subbasin plan supplement was submitted November 26, 2004 in response to the Council's request for clearer linkages among limiting factors, objectives and strategies. The long list of key findings, objectives and strategies in Chapter 4 of the original Subbasin Plan breaks down into three broad categories of limiting factors: (1) Habitat limiting factors, (2) Population performance and response limiting factors, and (3) Institutional limiting factors. The first and second categories of limiting factors are discussed here. Objectives and strategies under Category 2, the population performance and response limiting factors are listed in Table 8 of the supplement. This project is consistent with and implements Tier 1 (top priority) habitat limiting factors as described in the Yakima Subbasin Plan Supplement

The Ecosystem Diagnosis and Treatment (EDT) model provided the necessary framework to categorize, summarize, and prioritize habitat limiting factors. Level 3 EDT environmental parameters were selected because the level 3 categories of limiting factors succinctly summarize the key habitat factors limiting the biological potential of focal species. At the level 3 scale, the EDT model defines sixteen environmental parameters that impede the biological performance and response potential of salmonids.
Utilizing the results of the EDT model, local expert knowledge, the Subbasin Plan Assessment (Chapter 2), and other tools and resources, the limiting factors were divided into three tiers based on severity of impact to focal species, number of focal species affected, and on geographic extent of the factors. Within each tier the limiting factors are also listed in general priority. The seven Tier 1 limiting factors (Tables 9-15 of the Supplement) have the most impact on aquatic species production potential within the subbasin and should be addressed first. Only Tier 1 limiting factors, objectives and strategies, and only those strategies shown as "implementable" (i.e. capable of being carried out without first resolving a key uncertainty or other contingency) are discussed here.

1999-013-00 - Ahtanum Creek Watershed Assess (Expense) Confederated Tribes And Bands Of T

Description: Conduct watershed assessment in the agricultural portion of the Ahtanum Creek watershed to complete assessment of the entire watershed, facilitate restoration of salmon and steelhead, and protect bull trout.

Consistency with subbasin plans

This project is consistent with and implements Tier 1 (top priority) habitat limiting factors as described in the Yakima Subbasin Plan Supplement
http://www.nwcouncil.org/fw/subbasinplanning/yakima/plan/Supplement.pdf
The strategies below, all within the "implementable" category, address Tier 1 limiting factors (see list of factors in Table 2, p. 11), and each strategy is directed at one or more Assessment Units (AUs). The Ahtanum Creek watershed is part of AU #3 (low elevation tributaries).
Table 8, p. 26 (population performance), strategy 2 (monitoring). Ahtanum Creek is currently recognized as a major spawning area for steelhead, and Ahtanum Creek steelhead may be a genetically distinct population. This project has provided most of what is known about performance of this steelhead population.
Table 9, p. 26 (flow), strategies 1, 3, 4 and 5 (flow increases, floodplain protection and restoration).). Project staff, in conjunction with YN Tribal Council, have implemented instream minimum flows throughout Ahtanum Creek. The project's ongoing efforts to reconnect side channels and bring the stream into better connection with the floodplain are consistent with the strategies in Table 9.
Table 10, p. 27 (obstructions), strategy 1 (reconnect side channels)
Table 11, p. 28 (key habitat quantity), strategies 1 (side channels), 3 (floodplains), 4 (forest roads)
Table 12, p. 29 (habitat diversity), strategies 1 (side channels), 3 (floodplains), 8 (easements), 9 (riparian restoration)
Table 13, p. 30 (temperature), strategies 1 (riparian restoration), 2 (side channels)
Table 14, p. 30 (fine sediment), strategies 2 (road improvements), 4 (tech assistance), 5 (revegetation)
Table 15, p. 31 (channel stability), strategies 2 (channel constrictions), 4 (riparian restoration), 7 (revegetation)

Addresses subbasin plan priorities

A subbasin plan supplement was submitted November 26, 2004 in response to the Council's request for clearer linkages among limiting factors, objectives and strategies. The long list of key findings, objectives and strategies in Chapter 4 of the original Subbasin Plan breaks down into three broad categories of limiting factors: (1) Habitat limiting factors, (2) Population performance and response limiting factors, and (3) Institutional limiting factors. The first and second categories of limiting factors are discussed here. Objectives and strategies under Category 2, the population performance and response limiting factors are listed in Table 8 of the supplement.

The Ecosystem Diagnosis and Treatment (EDT) model provided the necessary framework to categorize, summarize, and prioritize habitat limiting factors. Level 3 EDT environmental parameters were selected because the level 3 categories of limiting factors succinctly summarize the key habitat factors limiting the biological potential of focal species. At the level 3 scale, the EDT model defines sixteen environmental parameters that impede the biological performance and response potential of salmonids.
Utilizing the results of the EDT model, local expert knowledge, the Subbasin Plan Assessment (Chapter 2), and other tools and resources, the limiting factors were divided into three tiers based on severity of impact to focal species, number of focal species affected, and on geographic extent of the factors. Within each tier the limiting factors are also listed in general priority. The seven Tier 1 limiting factors (Tables 9-15 of the Supplement) have the most impact on aquatic species production potential within the subbasin and should be addressed first. Only Tier 1 limiting factors, objectives and strategies, and only those strategies shown as "implementable" (i.e. capable of being carried out without first resolving a key uncertainty or other contingency) are discussed here. This project is consistent with and implements Tier 1 (top priority) habitat limiting factors as described in the Yakima Subbasin Plan Supplement

2002-014-00 - Sunnyside Wildlife Mitigation (Expense) WDFW - Olympia

Description: Restore, protect and enhance native floodplain wetland and riparian habitats and shrubsteppe uplands in the lowerYakima River Valley.

Consistency with subbasin plans

The subbasin wildlife assessment focuses on 4 focal habitats and their representative focal species. All management units on the Sunnyside Wildlife Area are comprised of 2 of these focal habitats: Shrub Steppe/Interior Grasslands and Interior Riparian Wetlands. Primary strategies for improving or restoring these 2 habitats are shown in Table 5 (pages 20&21) and Table 6 (pages 22&23) respectively. Work performed in the Shrub Steppe habitat that is consistent with the plan includes, but is not limited to: Monitoring and control of noxious weeds, generally by spot spraying to protect desired plant species. Hand pulling has been used in some cases on small infestations to prevent seed production. We do not do prescribed burns due to the sensitivity of neighboring landowners and past fire damage. We do, however, quickly plan and implement restoration projects after wildfires and have been very successful at range restoration. Fire protection contracts are in place with local fire districts and we coordinate with them on maintaining fire lines. We conduct sage grouse monitoring. We are actively working to limit or eliminate vehicle access to stop off road use and damage to microbiotic crust. Administrative vehicle use is limited for the same reason.

Work perfomed in the Interior Riparian Wetlands that is consistent with the plan includes: Routing warm, sediment-laden irrigation water through a series of wetlands to clean and cool it before it reaches the Yakima River. Completed project wide water rights assessment to protect rights for potential return to river. Restore and enhance wetlands. Remove Russian olive monocultures & replace with native herbaceous/woody vegetation. Remove fish passage barriers. Removed irrigation pump from river & relocated into artificial drain. Work with local municipal water treatment entities to return clean water to wetlands and the river. Restore water and native vegetation to disconnected river oxbows.

Addresses subbasin plan priorities

The Rattlesnake Hills area is a top priority for habitat restoration and improvement in shrub steppe/interior grasslands focal habitats. The Thornton and Rattlesnake Slope management units both fall within the eastern part of this geographical area. The work we perform on those units is directly related to the limiting factors listed for this area (Table 5, pages 20&21 in the plan supplement).

The mainstem Yakima River, and Satus & Toppenish Creeks are some of the top priority areas for habitat restoration and improvement in interior riparian wetland focal habitat. The I-82, Headquarters and Byron management units all fall within this priority zone. The work performed on these units is directly related to the limiting factors listed for these areas (Table 6, pages 22&23 in the plan supplement).

2002-025-01 - Yakima Tributary Access & Habi (Capital) South Central Washington RC&D

Description: Implement fish enhancements (fish passage, screens and riparian habitat) on Yakima tributaries based on prioritized schedule developed through a collaborative approach of local, state, federal and tribal interests. Conduct early actions in 2002.

Consistency with subbasin plans

Yakima Subbasin Plan Management Plan Supplement Nov. 26, 2004
Page 5 Once key strategies are developed, the ability to stop additional loss of habitat quantity, quality, and diversity and reverse species decline is in large measure a function of institutional effectiveness. Implementation of a number of important strategies requires greater coordination, integration, communication, and project development among those with the ability to improve the basin ecosystem.
[YTAHP provides the institutional structure to effectively implement the Plans strategies.]

Page 9 Screening and passage projects are considered high priority actions to increase salmonid abundance and intrinsic population productivity.
Page 15 Many large-scale obstruction and entrainment problems have been addressed but many still remain that impede fish migration especially in the tributaries.
Page 27 Table 10. Strategies to address obstructions and entrainment
Objectives – Replace/redesign diversion dams in tributaries to allow passage and prevent entrainment. Screen all unscreened diversion and upgrade inadequate screening. Reconnect side channel and springbrook habitats in the mainstem and tributary floodplains. Improve management of road/culvert systems to restore passage….
Replace/rebuild existing diversion dams based on prioritization from …/YTAHP.
Improve efficiency of irrigation distribution systems…. [Through the Conservation Districts YTAHP can work directly with farmers to improve irrigation efficiency.]

Page 34 Table 19. Strategies to address harassment
Objectives – Reduce potential for grazing operations to impact bull trout spawning habitat or redds. Implementable Strategies:
Install fencing around key bull trout spawning habitat to reduce grazing impacts.
Construct off channel watering structures to reduce grazing impacts.
Construct crossing structures for cattle.
[Through the Conservation Districts YTAHP works directly with farmers to improve grazing practices

Addresses subbasin plan priorities

The YTAHP is organized to restore salmonid passage … and to improve habitat. This program: a) surveys Yakima River tributaries and prepares an inventory of fish passage barriers, diversion screening, and habitat assessments; b) screens unscreened diversion structures; c) provides for fish passage at man-made barriers; and d) provides information and assistance to landowners interested in contributing to the improvement of water quality, water reliability and stream habitat.

Yakima Subbasin Plan Final Draft May 28, 2004
Executive Summary, Page 12 - Passage barriers and unscreened diversions and pumps have significant negative effects on salmon productivity. Related objectives of the plan are to improve passage…. relocate or consolidate existing structures, replace or rebuild existing diversion dams, move or consolidate diversions, and provide pump screens to landowners.
[YTAHP through the Conservation Districts has a special connection to the private land owners on who's property most of this type of work is necessary.]

Chapter 4, page 30 - … junctions of tributary streams with the mainstem Yakima present the greatest opportunity for increasing this currently limiting habitat type. … the progress of organizations such as YTAHP in providing access to these types of habitats will increase the availability of these types of habitats dramatically in the next several years due to removal of passage obstructions in the lower end of many upper Yakima tributaries.

Chapter 4, page 70 - Fundamental data needs exist for actual habitat data to use in the model and as baselines to track improvement/effectiveness/change over time. The YTAHP Program is currently in the process of inventorying large sections of the subbasin upstream of Union Gap, especially those tributaries that have been heavily modified by irrigation infrastructure and withdrawal. This information will dramatically increase data accuracy and prioritization of restoration needs and actions,….

2002-031-00 - Spring Chinook Growth Modulati (Expense) NOAA Fisheries

Description: Develop hatchery rearing protocols to reduce excessive production of early maturing male chinook salmon, improve smolt-to-adult survival and reduce negative ecological impacts of hatchery fish on wild fish.

Consistency with subbasin plans

APPLICATION TO COLUMBIA RIVER BASINWIDE REFORM STRATEGIES

Research conducted under project # 200203100 is explicitly called for in recommendations of the Columbia River Basin Fish & Wildlife Program (Nov. 14, 2000) for artificial production that states: "naturally selected populations should provide the model for successful artificially reared populations, in regard to population structure, mating protocol, behavior, growth, morphology, nutrient cycling, and other biological characteristics." This mirrors guidelines of the NMFS 2000 FCRPS Biological Opinion (9.6.5.3.4, RPA 184) and Final Updated UPA for the FCRPS BiOp Remand Hatchery Substrategy 2.2 (p.29). Furthermore, this project evaluates both wild and hatchery reared juvenile Yakima River spring Chinook salmon for operational guideline performance metrics as specified by the Artificial Production Review and Evaluation (APRE) final basin-level report (Document 2004-17, 30 November 2004) for the Cle Elum Hatchery Program, Table A1 (page 58 to 60) as follows:

1) The correct amount and type of food should be provided to achieve the desired growth rate for the species and life stage being reared.
2) The water used for rearing should provide natural water temperature profiles that result in fish similar in size to naturally produced fish of the same species.
3) The program should use a diet and growth regime that mimics natural seasonal growth patterns.
4) Fish produced should be qualitatively similar to natural fish in growth rate.
5) Fish produced should be qualitatively similar to natural fish in physiological status.
6) Fish produced should be qualitatively similar to natural fish in size.
7) Fish should be released at sizes and life history stages similar to those of natural fish of the same species."

APPLICATION TO THE YAKIMA RIVER SUBBASIN PLAN

This research is explicitly called for in the Yakima Subbasin Plan. According to Table 8 of the Yakima Subbasin Management Supplement-26: Population performance and response strategies calls for the following objectives:
1) Restore existing populations to their former range; maintain genetic, and spatial diversity.
2) Improve understanding of population dynamics and the negative and positive effects of artificial population management (production hatchery, supplementation programs, physical transfer of fish).
3) Manage appropriate populations for harvest and all populations for sustainability over the long term.
4) Reduce competitive effects with non-native and hatchery reared fish. Restore extirpated populations.

As it pertains to this project this strategy requires implementing the following:
1) Continue Yakima/Klickitat Fisheries Project (YKFP) supplementation experiments and habitat restoration.
2) Monitor population productivity, abundance and life-history and habitat restoration.
3) Continue and enhance the YKFP programs for spring and fall Chinook, coho reintroduction, kelt reconditioning.

On page 37 of the Management Supplement the importance of research conducted under this contract is highlighted with the following quote

…… Most demographic variables are similar between natural and hatchery origin fish.
However, preliminary results indicate that hatchery origin fish are returning at smaller size-at age and may be less successful at producing progeny in the wild than their wild/natural counterparts. Long-term fitness of the target population is being evaluated by a large-scale test of domestication. Semi-natural rearing and predator avoidance training have not resulted in significant increases in survival of hatchery fish, however growth manipulations in the hatchery may be reducing the number of precocious males produced by the CESRF and increasing the number of

migrants.

The broader importance of research and information obtained through this project is illustrated by the following quote from the Yakima Subbasin Management Supplement Section 3.3.4 page 40 that states the following:

……"One main purpose of the YKFP is to test the assumption that innovative, non-traditional artificial production methods can be used to increase natural production and harvest while maintaining the long-term genetic fitness of the fish population being supplemented and keeping adverse genetic and ecological interactions with non-target species or stocks within acceptable limits. By testing this hypothesis and developing new artificial production methods within specified biological parameters, significant benefits could be derived. As most organizations with a research and development program can attest, research and development is expensive. Even though the cost associated with research and development are high, so are the potential benefits. The applicability of research garnered from the YKFP has regional, national, and international significance. Although the YKFP is located in the Yakima Subbasin, neither its goals or findings are limited in scope or application to the Yakima Subbasin."……..

Addresses subbasin plan priorities

According to Appendix 1: Scoring Rationale and Protocol Yakima Salmonid Recovery Strategy Page 6
3.2 Species Priority
"The order of species priority for the Yakima watershed recovery strategy reflects their Endangered Species Act (ESA) status and their cultural significance for tribal subsistence and sport harvest. From highest to lowest importance, the species priority for the Yakima basin salmonid recovery strategy is: (1) steelhead, bull trout, and spring Chinook salmon 2) fall Chinook, (3) coho and (4) other native species such as resident rainbow trout.
……". Furthermore……"Spring Chinook salmon (Oncorhynchus tsawytcha) has the highest cultural value for tribal fishers and is of high value for sport fishers……

Furthermore……

In Appendix 1, section 3.3.2, page 8 Restoration Priorities of :
"……Some of the most significant limiting factors compromising salmonid habitat in the Yakima watershed, as identified in the EDT, LFA, WSP, and the Reaches Study include:

• Negative interactions between fish species (e.g. wild vs. exotic and wild vs. hatchery).

As a result, Appendix J of the Subbasin Plan (Yakima/Klickitat Fisheries Project)
Describes the following research objectives
Page xx-6
Objective 1.k Task: Yakima hatchery/wild spring Chinook smolt physiology studies: Determine whether significant physiological differences exist among wild, OCT and SNT Yakima spring Chinook smolts during rearing, at release, and at Chandler and at John Day Dam.

Page xx-12
Objective 1.p Task: Yakima spring Chinook residuals/precocials studies: Monitor abundance and distribution of wild and hatchery residual and precocial spring Chinook salmon.

In summary, these above objectives call for monitoring the developmental physiology of wild and hatchery spring Chinook in the Yakima River. Based on research findings from this project, the Cle Elum Hatchery initiated a 5 year production scale growth modulation study in 2002 (release year 2004) aimed at refining rearing strategies to improve smolt quality, reduce excessively high rates of precocious male maturation, and examine the effect of body size on smolt and adult survival. The OCT (optimal conventional treatment) is grown to a relatively large "standard hatchery" size at release while the SNT (semi-natural treatment) is grown at a rate and size that more closely mimics that of wild fish. This project is designed to monitor the development and physiology of these fish over multiple years (BY 2002-

2006) under varying environmental conditions. In addition, laboratory scale growth studies are being conducted to further refine these methods in an effort to reduce negative demographic, genetic, and ecological impacts of supplemented fish on wild stocks while improving the resource.

2003-001-00 - Manastash Cr Fish Passage/Scre (Capital) WDFW - Olympia

Description: The project will provide fish passage and screening for 5 irrigation diversions and will enhance stream flow which is currently a limiting factor dowstream of these diversions. This project could restore access to approximately 30 miles of good habitat.

Consistency with subbasin plans

Project specifically addresses Plan objective to restore passage in tributary streams and prevent entrainment of fish in diversions. Refer to Yakima Subbasin Plan Supplement 11/26/04, Table 10, page27.

Project contributes to Plan objective to improve habitat diversity by restoring flow to stream channels. Refer to Plan Supplement 11/26/04, Table 12, page 29

Manastash Creek is specifically identified in the Subbasin Plan. Passage restoration in tributaries is noted in Plan in table, pages 4-57 and 4-58

Addresses subbasin plan priorities

Restoration of fish passage, preventing entrainment at diversions and improvement of flow are tier 1 habitat limiting factors identified in the Plan Supplement 11/26/04, Table 2, page 11

Plan Supplement page 9 notes that screening and passage projects are considered high priority actions to increase salmonid abundance and intrinsic population productivity.

2006-004-00 - Wenas Wildlife Area (Expense) WDFW

Consistency with subbasin plans

The project is consistent with and implements the following Shrub Steppe/Interior Grasslands First Priority Strategies listed in Table 5 (pages 19 and 20 of the Supplement to the Management Plan): Implement Restoration Techniques, Row 2; Establish Priority Areas for Fire Suppression,Row 4; Create/Maintain Firebreaks, Row 5. To date 690 acres of degraded habitat has been planted to native shrubs and grasses, with six miles of associated fence built to protect these restoration efforts, and an additional 3,500+ acres have been treated to control invasive alien plant species. Wenas W.A. staff have established firebreaks adjacent to populated areas to minimize risk of uncontrolled fire from this source, as well as coordinating with state and rural fire districts to ensure restoration areas as well as high quality shrub steppe areas are given priority for wildfire suppression. WDFW has a contract with WDNR to provide suppression on 50,000 acres of shrub steppe habitat on the Wildlife Area. These projects and strategies will benefit greater sage-grouse, Brewer's sparrow and mule deer, identified in the plan as the Focal species for this strategy.
The project is also consistent with and implements the following Interior Riparian Wetlands First Priority Strategies listed in Table 6 (pages 21 and 22 of the Supplement to the Management Plan): Protect Intact Floodplain Habitats, Row 2; Implement Protection and Restoration Activities in Areas Important to Focal Species, Row 3; Use Fish-friendly Water Control Structures,Row 5; Plant Native Riparian Vegetation, Row 9. Umtanum Creek, which contains threatened steelhead, and it's tributaries are already benefiting from these restoration and enhancement activities. Some specific projects include decommissioning and reseeding of five miles of stream-adjacent parallel roads, acquisition of 1/8 mile of Umtanum Creek, identification of fish passage barriers and protection of riparian areas for passive restoration. These projects will benefit the mallard, yellow warbler and American beaver the plan's the Focal species.

Addresses subbasin plan priorities

Umtanum Ridge, within which the project area is located, is identified as a top priority for Immediate Implementation for all of the Shrub Steppe/Interior Grasslands Strategies listed above.

The Interior Riparian Wetlands Strategies listed above, with the exception of Row 9 Plant Native Riparian Vegetation, are identified in the subbasin plan as top priorities for implementation.

1998-014-00 - Ocean Survival Of Salmonids (Expense) NOAA Fisheries

Description: Measure the effects of time of entry, smolt quality, food habits, growth, and health status of juvenile coho and chinook salmon on survival in relation to oceanographic features of the ocean environment associated with the Columbia River plume.

Consistency with subbasin plans

The project is consistent and implements focal species objectives for salmon to develop an understanding for emigrating salmon life history diversity and habitat use in the Columbia River plume (Lower Columbia River and Columbia River estuary Subbasin Plan Vol II pages A-224 Supplement to the Mainstem Lower Columbia River and Columbia River Estuary Subbasin Plan page 2-10, 2-17); to implement Habitat Improvement Strategies by striving to understand how salmonids utilize the plume habitat and develop a scientific basis for estimating species response to habitat quantity and quality and to protect and restore these critical habitats (Lower Columbia River and Columbia River estuary Subbasin Plan Vol II pages A-245; Supplement to the Mainstem Lower Columbia River and Columbia River Estuary Subbasin Plan page 2-3), and to reduce critical uncertainties by increasing genetic research to identify genotypic variation in habitat use, understanding salmonid estuary and plume ecology, including food-web dynamics, understand juveniles salmon migration patterns, and understand linkages between physical and biological processes sufficiently to predict salmon survival response to restoration activities (Lower Columbia River and Columbia River estuary Subbasin Plan Vol II pages A-262-3).

Addresses subbasin plan priorities

Key next steps are identified in the Supplement to the Mainstem Lower Columbia River and Columbia River Estuary Subbasin Plan (page 5-2) to

1) improve our understanding of estuarine (including the plume) processes and species habitat needs and interactions so that impacts of potential management actions can be anticipated
2) develop a model specific to the estuary and lower mainstem that quantifies relationships between habitat conditions and species responses
3) use the model to conduct reach by reach assessments of habitat conditions in the lower mainstem, estuary, and plume and identify those reaches that have the greatest protection or restoration needs and potential

A key priority strategy identified in the Plan Overview of the Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (page 17) is to improve knowledge of the interrelationship among fish, wildlife, and limiting habitat conditions in the estuary, plume, and lower mainstem as one of eight broad strategies to implement now.

2003-006-00 - Effect Monitor Chinook R Est R (Expense) Sea Resources Inc

Description: This is a project to monitor and evaluate changes in habitat attributes and juvenile salmonid use before and after the Chinook River estuary restoration project.

Consistency with subbasin plans

This project is intended to monitor the success of the Chinook River estuary restoration project - an action that is consistent with, and specifically mentioned in the Estuary Tributaries Subbasin plan. Section 1.1 Key Priorities includes the following applicable priorities: 1) Restore Passage at Tide Gates, Culverts and Other Artificial Barriers and 2) Restore Lower River Estuary, Floodplain, and Riparian Habitats. The work is also related to priority 6 Hatchery Priorities are Consistent with Conservation Objectives as it provides monitoring of the reproductive success of newly established chum salmon runs in the Chinook River - an effort utilizing artificial production. The monitoring project is consistent with Section 7 (Monitoring and Research) of the Lower Columbia Province Plan - specifically Section 7.6 Action Effectiveness Monitoring. In addition Section 7.8.3 describes specific research needs in the estuary - those that are applicable include 2) Implement selected restoration projects as experiments, so that we can learn as we go; 3) Implement pre and post-restoration project monitoring programs, to increase learning; 5) Make more use of ongoing PIT tagging and other tagging and marking studies and data to determine origin and estuarine habitat use patterns of different stocks; 11) Understand salmonid estuarine ecology, including food web dynmaics; and 13) Understand juvenile and adult migration patterns.

Addresses subbasin plan priorities

See response above.

2003-007-00 - Lwr Col River/Est Eco Monitor (Expense) Lower Columbia River Estuary Partne

Description: Develop protocols, procedures, and indicators for measuring habitat condition, assesss exposure levels to toxic contaminants, develop ecosystem restoration information center for housing and accessing data specific to lower Columbia River and estuary.

Consistency with subbasin plans

The habitat status monitoring program component is consistent with the following key assumptions, which are based on assessment data and analysis in Chapter 2 of the subbasin plan:

- Our current understanding of the interrelationships among fish, wildlife, and limiting habitat conditions in the estuary and lower mainstem is not robust and introduces substantial uncertainty in decisions intended to benefit recovery and sustainability of natural resources. (page 2-156 of the subbasin plan.)

- Human activities have altered how the natural processes interact, changing habitat conditions in the Columbia River estuary and lower mainstem. (page 2-152 of the subbasin plan.)
- Changes in the Columbia River estuary and lower mainstem habitat have decreased the productivity of the ecosystem and contributed to the imperiled status of salmon and steelhead. (page 2-161 of the subbasin plan.)

The water quality monitoring component is consistent with the Strategy 12 defined on page 4-43 of the subbasin plan:

- Limit the effects of toxic contaminants in the Columbia River estuary, lower mainstem, and near-shore Ocean.

Implementing this strategy involves (1) extensive sampling to determine the locations and concentrations of contaminants in the lower mainstem and estuary, and (2) reducing uncertainty about exposure risks to salmonids, sturgeon, and lamprey. The effects of toxic contaminants could be addressed through the removal, treatment, or containment of hot spots or by addressing contaminants at their source, such as through the establishment of total maximum daily loads and best management practices that address stormwater and point sources. In either case, more specific data are needed on contaminant sources and the location and extent of contaminant effects before specific management actions can be taken.

Key Limiting Factors This Program Addresses

Contaminant exposure of salmonids, sturgeon, lamprey, and bald eagle

Limiting Factor 5 (page 4-19), 22 (page 4-23), 26 (page 4-24), 33 (page 4-25), 44 (page 4-27), and 51 (page 4-29)

Key Physical Objectives This Strategy Addresses

- Reduce contaminant exposure of emigrating salmonid and Pacific lamprey juveniles and white sturgeon eggs and juveniles. (page 4-35)
- Continue to reduce, monitor, and understand contaminant sources in the lower Columbia River. (page 4-40)

Addresses subbasin plan priorities

The habitat monitoring component directly supports Strategy 2 of the Management Plan Supplement: “Protect and Restore Habitat (page 2-6). Specifically, this project is implementing the Strategy Component: “Assess the Columbia River estuary and lower mainstem by discrete geographic reaches to aid in the development of restoration and protection priorities; develop an approach for determining expected outcomes of research, monitoring, and evaluation activities” (page 2-7 of the Supplement). The ecosystem classification system will help us better understand the extent, availability of shallow water habitat utilized by a number of focal species.

The Supplement categorized the reduction of toxic contamination as one of its primary strategies. Sublethal concentrations of contaminants affect the survival of aquatic and terrestrial species by increasing stress, predisposing organisms to disease, delaying development, and disrupting physiological processes, including reproduction. Fall Chinook and chum may be particularly susceptible to contaminants because they prefer peripheral shallow-water habitats where contaminants can accumulate. In the case of bald eagles, concentrations of PCBs, pesticides, and dioxins in eggs collected along the lower Columbia were at levels associated with reduced breeding success. (page 2-85 in the Subbasin Plan).

Another key objective this project addresses is “Develop an understanding of emigrating juvenile salmonid life history diversity . . . in the lower mainstem, western Oregon tributaries, estuary, and plume” (page 2-10 of the Supplement)

The ecological risk model is looking at different types of pollutants that salmonids are exposed to. To accurately do

this, tracking where the fish are and how long will need to be identified in order to accurately reflect the dose of toxins fish are exposed to while emigrating through the LCRE.

The water quality and salmon sampling component of the will be drawing conclusions from the sampling and analysis data. This is in response to Strategy 3: Address Toxic Contaminants, specifically the key objective "Continue to reduce, monitor, and understand contaminant sources in the lower Columbia River" (page 2-12 of the Supplement). The semi-quantitative model of contaminant flux will begin to track the source, transport, and fate of contaminants throughout the LCRE.

2003-008-00 - Pres/Restore Col R/Est Willapa (Expense) USFWS

Description: Purchase 626 acres on Crims and Walker Islands and restore tidal emergent marsh and riparian forest habitat by enhancing tidal channels to provide juvenile salmonid rearing/ foraging habitat and to achieve the recovery of the Columbian white-tailed deer.

Consistency with subbasin plans

The habitat restoration and wildlife, plant, and fish monitoring phases of the project are consistent with and implement the following strategies in the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, Volume IIA (Subbasin Plan for the Lower Columbia Mainstem and Estuary): EH.S3 and EH.S5 (P.A-245) and their associated measures EH.M1, EH-M2, EH.M3, and EH.M8 (p. A-246, 247). The invasive plant control phase implements strategy E1.S1 (p.A-257) and measure E1.M3 (p. A-258).

Columbian white-tailed deer monitoring implements item 33 in Chapter 5.10.6, Vol.IIA (p. A-264). The habitat restoration, reintroduction, and monitoring aspects of this project will contribute to physical objectives CWTD.PO.1, CWTD.PO.2, and CWTD.PO.5 (p. A-231,232).

The project as a whole falls under Strategy 2 (Protect and Restore Habitats) in the Management Plan Supplement (p. 2-10). The invasive plant control also contributes to Strategy 4 (p. 2-12).

Addresses subbasin plan priorities

The Columbian white-tailed deer is a focal species in the Subbasin Plan (Vol. IIA, Chapter 5.2.1.9, p. A-215). The habitat restoration and monitoring in this project contributes to strategy 2 (Protect and Restore Habitat) of the 5 prioritized strategies in the Management Plan Supplement (p. 2-1). Thus, the Subbasin Plan identifies the work conducted in this project as a high priority.

2003-010-00 - Historic Hab Food Web Link Sal (Expense) NOAA Fisheries

Description: Evaluate the role of river flow on habitat opportunities and food web structure for juvenile salmon by comparing historic and current conditions using model simulations and empirically derived food-web linkages.

Consistency with subbasin plans

This project is consistent with and implements estuarine strategies E.S4, E.S5 (Regional plan pages 6-27 and 6-28; Estuary/lower Mainstem subbasin plan page A-245,) and measure E.M3 (regional plan p. 6-28; subbasin plan page A-246). These strategies and measures relate to Physical Objectives for salmonids Sa.PO.1 and Sa.PO.7 (Estuary/lower Mainstem subbasin plan, pages A-223 and A-224). Actions in this subbasin affect survival of all salmonids throughout the Columbia River Basin (Estuary/lower mainstem subbasin plan, p. A-223; Management plan supplement, p. 1-1). This project is aimed at understanding effects of historic habitat and food-web changes in the estuary to support estuarine protection and restoration measures. It addresses information needs in the Management Plan Supplement for understanding (a) habitat-forming processes in support of strategy 1 (pages 2.2 to 2.6); (b) the importance of wetland habitats and macrodetrital food chains for salmon in support of strategy 2 (pages 2-6 to 2-10); and (c) fish-habitat relationships and historic habitat conditions needed to implement the Supporting Strategy (Manage Uncertainty) and to develop restoration objectives (pages 2-15 to 2-17).

Addresses subbasin plan priorities

This project accomplishes priority work by providing understanding of estuarine processes, salmonid habitat needs, and interactions. Lack of understanding in each of these areas has been identified as an overall constraint to plan implementation (Management Plan Supplement, p. 2-1). Specifically, this research addresses many of the critical uncertainties listed for the Mainstem/Estuary (numbers 11, 15, 18, 19, 21, regional plan page 7-29) and for Hydropower (number 2, regional plan page 7-29) that undermine effective recovery plan implementation (Estuary/lower Mainstem subbasin plan, section 5.10, pages A-262 and A-263). It also implements three of the four priority “next steps” identified in the Management Plan Supplement (p. 5-2). By providing information needed to support estuarine habitat protection and restoration, this research potentially benefits all anadromous salmonids in the Basin as well as hundreds of other species that use this unique environment (Management Plan Supplement, p. 1-1).

2003-011-00 - Columbia R/Estuary Habitat (Expense) Lower Columbia River Estuary Partne

Description: Establish program to identify and prioritize on-the-ground habitat restoration projects and plan their monitoring and evaluation. Take action on six restoration projects already processed and approved through regional and local workgroups.

Consistency with subbasin plans

This program is restoring and protecting, at a significant scale, landscapes that are essential to the health of the focal species identified in the subbasin plan. Both aquatic and terrestrial species need a broad range of habitat types in the proper proximities to one another, at the right time, to satisfy feeding, refuge, breeding, and rearing requirements. Over the last 130 years, human activities have altered the lower mainstem and estuary such that significant amounts of fish and wildlife habitat have been lost (page 2-95 and 2-96 in the subbasin plan). From 1870 to 1983 the amount of tidal swamp has declined by an estimated 77 percent and marsh habitat has declined by 43 percent. Salmonids, Pacific lamprey, bald eagle, Columbian white-tailed deer, rely on these habitat types for spawning, rearing, and foraging (see Appendix C of the Management Plan Supplement).
In the estuary and mainstem, habitat loss can be attributed to the conversion of wetlands and estuaries to other uses, such as urban and agricultural development, and the effects of flow alterations, dams, dikes, and dredging (page 2-83 in the subbasin plan). Diking is particularly detrimental because it completely removes habitat from the estuarine system.
Key Subbasin Limiting Factors This Program Addresses
- Availability of preferred habitat (LF.1, page 4-17 and LF.55 page 4-30)
- Loss of habitat connectivity (LF.3, page 4-18 and LF.57, page 4-30)
- Density dependence (LF.7, page 4-20)
- Sedimentation of substrates (LF.18, page 4-23)
- Migration barriers (LF.11, page 4-21)
- Lack of resting habitats (LF.11, 4-21)

Key Subbasin Physical Objectives This Program Addresses
- Protect existing rearing and spawning habitat to ensure no further net degradation (page 4-34).
- Increase shallow-water peripheral and side-channel habitats toward historical levels (page 4-34).
- Restore connectivity between the river and floodplain, as well as in-river habitats (page 4-34)

Addresses subbasin plan priorities

This project is a direct articulation of a number of the major components of Strategy 2: Protect and Restore Habitat, found in the Management Plan Supplement;. As described in past accomplishments and the 2006 goals section, this program in implementing large scale restoration in the lower river and estuary.

Both aquatic and terrestrial species need a broad range of habitat types in the proper proximities to one another, at the right time, to satisfy feeding, refuge, breeding, and rearing requirements. Disconnected habitat, a lack of habitat, lack of habitat diversity, or lack of access to habitat obviously reduces the spatial structure, abundance, productivity, and life history diversity of species.

The project is consistent with the following key assumptions, which are based on assessment data and analysis in Chapter 2 of the subbasin plan:
- Human activities have altered how the natural processes interact, changing habitat conditions in the Columbia River estuary and lower mainstem. (page 2-152 of the subbasin plan.)
- Habitat restoration efforts are capable of significantly improving conditions for fish and wildlife species in the Columbia River estuary and lower mainstem. (page 2-167 of the subbasin plan.)

Implementing this project also involves the development estuary and mainstem prioritization at the reach scale that organizes existing data habitat factor, protecting and restoring riparian and wetland habitat conditions and functions, restoring tidal swamp and marsh habitat. A key step in protecting and restoring habitat is determining which areas or reaches are in greatest need of protection or restoration. In many watersheds, analytical tools such as Ecosystem Diagnosis and Treatment (EDT) are used to quantify relationships between habitat conditions and species response and thus identify those reaches where the need for protection or restoration is most pressing. Currently, no such model

exists for use in the Columbia River.

2003-015-00 - Blind Slough Restoration (Expense) CREST

Description: Restoration of tidal exchange between the Columbia River Estuary and Blind Slough in the community of Brownsmead, Oregon. BPA funds will be used to match U.S. Army Corps Section 1135 funding for 25% of the total project costs.

Consistency with subbasin plans

The management plan for this subbasin outlines specific physical objectives to support a diversity of life histories for migrating salmonid species. They are outlined below:

Sa.PO.2 Increase shallow water peripheral and side channel habitats toward historic levels. (page 223)

Sa.PO.3 Restore connectivity between river and floodplain, tidally influenced reaches of tributaries, as well as in-river habitats (page 223).

Sa.PO.7 Develop an understanding of emigrating juvenile salmonid life history diversity and habitat use in the lower mainstem, estuary, and plume. (page 224)

Project also meets multiple Strategies and Measures for habitat under the 4H Integrated Strategy for the Lower Columbia and Estuary that are articulated in detail below:

EH.S3. Protect functioning habitats while also restoring impaired habitats to properly functioning conditions.(page 244)

EH.S4. Strive to understand, protect, and restore habitat-forming processes in the Columbia River estuary and lower mainstem. (page 245)

EH.S5. Improve understanding of how salmonids utilize estuary and lower mainstem habitats and develop a scientific basis for estimating species responses to habitat quantity and quality. (page 245)

Measures include:

EH.M1. Restore tidal swamp and marsh habitat in the estuary and tidal freshwater portion of the lower Columbia River. (page 245)

EH.M8. Restore connectedness between river and floodplain.(page 247)

Addresses subbasin plan priorities

Project is consistent multiple working hypotheses derived from assessment findings identified in the Lower Columbia Province Plan and more specifically in the Lower Columbia and Estuary subbasin plan which includes the area of Blind Slough. Hypotheses related to the Blind Slough project are listed below:

E.H7. Of all fish and wildlife species utilizing the Columbia River estuary and lower mainstem habitat, salmonids appear to be one of the most distressed.(page 167)

E.H8. The Columbia River estuary and lower mainstem ecosystem is critical to the expression of salmon life history diversity and spatial structure which support population resilience and production.

E.H9. Changes in the Columbia River estuary and lower mainstem habitat have decreased the productivity of the ecosystem and contributed to the imperiled status of salmon and steelhead. (page 169)

E.H10. Density dependent factors might affect salmonid productivity in the Columbia River estuary and lower mainstem under some conditions, but their significance is unclear. (page 170)

E.H11. Habitat restoration efforts are capable of significantly improving conditions for fish and wildlife species in the Columbia River estuary and lower mainstem.(page 171)

E.H12. Estuary and lower Columbia River mainstem habitat restoration efforts would provide substantial benefits for anadromous fish species throughout the Columbia and Snake river basins.

In addition, project helps in answering questions identified in the Critical Uncertainties defined on page 262. Specific items applicable to the Blind Slough project:

#2. Implement selected restoration projects as experiments, so that we can learn as we go.

#3. Implement pre- and post-restoration project monitoring programs, to increase the learning.

#11. Understanding salmonid estuarine ecology, including food web dynamics.

2006-002-00 - Implementation of the Caspian Tern Management EIS (Exp TBD

Consistency with subbasin plans

Avian predation is one of the limiting factors identified in the subbasin plan for outmigrating junveile salmonids in the estuary and Lower Mainstem Columbia habitat (see the following excerpt):
Piscivorous birds congregate near dams and in the estuary around man-made islands where they consume large numbers of outmigrating juvenile salmon and steelhead (Roby et al. 1998). Caspian terns, cormorants, and gull species are the major avian predators (NMFS 2000a). While some predation occurs at dam tailraces and juvenile bypass outfalls, by far the greatest numbers of juveniles are consumed as they migrate through the Columbia River estuary. Ruggerone (1986) estimated that gulls consumed 2% of the juvenile salmon and steelhead passing Wanapum Dam but comparable estimates have not been made for Bonneville Dam. Roby et al. (1998) estimated that avian predators consumed 10-30% of the total estuarine salmonid smolt population in 1997. (Additional discussion of bird predation in the estuary is included in section 45044960.1311136.0.)

Addresses subbasin plan priorities

The preferred alternative in the final EIS would reduce Caspian tern predation on juvenile salmonids by approximately 4 million smolts per year. This is consistent with the following strategy identified in the subbasin plan:
I.M9. Continue to manage predation by avian predators, such as Caspian terns, to avoid large increases in salmon predation while also protecting the viability of predator populations. (Category A)
Explanation: Transplanting of the tern colony from Rice Island to East Sand Island has successfully reduced predation on salmon. Ongoing measures will be necessary to ensure that the existing habitat remains suitable for terns and no new habitats are created in areas where increased predation might pose added risks. Additional alternatives for management of predation by avian predators will be included in an Environmental Impact Statement currently being prepared by the U.S. Fish and Wildlife Service.

2003-013-00 - Grays River Watershed Assess (Expense) Pacific Northwest National Laborator

Description: Conduct a watershed and biological assessment of the Grays River watershed to protect and restore chum spawning habitat

Consistency with subbasin plans

This project is identified within the Grays River Subbasin Plan under Section 4 (Key Programs and Projects). This project will provide information to managers that will directly addresses biological objectives, strategies, and knowledge gaps identified within Section 5 (Management Plan) of the Subbasin Plan. The project goal is to recommend actions that will result in recovery and conservation of ESA-listed salmon in the Grays River. This is consistent with the recommendations from the Subbasin Plan (see priorities below). This project also addressed RPA Action 157 under the NOAA Fisheries 2000 FCRPS BiOp and would continue to contribute to the ESA commitments made by BPA and the FCRPS Action Agencies under NOAA Fisheries' revised 2004 BiOp. The objectives of this project are consistent with the near-term RM&E estuary targets included in the FCRPS Action Agencies' 2005-2007 Implementation Plan (IP).

Addresses subbasin plan priorities

Section 5.4 of the Subbasin Plan describe factors currently limiting production of chum and fall Chinook salmon in the Grays watershed, and prioritizes river reaches where recovery actions should be implemented. This project is directly assessing the limiting factors for most of the priority areas. For example, the Subbasin Plan lists the middle mainstem Grays and tributary reaches, and the upper watershed as priority habitat areas (p. C-71). Our primary chum habitat study sites are centered in the Gorley reach of the mainstem Grays, the West Fork, Fossil Creek, and lower mainstem Grays. We will be focusing on assessing habitat quality in these reaches using many of the factors listed in Table 12 (e.g., connections to floodplain, riparian health, mass wasting, substrate quality, etc.). Our watershed assessment is focusing on the sediment input to the upper Grays, and is examining specifically the impacts of forest land use on watershed quality which is also recommended in the subbasin plan (Table 12). Our study areas are closely aligned with the Tier 1 priority reaches identified as in need of recovery actions in the Subbasin Plan (Table 14 and Figure 20). Data that we will be collecting and reports we prepare in FY 2006 will be used to directly support implementation of recovery actions outlined in the Subbasin Plan (Tables 15 and 16).
In summary, the Grays River watershed assessment project is closely tied to the implementation of the recommendations within the Subbasin Plan as well as the objectives of the Action Agencies' IP for the 2004 BiOp. However, the FY 2006 budget as currently proposed is not sufficient to complete this project in FY 2006. Many of the landowners and management agencies within the Grays Basin are patiently awaiting the results of our watershed and biological assessment. Delays in completion of this assessment may negatively affect the cooperative relationships we have established with these entities.

1992-009-00 - Yakima Phase Il Screens O&M (Expense) WDFW - Olympia

Description: YSS performs preventative maintenance and operational adjustments on completed Yakima Phase 2 fish screen facilities to assure optimal fish protection performance and to extend facility life, thereby protecting BPA's capital investment.

Consistency with subbasin plans

This project is consistent with and complements Aquatic Strategies 10 &16 in the Management Plan. Screening and passage projects are considered high priority actions to increase salmonid abundance and intrinsic population productivity. Work Cooperatively with BPA to design irrigation diversions that will remain stable and functioning over long time periods. Maintenance and Operation of these facilities to ensure they perform the fish protection function they were designed for is a key component of the salmond recovery efforts within the Yakima Basin.

Addresses subbasin plan priorities

Fish Protection facilities that prevent delay, injury, or mortality to anadromous fish that come in contact with irrigation diversions are a necessary and key component of the salmon recovery effort. Maintenance and Operation of these facilities per criteria established by state and federal agencies will achieve this goal.

1990-044-00 - Coeur D'Alene Reservation Habit (Expense) Coeur D'Alene Tribe

Description: Habitat restoration, purchase critical watershed areas to protect quality habitat, develop an educational outreach program, develop interim tribal harvest opportunities, construct and operate a hatchery, and 5 year monitoring and evaluation program.

Consistency with subbasin plans

The project is consistent with and implements the following Aquatic Objectives and Strategies:

Objective 2A2 - Protect and Restore Westslope Cutthroat Trout
Strategy a: Improve riparian conditions; increase channel stability.
Strategy b: Increase habitat diversity.
Strategy c (priority equal to d): Reduce fine sediment.
Strategy d (priority equal to c): Increase flows where appropriate.
Strategy e: Remove passage obstructions.
Strategy f: Reduce stream temperatures.
Strategy g: Decrease pollutants.
Strategy h: Evaluate native resident fish distribution and abundance and assess need for conservation aquaculture facilities.

Objective 2C1 - Establish put-and take fisheries for westslope cutthroat trout
Strategy a (priority equal to b): Construct a total of 5 ponds in the Coeur d' Alene Watershed to function as put-and-take westslope cutthroat trout fisheries by 2012.
Strategy b (priority equal to a): Identify stream reaches that do not, and likely will not, support westslope cutthroat trout by 2010 for establishment of put and take fisheries.
Strategy c: Supplement pond and streams identified in strategies a and b with sufficient numbers of hatchery raised westslope cutthroat from locally adapted stocks to meet subsistence and harvest goals.

The metrics summarized above in FY2006 Goals are consistent with the following objectives and strategies from the Subbasin Plan (Table 10.1-3):
Riparian Condition (15) 1B1, strategies a, c,d,e,g
Channel Stability (15) 1B1, strategies a, f
Habitat Diversity (15) 1B1, strategies a, f
Fine Sediment (6) 1B1, strategies f, k; 1B2
Low Flow (5) 1B1, strategy c
High Temperatures (4) 1B2
Pollutants (3) 1B1, strategy b; 1B2
Obstructions (1) 1B1, strategies h, i, j
High Flow (1) 1B1, strategy c

Addresses subbasin plan priorities

This project implements five of the top six priorities, including the two highest priority objectives for the Subbasin: restoration of adfluvial westslope cutthroat trout and implementation of put and take harvest opportunities (Table 10.3.1). The target watersheds addressed by this proposal include Benewah, Lake, Alder and Evans; all are priority adfluvial cutthroat bearing streams. Benewah, Lake and Alder are ranked 1st, 3rd, and 16th respectively for restoration and Evans is ranked 15th for protection based on their departure from reference conditions (See tables 6-4 through 6-20). In addition to their relative rankings, each of these streams are culturally significant to the Coeur d'Alene Tribe and are the highest priorities for resident fish substitution in the Council's 2000 Program.

Biological evaluations indicate that populations occupying lower elevation watersheds in the subbsasin are at highest risk based on low population numbers and habitat losses. Target watersheds addressed by this project all fall within this high-risk category. Affected attributes include low flow, high flow, fine sediment, high temperatures, and pollutants. The top three watersheds, including Benewah and Lake Creek, are in close proximity to Coeur d' Alene Lake and are

heavily impacted by land use practices (agriculture, timber harvest, logging, and/or residential development).

Of the top three ranked watersheds that have experienced significant habitat alterations based on watershed land use activities, Lake Creek has the greater biological potential (Table 6.8). Lake Creek provides critical passageway for adfluvial westslope cutthroat trout.

This project specifically addresses the following water quality impairments:
Lake Creek - Sediment and temperature limit fisheries production in the watershed (Table 6.18, Page 6-52)

Benewah - Temperature is the primary limiting factor for fisheries production in the watershed (Page 6-53).

1990-044-01 - Lake Creek Land Acquisition (Expense) Coeur D'Alene Tribe

Description: Protect, enhance, and maintain wetland and riparian habitat in the Lake Creek drainage as partial mitigation for the impacts attributed to the construction and operation of the Albeni Falls hydroelectric facility.

Consistency with subbasin plans

The project is consistent with and implements Terrestrial Objectives 1A1 through 1A8, Strategies a, b, c, d, and e (Coeur d'Alene Subbasin Plan, pages 10-25 & 10-26). These strategies stipulate the completion of mitigation for Chief Josheph, Grand Coulee and Albeni Falls Dams. The property purchased through the Lake Creek Project credited 66.91 HUs toward Albeni Falls construction and inundation losses. Lake Creek was originally scheduled to credit 760 HUs toward Albeni Falls Dam. Acquisitions that could be completed in FY2006 may complete the HU crediting for which the Lake Creek Project was intended.

The Project is consistent with and implements Aquatic Objective 2A1, Strategies a through h and Objective 2A2, Strategies a, b, c, d, f, and g (Coeur d'Alene Subbasin Plan, pages 10-11 & 10-12). These strategies stipulate improvements in habitat to improve native bull and cutthroat trout populations. Acquisition and management of properties to facilitate hydrologic processes that provide adaquite polutant-free streamflows would greatly improve habitats for native salmonids.

The Project is consistent with and implements Aquatic Objective 2B1, Strategies a and c (Coeur d'Alene Subbasin Plan, pages 10-12 & 10-13). These strategies stipulate the acquisition of lands to support resident fish populations as substitution for anadromous fish losses. The acquisition, protection, restoration and enhancement of properties targeted by this Project will provide duel benefits to fish and wildlife and thus will benefit habitats for resident fish populations as well.

Consistency with Measures adopted by the Northwest Power and Conservation Council are addressed in "Other Comments."

Addresses subbasin plan priorities

Coeur d'Alene Subbasin Terrestrial Objectives 1A1 through 1A8, Strategies a, b, c, d, and e were identified as Intermountain Provincial Priority 1 (Highest priority).

Coeur d'Alene Subbasin Aquatic Objective 2A1 was identified as the 3rd priority of Subbasin Aquatic Objectives. This project would encompass all Strategies under that Objective.

Coeur d'Alene Subbasin Aquitic Objective 2A2 was identified as the 1st priority of Subbasin Aquatic Objectives. Strategies within the Objective are listed in order of importance.

Coeur d'Alene Subbasin Aquatic Objective 2B1 was identified as the 5th in the order of Subbasin Objective priorities and Strategy a was identified as the seniour priority while Strategy c was identified as the juniour priority within the Objective.

1991-046-00 - Spokane Tribal (Galbr Sprgs) H (Expense) Spokane Tribe Of Indians

Description: Operate and maintain the Spokane Tribal Hatchery to aid in the restoration and enhancement of the Lake Roosevelt and Banks Lake fisheries.

Consistency with subbasin plans

This project is consistent with and implements Aquatic Strategies I, II (a, b & c)(Management Plan Pages 12-15 in the Upper Columbia and 12-16 Spokane Subbasins).

Addresses subbasin plan priorities

The project does accomplish priority work objectives under the plan associated with mititgation of loss anadromous and resident fisheries.

1994-043-00 - Lake Roosevelt Data Collection (Expense) Spokane Tribe Of Indians

Description: Monitor and evaluate the performance of hatchery fish. Develop and maintain a model able to predict the effects of hydro-operations and management actions on the lake ecosystem and fishery. Use model results to refine a fisheries management plans.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements the Upper Columbia Subbasin Aquatic Goals, Objectives and Strategies 1A1a-d, 1A2a-d, 1A3a, b, d and e, 1A4a, 1A5a-d, 1B2c, d, h, i and k, 1B3a, b and d, 1B4a, 1C1-4, 1C6, 2A1b-d, 2A2a-e, 2C1a and d-f, as well as Province Level Objectives 2A1-4, 2B, 2C1-2. Additionally, the project is consistent with and implements the Spokane Subbasin Aquatic Goals, Objectives and Strategies 1A1a, 1B1c, e, 1B2a, e, i and j, 1B3e, i and j, 1B5c, 1B6a, 1B7b-d, 1C4a and b, 2A1b and c, 2A2a, 2C1a and b, 2C2c, 2C3a and f, as well as Province Level Strategies 1C1-4, 2A1-4

Addresses subbasin plan priorities

Priority:
The project goals and milestones are a priority in the Upper Columbia Subbasin because the objective ranking framework in the Management Plan puts assessment and implementation of habitat strategies, protection of the genetic integrity of focal and native fish species, maintenance, restoration and enhancement of wild populations of native fish and subsistence species to provide harvestable surplus and restoration of resident fish species through artificial production as top priorities in the subbasin plan. The project goals and milestones are a priority in the Spokane Subbasin because the objective priority framework in the Management Plan puts strategies aimed at assessment of resident fish loss, development of projects aimed at the protection, restoration and enhancement of habitat and assessment of conservation aquaculture needs to assist with enhancing/re-establishing native fish populations as top priorities in the subbasin plan. Additionally, the subbasin plan identified the use of artificial production to provide recreational and subsistence fisheries consistent with the NPCC Resident fish Substitution Policy as a priority.

1995-009-00 - Lake Roosevelt Rainbow Trout N (Expense) Lake Roosevelt Development Associa

Description: Resident fish substitution addresses unmitigated losses of salmon and steelhead attributed to development and operation of hydropower projects.

Consistency with subbasin plans

The volunteer net pen program on Lake Roosevelt serves primarily to provide an artificial production of rainbow to supplement wild populations of native fish. This program is consistent with the councils 2000 Fish and Wildlife Program. 34.3.1 which states “There is an obligation to provide fish and wildlife mitigation where habitat has been permanently lost due to hydroelectric development. Artificial production of fish may be used to replace capacity, bolster production and alleviate harvest pressure on weak naturally spawning resident and anadromous fish populations” (third priority). Subbasin Objective 1A5 recommends restoring resident fish stock using artificial production (priority 4). Strategy A – Maintain and improve existing artificial production programs/net pens operations. 34-15 Subbasin Objective 2C1: artificially produce enough fish to supplement consistent harvest to meet state and tribal management objectives (priority 6). Strategy B—Preserve and enhance net pen operations. 34-18 Objective 4 (priority level). Strategy A—Maintain and improve existing artificial production programs/net pen operations.

The net pen program works closely with the Spokane Tribal Hatchery and the WDFW Sherman Creek Hatchery to coordinate the rearing and transfer of fish to the pens for additional rearing for approximately 8 more months. The Lake Roosevelt Fishery Enhancement Program monitor and evaluate the fishery.

Addresses subbasin plan priorities

The Subbasin plan prioritizes the production of net pen rainbows as a support fishery in Lake Roosevelt. The goals represent the accomplishments required to efficiently raise fish in 45 net pens located at seven sites over 94 miles of river. The priorities are discussed in the consistency portion of the response narrative. They are:
Subbasin Objective 1A5 (Priority 4)
34-15 Subbasin Objective 2C1 (Priority6)
34-18 Subbasin Objective 4 (Priority)
34.3.1. Power Planning Council Quote (Priority 3)

1995-027-00 - Lake Roosevelt Sturgeon (Expense) Spokane Tribe Of Indians

Description: Three year base-line assessment of white sturgeon in Lake Roosevelt from Grand Coulee Dam to the Canadian border, and the Spokane River arm. Special emphasis will be placed on defining recruitment potential and factors currently limiting recruitment.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements the Upper Columbia Subbasin Aquatic Goals, Objectives and Strategies 1A1a-b, 1A5a and d, 1B2 c and k, 2A1a and d, 2A2a, d and e, 2C1a and c-f, as well as Province Level Objectives 1C1-4, 1C6 and 2A1-4. Additionally, the project is consistent with and implements the Spokane Subbasin Aquatic Goals, Objectives and Strategies 1A1b, 1B2a, e and j, 1B3i, 1B4h, 1B5c, 1B6a, 1C3a, 2Aab and c, 2A2a, c and e, 2A3g, 2C1a-b, 2C2a and c, as well as Provincial Level Objectives, 1C1-4, 1C6, 2A2-4, 2B1 and 2C2.

Addresses subbasin plan priorities

Priority:
The project goals and milestones are a priority in the Upper Columbia Subbasin because the objective ranking framework in the Management Plan puts assessment and implementation of habitat strategies, protection of the genetic integrity of focal and native fish species, maintenance, restoration and enhancement of wild populations of native fish and subsistence species to provide harvestable surplus, and restoration of resident fish species through artificial reproduction as top priorities in the subbasin plan. The project goals and milestones are a priority in the Spokane Subbasin because the objective priority framework in the Management Plan puts strategies aimed at assessment of resident fish loss, development of projects aimed at the protection, restoration and enhancement of habitat, maintenance and implementation of restoration activities consistent with the Upper Columbia White Sturgeon Recovery Plan and assessment of conservation aquaculture needs to assist with enhancing/re-establishing native fish populations as priorities in the subbasin plan.

2001-033-00 - Hangman Watershed Coeur D'Alen (Capital) Coeur d'Alene Tribe

Description: Protect and/or restore riparian, wetland and priority upland wildlife habitats within the Hangman Watershed on the Coeur d'Alene Indian Reservation as part of implementation efforts in the Spokane River Subbasin.

Consistency with subbasin plans

Addressed in the FY2006 Expense request form.

Addresses subbasin plan priorities

Addressed in the FY2006 Expense request form.

2001-033-00 - Coeur d' Alene - Hangman Watershed O&M (Expense) Coeur D'Alene Tribe

Description: Protect and/or restore riparian, wetland and priority upland wildlife habitats within the Hangman Watershed on the Coeur d'Alene Indian Reservation as part of implementation efforts in the Spokane River Subbasin.

Consistency with subbasin plans

This Project is consistent with and implements the Spokane Subbasin Plan Terrestrial Objective 1A10, Strategy a (page 26-29 of the Spokane Subbasin Plan), which stipulates O&M will be directed at maintenance of HUs and wildlife values on mitigation properties. This Project is also consistent with Terrestrial Objective 1A11, Strategy a (page 26-29 of the Spokane Subbasin Plan), which mandates the implementation of an effectiveness monitoring program. Lands previously purchased to mitigate for HU losses as defined in Appendix C, Table 11-4 of the Columbia River Basin 2000 Fish and Wildlife Program must be managed and monitored to ensure those properties realize their HU potential. This Project will complete a management plan and initiate restoration during FY2006 that will ensure the properties reach their HU potential and provide a effectiveness Monitoring and Evaluation process. Implementing these strategies will assist in achieving the Intermountain Province Level Objective 1A (Spokane Subbasin Plan, page 26-27) of fully mitigating for construction and inundation losses incurred from Chief Joseph, Grand Coulee and Albeni Falls Dams.

This Project provides duel benefits for wildlife and fish by restoring and protecting wetland and riparian habitats in that the properties purchased for HU crediting will also support instream habitats and stream flows that provide native salmonid habitats within the Spokane Subbasin. The project is therefore also consistent with and implements Spokane Subbasin Aquatic Objective 2A3, Strategy b (page 26-13 of the Spokane Subbasin Plan), which calls for the restoration and protection of riparian corridors and wetlands. It also implements the Spokane Subbasin Aquatic Objective 2B1, Strategy c (page 26-14 of the Spokane Subbasin Plan), which mandates the protection and restoration of properties consistent with the 2000 Fish and Wildlife Program.

Consistency with Measures adopted by the Nortwest Power and Conservation Council are addressed in Other Comments.

Addresses subbasin plan priorities

Spokane Subbasin Plan Terrestrial Objective 1A10, Strategy a was identified as an Inermountain Provincial Priority 1 strategey.

Spokane Subbasin Plan Tertestrial Objective 1A11, Strategy a was identified as an Intermountain Provincial Priority 1 strategy.

Spokane Subbasin Plan Acquatic Objective 2A3, Strategy b was identified as an Intermountain Provincial Priority 2 strategy.

Spokane Subbasin Plan Acquatic Objective 2B1, Strategy c was identified as an Intermountain Provincial Priority 1 strategy.

In addition to the listed strategies, Hangman Creek was identified wihin the Subbasin Plan as a major priority for restoration efforts in several venues. Six stream reaches reaches (Reach Sequence numbers 61, 46, 49, 44, 62, and 63) in the Upper Hangman Watershed, were this Project is active, were identified in the Spokane Subbasin Plan as being the six reaches that have the greatest deviation from reference conditions (Spokane Subbasin Plan, page 22-23). Mainstem Hangman is also ranked as deviating the greatest from habitat conditions that could support mountain whitefish (Spokane Subbasin Plan, page 22-34). Hangman Creek is listed as the source of the greatest amount of bedload and suspended sediments to the Spokane River (Spokane Subbasin Plan, page 22-61). This project addresses these priority issues by restoring wetland and riparian habitats in upper protions of Hangman Creek, which will moderate the flashy hydrology of the Hangman Watershed and reduce instream pollutants.

2002-045-00 - Coeur D'Alene Fish Habitat Acq (Capital) Coeur d'Alene Tribe

Description: This project intends to protect wetland/riparian habitats within the Coeur d'Alene Subbasin through management rights acquisition and restore, enhance and maintain those habitat for the benefit of native fish and wildlife in perpetuity.

Consistency with subbasin plans

The Project is consistent with an implements Aquatic Objective 2A1, Strategies a through h and Objective 2A2, Strategies a, b, c, d, f, and g (Coeur d'Alene Subbasin Plan, pages 10-11 & 10-12). These strategies stipulate improvements in habitat to improve nativ bull and cutthroat trout populations. Acquisition and management of properties to facilitate hydrologic processes that provide adaquite polutant-free streamflows would greatly improve habitats for native salmonids.

The Project is consistent with and implements Aquatic Objective 2B1, Strategies a and c (Coeur d'Alene Subbasin Plan, pages 10-12 & 10-13). These strategies stipulate the acquisition of lands to support resident fish populations as substitution for anadromous fish losses. The acquisition, protection, restoration and enhancement of properties targeted by this Project will provide duel benefits to fish and wildlife and thus will benefit habitats for resident fish populations as well.

This project also implements Coeur d'Alene Tribe Wildlife Mitigation Measure 1 (page 2) and the Coeur d'Alene Subbasin Resident Fish Substitution Measures 4, 5, 6, 7, 9, and 10 (pages 3-4) since habitats purchased and managed for wildlife mitigation facilitate hydrologic functions that benefit resident fish.

Addresses subbasin plan priorities

Coeur d'Alene Subbasin Aquatic Objective 2A1 was identified as the 3rd priority of Subbasin Aquatic Objectives. This Project would encompass all Strategies unde that Objective.

Coeur d'Alene Subbasin Aquatic Objective 2A2 was identified as the 1st priority of Subbasin Aquatic Objectives. Strategies within this Objective are listed in order of importance and this Projects encompasses the most important Strategies within the Objective.

Coeur d'Alene Subbasin Aquatic Objective 2B1 was identified as the 5th in the order of Subbasin Objective priorities and Strategy a was identified as the senior priorty while Strategy c was identified as the juniour priority within the Objective.

1991-060-00 - Pend Oreille Wetlands Acquisit (Expense) Kalispel Tribe Of Indians

Description: Protect, restore, enhance and maintain important wetland/riparian wildlife habitat along the Pend Oreille River as partial mitigation for the construction and operation impacts associated with Albeni Falls Dam consistent with regional planning documents.

Consistency with subbasin plans

Terrestrial Objective 1A9 strategy a. Ranked HIGH - 2nd priority.

Addresses subbasin plan priorities

This project matches the subbasin goals and objectives exactly as it is proposed to "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" (Pend Oreille Subbasin Plan pp. 18-32).

1992-061-00 - Albeni Falls Wildlife Mitigati (Capital) IDFG

Description: Protect, enhance, and maintain important wetland and riparian wildlife habitat in the Lake Pend vicinity as on-going mitigation for construction and operation impacts associated with the Albeni Falls hydroelectric project.

Consistency with subbasin plans

Consistent with subbasin plans for Pend Oreille, Coeur d'Alene and Kootenai as follows:

Pend Oreille Subbasin Plan
Objectives 1A1-8; 1A9

Coeur d'Alene Subbasin Plan
Objectives 1A1-9

Kootenai Subbasin Plan
Objectives R2, RP1, RP4, M6, T4, T8, WB2, RP3, GS1, XF2, KOK2, BUR2, R4, BT1, RBT1, WLT2

Addresses subbasin plan priorities

Priorities identified in subbasin plans for Pend Oreille, Coeur d'Alene and Kootenai as follows:

Pend Oreille Subbasin Plan
Objectives 1A1-8 Prioity 1; 1A9 Priority 2

Coeur d'Alene Subbasin Plan
Objectives 1A1-9 Priority 1 and 2

Kootenai Subbasin Plan
Objectives R2, RP1, RP4, M6, T4, T8, WB2, RP3, GS1, XF2, KOK2, BUR2, R4, BT1, RBT1, WLT2 all high priority.

1992-061-00 - Albeni Falls Wildlife Mitigati (Expense) IDFG

Description: Protect, enhance, and maintain important wetland and riparian wildlife habitat in the Lake Pend vicinity as on-going mitigation for construction and operation impacts associated with the Albeni Falls hydroelectric project.

Consistency with subbasin plans

Consistent with subbasin plans for Pend Oreille, Coeur d'Alene and Kootenai as follows:

Pend Oreille Subbasin Plan
Objectives 1A1-8; 1A9

Coeur d'Alene Subbasin Plan
Objectives 1A1-9

Kootenai Subbasin Plan
Objectives R2, RP1, RP4, M6, T4, T8, WB2, RP3, GS1, XF2, KOK2, BUR2, R4, BT1, RBT1, WLT2

Addresses subbasin plan priorities

Priorities identified in subbasin plans for Pend Oreille, Coeur d'Alene and Kootenai as follows:

Pend Oreille Subbasin Plan
Objectives 1A1-8 Prioity 1; 1A9 Priority 2

Coeur d'Alene Subbasin Plan
Objectives 1A1-9 Priority 1 and 2

Kootenai Subbasin Plan
Objectives R2, RP1, RP4, M6, T4, T8, WB2, RP3, GS1, XF2, KOK2, BUR2, R4, BT1, RBT1, WLT2 all high priority.

1994-047-00 - Lake Pend Oreille Kokanee Miti (Expense) IDFG

Description: Enhances resident fish populations by changing the winter draw down of Lake Pend Oreille and the Pend Oreille River and researches other possible mechanisms for fish declines including predation and competition.

Consistency with subbasin plans

The project is consistent with and implements strategies in the Inter Mountain Province Management Plan and Inventory. Objectives 1B, 1C5,1C6, 2A3, and 2C2 on pages 2-13, 2-14 and 2-15. These objectives call for restoring riparian habitat (the project manages lake levels to protect shoreline spawning kokanee), meeting recovery plans for bull trout (bull trout recovery plan calls for restoring kokanee to supply forage for bull trout), restoring resident fish (project attempts to recover kokanee impacted by Albeni Falls Dam), minimize negative impacts to native fish from nonnative species (project attempts to restore kokanee which will minimize competetion between lake trout and bull trout), and provides harvest opportunity (if project restores kokanee, a multimillion dollar fishery could be restored).

Addresses subbasin plan priorities

Work accomplishes priority work in the Intermountain Province Management Plan and Inventory that are listed in Table 2.3.1-2, starting on page 2-24.

First priority work in objective 1A involves new items and therefore cannot be proposed until new proposals are submitted for FY07. Our work falls under the 2nd Priority classification in Category 1; objectives 1B, 1C1-1C5, 1B5, 1B7, 1C5, 1C1, and 1C3. These objectives serve to protect shoreline habitat, increase warm water fish habitat in the Pend Oreille River, protect bull trout, and mitigate losses of kokanee directly attributable to operation of Albeni Falls Dam.

These objectives address several limiting factors (page 2-24 to 2-25) including:

1. Habitat degradation
2. Non-native fish impacts, and
3. Loss of fishing opportunity

1995-001-00 - Kalispel Tribe Resident Fish P (Expense) Kalispel Tribe Of Indians

Description: Assess trout habitat of the tributaries to the Pend Oreille and implement recommendations for enhancement. Provide bass habitat in the mainstem of the Pend Oreille and supplement the population.

Consistency with subbasin plans

[Pend Oreille Subbasin Objectives (strategies) 2C1(a)]. (Page 18-18)

[Pend Oreille Subbasin Objectives (strategies) 2A1(a), 2A3 (a) and (b); 1B1 (a), (c), and (d);1B4 (a) and (b);1C1 (a) and (g); 1C5 (a)]. (Pages 18-16,17; 18-8, 9, 10; 18-12, 13)

[Pend Oreille Subbasin Objectives (strategies) 2A2(a); 1C5(a)]. (Pages 18-17, 18-13)

[Pend Oreille Subbasin Objectives (strategies) 2C1(b)]. (Page 18-18)

[Pend Oreille Subbasin Objectives 2A1(a), 2A3(a) and(b); 1C5(a)]. (Pages 18-16, 18-17, 18-13)

Addresses subbasin plan priorities

1st Priority
Pend Oreille Subbasin Objectives (strategies) 2A1(a)
Pend Oreille Subbasin Objectives (strategies) 2A3 (a) and (b)
Pend Oreille Subbasin Objectives (strategies) 1B1 (a), (c), and (d)
Pend Oreille Subbasin Objectives (strategies) 1B4 (a) and (b)
Pend Oreille Subbasin Objectives (strategies) 1C1 (a)
Pend Oreille Subbasin Objectives (strategies) 1C5 (a)
Pend Oreille Subbasin Objectives (strategies) 2A2(a);

2nd Priority
Pend Oreille Subbasin Objectives (strategies) 2C1(a)].
Pend Oreille Subbasin Objectives (strategies) 2C1(b)].
Pend Oreille Subbasin Objectives (strategies) 1C1(g);

1990-018-00 - Rainbow Tr Hab/Pass Impr Prog (Expense) Colville Confederated Tribes

Description: Increase the quality and quantity of spawning and rearing habitat in selected streams that drain into Lake Roosevelt by eliminating migration barriers, improving riparian conditions, and improving instream habitat.

Consistency with subbasin plans

This project is consistent with and implements aquatic strategies 1B2 Strategy a, d, and e on page 42-7. Riparian habitat restoration for focal species redband trout, adfluvial rainbow trout, and kokanee.(Priority 1; 1B1 Inventory all barriers and strategies b, c, and d on pages 42-6 & 7 (Priority 7); 1B3 strategy b: Conserve and protect intact or restored riparian areas, strategy g: develope technical and policy working groups, c: limit livestock from riparian areas and replant native vegetation, Strategy e: protect and restore cottonwoord galleries, strategy f: Enforce water allocations, on page 42-8(priority 3); 1B5 Strategies a: conduct riparian habitat resoration, reduce fine sediment inputs and increase channel complexity, strategy b: decommisssion roads, strategy c: Install in-stream sturctures that improve habitat complexity, strategy d: limit livestock from riparian areas, strategy e: develop technical and policy working groups on page 42-9 (Priority 9); 1B6 Reduce width to depth ratios to <10 strategy a: Conduct riparian habitat restoration, strategy c: conserve and protect intact or retored riparian areas, strategy d: Limit Livestock and replant native vegetation, strategy e and f(priority 11). 1B7 Protect and maintain flow adequate fo all life stages of focal and native fish strategy b: develop minimum in-stream flows for fish bearing streams 1B1 strategy C and 1B4 strategy D on page 42-8(priority 5). 1C1, 1C2, 1C4 Restoration of resident fish species distribution and abundance on pabe 42-10(priority 15). 2A1, 2A2, 2A4 page 42-11 & 12(priority 4). 2C2 strategy a: Use locally adapted redband trout to supplement natural populations on page 42-14 (priority 8)Under the Rufus Woods Sub-basin Plan 1B1 strategy e: inventory and prioritize all passage barriers on page 50-7(priority 2) Under the Upper Columbia Sub-basin Plan 1B1 strategy b: inventory and prioritize all passage barriers on page 34-8(priority 10)

Addresses subbasin plan priorities

This project and it's goals accomplishes priority work under the Inter-Mountain Province San Poil, Rufus Woods, and Upper Columbia sub-basin plans, because the workplan places work with native resident adfluvial rainbow trout, redband rainbow trout, and kokanee and habitat improvements as Priority 1, Priority 2, Priority 3, Priority 4, Priority 5, Priority 6, Priority 7, Priority 9, and Priority 11 in the San Poil Plan and Priority 2 in the Rufus Woods Plan and Priority 10 in the Upper Columbia Plan. During the next review period Project Proposals to address Priority 10, 12, 14, 15 and 16 are planned.

1992-048-00 - Hellsgate Big Game Winter Rang (Expense) Colville Confederated Tribes

Description: Protect, enhance, manage and evaluate wildlife habitats and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.

Consistency with subbasin plans

This project was identified and included in all the sub-basin plans for completing mitigation as well as protecting, restoring, and enhancing acquired lands for wildlife species and habitats. Many Tribes, State, and other agencies propose individual projects for each area dealing with mitigation (separate projects), example (WDFW Scotch creek, Swanson lakes, etc). The CCT has proposed only this project to address wildlife mitigation. All future acquisitions and work for terrestrial wildlife will be addressed under this project with the main focus to fully mitigate hydropower losses from Grand Coulee and Chief Joseph Dams. This project is not only consistent with but an integral component of all sub-basin plans in the Intermountain Province. This project is the only project the CCT has proposed to address completing wildlife losses resulting from original construction and inundation of Grand Coulee and Chief Joseph Dams. The resulting acres of habitat will be protected and enhanced for indicator/management species as well as other components of a healthy ecosystem for the life of the projects. These managed lands will provide secure core areas for wildlife populations to remain viable over time and prevent future losses to important species and habitats on the CCT Reservation.

Addresses subbasin plan priorities

Mitigation for Chief Joseph and Grand Coulee Dams was the highest priority in the Intermountain Province. This project directly addresses mitigation for losses by land acquisition and protection activities to satisfy BPA obligation under the Power Act. In addition the ongoing O&M monies will continue to protect, enhance, and restore these lands for species and habitats over time to ensure diversity and abundance. In the Intermountain Province Plan, the top priority has been to fully mitigate for wildlife losses resulting from Grand Coulee and Chief Joseph hydropower projects. Each sub-basin Rufus Woods, San Poil, and Upper Columbia identifies those losses as priorities within each area. Specific references to these sub-basins can be found in the IMP under San Poil Terrestrial Objectives and Strategies Pages 22-42 through 30-42 and Prioritized in 42.4.1 Table 42.4-1, Rufus Woods Terrestrial Objectives and Strategies pages 50-1 through 50-35 and Summarized in Table 50.4-1, and Upper Columbia summary Table 34.4-1 on pages 34 through 37. All these sub-basins address the NPPC mitigation obligation for each hydropower project found in Table 11-4 of the Columbia River Basin 2000 Fish & Wildlife Program on pages 25-34.

1991-062-00 - Blue Cr Winter Range (Capital) Spokane Tribe Of Indians

Description: Mitigation and protection of lands purchased for partial mitigation on the Spokane Indian Reservation due to the construction and inundation of winter range habitat caused by Grand Coulee Dam.

Consistency with subbasin plans

Consistent with Intermountain Province Objectives 1A (1A.1-1A.9)
Strategy a

Objective 2B.2
Strategy a
Strategy c
Strategy d

Addresses subbasin plan priorities

Consistent with Intermountain Province Objectives 1A (1A.1-1A.9)
Strategy a – High Priority

Objective 2B.2
Strategy a – High Priority
Strategy c – High Priority
Strategy d – High Priority

1995-011-00 - Chief Joseph Kokanee Enhanceme (Expense) Colville Confederated Tribes

Description: This is a stock assessment project, specifically to determine the stock status, strength, genetics, and local fishery contribution by natural production kokanee. High entrainment rates are suspected through Grand Coulee Dam. An hydroacoustic assessment

Consistency with subbasin plans

Sub-basin planning consistency
Within the intermountain province, this project is consistent with and implements many of the aquatic strategies identified in 4 of 6 sub-basins. Kokanee were identified as a focal species in all sub basins of the province.
In the Spokane sub-basin, strategy 1A1; Complete assessments of resident fish losses strategies a, b, c, & d. (Pg26-18). 1A2 fully mitigate and compensate for Resident fish losses, strategies a & b. (Pg 26-21)
In the Upper Columbia sub-basin, aquatic strategies 1A1, Continue to evaluate strategies a, b, c &d are addressed, (pg 34-6 & 34-7); 1A5 strategies a, c &d (pg 34-7) 1C1, 1C2 (pg 34-12) 2A2 Maintain, restore and enhance resident fish, Strategies a, b, c &d are being implemented (pg 34-18)) 2A1 Protect genetic integrity strategies a, b, c & d are being implemented (pg 34-17)

San Poil sub-basin strategy 2A2,Maintain genetic integrity while maintaining fishery strategies a, b, c, d, e & f (pg 42-16) 2C2. Artificially produce native salmonids strategies a-e (pg 42-18)
2A2, strategies a, b, c, & d (pg 42-16.

Rufus Woods sub basin: 2A1Determine genetic distribution of focal species, strategfies a-c (pg 50-24; 2A3, Protect and enhance native fish. Strategies a, b, & c. (pg 50-21)

Addresses subbasin plan priorities

The Chief Joseph Kokanee Enhancement project goals and work elements accomplish work identified as priorities under the Intermountain province sub-basins. Kokanee are a
focal specie in all of the sub-basin within the Intermountain Province. In the Spokane sub-basin priorities 1 and 2 are being accomplished. In the Upper Columbia priorities 1, 2, 3, 4, 6, &7 are being met. In the San Poil sub-basin priorities 1, 2, 7 &8 are being addressed. In the Rufus Woods sub-basin, Priorities 2, 7, 9, 15, 16 and 18 are being met.

2001-032-00 - Coeur D'Alene Fisheries Enhanc (Expense) Coeur D'Alene Tribe

Description: Determine the current distribution and enhancement opportunities for redband trout in Hangman Creek and its tributaries within the Coeur d'Alene Reservation.

Consistency with subbasin plans

This project directly relates to and is consistent with the top two and three of the top four priorities in the subbasin plan. The project directly addresses the following subbasin objectives and strategies found in the intermountain province plan Spokane subbasin management plan table 26.3-1 pages 26-18 and 19:

Subbasin Objective 1A1 - Complete Watershed assessments
Strategy a*: Using existing databases, identify data gaps and critical information needs for the Spokane Subbasin.
Strategy b*: Continue filling data gaps in the Subbasin through ongoing investigations (such as JSAP) and new investigations.

Subbasin Objective 1B2: - Complete habitat restoration work
Strategy a: Using appropriate assessment tools, develop and prioritize projects for implementation.
Strategy b: Conduct riparian restoration, reduce fine sediment inputs, and increase channel complexity to address known limiting factors for salmonid species.
Strategy c: Develop management plans with federal, state, Tribal, and private landowners to protect critical salmonid habitat.
Strategy d: Create or use existing incentive programs for private landowners to implement strategies to achieve this objective.
Strategy e: Implement projects aimed at improving aquatic conditions in both lotic and lentic habitats.
Strategy f: Where possible, acquire Priority properties that currently support native fish through fee title acquisition, conservation easements, and/or long-term leases by year 2020.
Strategy g: Manage livestock grazing within riparian zones to maximize native habitats.
Strategy h: Implement projects for removal of fish passage barriers.
Strategy i: Use vegetation enhancements, annual seeding, and water retention in backwater areas to increase near-shore fish production, increase shoreline stability, and reduce erosion.
Strategy j: Develop technical and policy working groups that meet regularly to identify problems and implement solutions for the Subbasin.

Subbasin Objective 1C4: Develop and meet recovery goals for sensitive native resident fish species.
Strategy a: Implement restoration, protection, and enhancement methods for native salmonids (redband rainbow trout).
Strategy b: Increase the number of miles of streams within the Spokane River watershed that support native redband rainbow trout.

Addresses subbasin plan priorities

It is important to note that redband rainbow trout are considered a top priority species within the subbasin plan and are only located in two tributaries of the Spokane river, of which, this project is associated with one of those tributaries (Hangman Creek). Water quality as a result of land use practices is most likely the principal limiting factor in the watershed(refer to sections 21.2.5, 21.2.7, 22.1.4, 22.8, and 22.9 for information regarding water quality, land use practices, and limiting factors).

Demonstration projects completed through this project will directly improve water quality by reducing fine sediment input, lowering overall water temperature and increasing summertime flows within the watershed as well as improving other habitat conditions for redband trout in the Hangman Creek watershed.

1985-038-00 - Colville Hatchery (Expense) Colville Confederated Tribes

Description: Produce 22,679 kg (50,000 lbs) of resident salmonids for distribution to reservation waters in an effort to provide a successful subsistence/ recreational fishery as partial mitigation for anadromous fish losses above Chief Joseph and Grand Coulee Dams.

Consistency with subbasin plans

This project is consistent with and implements the aquatic strategies 2A3, 2A2, 2C2, and 2A4 in the Rufus Woods subbssin (management plan pages 50-22 to 50-25); aquatic strategies 2A2, and 2C2 in the SanPoil subbasin (management plan pages 42-16 and 42-18); aquatic strategies 2A2, 1A5, and 2C1 in the Upper Columbia subbasin (management plan pages 34-18 and 34-19). These strategies relate to objectives for resident fish stocks.

Addresses subbasin plan priorities

This project accomplishes priority work under the subbasin plans, because the prioritization framework in the management plan puts work of this type in this area with these species as a high priority.

1991-047-00 - Sherman Creek Hatchery - O&M (Expense) WDFW

Description: Sherman Creek Hatchery's (SCH) primary objective is the restoration and enhancement of the Lake Roosevelt and Banks Lake Fisheries. In 1991, WDFW and BPA entered into a 25 year non-discretionary contract to fund the operations and maintenance of SCH.

Consistency with subbasin plans

The Sherman Creek Hatchery is consistent to the subbasin plan.Below is a reference to the subbasin plan that fits into the goals of the Sherman Creek Hatchery. Columbia River Basin Level Goal 1C: Restore resident fish species to near historic abundance etc. Subbasin Objective 2A1,Strategy b: Use locally adaptive, genetically appropriate native stocks etc. Stategy c: Implement marking program to identify hatchery produced trout from wild fish etc. subbasin Objective 2C1: Artifically produce enough fish to supplement consistent harvest to meet state and tribal management objectives. Strategy a: Artifically produce sufficient fish to fulfill management and harvest needs. Strategy b: Preserve and enhance netpen operations.

Addresses subbasin plan priorities

The goals of the Sherman Creek Hatchery match subbasin plan priorities in the following reference points. Subbasin Objective 1A5 Strategy a: Maintain and improve existing artificial production programs/netpens operations. Strategy b: Use locally adapted native redband rainbow stock,etc.
Strategy c: Develop artificial production capacity for kokanee salmon that utilizes locally adapted stocks. Strategy d. Develop technical and policy working groups that meets regularly to identify problems and implement solutions for the Upper Columbia Subbasin. Subbasin Objective 2C1, Strategy a:,Strategy b: Strategy d: Strategy e: Strategy f:

1995-067-00 - Colville Confederated Tribes P (Capital) Colville Confederated Tribes

Description: Acquire, protect, enhance and evaluate wildlife habitat and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.

Consistency with subbasin plans

Acquireing land was identified and included in all the sub-basin plans for the Inter mountain and Columbia Cascade Provinces. The CCT has identified several key tracts to address wildlife mitigation. All future acquisitions and work for terrestrial wildlife will be addressed under the Tribes wildlife mitigation program (Hellsgate project) with the main focus to fully mitigate hydropower losses from Grand Coulee and Chief Joseph Dams. Land acquisition is consistent with and an integral component of all sub-basin plan priorities for wildlife projects. The CCT has proposed this request for funding to address completion of terrestrial wildlife losses from the hydropower projects bordering the Colville Reservation. The resulting acres of habitat will be protected and managed for indicator/management species as well as other components of a healthy ecosystem for the life of those projects. These managed lands will provide secure areas for wildlife populations to remain viable over time and prevent future losses to important/key species and habitats on the Colville Reservation.

Addresses subbasin plan priorities

Mitigation for Chief Joseph and Grand Coulee Dams was the highest priority in the Intermountain Province. This request from the Capital budget for FY06 directly addresses mitigation for losses by land acquisition and protection activities to satisfy BPA obligation under the Power Act. In the Intermountain Province Plan, the top priority has been to fully mitigate for wildlife losses resulting from Grand Coulee and Chief Joseph hydropower projects. Each sub-basin Rufus Woods, San Poil, and Upper Columbia identifies those losses as priorities within each area. Specific references to these sub-basins can be found in the IMP under San Poil Terrestrial Objectives and Strategies Pages 42-22 through 42-30 and Prioritized in 42.4.1 Table 42.4-1, Rufus Woods Terrestrial Objectives and Strategies pages 50-1 through 50-35 and Summarized in Table 50.4-1, and Upper Columbia summary Table 34.4-1 on pages 34 through 37. All these sub-basins address the NPPC mitigation obligation for each hydropower project found in Table 11-4 of the Columbia River Basin 2000 Fish & Wildlife Program on pages 25-34.

1995-067-xx - Colville Confederated Tribes Pre-Acquisition Activities/Cost Colville Confederated Tribes

Consistency with subbasin plans

This one-time request for start-up monies is consistent with the Intermountain sub-basin plans in acquiring lands to finish construction and inundation losses from Chief Joseph and Grand Coulee Dams. These lands once acquired will be added to the Tribes ongoing Hellsgate O&M project for protection and enhancement activities. Land acquisition for mitigation is identified in the sub-basin plans as high priority, but funds are needed to do the start-up activities, assessments, and acquisitions.

Addresses subbasin plan priorities

Mitigation for Chief Joseph and Grand Coulee Dams was the highest priority in the Intermountain Province. This project directly addresses mitigation for losses by land acquisition and protection activities to satisfy BPA obligation under the Power Act. In addition the ongoing O&M monies will continue to protect, enhance, and restore these lands for species and habitats over time to ensure diversity and abundance. In the Intermountain Province Plan, the top priority has been to fully mitigate for wildlife losses resulting from Grand Coulee and Chief Joseph hydropower projects. Each sub-basin Rufus Woods, San Poil, and Upper Columbia identifies those losses as priorities within each area. Specific references to these sub-basins can be found in the IMP under San Poil Terrestrial Objectives and Strategies Pages 42-22 through 42-30 and Prioritized in 42.4.1 Table 42.4-1, Rufus Woods Terrestrial Objectives and Strategies pages 50-1 through 50-35 and Summarized in Table 50.4-1, and Upper Columbia summary Table 34.4-1 on pages 34 through 37. All these sub-basins address the NPPC mitigation obligation for each hydropower project found in Table 11-4 of the Columbia River Basin 2000 Fish & Wildlife Program on pages 25-34.

1997-004-00 - Resident Fish Above Chief Joe (Expense) Kalispel Tribe Of Indians

Description: Coordinating, collecting, assessing, and making recommendations based on blocked area fisheries information.

Consistency with subbasin plans

Upper Columbia Subbasin
Upper Columbia Subbasin Objectives 1A1 (a, b) Page 34-6
Upper Columbia Subbasin Objectives 1B1 (a, b, d) Page 34-8
Upper Columbia Subbasin Objectives 1B4 (a) Page 34-9
Upper Columbia Subbasin Objectives 1B6 (d) Page 34-10
Upper Columbia Subbasin Objectives 2A1 (a) Page 34-18
Upper Columbia Subbasin Objectives 1C1 (a) Page 34-12

Spokane Subbasin
Spokane Subbasin Objectives 1A1 (a, b) Page 26-6
Spokane Subbasin Objectives 1A2 (a) Page 26-6
Spokane Subbasin Objectives 1B1 (a, b, c) Page 26-6, 7
Spokane Subbasin Objectives 1B2 (a) Page 26-7
Spokane Subbasin Objectives 1B3 (a) Page 26-8
Spokane Subbasin Objectives 1C1 (a) Page 26-11
Spokane Subbasin Objectives1C3 (a) Page 26-11
Spokane Subbasin Objectives 2A1 (a, b, c) Page 26-12
Spokane Subbasin Objectives 2A2 (a) Page 26-13

Pend Oreille Subbasin
Pend Oreille Subbasin Objectives 2A1 (a) Page 18-16
Pend Oreille Subbasin Objectives 2A3 (a and b) Page 18-17
Pend Oreille Subbasin Objectives 1B1 (a, b and c) Page 18-8
Pend Oreille Subbasin Objectives 1B2 (b, c, and d) Page 18-9
Pend Oreille Subbasin Objectives 1B3 (a) Page 18-9

Addresses subbasin plan priorities

Upper Columbia Subbasin
Upper Columbia Subbasin Objectives 2A1 (a) Priority Ranking #2
Upper Columbia Subbasin Objectives 1C1 (a) Priority Ranking #5
Upper Columbia Subbasin Objectives 1A1 (a, b) Priority Ranking #7
Upper Columbia Subbasin Objectives 1B6 (d) Priority Ranking #9
Upper Columbia Subbasin Objectives 1B1 (a, b, d) Priority Ranking #10
Upper Columbia Subbasin Objectives 1B4 (a) Priority Ranking #17

Spokane Subbasin
Spokane Subbasin Objectives 1A1 (a, b) Priority 1
Spokane Subbasin Objectives 1A2 (a) Priority 2
Spokane Subbasin Objectives 1B1 (a, b, c) Priority 2
Spokane Subbasin Objectives 1B2 (a) Priority 1
Spokane Subbasin Objectives 1B3 (a) Priority 4
Spokane Subbasin Objectives 1C1 (a) Priority 2
Spokane Subbasin Objectives1C3 (a) Priority 1
Spokane Subbasin Objectives 2A1 (a, b, c) Priority 1
Spokane Subbasin Objectives 2A2 (a) Priority 3

Pend Oreille Subbasin

Pend Oreille Subbasin Objectives 2A1 (a) Priority 1
Pend Oreille Subbasin Objectives 2A3 (a and b) Priority 1
Pend Oreille Subbasin Objectives 1B1 (a, b and c) Priority 2
Pend Oreille Subbasin Objectives 1B2 (b, c, and d) Priority 2
Pend Oreille Subbasin Objectives 1B3 (a) Priority 2

1998-003-00 - Spokane Tribe Wildlife Mitiga (Expense) Spokane Tribe Of Indians

Description: Partial mitigation to protect, mitigate, and enhance wildlife mitigation lands on the Spokane Indian Reservation for construction and inundation losses of wildlife habitat on the Spokane Indian Reservation caused by Grand Coulee Dams

Consistency with subbasin plans

Project is consistent with Intermountain Province Objectives 1A (1A.1-1A.9)
Strategy b – High Priority
Strategy c – Medium Priority
Objective 2B.1
Strategy a – High Priority
Strategy c – High Priority
Strategy d – High Priority
Strategy e – High Priority

Addresses subbasin plan priorities

Objectives 1A (1A.1-1A.9)
Strategy b – High Priority
Strategy c – Medium Priority
Objective 2B.1
Strategy a – High Priority
Strategy c – High Priority
Strategy d – High Priority
Strategy e – High Priority

2001-028-00 - Banks Lake Fishery Evaluation (Expense) WDFW - Olympia

Description: Determine the abundance and ecological interactions of fish populations in Banks Lake. Identify limiting factors for naturally recruiting and hatchery supplemented fish. Provide management recommendations to maximize the fishing potential of Banks Lake.

Consistency with subbasin plans

The Banks Lake Fishery Evaluation Project monitors and evaluates the stocking of hatchery kokanee from the Ford and Spokane Tribal Hatcheries (#9104600) and evaluates the factors that limit the fish populations in the lake. The following objectives and strategies from the Upper Columbia and Crab Creek subbasin plans relate to this project's objectives:

Upper Columbia

- Objective 1, strategy a; page 34-17 – stream habitat restoration.
- Objective 1, strategy j; page 34-17 – Develop minimum in-stream flows.
- Objective 3, strategy a; page 34-18 – Enhance native and focal species.
- Objective 2, strategy a; pages 34-17 and 34-18 – Determine genetic distribution.
- Objective 2, strategy b; page 34-18 – Use locally adapted stocks.
- Objective 3, strategy d; page 34-18 – Artificial production for harvest needs.
- Objective 4, strategy a; page 34-18 – Maintain production programs/net pens.
- Objective 6, strategy a; page 34-19 – Artificial production for harvest needs.
- Objective 6, strategy b; page 34-19 – Preserve and enhance net pen operations.
- Objective 7, strategy c; page 34-19 – Monitor entrainment.
- Objective 12, strategy g; page 34-21 – Develop minimum in-stream flows.
- Objective 14, strategy a; page 34-22 – Develop feasibility of lake enrichment.
- Objective 15, strategy c; page 34-22 - Develop minimum in-stream flows.
- Objective 17, strategy b; page 34-22 – Implement the assessment.

Crab Creek – Assessment Unit 6 - Banks Lake

- Hypothesis 1, objective 1; page 185 – species interactions and affect on fishery
- Hypothesis 2, objective 1; page 185 – monitor secondary production
- Hypothesis 3, objective 1; page 185 – Determine level of natural salmonid production
- Hypothesis 4, objective 1; page 185 – Determine impacts of drawdown
- Hypothesis 4, objective 2; page 186 – Impacts of residence time on production
- Hypothesis 4, objective 3, page 186 – monitor entrainment
- Hypothesis 4, objective 4, page 186 – kokanee harvest, production and stocking
- Hypothesis 5, objective 1, page 186 – increase utilization of Lake Whitefish

Addresses subbasin plan priorities

The Banks Lake Fishery Evaluation Project (2001-028-00) can be directly related to at least two sub-basin plans, the Upper Columbia Mainstem (UCM) and Crab Creek (CC). The Banks Lake Project has been placed in both subbasins due to its geographical location (CC)), the water exchange between lakes (CC and UCM), and its tight connection to BPA funded projects and mitigation goals on Lake Roosevelt (UCM). The Banks Lake Fishery Evaluation Project monitors and evaluates the stocking of hatchery kokanee from the Ford (2001-029-00) and Spokane Tribal Hatcheries (#9104600) and evaluates limiting factors to resident fish populations in the lake. The Lake Roosevelt Hatcheries Coordination Team coordinates artificial production and enhancement efforts on Lake Roosevelt and Banks Lake.

Banks Lake contains two fish species that have been identified in the UCM subbasin plan as focal species, kokanee and burbot. Kokanee are an important subsistence species while burbot are native to the Columbia Basin, and both provide off-site recreational fishing opportunities. Rainbow trout and kokanee are identified as focal salmonid species in the CC subbasin plan and management for these species remains a high priority in Banks Lake. Other non-native resident gamefish are identified as focal species and provide a substantial fishery in Banks Lake (over $6 million annually). These species are part of the overall Fisheries Evaluation Project on Bank Lake.

The Banks Lake Fishery Evaluation Project is consistent with many of the goals and objectives of the UCM and CC

subbasin plans (outlined in Subabsin planning; consistent section). The UCM subbasin plan states that extirpation of anadromous fish from the Subbasin has severely limited the fishery. Until anadromous fish can feasibly be recovered in the Subbasin, on-site and off-site resident fish projects will be used as partial substitution for anadromous losses.

2001-029-00 - Ford Hatchery Improvement O&M (Expense) WDFW - Olympia

Description: Improve water supply and operate and maintain Ford Hatchery to enhance the recreational and subsistence kokanee fisheries in Lake Roosevelt and Banks Lake, and bolster put-and-take resident trout fishing lakes in Region 1 (Eastern WA).

Consistency with subbasin plans

The Ford Hatchery O&M, Well Improvement Project is consistent to the subbasin plan.Below is a reference to the subbasin plan that fits into the goals of the Ford Hatchery. Columbia River Basin Level Goal 1C: Restore resident fish species to near historic abundance etc. Subbasin Objective 2A1,Strategy b: Use locally adaptive, genetically appropriate native stocks etc. Stategy c: Implement marking program to identify hatchery produced trout from wild fish etc. subbasin Objective 2C1: Artifically produce enough fish to supplement consistent harvest to meet state and tribal management objectives. Strategy a: Artifically produce sufficient fish to fulfill management and harvest needs. Strategy b: Preserve and enhance netpen operations.

Addresses subbasin plan priorities

The goals of the Ford Hatchery match subbasin plan priorities in the following reference points. Subbasin Objective 1A5 Strategy a: Maintain and improve existing artificial production programs/netpens operations.
Strategy c: Develop artificial production capacity for kokanee salmon that utilizes locally adapted stocks. Strategy d. Develop technical and policy working groups that meets regularly to identify problems and implement solutions for the Upper Columbia Subbasin. Subbasin Objective 2C1, Strategy a:,Strategy b: Strategy d: Strategy e: Strategy f:

2001-030-00 - Sharp Tailed Grouse Habitat (Expense) Colville Confederated Tribes

Description: Conduct a population viability analysis for a comphrenhensive, adaptive management plan to restore critical shrub-steppe and riparian deciduous habitat to secure a viable metapopulation of sheap-tailed grouse on the Intermountain Province region.

Consistency with subbasin plans

This project is consistent with and implements Terrestrial Strategies a, b, and c (Management Plan page 34-27). These strategies relate to Objectives 1A8 for sharp-tailed grouse habitat protection, enhancement/restoration (Management Plan page 34-26). This project also is consistent with and implements Terrestrial Strategies a*, and b (Management Plan pages 34-29). These strategies relate to Objectives 2A2 for increased sharp-tail grouse populations (Management Plan pages 34-28, 34-29). Additionally, the assessment identifies habitat quality and quantity as well as lack of genetic information as limiting factors. This project is designed to acquire and protect habitat for sharp-tailed grouse to mitigate for construction losses resulting from the Grand Coulee Project. Currently this project has acquired 10,400 acres, and in 2006 we will acquire 18,431 additional acres for sharp-tailed Grouse. In addition, this project is aimed at compiling genetic information to determine the extent of genetic hardiness of sharp-tailed grouse. The project is monitoring and evaluating sharp-tailed grouse populations on the Colville Indian Reservation and enhancing and protecting mitigation lands to evaluate the effectiveness of management activities on this species and it's habitats. Furthermore, the project has coordinated with State, Federal, Tribal, and Canadian entities to augment the sharp-tailed grouse population by translocating 19 sharp-tailed grouse to the Colville Indian Reservation.

Addresses subbasin plan priorities

This project accomplishes Provincial Priority 1, and Provincial Priority 3, work under the sub-basin plan (Management Plan pages, 34-25, 34-28). The prioritization framework in the Management Plan puts habitat acquisition, restoration, enhancement, and management species on mitigation lands within the bounds of the Colville Indian Reservation for sharp-tailed grouse as a high priority.

2001-031-00 - Resident Fish Symposium (Expense) Lake Roosevelt Forum

Description: The Lake Roosevelt Forum will develop, coordinate, promote and convene an annual three-day symposium dealing with resident fish programs and related research within the Intermountain Province, with particular emphasis on the Lake Roosevelt Subbasin.

Consistency with subbasin plans

This project is consistent with and supports the public education, coordination and collaboration components articulated in the Intermountain Province Subbasin Plan. In the IMP, a provincial approach was taken to subbasin planning. As a result, a vision, objectives, and strategies applicable to the entire IMP were developed. The six subbasins within the IMP include Coeur d' Alene, Pend Oreille, Spokane, Upper Columbia, San Poil, and Lake Rufus Woods. The geographic area, issues, topics and presenters that are the focus of conference activity are drawn from the IMP region. That said, many attendees come from the broader Fish and Wildlife program region because they find topics of common interest, and value forging closer relationships with individuals in the IMP area.

Addresses subbasin plan priorities

Conference goals are consistent with the following vision, guiding principles and specific goals identified by the IMP.
Vision: We envision the Intermountain Province being comprised of and supporting viable, diverse, fish and wildlife populations, and their habitats that contribute to the social, cultural, and economic wellbeing of the Pacific Northwest.
Guiding Principles:

- Public outreach is essential for successful plan development and implementation.
- Human interests can be balanced with fish and wildlife needs.
- All people are stewards for future generations.
- Integrated subbasin plans should consider ecological, not political, boundaries.

Goals:

- Coordinate subbasin planning at the provincial level.
- Provide a forum in which local, state and Tribal governments, and other interested stakeholders collaborate and coordinate on the creation of subbasin plans
- Have an open public process with multiple opportunities for comment from all interested parties
- Maintain a dialogue between local technical experts and stakeholders during development of the subbasin plan

2001-034-00 - Forage & Mule Deer Conditions (Expense) WSU

Description: We are proposing a cooperative, five-year research investigation involving the WDFW, the lead agency, and Washington State University (WSU), a collaborating agency, to assess the role of habitat in maintaining mule deer numbers.

Consistency with subbasin plans

The Intermountain (IM) Province Management Plan lists Shrub-Steppe as a focal habitat, which has declined 21.8% (Tbl. 4.2, Pp. 4-7). The availability of water for irrigation and cheap power accelerated the conversion of upland native habitats to irrigation agriculture (Pp. 4-20). In the IM plan, mule deer are listed as a culturally significant, Focal Animal species that represents wildlife dependent on shrub-steppe, mixed forest, ponderosa pine-savannah and rockland habitats (Pp. 4-49), that serve a key ecological function as a browser (4-58) and, as a fungivore, are considered a functional keystone species (4-59). The plan estimates that 29,125 HU of mule deer habitat have been lost from Federal Hydrosystem projects in IM province (Tbl. 4.10, Pp. 4-47). Therefore, mule deer and their associated habitat are considered a high mitigation priority (Tbl. 4.18, Pp. 4-64).

Our project (# 2001-034-00 Contract # 00006184 "Effects of Cougar Predation and Nutrition on Mule Deer Population Declines in the IM Province of the Columbia Basin") was designed and funded specifically to determine the cause of declines and limiting factors (nutrition, predation, or competition) in mule deer populations in 4 of the 6 subbasins within IM province. Our project is also generating data on quality and quantity of mule deer habitat and tests of current HEP models that are key to accomplishing other high priority objectives in 5 subbasins. Without better knowledge of habitat requirements, costly mitigation projects are more likely to be ineffective and wasteful. All of the following objectives are priority 1 or 3.

Pend Oreille Subbasin Mgmt.& RM& E Plans, Tbl. 18.4-1, 19.1, Pp.18-39 - 18-42, 19-16, Obj. 2A6, strat. a, c, 2B3, strat. a,b, i.
Upper Columbia Subbasin Mgmt. Plan, Tbl. 34.4-1, Pp. 34-33 - 34-37,
Obj. 2C2, Strat. d, 1A3, Strat. a, c
San Poil Subbasin Mgmt. Plan, Tbl. 42.4-1, Pp. 42-32 - 42-36,
Obj. 2B5, Strat. a, c,1A3, Strat. d, 2B2
Lake Rufus Woods Subbasin Mg

Addresses subbasin plan priorities

The species (mule deer) and habitats (shrub-steppe, mixed forest, ponderosa pine- savannah and rockland habitats) our project addresses are considered high priority by the IM provincial plan and 5 of 6 of its subbasins (Tbl. 4.2, 4.18, Pp. 4-7, 47, 49,58, 59, 64).
Our project “Effects of Cougar Predation and Nutrition on Mule Deer Population Declines in the IM Province of the Columbia Basin” was designed, funded and implemented to address Provincial Priority 1 & 3 objectives and strategies, ascertaining the causes of mule deer declines and limiting factors in their populations. In addition, our work provides information that will allow other Provincial Priority 1 & 3 objectives and strategies to be carried out (e.g., enhance populations of big game and their habitats, reverse mule deer declines by increasing quality and quantity of forage, evaluate effectiveness of mitigation for mule deer).

Pend Oreille Subbasin Mgmt.& RM& E Plans, Tbl. 18.4-1, 19.1, Pp.18-39 - 18-42, 19-16, Obj. 2A6, strat. a, c, 2B3, strat. a,b, i.
Upper Columbia Subbasin Mgmt. Plan, Tbl. 34.4-1, Pp. 34-33 - 34-37,
Obj. 2C2, Strat. d, 1A3, Strat. a, c
San Poil Subbasin Mgmt. Plan, Tbl. 42.4-1, Pp. 42-32 - 42-36,
Obj. 2B5, Strat. a, c,1A3, Strat. d, 2B2
Lake Rufus Woods Subbasin Mgmt. & RM&E Plans, Tbl. 50.4-1, 51.1, Pp. 50-36 - 50-39,. 51-10, Obj.1A8, Strat. C, 2B2, Strat. a, b, f
Spokane, Tbl. 26.4-1, Pp. 26-37 - 26-42, Obj. 1A3, 2A5, Strat. a

2000-014-00 - Evaluate Lamprey Habitat/Popul (Expense) USFWS

Description: With emphasis on Pacific lampreys, identify and quantitatively evaluate populations of lampreys and their habitats in a stream below Bonneville Dam.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements components of reports associated with Lower Columbia River Subbasin Plans. The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan lists Pacific Lamprey as a significant species (Page 2-3). Relatively little is known about status of Pacific lamprey. Lamprey have been adversely effected by loss of habitat (Page 1-2), have experienced declining or variable trends in recent years and are an integral part of the Lower Columbia River ecosystem (Page 3-104). Most data suggests that populations have declined concurrent with hydroelectric development and other habitat changes (Page 2-18). Limiting factors are listed in Table 14 (Page 3-110 thru 111). The objectives for Pacific lamprey are to reverse the decreasing abundance trend and manage for populations that can meet cultural and ecological needs (Overview, Page 15; Page 5-46). The NF and EF Lewis River Subbasin Plan calls for improving habitat to help benefit declining lamprey populations (G-191). This plan also identifies a lack of data and little research on Pacific lamprey, both of which are considered necessary (see all of Appendix B, 16-1). The Lower Columbia and Columbia Estuary Bi-State Subbasin Plan also recognizes that Pacific lamprey are ecologically and culturally significant (Page 4-3). This plan calls for reducing predation on (PO4), limiting exposure to contaminants for (PO5), documenting ecological interactions of (PO6), documenting habitat use by (PO7 and PO11), avoiding dredging mortality of (PO10), protecting overexploitation of (PO12), restoring peak flows for (PO14), improving dam passage of (PO15) Pacific lamprey (Page ES-5 thru 6) and providing for a minimum of 100,000 adults passing Bonneville Dam annually (Page 4-32).

Addresses subbasin plan priorities

Priority:
The project accomplishes priority work identified under the above referenced plans. In The Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan, the objective to reverse the decreasing abundance trend and manage for populations that can meet cultural and ecological needs will require substantial increases in our understanding of the species. At present, research needs include: determining adult swimming and migratory capabilities and the degree of spawning site fidelity; quantifying the level of predation on migrating adults; identifying spawning locations, habitat characteristics, and incubation survival; determining habitat requirements and duration of freshwater residency of juvenile lamprey in the subbasins, mainstem and estuary; and rectifying difficulties in abundance estimates because of repeated up and downstream movement (Recovery Goals, Page 5-46). In addition, OS.M7. calls for an evaluation and improvement of passage conditions at mainstem and tributary dams, ensuring no negative effects on salmonid passage; while OS.M8. calls for allocation of water within the annual water budget for the Columbia River Basin so that it simulates peak spring discharge (Strategies and Measures, Page 6-68). The identification of status, limiting factors, and management alternatives for lamprey is also a high priority (Monitoring and Research, Page 7-31). The NF and EF Lewis River Subbasin also identifies a lack of data and little research on Pacific lamprey, both of which are considered necessary (see all of Appendix B, 16-1). The Lower Columbia and Columbia Estuary Bi-State Subbasin Planstates that strategies and measures to return selected historic lamprey populations to viability are among the highest levels of importance. The goal for the Columbia River Pacific lamprey is to reverse the decreasing abundance trend and increase the population to a self-sustaining, viable population that can provide for cultural and ecological needs.

1993-060-00 - Select Area Fishery Evaluation (Expense) WDFW - Olympia

Description: Develop and enhance fisheries in the lower Columbia River utilizing hatchery stocks, while protecting depressed wild stocks, through application of net-pen rearing, and monitor and evaluate rearing effects on habitat at net-pen sites.

Consistency with subbasin plans

The Select Area Fishery Evaluation (SAFE) Project provides the opportunity for both commercial and recreational fishers to harvest strong stocks of hatchery salmon in off-channel areas of the Columbia River with minimal impacts to non-local stocks including species listed under the Endangered Species Act. The Bi-state Mainstem Lower Columbia River and Columbia River Estuary Subbasin plans identify the management of "Columbia River fisheries at sustainable levels, maintaining a viable population through adequate spawner abundance, and directing harvest away from depressed stocks" as Strategy 15 in the biological objectives of the recovery plan (p. 9 of the Executive Summary and p. 4-63 of the Management Plan).

While harvest reduction has the potential to benefit some species (e.g. fall chinook) more than others (e.g. chum), the Management Plan Supplement to the Bi-state Columbia River Estuary Subbasin plan recommends continuation of the SAFE Project because it has a "High" probability to contribute to the biological objectives in the recovery of chum (p. 5-36), fall chinook (pp. 5-54 and 5-74), coho (pp. 5-92 and 5-111), winter steelhead (pp. 5-128 and 5-146), spring chinook (pp. 5-162 and 5-179), and summer steelhead (pp. 5-198 and 5-217).

The Washington Lower Columbia River and Estuary Subbasin Plan recommends a strategy "preserving fishery opportunities focused on hatchery fish in a manner that does not adversely affect recovery efforts" (Section 6.6, pp. 6-32 and 6-35). The plan recommends "utilization of the Select Area off-channel sites" as action to minimize impacts to naturally spawning steelhead, coho, and spring chinook (Section 6.6, pp. 6-41, 6-42, and 6-43). For future monitoring and research, the Washington Estuary Subbasin Plan lists "evaluate innovative techniques (e.g. terminal fisheries and tangle nets) to improve access to harvestable stocks and reduce undesirable direct and indirect impacts to wild populations" (Section 7.8.5 p. 7-30). Conservation benefits from the SAFE project apply to fish stocks from every subbasin in the Columbia.

Addresses subbasin plan priorities

The Bi-state Mainstem Lower Columbia River and Estuary Subbasin Plan prioritizes harvest management as Strategy 15 for achievement of the biological objectives in the conservation and recovery of depressed stocks of salmon and steelhead (p. ES-9). Strategy 15 states that Columbia River fisheries be managed "at sustainable levels, maintaining a viable population through adequate spawner abundance, and directing harvest away from depressed stocks" and ranks the benefit as "High" for the physical objective of protecting "genetic integrity and biological diversity and abundance of depressed stocks by directing the effort of commercial harvesters in the estuary to alternative, hatchery derived stocks" (p. 4-63). The Management Plan Supplement recommends the continuation of the Select Area Fisheries Project because it has a "High" probability to contribute to the recovery of chum (p. 5-36), fall chinook (pp. 5-54 and 5-74), coho (pp. 5-92, 5-111), winter steelhead (pp. 5-128, 5-146), spring chinook (pp. 5-162, 5-179), and summer steelhead (pp. 5-198, 5-217).

The Washington Lower Columbia River and Estuary Subbasin Plan states that "salmon recovery is predicated on restoration of healthy, harvestable naturally spawning populations" and recommends "preserving fishery opportunities focused on hatchery fish" (p. 6-32). While mitigation for development of the Columbia hydrosystem is focused on the preservation and recovery of depressed salmonids, the preservation of the fishery infrastructure is equally important if recovery is indeed defined by harvestable, naturally spawning populations. The Select Area Fishery Evaluation (SAFE) Project was recommended in the recent FCRPS Biological Opinion as a bridge to a time in the future when naturally spawning populations of salmon and steelhead again support commercial harvest. Fishing communities and their economies have been devastated by the collapse of Columbia River fish runs and curtailment of fisheries. The economic and social benefits of the SAFE project remain significant to affected fishers and their industries.

2000-012-00 - Eval Factors Limiting Col R Ch (Expense) USFWS

Description: Evaluate factors limiting chum salmon production in Hardy Creek, Hamilton Springs, and Columbia River side-channel.

Consistency with subbasin plans

Consistency--The project provides information that will assist in evaluating status of chum salmon relative to biological objectives in the management plan for the subbasin (Volume II, Chapter H, page H-59, Table 10). The project is consistent with and implements aspects of the biological monitoring plan for Bonneville tributaries populations described in the management plan for the subbasin (Volume II, Chapter H, page H-93, Table 23). It provides information on life stages and relations with primary limiting factors affecting chum salmon in tributaries noted in the Habitat Factor Analysis of the subbasin plan (Volume II, Chapter H, page H-35, Table 3). Information generated by the project contributes to several aspects of monitoring and research described in Chapter 7 of the regional plan (e.g., objectives for routine monitoring and intensive monitoring pages 7-5 through 7-13).

Addresses subbasin plan priorities

Priority--The project provides information supportive of the 10 prioritized measures for the Bonneville tributaries basin contained in the subbasin management plan (Volume II, Chapter H, pages H-70 through H-81, Table 15). The sites of the project are considered tier 1 or tier 2 priority locations depending on the specific measure. Chum salmon at the project sites are considered a component of a primary population in the subbasin plan, this is, those that would be restored to high or better probabilities of persistence, which imparts important contributions to recovery (Volume II, Chapter H, page H-59).

Other documents--Implementation of this specific project during the 2005-2007 timeframe is included as an action agency commitment in the Implementation Plan for the FCRPS Updated Proposed Action. Chum salmon addressed by this project are members of a population in NOAA's supplement to the subbasin plan (i.e., draft recovery plan). This project will contribute to evaluating recovery criteria in the supplement and viability goals developed by the Willamette/lower Columbia River TRT.

2001-053-00 - Reintro Of Chum In Duncan Cr (Expense) Pacific States Marine Fisheries Comm

Description: Monitor and evaluate the success of the recently restored spawning channels for chum salmon at Duncan Creek. If necessary, jump start the population by collecting brood stock from adjacent populations.

Consistency with subbasin plans

The project is consistent with and implements regional strategies S.S1 (Provide habitats adequate to sustain through access, protection and restoration), S.S2 (Configure habitat protection and restoration to support region-wide recovery goals), S.S5 (Restore access of key populations to blocked habitats in historically accessible subbasins), S.S6 (Maximize efficiency of habitat restoration activities by concentrating in currently productive areas with significant scope for improvement), H.S1 (Expand use of hatchery reintroduction and supplementation programs to conserve and recover naturally-spawning fish when and where appropriate) (Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin plan Volume 1 – Regional Plan pages 6-10, 6-11 and 6-47). This project addresses the loss of quality spawning and incubation areas for Lower Columbia River chum salmon. Supplementation strategies (adult and fry) are being evaluated to aid in the reintroduction of chum salmon to rejuvenated habitat. This project includes the use of Washougal Hatchery for chum salmon risk reduction and enhancement.

Addresses subbasin plan priorities

The project accomplished/s work under these the key priorities #2 (Restoring floodplain function, riparian function and stream habitat diversity), #4 (Restore passage at culverts and other artificial barriers), #5 (Address immediate risk with short-term habitat fixes) and #6 (Align hatchery priorities with conservation objectives) identified in the subbasin plan (Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin plan Volume II – Subbasin Plan Chapter H, pages H - 4 and 5).

2003-012-00 - Shillapoo Wildlife Area (Expense) WDFW - Olympia

Description: Maintain and implement measures to restore and enhance wetland, riparian, and upland habitat in the Vancouver Lake Lowlands area.

Consistency with subbasin plans

This project is part of the Washington Wildlife Agreement (Section 5b line 9 as "Vancouver Lowlands") and is designed to partially mitigate wildlife impacts of Bonneville, The Dalles, and John Day dams. Key species addressed in management of the wildlife area include yellow warbler, Canada goose, and Sandhill cranes, which were also used in development of the subbasin plan for the Lower Columbia Mainstem. The focus of enhancement work here has direct ties to the subbasin plan through reestablishing/improving wetland and riparian habitats.

The project is consistent with Strategies 1,2 and 4 (pages 2-2, 2-6 and 2-12) of the supplement to the Mainstem Lower Columbia River and Columbia River Estuary Subbasin Plan. Wetland enhancements address strategy 1 by creating water regimes that would be more typical of the historic peak seasonal discharge (p 2-2,2-3) to restore native plant communities. Strategy 2 is addressed by restoring wetlands and riparian habitat in areas that had been developed for agriculture (p 2-8). Strategy 3 is addressed by wetland management measures that favor native plant communities and direct control measures for exotic invasive plants.

Addresses subbasin plan priorities

This project accomplishes priority work for multiple species by protecting or restoring riparian and floodplain habitat along Lake River and other areas associated with limiting factors Sa.LF.1, Sa.LF.2 (p A-176), BE.LF.2 (p A-184), Os.LF.2 (p A-189). This also addresses physical objectives Sa.PO.1 (p A-223), BE.PO.2&3 (p A-230), Os.PO.1 (p A-239),

Providing overwintering habitat for dusky Canada geese and Sandhill cranes is a key focus for managing this wildlife area: Limiting factor MI.LF.1 (p A-190) and Physical objectives MI.PO.1, 2, 3&4 pp A-241, 242).

The wildlife area also represents potential future dispersal habitat for Columbian White-tailed deer (limiting factor CWTD.LF.1, p A-185; physical objectives CWTD.PO.1, 2&3) and provides habitat protection and enhancement benefiting River Otter (p A-186 and physical objective RO.PO.1, p A-235) yellow warbler (p A-189 and physical objective YW.PO.1, p A-240), and red-eyed vireo (p A-189 and ReV.PO.1).

Although the suitability has not been fully explored the wildlife area is considered a potential site for western pond turtle recovery efforts. The western pond turtle is a component of plans for other adjoining subbasins upstream.

1999-025-00 - Sandy River Delta Habitat (Expense) USFS

Description: Restore 600 acre island of rare Columbia River floodplain "gallery" riparian forest. Restore 200 acres wetland/associated upland habitat. Remove 1930's dike from original Sandy River channel to restore hydrology and increase anadromous habitat.

Consistency with subbasin plans

Both the Sandy River Subbasin Summary (draft, May 17, 2002) and the Lower Columbia Mainstem and Estuary Subbasin Plan (December 15, 2004) are referenced, since the project is located in the floodplain of both the Sandy and Columbia Rivers.

The Sandy River Subbasin Summary does not provide an explicit strategy, however, the project is consistent with and implements the following items of the "Statement of Fish and Wildlife Needs" (page 136):
• More and better-connected habitat, especially riparian habitat
• Improved riparian structure and function
• Improved floodplain function and hydrologic integrity, including reconnection of side channel areas and wetlands.

Lower Columbia Mainstem and Estuary Subbasin Plan
Riparian forest and wetland protection and restoration will protect and improve habitat for bald eagle (focal species), yellow warbler and red-eyed vireo (species of ecological significance) per Objectives BE.PO.2 page A-230; YW.PO.1 page A-240; and ReV.PO.1 page A-241).

Dike removal could improve habitat for Fall Chinook and chum, two focal species (page A-221), and improve habitat for juvenile rearing (as well as migrants). (Objectives Sa.PO.2 and Sa.PO.3, page A-223).

Addresses subbasin plan priorities

Both the Sandy River Subbasin Summary (draft, May 17, 2002) and the Lower Columbia Mainstem and Estuary Subbasin Plan (December 15, 2004) are referenced, since the project is located in the floodplain of both the Sandy and Columbia Rivers.

The Sandy River Subbasin Summary does not provide an explicit priority framework. The only Sandy Subbasin recommendation is for the subject project (1999-025-00); page 139.

The Lower Columbia Mainstem and Estuary Subbasin Plan prioritizes the following actions:

The riparian forest and wetland protection and restoration actions implement "Priority A" measure EH.M2: "Protect and restore riparian condition and function" (page A-246).

The dike removal implements "Priority C" measure EH.M1: "Restore tidal freshwater portion of the lower Columbia River" (page A-246), and "Priority C" measure EH.M8: "Restore connectedness between river and floodplain" (page A-247).

1991-078-00 - Burlington Bottoms Wldlf Mitig (Expense) ODFW

Description: The project would mitigate for hydro-electric facilities through protecting, maintaining, and enhancing wildlife habitat and related Habitat Units, benefitting target and other wildlife including Threatened, Endangered, and At-Risk species.

Consistency with subbasin plans

This project is consistent with the Lower Columbia Subbasin Plan (LCSP) with the shared goal of protecting and enhancing habitat that will benefit multiple species rather than single species (pg. 10, Mngt. Plan). It is consistent with the following Strategies & Objectives:

- Strategy 1 (pg. 10)- “Reduce effects of Columbia River hydrosystem” & two objectives (pg. 16): One of the main goals of our Habitat Management Plan is restore historic water levels to the extent possible & restore connectivity between rivers and floodplains. This would allow for restoration of native plant communities including restoring emergent wetlands, as well as improving habitat for a variety of fish and wildlife species such as Chinook salmon (backwater slough rearing habitats) and red-legged frogs. Restoration will be carried out be through moist soil mngt.including installation of a water control structure. Also, a water control structure will be completed on nearby McCarthy Creek site, which will allow for increased hydrologic flows and resulting increased connectivity between the two sites & nearby Multnomah Channel. Total acreage is 150-200 acres.

- Strategy 2 (pg. 16) is “Protect and Restore Habitats” with 5 objectives: consistency with numbers 2 and 3 were addressed under Strategy 1 above. Consistent with objective #1 since it protects & restores important rearing habitats for salmonids in ponds and backwater sloughs on site. For #4, this project is consistent in restoring habitat diversity by removal of invasive plant species (ivy) and planting native species to increase diversity as well as protect and enhance rare plant communities such as old growth Oregon ash forests & wapato (emergent wetlands). For #5, this project is increasing forested areas through removal of invasive plant species (ivy, knotweed) & native planting to increase the forested acreage.

- Strategy 4 (pg. 22) - “Slow Introduction of Non-native Species”. This project is consistent with both objectives, by conducting past and on-going fish surveys, & documenting non-native fish presence.

Addresses subbasin plan priorities

The work conducted through this project is priority work as defined by the Willamette Subbasin Plan in the following manner:
- Priority 5.2.2.2 (pg. 5-2) Fix Culverts and Diversions to Allow Fish Passage; under work planned for 2005 and 2006, this project will be replacing one culvert that blocks fish passage and installing two new culverts in order to restore fish passage in the floodplain habitat adjacent to McCarthy Creek.
- 5.2.2.3 (pg. 5-2) Focus on Valley and Foothills Wildlife: this project protects and enhances some of the last remaining 20% of the Willamette Basin bottomland forests which provides habitat for a variety of species including red-eyed vireo, yellow warbler, pond turtle, and Northern red-legged frog.
- 5.2.2.4 (pg. 5-2) Restore Lowland Riparian Areas; restoration of riparian vegetation has been a primary objective of this project because of the importance of riparian habitat for both wildlife and aquatic species. Planting of native vegetation including willows and ash has occurred in various areas on the site and is planned for FY 2006.
- 5.2.2.5 (pg. 5-3) Restore Low-Cost, High-Return Areas of the Willamette River Floodplain; One of the objectives of this project is to restore the historic hydrologic regime to the extent possible, in order to protect and enhance the floodplain habitats that are highly productive and biologically diverse for salmonids & other species.

This project is priority work under the Lower Columbia Subbasin Plan by addressing limiting factors as follows (pg. 3-18, etc.): - Habitat degradation & loss of habitat connectivity; this project protects and enhances key habitat for juvenile salmonids through the goal of native planting along sloughs & ponds & mimicing hydrologic flows to reconnect historic channels & floodplain habitats.
- Loss of riparian areas, including loss of canopy cover; this project, through its objective of habitat enhancement for fish & wildlife, it protects & enhances important and rare old growth Oregon Ash/cottonwood forests, removing

invasive plant species and native planting.

1992-059-00 - Amazon Basin/Eugene Wetlands - (Expense) Nature Conservancy

Description: Restore, enhance existing mitigation lands, and acquire 99 acres contiguous with the Willow Creek Wildlife Mitigation Project. Complete a baseline Habitat Evaluation for new acquisitions and re-assess habitat conditions on existing mitigation area.

Consistency with subbasin plans

The project is consistent with the following sections of the subbasin plan:
3.6.2 Opportunities
3.6.2.3 Habitat for Restoration - The Nature Conservancy document
Willamette Valley-Puget Trough-Georgia Basin (WPG) Ecoregional Assessment
(Floberg et al. 2004).
4.4.5 Northwest Oregon Invasive Weed Management Partnership
The project coordinates with the Northwest Oregon Invasive Weed Management Partnership.
5.2.2.3 Focus on Valley and Foothills Wildlife
Restoration efforts are focused on valley habitats to benefit the unique and rare wildlife species that live there.
5.2.2.4 Restore Lowland Riparian Areas
Working to restore riparian vegetation along lowland streams and rivers in agricultural and urban areas.
5.2.2.5 Restore Low-Cost, High-Return Areas of the Willamette River Floodplain*
Working to restore natural flow regimes, periodic flooding, complex channels, and functioning riparian areas required to create and maintain the habitat features and dynamics that make floodplains especially productive and biologically diverse.
5.3.2 Terrestrial Biological Objectives
Working to increase population trends of focal species, especially
those listed under the Endangered Species Act, and the quantity and quality of connected habitats on which they depend.
5.3.2.1 Biological Performance Objectives
Project focuses on conservation of many of the biological objectives for the Willamette Subbasin Plan focal terrestrial species displayed in Table 5-1.
5.3.2.2 Habitat Objectives
Project addresses Habitat objectives displayed in Table 5-1. Project works in oak woodland, upland prairie, wetland and riparian areas.
5.6.1.4 Riparian Areas
Project concentrates efforts in the lowlands of the Willamette Valley.
5.7 Research, Monitoring, and Evaluation
Project is engaged in several forms of aquatic and terrestrial research, monitoring, and evaluation (RM&E).

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan, because the Prioritization Framework in the Management Plan puts work on Valley and Foothills Wildlife, Lowland Riparian Areas
Oak Woodlands, Upland prairies, Wetland, and Terrestrial Biological Objectives especially those listed under the Endangered Species Act, as high priorities.

1992-068-00 - Willamette Basin Mitigation (Capital) ODFW

Description: Mitigate for hydro-electric facilities through enhancement, easement development, acquisition, restoration, and management of wetlands and other target habitat types and their respective species in the Willamette basin in Oregon. The Willamette Basin Mit

Consistency with subbasin plans

These proposed acquisitions are consistent with the Willamette subbasin plan because:
1) they contain substantial proportions of focal habitats prioritized in the subbasin plan,
2) they are associated or near protected wildlife areas, refuges, and greenspaces,
3) they are adjacent to a major confluence site (Luckiamute, Santiam, and Willamette Rivers),
4) they connect valuable wildlife habitats,
5) they are have strong restoration potential, and
6) they represent one of the few declining opportunities to acquire multiple parcels under one ownership.

Addresses subbasin plan priorities

The goals for the proposed acquisitions match many of the priorities outlined in section 4.5.2.2 (terrestrial habitat conservation priorities), 5.2 (focal habitats), 5.2.2.3 (extent of current habitats), 5.2.2.4 (restoration priorities for lowland riparian areas), and 5.4.3.2 (connecting favorable habitats). Opportunties to acquire habitats that are connected to major resource sites, that are interconnected, that have substantial restoration potential, and that are of a significant size in the Willamette Valley are rare and will become more difficult and expensive.

1992-068-00 - Willamette Basin Mitigation (Expense) ODFW

Description: Mitigate for hydro-electric facilities through enhancement, easement development, acquisition, restoration, and management of wetlands and other target habitat types and their respective species in the Willamette basin in Oregon. The Willamette Basin Mit

Consistency with subbasin plans

BPA has provided substantial mitigation funds for the enhancement and restoration of the Willamette projects. Future restoration of these sites is critical because like most areas in the Willamette basin they have experienced significant change from human activities such as alterations of the ground and underground hydrologic systems, agricultural developments, and invasion of exotic vegetation. The acquisition and restoration of these areas are completely consistent with the conservation and management goals of the Willamette subbasin plan. They provide significant habitat for terrestrial and aquatic wildlife in biologically sensitive confluence areas. They are an extensions or parts of valuable wildlife areas such as Findley National Wildlife Refuge, EE Wilson, and other protected lands (Urban greenways) near Eugene and Corvallis and other municipalities. These areas are part of the conservation network of habitats described in section 4.3 of the subbasin plan. Section 4.5.2.1 identifies the valley floor as an area with limited opportunities for habitat protection because of the lack of public land. Section 4.5.2.2 in the subbasin plan outlined the need to substantially enhance terrestrial protections and restoration efforts and improve conservation efforts in the lowland areas. Restoration projects on these areas also benefit aquatic species such as Oregon Chub near Big Island and will restore channel connectively as proposed in the hydrologic plans for most sites. Restoration of lowland riparian areas are consistent with sections 5.2.2.4 (restoration of lowland riparian areas). These sites contain significant areas of oak woodland, wetland prairie, ponds and sloughs, and stream riparian areas, all described as focal habitats in Table 5.2. Section 5.4.3.2 described the need to connect favorable habitats. Restoration work on the sites will restore connectivity between focal habitats and between nearby protected wildlife areas.

Addresses subbasin plan priorities

The major longterm goals for these sites include the restoration of focal habitats particularly those described in the habitat loss section (5.2.2.3) in the subbasin plan and in Table 5.2. The loss of lowland habitats have been the most pronounced areas lost in the Willamette subbasin. Section 5.3.1.1 has identified restoration of Oregon Chub as a priority. Management goals for Big Island include substantial survey work and monitoring as well as potential enhancements of chub sites identified near Big Island. Long term restoration activities will also address the need to better understand hydrologic systems on the sites and the need to restore mitigate for the loss of a natural hydrologic through the removal of dikes and roadways, and the re-connection of side channels. Many of these activities have been identified as critical restoration strategies in section 5.4 and Table 5.3 in the subbasin plan. Removal of invasive exotics are critical for habitat restoration in the focal habitats and will be an on-going part of any mitigation work. Specifically, for 2006, work planned includes completion of baseline HEPs, management plans, survey and monitoring of habitats for biological databases, GIS mapping of habitats and water systems, and site preparation and native species plantings. For Big Island, survey and monitoring work will continue for Oregon Chub with the ultimate goal of enhancing nursery development of Big Island Chub ponds. An understanding of floodplain dynamics will assist in site identification. Restoration work in focal habitats will include native vegetation restoration through removal of exotics and re-seeding and planting of native species. Also efforts will be made to develop additional funding for site restoration through OWEB and USFWS grants. Site selection for future acquisitions will focus on areas near current restoration sites to enhance the connectivity between favorable habitats as specified in section 5.4.3.2.

1996-070-00 - Mckenzie Focus Watershed (Expense) MWC

Description: Continue McKenzie River Focus Watershed Program Coordination. Develop, coordinate, plan, design, implement and monitor habitat protection, restoration and water quality projects; improve resource stewardship through public outreach and educaiton

Consistency with subbasin plans

Priority 5.2.2.7 (page 5-3) - Ensure that all of the priority themes are taken up in an organized way at the local level. Formed in 1993 the McKenzie Watershed Council (Council) serves as a forum for exchanging information, a vehicle for resolving issues and as an advisory body to various government agencies with management authority within the 1,300-square-mile McKenzie River Watershed. With a mission of fostering better stewardship of McKenzie Watershed resources through voluntary and collaborative partnerships the Council is one of the oldest community-based watershed stewardship organizations in the Pacific Northwest. The Council is widely recognized as a leading watershed organization in a field of more than 90 such organizations throughout the state of Oregon. Council actions are directed by the following goals: Goal I - Promote Community Understanding and Stewardship through Outreach and Education, Goal II - Promote Partnerships to Support Local Stewardship Actions, Goal III - Protect and Restore Key Fish and Wildlife Habitats, Goal IV - Protect and Restore Water Quality and Quantity and Goal V - Council Accounts For and Provides Investments in the Watershed. The McKenzie Watershed Council and its partnering organizations ensure that the priority themes of the Subbasin Plan will be considered on the local level.

Institutional Strategies (listed in Table 5-3, page 5-20 and in Section 5.5, page 5-27) - Funds from BPA help increase watershed council capacity to improve coordination and communication among all interested stakeholders. Local landowners know of and trust the McKenzie Watershed Council as a source of reliable information regarding McKenzie Watershed issues. The McKenzie Watershed Council represents an opportunity to bring the Willamette Subbasin Plan to the local level to ensure that goals and strategies of the subbasin plan are implemented.

Addresses subbasin plan priorities

Goals of the Council (listed above) match the priorities of the Subbasin Plan through their focus on collaboration with local stakeholders within the watershed (Priority 5.2.2.7; page 5-3). Through the EDT analysis conducted through the subbasin planning process, the Lower McKenzie River was identified with the highest protection and restoration benefits (Appendix K). Key factors limiting spring Chinook salmon populations include a loss of habitat diversity and key habitat quantity. Through a well coordinated restoration program, the Council is able to help coordinate the implementation of the 23 Restoration and Protection Strategies outlined in the McKenzie Subbasin EDT (Appendix K, pages 27-37). The Council is playing a leadership role in addressing the priorities addressed in the Willamette Subbasin Plan: 1) Deal with the Dams: The Council has played a significant role in advising the Corps of Engineers on the operation of dams in the McKenzie system to support fish populations and ecosystems function. 2) Fix Culverts and Diversions to Allow Fish Passage: The Councils has replaced 3 culverts to remedy fish passage issues. In addition, the Council is working to create a database of high priority culverts for fish passage improvements. 3) Focus on Valley and Foothills Wildlife: The Council, in cooperation with the McKenzie River Trust, is focusing on protecting and restoring key valley and foothills wildlife habitats, including bottomland forests and oak savanna. 4) Restore Lowland Riparian Areas: The Council is actively working with landowners to restore riparian areas in the lower portions of the river valley, the Mohawk watershed, and near the confluence of the McKenzie and Willamette River. 5) Restore Low-Cost, High-Return Areas of the Willamette River Floodplain: The Council, in cooperation with the McKenzie River Trust, has a strategic commitment to restore complex channels and functioning riparian areas along the Willamette and lower McKenzie River.

2000-016-00 - Tualatin River National Wildli (Expense) USFWS

Description: Develop wildlife mitigation sites within the approved acquisition boundary of the Tualatin River NWR through protection, enhancement, and management activities for the benefit of fish and wildlife species in the Tualatin River watershed.

Consistency with subbasin plans

Willamette Valley Subbasin Plan
5.3.2.1 Biological Performace Objectives, and 5.3.2.2 Habitat Objectives, Table 5-1. As listed in this table proposed habitat restoration would benefit the following priority species: 1) Vesper sparrow, 2)Western meadowlark, 3)Western bluebird, 4) Red-legged frog, 5) Sora, 6) Green heron, 7) Wood duck, 8) Common yellowthroat, and 9) Pileated woodpecker.
5.4 Aquatic and Terrestrial Strategies, Table 5-3. As recommended by the plan, this project would: 1) Increase interaction of rivers and floodplains by removing or altering selected off-channel blockages, 2) Restore physical habitats, 3) Conserve and restore biological communities, 4) Achieve more natural flow and water regimes, and 5) Connect favorable habitats.

Addresses subbasin plan priorities

Wilammette Valley Subbasin Plan
5.2.2.3 Focus on Valley and Foothills Wildlife, PP 5-2.
The proposed project would restore very rare scrub-shrub wetlands, wet meadow prairie, and Oregon ash woodland to provide habitat benefits for priortiy wildlife species.

5.2.2.4 Restore Lowland Riparian Areas, PP 5-2.
The proposed project would restore riparian forest for the benefit of priority wildlife species as well as listed anadroumous fish. The project would provide benefits such as shading along the Tualatin River and adjacent channels, providing back-water refugia during flood events, increasing ground water recharge, and providing a source of large woody debris inputs.

5.4.2.1 (Aquatic Strategies) Restore Processes That Maintain Watershed Health, PP 5-22.
The proposed project would help restore physical processes such as water quality benefits, more natural flow, infiltration, and temperature regimes.

5.4.3.1 (Terrestrial Strategies) Restore Processes That Maintain Watershed Health, PP 5-25.
The proposed project would specifically address "improving extent and composition of riparian areas" and "achieving and sustaining an adequate supply of standing and down dead wood in upland and streamside environments." In addition, this project would address the control of non-native invasive plant species.

5.6.1.4 Riparian areas, PP 5-34. This project would "place a priority on riparian areas that have the highest probability of inundation under current flow regimes." This area flooded in 7 of the past 9 years.

1995-057-01 - S Idaho Wildlife Mitigation (Expense) IDFG

Description: Protect, enhance, restore and maintain wildlife habitats to mitigate for construction losses at Anderson Ranch, Black Canyon and Deadwood dams.

Consistency with subbasin plans

In the Boise/Payette/Weiser Subbasins Management Plan: This project is consistent with and implements biological objectives 1 through 4 on p.13;

Riparian/Wetland objectives 14A, strategies 2, 3, and 4 on pp. 51-52; and 14B, strategy 3 on p. 52; and

Strub-steppe objective 15, strategies 2 and 6 on p. 53.

Addresses subbasin plan priorities

The Boise/Payette/Weiser Subbasins Management Plan Supplement reports “The highest priority strategies to implement are those outlined in the objectives and strategies under problem statements 14 and 15 that address limiting factore in shrub-steppe and in riparian areas in shrub-steppe areas.”

The above paragraph directly relates to the habitat values being protected and enhanced by the Krueger property in the Boise subbasin.

1997-019-00 - Stinking Water Salmonid Project (Expense) Burns Paiute Tribe

Description: Evalute and determine the life history, distribution, and critical habitats pertainant to populations of bull trout and other salmonids within the Malheur subbasin.

Consistency with subbasin plans

The project is consistent with the Malheur River Subbasin Plan and implements Aquatic Strategies 4.2.1, 5.1.1, and 5.1.2 (Page 78 and 94). These strategies relate to Objectives 5.1 and 4.2 for redband trout (Oncorhynchus mykiss). This project is also consistent with the draft Malheur River Bull Trout (Salvelinus confluentus) Recovery Plan (2002) Task Number 4.1.1 and 5.5.4. These bull trout strategies relate to Objective 2.2 in the Malheur River Subbasin Plan (Page 76 and 95). This project is also consistent with the NPCC 2000 Amendments and the 1995 NPCC Fish and Wildlife Program, measures 10.5.B, 10.5.B.1, and 10.5.B.2. This project is also consistent with the Management Plans of project no. 2000-009-00, Logan Valley Wildlife Mitigation Site and 2000-027-00, Malheur River Mitigation Site. Redband and bull trout is a focal species for the Malheur River Subasin Plan (Page 19).

Addresses subbasin plan priorities

Bull Trout Genetic studies in the Malheur River have been identified as a high priority task in the draft Malheur River Bull Trout Recovery Plan (2002) Task Number 4.1.1 and 5.5.4. The bull trout genetic studies in the Malheur River in 2006 will provide an increased understanding of bull trout interactions and population dynamics, and may lead to revision of recovery criteria. Genetic baseline information would also be a necessity in the implementation of any artificial propagation program. Furthermore, it was intended to include the Draft Malheur River Bull Trout Recovery Plan into the Malheur River Subbasin Plan and directly linked to

As stated in the Malheur River Subbasin Assessment and Management Plan for Fish and Wildlife Mitigation in Appendix A, Part 2 – Aquatic Assessment pages 34-36, very little is known on redband trout in the Malheur River Subbasin, particularly below Agency Valley and Warm Springs Dam. According to the Qualitative Habitat Assessment for Redband Trout, habitat data available is limited to “expert opinion” for habitat located below Agency Valley Dam and Warm Springs Dam. Abundance, genetic, distribution, and population information collected in FY 2006 will focus on stream associated with the Malheur River Mitigation Site (project no. 2000-027-00). Furthermore, the Protective Habitat Ranking for this reach is 6th out of 53 reaches and Restoration Habitat Ranking is 32nd out of 53 reaches. Again, the data available is “expert opinion” and an effort to quantify habitat and abundance/genetic composition of redband trout is needed to identify site specific habitat protection activities on land associated with the deeded and associated allotments of the Malheur River Mitigation Site.

2000-009-00 - Logan Valley Wildlife Mitigati (Expense) Burns Paiute Tribe

Description: Restore and enhance critical fish and wildlife habitat, enhance historic home range and seasonal habitat for resident and migratory species, control weeds, and improve water quality for headwaters of the Malheur River Basin.

Consistency with subbasin plans

This project is consistent with objective 1.1 strategy 1, 5 (pg.69), 8 and 9 (pg.70) objective 1.2 strategy 3, 4 (pg.71), and 7 (pg.72) objective 1.4 strategy 2 and 3 (pg.74) objective 1.5 strategy 1, 5, and 6 (pg. 75) objective 2.1 strategy 1, 2, and 4 (pg.76) objective 8.1 strategy 1 (pg.82) and 3 (pg.83) objective 13.1 strategy 1, 2, and 3 (pg.86) objective 14.1 strategy 2, 3, 4 (pg.87), 5 and 6 (pg.88) objective 14.2 strategy 4 and 5 (pg.88) objective 15.1 strategy 3 (pg.89) and objective 17.1 strategy 2 (pg.90). These objectives are related to habitat restoration, assisting in the recovery of bull trout, restoring mixed conifer forest habitat, restoring riparian habitats, mitigating wildlife losses due to development of the federal Columbia River power system, terrestrial habitat mapping, and evaluating and addressing noxious weeds. The project is a wildlife project based on terrestrial improvements, however, riparian work, grazing management, irrigation activities, etc. benefit bull trout and redband trout indirectly. In addition, the project includes approximately 5 miles of stream utilized by bull trout and redband trout for spawning and rearing habitat.

Addresses subbasin plan priorities

Priority I,II (pg.94), III and IV (pg.95) are addressed in part with this project. Also, management activities both directly and indirectly address limiting factors 4.1, 4.2 (Appendix A, pg.56), 4.4 (Appendix A, pg.58), and 4.6 (Appendix A, pg.59) for the subbasin.

2000-027-00 - Acquisition Of Malheur Wildlif (Expense) Burns Paiute Tribe

Description: Restore habitat on the Malheur River for T&E species and enhance critical wintering habitat for migratory mammals, birds and resident fish

Consistency with subbasin plans

This project is consistent with goal 1, objective 1.1, strategy 8 and 9 (page 70), objective 1.2, strategy 2, 3, 4 (page 71), and 8 (page 72), goal 6, objective 6.5, strategy 1 (page 80), goal 8, objective 8.1, strategy 4, 5, and 6 (page 83), goal 9, objective 9.1, strategy 1, 2 (page 83), 5, 6, 7, and 8 (page 84), goal 10, objective 10.1, strategy 1 and 2 (page 85), goal 12, objective 12.1, strategy 2 and 3 (page 86), goal 13, objective 13.1, strategy 1, 2, 3 (page 86), and 4 (page 87), goal 14, objective 14.1, strategy 2, 3, 4 (page 87), 5 and 6 (page 88), objective 14.2, strategy 1, 2, 4, and 5 (page 88), goal 15, objective 15.1, strategy 1 and 3 (page 89), goal 17, objective 17.1, strategy 1 and 2 (page 90). These objectives are related to habitat restoration, mitigating tribes for the loss of the anadromous fish resource in the Malheur subbasin, restoring mixed conifer forest habitat, restoring shrub-steppe habitat, restoring mt. mahogany and bitterbrush, restoring herbaceous wetlands, restoring riparian habitats, mitigating wildlife losses due to development of the federal Columbia River power system, terrestrial habitat mapping, and evaluating and addressing noxious weeds. In addition, much of the riparian restoration work completed on the project benefits resident redband trout populations.

Addresses subbasin plan priorities

Priority II (page 94) and III (page 95) are addressed with this project. Also, management activities both directly and indirectly address limiting factors 4.1, 4.2 (Appendix A, pg.56), 4.3, 4.4 (Appendix A, pg.58), and 4.6 (Appendix A, pg.59) for the subbasin.

2003-029-00 - Assess Upper Malheur Above Beu (Expense) Burns Paiute Tribe

Description: The project is broke into two phases, the first being a feasibility study on the reintroduction of anadromous fish in the Malheur Subbasin. The second phase is the development of a reintroduction plan for the Subbasin.

Consistency with subbasin plans

Chinook salmon was selected as an aquatic focal species for the Malheur River Subbasin Management Plan (page 19). The Malheur River Subbasin Plan list re-introduction of anadromous fish as an Aquatic Species Goal 2.1.2.1 and 2.1.2.3 (page 12). The project is consistent with and implements Aquatic Strategies 6.1.2 (page 79). These strategies relate to Objectives 6.1 for chinook salmon. This project is also consistent with the 2002 draft Bull Trout Recovery Plan Malheur River Unit task 5.5.2, Investigate potential for restoring historic prey base by reintroducing anadromous species. The tasks in the draft Bull Trout Recovery Plan Malheur River Unit relate to Objective 2.2 in the Malheur Subbasin Management Plan (page 76). A few specific measures from the Council's Fish and Wildlife Program (NPPC 1994) that relate to this project: 1.6 - Indian Rights, 2.2A: Support native species in native habitats, 2.2E6: Criteria for establishing constraints on hydroproject operations, including (a) protection and rebuilding of weak native fish stocks and resident fish substitutions, (b) protection of tribal rights to fish at usual and accostomed fishing places and ceded areas, 3.2C.1 Focuses on identifying key uncertainties associated with program measures, 7.10K: Passage into historic habitat, and 7.10K1: Where appropriate, determine the feasibility of providing passage above blockages to habitat caused by human development activities. Appropriate habitat includes areas where weak stocks are habitat limited and, therefore, would benefit from additional habitat.

Addresses subbasin plan priorities

Chinook salmon is a focal species for the Malheur River Subbasin. These studies will address critical uncertainties in developing a plan for re-introducing anadromous fish in the Malheur River Subbasin. The Qualitative Habitat Assessment has no protection priorities due to the absence of these populations. The habitat above Beulah and Warm Springs Reservoirs contain approximately 90% of the historical spawning habitat. The draft 2002 Bull Trout Recovery Plan Malheur River Unit task 5.2.2 (Investigate potential for restoring historic prey base by reintroducing anadromous species) is a high priority and this task relate to Objective 2.2 in the Malheur River Subbasin Management Plan.

1995-015-00 - Lake Billy Shaw O&M And M&E (Expense) Shoshone Paiute Tribe

Description: The purpose of this Operation and Maintenance(O&M) project is to enhance and develop the Billy Shaw fishery area as a premier fishery in the Northwest U.S. Stocking with native fish (or suitable species) shoreline and water quality enhancement/monitorin

Consistency with subbasin plans

In accordance with the vision statement for the Owyhee Subbasin Plan (Ch 4 p2), the stocking of Mountain View, Sheep Creek, and Lake Billy Shaw reservoirs provides a tangible benefit to the Tribes' cultural, social, and economic well-being; further, the reservoirs contribute to the regional recreational economy and the social well-being of the surrounding communities. Also in keeping with the vision statement, the reservoirs project protects, enhances and sustains habitats that support diverse wildlife populations and healthy fisheries.

CITATIONS:

Chapter 4 pp36-37:
Specific Approach for Implementation (4.3.2) for Near Term Objectives and Strategies Strategy 1: Continue implementation of ongoing projects; this includes the Duck Valley Fisheries project.

Chapter 4 pp41-43, and pp106-108:
4.4.1.1 Aquatic – Short-term Objectives and Strategies
4.4.2.1.1 Overview of Short-term Terrestrial Objectives & Strategies
The ongoing BPA projects sponsored by the Shoshone-Paiute Tribes form the nucleus of goals, objectives, and strategies for aquatic habitat restoration and enhancement and wildlife and terrestrial habitat restoration projects.

The near-term Owyhee Subbasin Plan objectives and strategies are summarized in Table 4.11 and Table 4.18. These tables include the current objectives and future goals of the Duck Valley Fisheries project, including:

- Habitat restoration – plant native trees/willows and grasses along shoreline and tributaries to Lake Billy Shaw
- Control grazing impacts – install water troughs/stock ponds to keep stock away from reservoir/fences
- Education & public outreach – monthly newspaper articles/quarterly; update & maintain signage; student involvement in projects
- Monitor & evaluate – collect and summarize data on biological and economic aspects of Lake Billy Shaw fishery
- Fishery Management – manage put-and-take fisheries (Mountain View Reservoir, Lake Billy Shaw, and Sheep Creek Reservoir) on the Duck Valley Indian Reservation
- Monitor and Evaluation (M&E) – monitor seasonal reservoir conditions
- Monitor and Evaluation (M&E) – monitor native redband trout populations (presence/absence in reservoirs and influent/effluent streams – to minimize impact by hatchery trout)
- Monitor and Evaluation (M&E) – monitor cost & benefits of put-and–take fisheries.

Addresses subbasin plan priorities

In the development of the Owyhee Subbasin Plan, participants were reluctant to prioritize projects, species, habitats or objectives; therefore, there is not a specific prioritization schedule.

However, Tables 4.11 and 4.18 in Chapter 4 outline the near-term goals for aquatic and terrestrial habitats (see response to Consistency section), and the objectives of the Duck Valley Fisheries project are listed, making this project a priority. Further, this project meets the vision (Ch 4 p2) and spirit of the Owyhee Subbasin Plan by providing tangible economic, social, and cultural benefits to both the Tribal community and neighboring communities, and by supporting diverse fish and wildlife populations and habitats.

1995-057-03 - S Idaho Wildlife Mitigation (Expense) Shoshone Paiute Tribe

Description: Acquire, enhance and protect wildlife habitat to mitigate for the construction of Anderson Ranch, Deadwood, and Black Canyon hydroelectric facilities.

Consistency with subbasin plans

CITATIONS:
Chapter 4 Table 4.18 lists terrestrial biological objectives for the Owyhee subbasin including:
1. Identify parcels for acquisition or conservation easement
2. Identify sites for habitat enhancement activities
3. Protect 2500 HUs of wildlife habitat and associated aquatic habitat through fee-title acquisition or conservation easement
4. Protect 500 HUs of wildlife habitat and associated aquatic habitat through habitat enhancement activities

Chapter 4 pp422-423 and pp36-37:
4.3.2 Specific Approach for Implementation – Near Term (3-5 years) Objectives and Strategies

Near Term (2005-2007) Strategy 1: Continue implementation of ongoing projects.
1.1. Build on the strength of the objectives, strategies and actions incorporated into successful ongoing projects (2005-2007).
4.4.2.2.2 Riparian and Wetland Habitats (Ch 4 p115)
Problem 1. The loss and degradation of riparian and wetland areas in the Owyhee subbasin has negative effects on fish and wildlife species that utilize these habitats. Improper grazing, roads, and water use have been identified as the primary factors limiting the quality of this habitat type in the subbasin.

Objective 1.1. Minimize effects of improper grazing in riparian and wetland habitats.
Strategy 1.1.1.
3. Protect riparian and wetland habitat through land acquisition, conservation easements. This is a strategy that is often not locally supported by counties within the Owyhee Subbasin.

4.4.2.2.3 Shrub-steppe Habitat (Ch 4 p118)
Problem 2. Degradation, fragmentation, and loss of native shrub-steppe habitat in the Owyhee subbasin adversely affects associated terrestrial species. Improper grazing, fire, noise pollution, nonnative invasive plants and noxious weeds have been identified as the primary factors limiting the quality of this habitat type and terrestrial species in the subbasin.

Objective 2.1. Minimize impacts of improper livestock grazing to native shrub-steppe habitat and terrestrial species within the Owyhee subbasin.

Strategy 2.1.1. Implement various livestock grazing management actions appropriate to specific sites (refer to following bulleted list) to enhance shrub-steppe habitat conditions.

- Protect shrub-steppe habitat through land acquisition, conservation easements.

Addresses subbasin plan priorities

Participants in development of Owyhee Subbasin Plan were reluctant to prioritize projects; however, it was stressed in the document that the continuation of ongoing projects is a near-term goal. This project is ongoing.

1997-011-00 - Shoshone-Paiute Habitat Enhanc (Expense) Shoshone Paiute Tribe

Description: This project increases critical riparian areas of the Owyhee River and its tributaries as well as preserves the numerous natural springs located on the Duck Valley Indian Reservation. Provides a clean pure source of water for the fish and wildlife.

Consistency with subbasin plans

Improper grazing, roads, and water use were identified in the Owyhee Subbasin Plan as limiting factors to riparian, wetland, shrubbe-steppe, and aquatic habitats in the subbasin. The DVIR Habitat Enhancement project intends to protect and restore these habitats through off-site livestock watering, coordination with the ranching community, fencing, bioengineering, and enhancement of backcountry roads that follow or go through streams. SPT also intends to implement the M&E Plan to evaluate the effectiveness of these projects, which was Strategy 2 in the OSP (Ch 4 p37). Strategy 1 (Ch 4 p36) is to continue the implementation of ongoing projects in the Owhyee Subbasin, such as the Habitat Enhancement project.

The ongoing projects sponsored by the Shoshone-Paiute Tribes form the nucleus of goals, objectives, and strategies for aquatic and terrestrial habitat restoration and enhancement using BPA funds (Ch 4 pp41-43; pp106-108). The ongoing near-term habitat restoration objectives and strategies are summarized in Tables 4.11 and 4.18, including the following Habitat Enhancement project objectives:

- identify, prioritize and locate springs in need of protection (priority to suspected redband trout streams),
- implement protective measures of springs (minimum of 6 springs per year); implement protective measures (fencing riparian areas/fixing road crossings) on streams and/or headwaters (appr. 6-10 miles of fence, troughs, culverts, etc).
- implement PFC assessment; conduct population estimates, size structure, condition, locations (GPS) in coordination with Project 2000-079.
- develop and implement terrestrial habitat and wildlife monitoring plan for the Duck Valley Indian Reservation.

Ch 4 pp115-118 and pp430-431 lists strategies and objectives to monitor, evaluate, minimize and treat the effects of grazing in riparian, wetland, and shrub steppe habitats; these management actions mimic the objectives of the DVIR Habitat Enhancement project.

Addresses subbasin plan priorities

CH 4 p56: Table indicates that riparian condition including bank stability has been identified as a limiting factor in the Owyhee Subbasin, including the DVIR portion of the Owhyee River.
CH 4 p115: 4.4.2.2.2 Riparian and Wetland Habitats
Problem 1. The loss and degradation of riparian and wetland areas in the Owyhee subbasin has negative effects on fish and wildlife species that utilize these habitats. Improper Grazing, roads, and water use have been identified as the primary factors limiting the quality of this habitat type in the subbasin.

CH 4 p118: 4.4.2.2.3 Shrub-steppe Habitat
Problem 2. Degradation, fragmentation, and loss of native shrub-steppe habitat in the Owyhee subbasin adversely affects associated terrestrial species. Improper Grazing, fire, noise pollution, nonnative invasive plants and noxious weeds have been identified as the primary factors limiting the quality of this habitat type and terrestrial species in the subbasin.

1998-002-00 - Snake River Native Salmonid As (Expense) IDFG

Description: Investigate population status and trends, life histories, habitat needs, limiting factors, and threats to persistence of native salmonids in the Snake River and tributaries upstream of Hells Canyon Dam in Idaho, and implement recovery/protection plans.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements Aquatic Strategies in a number of subbasin plans.

Boise/Payette/Weiser Subbasin Plan - strategies 2A1, 2A2, 2B3, 2c1 thru 8, 3A1 thru 4, 3B1 thru 4, 3C1 thru 4, 4A1 thru 8

Bruneau Subbasin Plan - strategies 6A2, 8A1 thru 3, 8B1 thru 2, 8C1 thru 3, 8D1 thru 3, 9A1 thru 3

Middle Snake Subbasin Plan - strategies 3A1, 3A2, 3Ba, 3B3, 3B5, 3C3, 4B5, 11A1, 11B1, 11B2, 11B3

Upper Snake Subbasin Plan - strategies IG1a thru f, ILa thru g, IM1a, IM1g, IN1a thru e, IN2a thru f

All of these strategies are aimed at protecting native salmonids, restoriing their habitat, evaluating their status and viability, assessing limiting factors for populations of native salmonids, and developing recovery strategies from these findings.

Priority:
Two subbasin plans in my area of work (Owyhee and Upper Snake) have no designated priorities. My project accomplishes priority work outlined in the remaining subbasin plans because the Prioritization Framework in the Management Plan puts as a high priority the evaluation and protection of native salmonid habitat, limiting factor analysis, status assessments, and other related work.

Priorities this project addresses within a combination of any and all the subbasins outlined above include 1) determining impacts of predaceous species on redband trout and mountain whitefish, 2) determining genetic purity and variability among and within redband trout populations, 3) obtaining a better understanding of factors limiting native salmonid populations, 4) obtain population parameter data for mountain whitefish including natality, mortality, distribution, movements, etc., and 5) assess thermal tolerance for native salmonids.

Addresses subbasin plan priorities

The goals outlined for FY06 are in agreement with the priorities outlined in the above response.

Goals 1) Coordination of all data collection and data sharing will help accomplish all the priorities listed above.

Goal 2) Status assessments for both redband trout and mountain whitefish would be valuable for determining priority populations in need of protection or restoration, and for initiating limiting factor analysis to assess what factors appear to be influencing the current status of these native salmonids (priorities 2, 3, 4, and 5 above).

Goal 3) Assessing another form of brook trout removal will help identify whether this new technique can be effective in controlling the spread of this nonnative salmonid that is a major limiting factor to many populations of native salmonids in the Upper Snake River Basin (priority 3 above).

Goal 3) Initiating the redband trout growth study will help us understand the uniqueness of the desert redband trout, and help evaluate the extent that water temperature is a limting factor for desert and montane redband trout (priority 3 above).

Goal 4) Finalizing data collection and moving forward with the redband trout genetic study will also help prioritize core populations in need of protection as well as populations that need rehabilitation or restoration (priority 2 above).

Goal 5) Collecting mountain whitefish population abundance data as well as population dynamics characterization addresses priority 4 above.

Goal 6) Data storage in a database facilitates quick and easy data sharing which this project has done extensively, and addresses all the priorities outlined above.

1991-019-01 - Hungry Horse Mitigation/Flathe (Expense) Salish & Kootenai Tribes

Description: Implement and monitor fisheries improvement activities for native species and conduct a feasibility study on the reintroduction of sharp-tailed grouse. Research factors limiting the successful application of mitigation and restoration measures.

Consistency with subbasin plans

The strategy to accomplish restoration of native species and their habitats is completely consistent between the subbasin plan and this project. We have been identifying and developing understanding of limiting factors through research and inventory, implementing physical solutions to identified problems, and monitoring the biological responses to our treatments. This project closely addresses the following objectives within the subbasin plan: M1, M2, M3, M4, T1, T2, T3, T4, T5, T6, L1, L2, R1, R2, R3, BT1, BT2, BT3, BT4, WCT1, WCT2, WCT3, RW1, RW2, RW3, RW4, RW5, RW6, (pages 21-63 of the management plan). This project is also consistent with Basin Level Resident Fish Objectives 2 through 4 (pages 16 and 17 of the management plan and Basin Level Wildlife Objectives 1 through 5 (page 17 of the management plan).

Addresses subbasin plan priorities

This project primarily addresses the Flathead Indian Reservation portion of the Flathead Basin. In striving to restore native species and their habitats we prioritize goals consistent with the subbasin plan in that we specifically address the limiting factors identified in the plan, and we first address populations with existing connectivity to other populations. We also prioritize populations of native species that are isolated but in large enough habitats to be reasonably viable.

1991-019-03 - Hungry Horse Mitigation/Habita (Expense) MFWP

Description: Enhance and protect native fish communities in the Flathead Basin through watershed assessments, fish passage improvements, habitat enhancement, off-site fishery restoration, applied research, and project- and watershed level monitoring.

Consistency with subbasin plans

Hungry Horse Mitigation Program proposed actions for FY2006 are consistent with the Flathead Subbasin Plan. On page 87 (Table 10.3), the plan lists the objectives, priority rankings and briefly describes those management objectives related to each overall objective. Specifically, this project addresses the following overall objectives, and relates those objectives to specific management objectives and associated strategies outlined within the Management Plan: 1. Restore normative mainstem riparian; M1 (p. 21), and RW1 (p. 49) and reduce fine sediments M4 (p. 24). 2. Modify Hungry Horse Dam operation 50% closer to normative M33 (p. 23). 3. Protect and restore tributary habitat in class 1 to 2.5 streams, T1-T6 (p.26-32). 4. Improve HH Res. Conditions by reducing drawdown and improving refill R2 (p.34) and water retention time R4 (p.36). 5. Bull trout monitoring and restoration BT1 and BT2 (p. 39-41). 6. Westslope cutthroat research and restoration WCT1-WCT4 (p. 44-47). 7. Improve and protect riparian and wetland habitat RW1-3 (p. 49-51) and RW6 (p. 54) weed control. 9. Suppress and remove nonnative species; BT1 (p.39), WCT3-4 (p.46-47). 10. Reduce and prevent nonnative introductions, BT3 (p.41), WCT1-2 (p. 45-46). 11. Increase habitat diversity to reference levels T3 (p. 28), R3 (p. 35) is done with BoR. 12. Improve channel stability to reference conditions M1 and T2 (p. 27). 13. Improve habitat connectivity T5 (p. 31). 14. Restore normative thermal regime in mainstem M3 (p. 23). In addition, the Assessment identified stream temperature, riparian condition, channel stability and fine sediment (in descending order) as the key limiting factors for resident salmonids. In the regulated mainstem, they are altered flows, riparian condition, fine sediment and channel stability, and in the reservoirs they are migratory obstructions, volumetric turnover rates, hydraulic regime and trophic status.

Addresses subbasin plan priorities

We identified three primary aquatic limiting factors in the Flathead River Subbasin: (1) impoundment and hydro operations, (2) physical habitat alteration(in addition to impoundments and hydro operations), and (3) the introduction of non-native species. These three primary limiting factors resulted in at least 18 important secondary limiting factors that negatively affect habitat, fish, and wildlife. Our objectives and strategies address each of these limiting factors (Management Plan, Tables 10.1 and 10.2) for mainstem, tributaries, reservoirs, and lakes and for focal fish species (bull trout and westslope cutthroat trout). The highest priority (urgent) objectives relative to this project are: Restore normative mainstem hydrograph, Suppress and remove nonnative species, Improve and protect critical habitat (complexity) and fish passage; Restore/maintain population size required for populations to persist, Restore/maintain population stability, connectivity, and habitat conditions required for recruitment. All of our projects are considered urgent or high priority as determined by limiting factors.

1991-019-04 - Hungry Horse Mitigation - Koka (Expense) USFWS

Description: Conduct nonnative fish removal in Lake McDonald in Glacier National Park to facilitate restoration of native bull trout and westslope cutthroat trout in the Flathead drainage; produce hatchery fish for offsite stocking to mitigate Flathead Lake losses.

Consistency with subbasin plans

The Creston NFH has worked with the Council, subbasin planners and stakeholders to ensure our programs are consistent with the goals and objectives of the Flathead subbasin plan. Specifically, we will be integrating Creston NFH programs into subbasin planning through the utilization of approved hatchery management and genetic management plans. Qualitative assessments have shown that the stocking of closed basin lakes and reservoirs isolated within the Flathead subbasin yield an efficient hatchery plant to angler creel ratio. After one to two years growth, these plants provide recreational angling opportunities for catchable sized trout and partially offset the affects of closures and reduced limits on recoverable populations of westslope cutthroat and bull trout in the Flathead Lake and River system.

Addresses subbasin plan priorities

The Management Plan for the Flathead subasin identifies a multitude of project priorities. The fish production acitivities of the Creston NFH fall into many of these measures. Some of the management strategies that the Creston NFH programs follow are; restore native species, mitigate for lost fish and wildlife, have good geographic distribution, protection and restoration of fish and wildlife resources, a balance of projects that meet the publics desire for access and recreation and those which provide refuge for wildlife, resource priorities that relate to damage done by BPA projects, projects that have multiple benefits and are most cost effective, public education and outreach, projects completed at lower elevations and those that improve or site water quality.

1996-087-01 - Montana Focus Watershed Coordi (Expense) Salish & Kootenai Tribes

Description: This program fosters “grass roots” public involvement, interagency cooperation and cooperative cost-sharing for habitat restoration to offset impacts to fishery resources in the Flathead watershed.

Consistency with subbasin plans

This project is an integral component of completing the following objectives within the subbasin plan: M1, M2, M4, T1, T2, T3, T4, T5, T6, L1, L2, RW2, RW3, RW4, GS1, GS2, GS4, AP1, AP2, AP4, AP5 (pages 21-63 of the management plan). This project is also consistent with Basin Level Resident Fish Objectives 2 through 4 (pages 16 and 17 of the management plan and Basin Level Wildlife Objectives 1 through 5 (page 17 of the management plan).

Addresses subbasin plan priorities

The limiting factors for resident fish and wildlife are outlined and addressed with objectives and strategies in the management plan (see above). This project is a necessary element to completing the goals of improving habitat as outlined in the subbasin plan. How is one to improve habitat in the subbasin without coordinating efforts, seeking funding, working with private landowners, etc? This project is listed within the plan as a strategy to achieve multiple objectives (see above).

2002-003-00 - Secure & Restore F&W Habitat (Capital) Salish & Kootenai Tribes

Description: Utilize land acquisition and habitat restoration to protect and enhance habitats critical to fish and wildlife. Reduce human-wildlife conflicts on acquired and restored lands to increase their value for wildlife.

Consistency with subbasin plans

This project is consistent with many of the objectives in the subbasin plan that are directed at mitigating the limiting factors associated with resident fish and wildlife. This project is an integral component of completing the following objectives within the subbasin plan: M1, M4, T1, T2, T3, T4, T5, T6, L1, L2, RW3, RW5 (pages 21 through 53 of the management plan). If BPA and CSKT reach resolution regarding wildlife mitigation, this project would also help to address objectives GS1, GS2, GS4, XF2, (pages 55 through 59). This project is also consistent with Basin Level Resident Fish Objectives 2 through 4 (pages 16 through 17 of the management plan) and Basin Level Wildlife Objectives 1 through 5 (page 17 of the management plan).

Addresses subbasin plan priorities

The limiting factors for resident fish and wildlife are outlined in the subbasin assessments and addressed within the objectives and strategies in the management plan (see above). This project will assist in allowing the CSKT to accomplish the objectives directed at addressing the limiting factors identified in the plan. The areas to implement those objectives are also outlined in the plan (listed and mapped as near term priorities in the plan).

1988-064-00 - Kootenai R White Sturgeon (Expense) Kootenai Tribe Of Idaho

Description: Prevent extinction, preserve existing gene pool, and begin rebuilding healthy age classes of the endangered white sturgeon in the Kootenai River using conservation aquaculture techniques with wild broodstock.

Consistency with subbasin plans

This project addresses Urgent and High Priority aquatic objectives WST2, WST3, WST4, and BUR3 listed on Pages 62-64 and Page 68 of the Aquatic Objectives Section (White Sturgeon and Burbot) of the Kootenai Subbasin Management Plan and listed in the Table 10.5 on page 123. The objectives address restoration of white sturgeon and burbot recruitment and population size, as well as examining limiting factors relating to recruitment failure.

WST2 and WST3 strategies - Develop and implement conservation aquaculture for white sturgeon using adaptive breeding plan as a guide/Restore natural recruitment. (Page 62-63)
BUR3 strategies - Develop and implement conservation aquaculture techniques for burbot restoration. Page 68-69)
WST4 strategy - Evaluate lethal and sub-lethal effects of environmental contaminants, including reproductive and behavioral effects on white sturgeon and burbot. (Page 64)

This project also addresses the following high priority Harvest Objective (HAR1 – page 72) – Maintain or increase harvestable sport fish while protecting native species and the following Administrative/Programmatic Objectives (AP2 –page 90, AP3 – page 91, and AP5 – page 92) – Develop and maintain adequate regional and international coordination, pursue independent peer-review and qualified scientific counsel, and improve distribution of information required to successfully implement the Subbasin Plan.

Addresses subbasin plan priorities

This project addresses Urgent and High Priority aquatic objectives WST2, WST3, WST4, and BUR3 listed on Pages 62-64 and Page 68 of the Aquatic Objectives Section (White Sturgeon and Burbot) of the Kootenai Subbasin Management Plan and listed in the Table 10.5 on page 123. The objectives address restoration of white sturgeon and burbot recruitment and population size, as well as examining limiting factors relating to recruitment failure. This project meets all Tier 1 criteria and the following Tier II criteria (1,3,5,6,7,8,and 9) found in Section 10.5 (starting on Page 125) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that "after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority for funding" (Page 126 - paragraph after Tier I criteria). This project falls in the above- mentioned category.

1988-065-00 - Kootenai R White Sturgeon Inve (Expense) IDFG

Description: Implement recovery and restoration efforts for Kootenai River white sturgeon, burbot, bull and rainbow trout, and whitefish stocks in the Kootenai River and effects of water fluctuations and ecosystem changes on these stocks.

Consistency with subbasin plans

Subbasin planning
How is this project consistent with subbasin plans?
This project addresses the following Urgent and High Priority aquatic habitat objectives:

Mainstem Objectives (Pages 21-28)
M1 - Restore normative mainstem hydrograph
M3 – Monitor turbidity and fine sediment
M4 – Restore thermal regime
M5 – Improve habitat diversity (in-river spawning habitat)

Tributary Objectives (Pages 29-35)
T3 – Reduce fine sediment
T4 – Improve channel stability
T5 – Improve thermal regime
T6 – Increase habitat diversity

This project addresses the following Urgent and High Priority aquatic biological objectives for Bull Trout (BT), Redband Trout (RBT) Westslope Cutthroat (WCT), Kokanee (KOK), white sturgeon (WST), and Burbot (BUR). Page numbers for the objectives are listed in parentheses.

Restore productivity and nutrients – BT5 (47), KOK1 (56), BUR1 (65), and WST1 (60)
Restore and maintain population size – BT2 (43), RBT2 (49), WCT2 (53), KOK3 (58), WST3 (63), and BUR4 (70)
Restore and maintain population stability – BT3 (44)
Restore natural recruitment – WST2 (62), BUR3 (68)
Rehabilitate native community composition – KOK2 (58), BUR2 (67)
Maintain or increase number of local populations – BT1 (41), RBT1 (48), WCT1 (52)

This project also addresses the following high priority harvest objective (HAR1 – page 72) – Maintain or increase harvestable sportfish while protecting native species.

Addresses subbasin plan priorities

How do goals match subbasin plan priorities?
This project addresses the following Urgent and High Priority aquatic habitat objectives found in the Kootenai Subbasin Management Plan: listed in the section above and also listed in the Table 10.5 on page 123. The objectives address restoration of habitats and focal species. This project meets all Tier 1 criteria and the following Tier II criteria (1,3,5,6,7,8,9, and 10) found in Section 10.5 (starting on Page 125) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that "after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority for funding" (Page 126 - paragraph after Tier I criteria). This project falls in the above- mentioned category.

1994-049-00 - Kootenai River Resident Fish A (Expense) Kootenai Tribe Of Idaho

Description: Identify the most appropriate and effective management strategies to enhance aquatic biota in the Kootenai River Ecosystem and recover native species assemblages across multiple trophic levels.

Consistency with subbasin plans

This project addresses the following Urgent and High Priority aquatic biological objectives for Bull Trout (BT), Redband Trout (RBT) Westslope Cutthroat (WCT), Kokanee (KOK), white sturgeon (WST), and Burbot (BUR). Page numbers for the objectives are listed in parentheses.

Restore productivity and nutrients – BT5 (47), KOK1 (56), BUR1 (65), and WST1 (60)
Restore and maintain population size – BT2 (43), RBT2 (49), WCT2 (53), KOK3 (58), WST3 (63), and BUR4 (70)
Restore natural recruitment – WST2 (62), BUR3 (68)
Rehabilitate native community composition – KOK2 (58), BUR2 (67)
Maintain or increase number of local populations – BT1 (41), RBT1 (48), WCT1 (52)

This project also addresses the following high priority Harvest Objective (HAR1 – page 72) – Maintain or increase harvestable sport fish while protecting native species and the following Administrative/Programmatic Objectives (AP2 –page 90, AP3 – page 91, and AP5 – page 92) – Develop and maintain adequate regional and international coordination, pursue independent peer-review and qualified scientific counsel, and improve distribution of information required to successfully implement the Subbasin Plan.

Addresses subbasin plan priorities

This project addresses the Urgent and High Priority objectives of the Kootenai Subbasin Management Plan listed in the section above and also listed in the Table 10.5 on page 123. The objectives address restoration of habitats and focal species. This project meets all Tier 1 criteria and the following Tier II criteria (1,3,5,6,7,8,9, and 10) found in Section 10.5 (starting on Page 125) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that "after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority for funding" (Page 126 - paragraph after Tier I criteria). This project falls in the above- mentioned category.

1995-004-00 - Libby Reservoir Mitigation Pla (Expense) MFWP

Description: Implementation of watershed based habitat enhancement and fish recovery actions to mitigate the losses caused by hydropower in the Kootenai Subbasin. Montana Fish, Wildlife & Parks collaborates with the Tribes of Montana and Idaho, IDFG and B. C. Canada.

Consistency with subbasin plans

The Libby Mitigation Project's proposed actions for FY2006 are consistent with the Kootenai Subbasin Plan. On page 29 (Table 3), the plan lists the objectives, priority rankings and briefly describes those management objectives related to each overall objective. Specifically this project addresses the following overall objectives, and relates those objectives to specific management objectives and associated strategies outlined within the Management Plan (MP) 1. Restore normative mainstem hydrograph; M1 (MP p. 21), and RP2 (MP p. 77) 2. Suppress and remove nonnative species; BT4 (MP p.45), RBT3 (MP p.50-51), WCT3 (MP p. 54) 3. Reduce and prevent nonnative introductions, BT4 (MP p.45), RBT3 (MP p.50) , WCT3 (MP p. 54). 4. Protect class 1 habitat; T1 (MP p. 29). 5. Restore/maintain population size required for populations to persist; BT5 (MP p.47), RBT2 (MP p. 49), and WCT2 (MP p.53). 6. Restore/maintain population stability; BT3 (MP p. 44). 7. Restore habitat conditions required for recruitment; M1, M3 and M5 (MP pages 22, 23, & 27). 8. Alter hydrograph to remove tributary deltas; M1 (MP p. 22). 9. Restore riparian habitat to reference condition; M2 (MP. 23), T2 (MP p. 30). 10. Reduce fine sediment input; M3 (MP p.25) and T3 (MP p.31). 11. Increase habitat diversity to reference levels; M5 (MP p. 27) and T6 (MP p. 35). 12. Improve channel stability to reference conditions; M6 (MP p. 27), and T4 (MP p. 32). 13. Improve habitat connectivity; T8 (MP p. 37). 14. Increase Libby Reservoir retention time; R1 and R3 (MP p. 38-39). 15. Reduce refill failure to top 5 feet of Libby Reservoir; R1 and R3. 16. Restore normative thermal regime in mainstem; M4 (MP p. 26) and T5 (MP p. 33), and 17. Increase number of local populations; BT1, RBT1, and WCT2 (MP pgs. 41, 48, and 53). In addition, the Assessment identified stream temperature, riparian condition, channel stability and fine sediment (in descending order) as the key limiting factors for resident salmonids. In the regulated mainstem, they are altered flows, riparian condition, fine sediment and channel stability, and in the reservoirs they are migratory obstructions, volumetric turnover rates, hydraulic regime and trophic status.

Addresses subbasin plan priorities

The Kootenai Subbasin Plan prioritizes the overall habitat and biological objectives into 3 categories (Management Plan page 29; Table 3). The highest priority (urgent) objectives relative to this project were: Restore normative mainstem hydrograph, Suppress and remove nonnative species, Reduce and prevent nonnative introductions, Protect class 1 habitat, Restore/maintain population size required for populations to persist, Restore/maintain population stability and, Restore habitat conditions required for recruitment. The second highest objectives (highly recommended) relative to this project were: Alter hydrograph to remove tributary deltas, Restore riparian habitat to reference condition, Reduce fine sediment input, Increase habitat diversity to reference levels, Improve channel stability to reference conditions, Improve habitat connectivity, Increase Libby Reservoir retention time and, Reduce refill failure to top 5 feet of Libby Reservoir. The lowest priority (recommended) objectives identified in the management plan were: Restore normative thermal regime in mainstem and, Increase number of local populations.

1996-087-02 - Focus Watershed Coordination I (Expense) Kootenai River Network Inc

Description: Fosters “grass-roots” public involvement and interagency cooperation for habitat restoration to offset deleterious impacts to the Kootenai River watershed fisheries. Establishes cost-share arrangements with government agencies and private groups.

Consistency with subbasin plans

The Kootenai River Focus Watershed Coordination Project is consistent with the Kootenai Subbasin plan and with the Guiding Principles as it promotes and enhances local participation in, and contribution to, natural resource problem solving and Subbasin-wide conservation efforts. The project provides information to residents of the Kootenai Subbasin to promote understanding and appreciation of the need to protect, enhance, and restore a healthy and properly functioning native ecosystem. This is accomplished through workshops and activities such as the International Restoration Tour, Stream Trailer Demonstrations, Transboundary GIS Basin planning and interpretive mapping, and through media such as the newsletter and website, and providing outreach on Focal and Target species. Through coordination and facilitation, the project promotes cooperation on restoration projects with other plans and management programs, such as the Endangered Species Act, TMDLs, and individual species plans. The project’s goal directly supports the vision of the Subbasin Plan of the establishment and maintenance of a healthy ecosystem through facilitating watershed restoration activities, transboundary communication, and sponsoring on-the-ground tours of successful restoration projects.

Addresses subbasin plan priorities

The goals of the Kootenai River Focus Watershed Coordination Project matches with the Kootenai Subbasin Plan Priorities by providing restoration project facilitation, outreach and education activities consistent with the identified priorities. The project incorporates priority topics such as, native and non-native species, restoration of tributary hydrographs and riparian conditions, restoring/maintaining population stability, improving channel stability, reducing sediment input, and increasing habitat diversity into the educational programming and facilitation activities, and coordinates our activities with other programs, such as TMDLs . The project promotes and enhances community involvement and education on natural resource issues, helping to support Subbasin-wide conservation efforts.

2000-004-00 - Protect Wigwam R Bull Trout-Ko (Expense) Ministry Of Environment

Description: Access and monitor the status of wild, native stocks of bull trout in tributaries to Lake Koocanusa and the upper Kootenay River and protect these fish from inappropritae reservoir operating regimes and land use practices.

Consistency with subbasin plans

The activities of this project fall within the "Prioritized Kootenai River Subbasin Objectives (Habitat and Biological)" called "Restore/maintain population size required for population to persist", which is found in the table on page 29 of the "Kootenai River Subbasin Executive Summary".

Addresses subbasin plan priorities

As indicated above, the activities of this project fall within the subbasin plan objective called "Restore/maintain population size required for population to persist". This subbasin plan objective received a priority score of U=Urgent, found in the table on page 29 of the "Kootenai River Subbasin Executive Summary".

2002-002-00 - Enhance White Sturgeon Habitat (Expense) Kootenai Tribe Of Idaho

Description: Construct sediment transport models to assess the feasibility to enhance white sturgeon spawning substrate habitat, Kootenai R., ID. Study temporal/transient changes in sediment type, bedform, and eroision/depostion on spawning substrate.

Consistency with subbasin plans

This project addresses Urgent Priority aquatic objectives M1, M5 and WST2 listed in Table 10.5 on page 123 and on Pages 21, 27 and 62 of the Aquatic Objectives Section of the Kootenai Subbasin Management Plan. The objectives address mainstem hydrograph conditions and habitat restoration and diversity, as well as restoring white sturgeon recruitment. The strategies this project implements include the following:
M1 strategy - Develop and pursue opportunities to restore normative river functions in the lower Kootenai River, including hydrograph cycles, periodic channel maintenance flow, habitat diversity and floodplain connectivity (Page 21)
M1 strategy - Update exisiting hydrological models based on historic temperature, flow, and velocity data (Page 22)
M5 strategy - Design and implement creative solutions for increasing habitat diversity, including...in-river habitat modification and creation.....(Page 25)
WST2 strategy - Restore white sturgeon natural recruitment...(Page 62)

Addresses subbasin plan priorities

This project addresses Urgent Priority aquatic objectives M1, M5 and WST2 listed in Table 10.5 on page 123 and on Pages 21, 27 and 62 of the Aquatic Objectives Section of the Kootenai Subbasin Management Plan. The objectives address mainstem hydrograph conditions and habitat restoration and diversity, as well as restoring white sturgeon recruitment. This project meets all Tier 1 criteria and the following Tier II criteria (1,3,4,5,6,7,8,9, and 10) found in Section 10.5 (starting on Page 125) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that "after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority for funding" (Page 126 - paragraph after Tier I criteria). This project falls in the above- mentioned category.

2002-008-00 - Reconnect Floodplain Kootenai R (Expense) Kootenai Tribe Of Idaho

Description: Assess the feasibility and options for reconnecting slough habitat that has been isolated from the Kootenai River by dikes.

Consistency with subbasin plans

This project addresses the following Urgent and High Priority Aquatic and Terrestrial biological objectives for White Sturgeon (WST), Burbot (BUR), Tributary (T), Wetlands (WB), Riparian (RP), Grassland/Shrubs (GS), Xeric Forests (XF), and Mesic Forests (MF). Page numbers for the objectives are listed in parentheses.

Restore productivity rates and nutrient concentrations to pre-dam levels: WST1 (61), BUR1 (65), WB1 (73), RP2 (78)
Restore natural recruitment: WST2 (62), BUR3 (68)
Restore habitat conditions required for recruitment: WB2 (75), RP1 (77), RP5 (81), GS4 (84), XF1 (85), XF2 (85)
Restore tributary hydrographs: T7 (36)
Restore riparian habitat to reference conditions: T2 (30), RP1 (77), RP4 (80), RP5 (81)
Increase habitat diversity to reference levels: T6 (35), RP1 (77), RP4 (80), GS2 (83), MF1 (87), MF2 (87), XF1 (85), XF2 (85)
Protect and revegetate riparian areas: RP1 (77), RP4 (80)
Improve habitat connectivity: RP1 (77), RP3 (79), GS1 (82), XF2 (85)

This project also addresses the following Administrative/Programmatic Objectives (AP2 – page 90, AP3 – page 91, and AP5-page 92): Develop and maintain adequate regional and international coordination, pursue independent peer-review and qualified scientific council, and improve distribution of information required to successfully implement the Subbasin Plan.

Addresses subbasin plan priorities

This project addresses the Urgent and High Priority objectives of the Kootenai Subbasin Management Plan (listed above and in Table 10.5 – page 123). The objectives address the restoration of habitats and focal species, in both aquatic and terrestrial ecosystems. Moreover, this project meets the prioritization strategies in all Tier I and is the consistent with all Tier II criteria (and fully meets 1, 2, 4, 6, 7, 8, 9, and 10) found in Section 10.5 (page 125-128) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that “after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority of funding” (Page 126). This project falls in the above mentioned categories.

2002-011-00 - L. Kootenai Floodplain Assess. (Expense) Kootenai Tribe Of Idaho

Description: Pilot project to assess operational losses with long-term mitigation, protection, enhancement, rehabilitation in floodplain ecosystems on the Lower Kootenai River Watershed.

Consistency with subbasin plans

This project addresses the following Urgent and High Priority Aquatic and Terrestrial biological objectives for White Sturgeon (WST), Burbot (BUR), Tributary (T), Wetlands (WB), Riparian (RP), Grassland/Shrubs (GS), Xeric Forests (XF), and Mesic Forests (MF). Page numbers for the objectives are listed in parentheses.

Restore normative mainstem hydrograph: RP2 (78)
Suppress and remove non-native species: WB3 (76), RP1 (77), RP5 (81), GS3 (83), XF3 (86), MF4 (88)
Reduce and prevent non-native introductions: WB3 (76), RP1 (77), RP5 (81), GS3 (83), XF3 (86), MF4 (88)
Restore productivity rates and nutrient concentrations to pre-dam levels: WST1 (61), BUR1 (65), WB1 (73), RP2 (78)
Restore natural recruitment: WST2 (62), BUR3 (68)
Restore habitat conditions required for recruitment: WB2 (75), RP1 (77), RP5 (81), GS4 (84), XF1 (85), XF2 (85)
Restore tributary hydrographs: T7 (36)
Restore riparian habitat to reference conditions: T2 (30), RP1 (77), RP4 (80), RP5 (81)
Increase habitat diversity to reference levels: T6 (35), RP1 (77), RP4 (80), GS2 (83), MF1 (87), MF2 (87), XF1 (85), XF2 (85)
Protect and revegetate riparian areas: RP1 (77), RP4 (80)
Improve habitat connectivity: RP1 (77), RP3 (79), GS1 (82), XF2 (85)

This project also addresses the following Administrative/Programmatic Objectives (AP2 – page 90, AP3 – page 91, and AP5-page 92): Develop and maintain adequate regional and international coordination, pursue independent peer-review and qualified scientific council, and improve distribution of information required to successfully implement the Subbasin Plan.

Addresses subbasin plan priorities

This project addresses the Urgent and High Priority objectives of the Kootenai Subbasin Management Plan (listed above and in Table 10.5 – page 123). The objectives address the restoration of habitats and focal species, in both aquatic and terrestrial ecosystems. Moreover, this project meets the prioritization strategies in all Tier I and is the consistent with all Tier II criteria (and fully meets 1, 2, 4, 6, 7, 8, 9, and 10) found in Section 10.5 (page 125-128) of the Kootenai Subbasin Plan. Additionally, it is stated in the Subbasin Plan that “after applying and meeting Tier I criteria, ongoing projects that address urgent objectives will be afforded the highest priority of funding” (Page 126). This project falls in the above mentioned categories.

1983-350-00 - Nez Perce Tribal Hatchery O&M (Expense) Nez Perce Tribe

Description: Implement $16 million construction of Nez Perce Tribal Hatchery (NPTH) supplementation program to assist in the recover and restoration of non-listed spring chinook and coho salmon and ESA listed Snake River fall chinook in the Clearwater subbasin.

Consistency with subbasin plans

The Clearwater Management Plan includes specific adult return objectives for anadromous species (See Table 3, Clearwater Management Plan, p. 16). These anadromous species objectives require a combined application of artificial production strategies, habitat protection and restoration strategies, and mitigation of deleterious out-of-subbasin effects. The application of artificial propagation measures are intended to realize anadromous fish restoration, recovery objectives, mitigation, and harvest goals in Table 3.

This project is consistent with and implements Biological Objective D: Utilize a mix of hatchery and natural production strategies for native, localized, and reintroduced populations to meet subbasin goals delineated in Table 3 within 25 years.

Strategy 1: Maximize hatchery effectiveness in the subbasin – continue existing and/or implement innovative hatchery production strategies in appropriate areas to support fisheries, natural production augmentation and rebuilding, reintroduction, and research (Management Plan, p. 21). Strategy 2: Apply safety net hatchery intervention based on extinction risk analysis and benefit risk assessments (Management Plan, p. 21). Strategy 3: Implement artificial propagation measures and continue existing natural production strategies (Management Plan, p. 21). Strategy 4: Monitor and evaluate effectiveness of implementation of hatchery and natural production strategies (Management Plan, p. 21).

Addresses subbasin plan priorities

This project accomplishes priority work under the subbasin plan because it produces Spring and Fall Chinook directly aimed at achieving goals identified in Table 3 (Clearwater Management Plan, p. 16). Furthermore, artificial production from this project is agreed to and mandated under a court ordered agreement in U.S. vs. Oregon

1983-350-03 - Nez Perce Tribal Hatchery M&E (Expense) Nez Perce Tribe

Description: Monitor and evaluate results of the Nez Perce Tribal Hatchery so that operations can be adaptively managed to optimize hatchery and natural production, sustain harvest, and minimize ecological impacts.

Consistency with subbasin plans

The project is consistent with and implements Biological Anadromous Fish Species Strategy 1A1, 1A2, 1A3, and 1A4 (Clearwater Subbasin Mgmt. Plan p.14). These strategies relate to Objective 1A; to monitor and evaluated naturally spawning adults. Biological Anadromous Fish Species Strategy 2B1, 2B2, 2B4, and 1B7 (Mgmt. Plan p.18). These strategies relate to Objective 2B; to monitor and evaluate fish productivity, production, and life stage specific survival through habitat improvements. Biological Anadromous Fish Species Strategy 3C1, 3C2, and 3C3 (Mgmt. Plan p.19). These strategies relate to Objective 3C; to monitor and evaluate the use of hatchery fish to meet recovery and harvest objectives. Biological Anadromous Fish Species Strategy 3D1, 3D2, 3D3, 3D4, and 3D5 (Mgmt. Plan p.21). These strategies relate to Objective 3D; monitor and evaluate hatchery and natural production strategies. Biological Anadromous Fish Species Strategy 4E1, 4E2, and 4E3 (Mgmt. Plan p.22). These strategies relate to Objective 4E; to monitor native resident populations of westslope cutthroat and bull trout. Biological Anadromous Fish Species Strategy 4F1, 4F3, and 4F4 (Mgmt. Plan p.22 & 23). These strategies relate to Objective 4F; to monitor native resident populations of westslope cutthroat and bull trout. Biological Anadromous Fish Species Strategy 4H1, 4E3, and 4E6 (Mgmt. Plan p.24 & 25). These strategies relate to Objective 4H; to monitor populations of brook trout and bull trout. Biological Anadromous Fish Species Strategy 7O2 and 7O7 (Mgmt. Plan p.31). These strategies relate to Objective 7O; to monitor instream flows. Biological Anadromous Fish Species Strategy 7P1 and 7P5 (Mgmt. Plan p.32). These strategies relate to Objective 7P; to monitor fish migration. Biological Anadromous Fish Species Strategy 7Q1 and 7Q6 (Mgmt. Plan p.33). These strategies relate to Objective 7Q; to monitor stream temperature. Biological Anadromous Fish Species Strategy 7R1 and 7R2 (Mgmt. Plan p.34). These strategies relate to Objective 7R; to monitor and evaluate thermal impact of Dworshak Dam operations on life history characteristics of fall chinook salmon. Biological Anadromous Fish Species Strategy 10BB1 and 10BB6 (Mgmt. Plan p.42 & 43). These strategies relate to Objective 10BB; to evaluate riparian habitats in relation to spawning and rearing habitat. Biological Anadromous Fish Species Strategy 16JJ4 (Mgmt. Plan p. 22). These strategies relate to Objective 16JJ; to monitor fish populations in relation to road impacts.

Addresses subbasin plan priorities

The Clearwater Subbasin Management Plan prioritization process utilizes an environmental framework approach to prioritization and does not address biological characteristics explicitly. The Research Monitoring and Evaluation Plan section (Mgmt. Plan p.61) states “the terrestrial and aquatics portion of the proposal describe high priority RM&E needs.” The Plan further states that:

“These needs are defined as programs that gather data or conduct research that furthers our understanding of specific populations, their habitats, and their ecosystems, fills existing knowledge or data gaps, answers questions critical to successful management of species or communities, tests or develops innovative restoration/management activities, thereby facilitating adaptive management.”

Within the Aquatics section this project (NPT Hatchery M&E) is in coordination with other state and federal agencies for the following Proposed Research:

General 1. Investigate effects of potential loss or lack of nutrients due to declines in anadromous salmonid populations (p.63).

General 2. Determine migration characteristics and timing of smolts outmigrating from the subbasin and assess hatchery:wild ratio (p.63).

General 3. Develop appropriate intensity and spatial distribution of monitoring to estimate parr carrying capacity (p.63).

Water Quality 1. Define and treat spatial and temporal gaps in temperature M&E at the subbasin scale (p.64).

Water Quality 2. Assess temperature-amelioration restoration project (p.65).

Water Quality 3. Develop temperature standards (p.65).

Water Quantity/Passage 1. Designate minimum flow requirements (p.66).

Water Quantity/Passage 2. Evaluate habitat connectivity and existing or potential migration barriers to focal salmonid species (p.67)

Habitat - General 1. Define sediment budget, rates, restoration efforts, and restoration opportunities (p.68).

Habitat - General 2. Develop/expand index areas (p.69).
Hatchery-Wild Interactions 1. Quantify salmon and steelhead stray rates and potential genetic consequences (p.70).
Hatchery-Wild Interactions 2. Assess competitive interactions between reintroduced and native salmonid populations (p.70).
Resident Fish - General 1. Definition of fluvial cutthroat and bull trout habitat utilization, population dynamics and potential for genetic interchange with resident forms (p.71).
Resident Fish - General 3. Assess population status, limiting factors, and rehabilitation potential for Pacific lamprey in the Clearwater subbasin (p.72).
Resident Fish - General 4. Assess population status, limiting factors, and genetics of redband rainbow trout in the Clearwater subbasin (p.72).
Resident Fish - Dworshak 1. Assess flow augmentation on bull trout in the North Fork and Lower Clearwater Rivers (p.73).
Anadromous Fish 1. Investigate population status of chinook, coho, and summer steelhead (p.75).
Anadromous Fish 2. Profile anadromous salmonid genetics (p.75).
Anadromous Fish 3. Assess out-of-subbasin factors affecting smolt outmigration success (p.76).
Anadromous Fish 4. Assess effectiveness of hatchery production to sustain or rebuild natural production (p.76).
Anadromous Fish 6. Evaluate unclipped hatchery steelhead released in the Clearwater and Salmon River subbasins (p.77).

1987-099-00 - Dworshak Dam Impacts Assess/In (Expense) IDFG

Description: Evaluates the impacts of drawdowns and routine dam operations on resident fish populations. Also, determines ways to minimize entrainment losses of fish into Dworshak Dam.

Consistency with subbasin plans

This project is consistent with and implements Aquatic Strategies 1, 2, and 3 in the Clearwater Subbasin Plan (Management Plan, pg 26) under objective I (capitalized letter i) for Dworshak Reservoir resident fisheries. This project is focused on assessing the effectiveness of methods to minimize entrainment losses of fish through Dworshak Dam. It also monitors and evaluates program success through comparisons of trends in population relative abundance pre- and post-implementation of management activities designed to minimize entrainment rates. This research is briefly outlined as project VII-3 in section 4.3.1 of the Clearwater Subbasin Management Plan.
It is believed that current research and management efforts aimed at reducing impacts on kokanee will benefit a suite of resident species which are similarly impacted by reservoir operations. Therefore, this project is directly related to and will guide future research addressing objectives E, J, K, and L for bull trout, rainbow trout, mitigation goals, and developing an integrated rule curve for Dworshak Dam operations, respectively. In addition, these technologies, once proven, could be implemented in other storage reservoirs in the Columbia Basin where entrainment losses are prevalent. This project also conforms to the Columbia River Basin Fish and Wildlife Program (FWP) program measure 10.1B, which gives a high priority to "resident fish substitution measures in areas that previously had salmon and steelhead, but where anadromous fish are now irrevocably blocked by federally operated hydropower development". The native river habitat has changed into a fluctuating reservoir. This project attempts to improve sport fisheries on the native and introduced fish within this new habitat. It is also a principle of the FWP to "Protect, mitigate and enhance resident fish in hydropower system storage projects to the fullest extent practical from negative impacts associated with water releases".

Addresses subbasin plan priorities

Resident fish goals, objectives, and strategies were not prioritized in the Clearwater Subbasin plan assessment. However, this project addresses several limiting factors in the Clearwater Subbasin plan assessment.
Dworshak Dam is specifically identified as an Assessment Unit Scale – local source limiting factor for resident fish in the subbasin under section 8.3.2 (pg 348) of the subbasin assessment. The reservoir inundated an estimated 200 km of river and stream habitat which is lost resident fish habitat, which to date has not been fully mitigated. The current operation of Dworshak Dam is a limiting factor to fish populations within Dworshak Reservoir. Drawdowns of the reservoir can be a much as 47 m (154 ft.) and reduce the surface area by 52%, thereby reducing habitat for fish populations. Drawdowns also prevent the establishment of productive littoral areas around the shorelines of the reservoir, which affects near-shore spawning and feeding species.
Kokanee are the best-adapted species for this fluctuating reservoir since they occupy the pelagic, offshore, areas and spawn in tributary streams. Their densities have exceeded 100 adult kokanee per hectare, and harvest of kokanee by anglers has exceeded 200,000 fish in some years. The population's biggest limiting factor has been entrainment into Dworshak Dam outflows. For example in the spring of 1996, Idaho Department of Fish and Game estimated that 1.3 million kokanee were entrained, potentially reducing the kokanee population in the reservoir by 95%. Fickeisen and Geist (1993) noted that the principle bottleneck to the population appeared to be the entrainment losses of fish through the dam. Reservoir operations also limit smallmouth bass populations. Fluctuating water levels during incubation have resulted in desiccation of nests and limited beds of aquatic vegetation that provide habitat for production of food needed by age 1 to age 4 fish.

1989-098-01 - Salmon Studies Id Rvrs Usfws (Expense) USFWS

Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook salmon populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

Consistency with subbasin plans

Spring chinook are identified as a "focal" species in the Clearwater Subbasin Assessment (pg 6).
ISS addresses the natural spawning component of the anadromous adult return objectives for the Clearwater subbasin (Problem 1, Obj A, table 3, pg 16) by supplementing natural spring Chinook populations with hatchery-origin progeny and monitoring the effects of these supplemental fish on natural populations in an effort to increase the long-term returns to the Clearwater subbasin.
Evaluation of supplementation and implementation of natural production strategies within the ISS program addresses the utilization of a mix of hatchery and natural productin strategies to meet subbasin goals (Problem 3, Obj D, pg 21).
Research, monitoring and evaluation activities proposed within the Clearwater Subbasin Management Plan are currently be addressed by the ISS program. The ISS program currently monitors life-stage survival, out-migration timing and life-stage specific habitat use of naturally produced spring Chinook juveniles within Clear Creek and Pete King Creek (pg 63, I2). Current sampling protocol emphasizes data collection pertaining to presence/absence of spawners and/or juveniles (redd counts, scretrapping and snorkeling), presence/absence of hatchery-origin spawners (carcass surveys), age of spawners,and temperature monitoring which is proposed as sampling strategies for developing/expanding index areas (pg 69, VI2). The ISS program has multiple year data sets pertaining to adult returns, smolt survival to downstream dams, adult spawner abundance, spawning success and spawner to spawner ratios for Clear Creek and Pete King Creek for investigating the population status of spring Chinook (pg 75, VIII1).Other reserch goals addressed by ISS are: (1)assessing out-of-subbasin factors affecting smolt outmigration success (pg 75, VIII3) and (2) assesing the effectiveness of hatchery production to sustain or rebuild natural production (pg 76, VIII4).

Addresses subbasin plan priorities

This project occurs in areas of federally-owned and privately-owned lands. Opportunity for action on are considered high on federally-owned lands and moderate for privately-owned lands.
Focal species and high priority issues occur within the study streams encompassed within their respective PMUs. Spawning and rearing of spring Chinook is known to occur in Clear Creek and Pete King Creek, the streams being monitored by this project. Although no listed priorities are directly linked to this project, implementing current listed priorities will benefit spring Chinook recovery which is the overidding goal of the ISS project.

1990-055-00 - Id Steelhead M&E Studies (Expense) IDFG

Description: Evaluate the feasibility of using artificial production to increase natural steelhead populations and to collect life history, genetic, and disease data from wild steelhead populations in Idaho.

Consistency with subbasin plans

Salmon Subbasin:
Strategy 1A2. Population specific SAR's. Project PIT-tagging of steelhead address this need.

Strategy 2A1. Project has completed a genetic analysis of 74 wild steelhead populations and all 5 hatchery stocks.

Strategy 2A3. Project makes wild steelhead escapement counts at Rapid River. Yearly snorkel surveys done to estimate juvenile steelhead densities in upper Salmon River and SF Salmon drainages.

Strategy 2A4. Project began working in SF Salmon drainage and Rapid River in 2004 to gather data on wild steelhead populations.

Strategy 2A5. Project collects data necessary to do an extinction risk analysis for steelhead.

Strategies 3A1 and 3A2. Data is collected in Rapid River to make survival estimates and calculate smolts per female for steelhead.

Strategies 3C1, 3C2, 3C3. Data is collected for steelhead in index streams from snorkel surveys, PIT-tagging, and adult counts at Rapid River.

Clearwater Subbasin
Strategy 1A1. Project PIT-tags wild steelhead that can be used for this analysis.

Strategy 1A2. Project makes yearly escapement count of wild steelhead at Fish Creek and does yearly snorkel surveys to estimate juvenile densities in the SF Clearwater, Lochsa and Selway drainages.

Strategy 3D2. Project collects steelhead data needed to do an extinction risk analysis for steelhead.

Strategy 4E1. Project collects resident fish densities during the yearly snorkel surveys.

Strategy 4G1. Project has completed a genetic analysis that can be used to assess O. mykiss and O. clarkii hybridization.

Addresses subbasin plan priorities

Salmon Basin: No priorities were assigned to this plan however, research needs were identified (Table 13, p 120). This project contributes steelhead data that can be used in the Research Needs and Performance Measures identified in Table 13 to assess survival among life-stages (Need 1), effective population size and genetic diversity (Need 2), juvenile abundance and distribution, age class structure, and condition of juveniles at emigration (Need 4).

Clearwater Basin: No priorities were assigned to this plan however, research needs were identified (Section 4.3, p 61). This project is specifically named in the Management Plan for collecting data for Research Needs I.1 (effects of nutrients); I.2 (determine migration characteristics and timing of smolt outmigration); I.3 (develop appropriate intensity and spatial distribution monitoring to estimate parr carrying capacity); VIII.1 (population status of summer steelhead); VIII.2 (profile anadromous salmonid genetics); VIII.4 (assess effectiveness of hatchery production to sustain or rebuild natural production). In addition this project contributes data necessary for Research Needs II.2 (stream water temperature monitoring); V.1 (quantify stray rates and potential genetic consequences); VI.1 (resident trout population monitoring); and VI.4 (genetics of O. mykiss)

1993-035-01 - Red River Restoration (Expense) IDFG

Description: Restore physical and biological processes to create a self-sustaining river/meadow ecosystem using a holistic approach and adaptive management principles to enhance fish, riparian, and wildlife habitat and water quality within the Red River watershed.

Consistency with subbasin plans

Continued implementation of the Red River Restoration Project is consistent with the following objectives and strategies included in the Clearwater Subbasin Management Plan.
Page 33
Objective Q: Reduce water temperatures to levels meeting applicable water quality standards for life stages specific needs of anadromous and native resident fish, with an established upward trend in the number of stream miles meeting standards by 2017.
Strategy: Restore riparian functions related to temperature—continue efforts aimed at increasing streamside shading where streamside shading has been reduced by anthropogenic activities.
Maintenance of existing riparian plantings and the establishment of new plantings will increase streamside shading along Red River and meadow tributaries.
Page 37
Objective U: Improve aquatic habitat diversity and complexity to levels consistent with other objectives outlined in this document, with particular emphasis on recovery of anadromous and fluvial stocks.
Strategy: Restore complexity—address priority problems with protection and restoration activities designed to promote development of more complex and diverse habitats through improved watershed condition and function.
Strategy: Restore ecosystem functions—identify and rehabilitate upland, wetland and floodplain areas.
Maintenance of existing riparian plantings and the establishment of new plantings will provide natural bank stabilization, provide overhanging vegetation for fish habitat, reduce water temperatures, and provide a source of nutrients and instream woody debris.
Page 42 and 43
Objective BB: Protect and restore an additional 300 miles of riparian habitats by 2017.
Strategy: Identify and prioritize riparian habitats for protection and restoration. Give highest priority to riparian habitats supporting spawning and rearing for anadromous and native resident salmonids.
Red River provides both spawning and rearing habitat for chinook salmon and rearing habitat for steelhead trout. It also provides seasonal habitat for bull trout and westslope cutthroat trout. Protection and maintenance of existing riparian plantings and the establishment of new plantings will benefit all of the above species, in addition to a variety of focal and other wildlife species.

Addresses subbasin plan priorities

The 22 Potential Management Units (PMU's) in the Clearwater Subbasin Management Plan are divided into three groups, those dominated by private ownership, mixed ownership, and federal ownership The Red River drainage is primarily located with PMU #FD-3, which is dominated by federal ownership. Restoration opportunities are rated as high in FD-3 (Section 4.4, page 86). Protecting and restoring riparian/wetland habitats are rated as high priorities in FD-3 (Section 4.4, page 86). Riparian and wetland restoration projects can be used to restore areas damaged by dredging and/or grazing, thereby improving both aquatic and terrestrial habitats.

The Clearwater Subbasin Management Plan Supplement provides additional discussion on priorities. Page 3 of the Supplement identifies instream temperature, sedimentation, and loss/disturbance of riparian habitats as three of the five high priority limiting factors in the Clearwater Subbasin. Implementation of the Red River Restoration project will address all three of these limiting factors.

1995-013-00 - Nez Perce Trout Ponds (Expense) Nez Perce Tribe

Description: Repair 2 existing trout ponds, conduct site inventory, design, construction, management of up to 12 more fish ponds to provide consumptive resident fisheries to compensate for losses caused by Dworshak Dam.

Consistency with subbasin plans

NPT Resident Fish Substitution Program is consistent with and implements activities that are within the general scope of the objectives and strategies in the Clearwater Subbasin Management Plan (November 2003). Council staff recommended adoption of the plan, along with December 2004 revisions, as a draft program amendment, which was then released for public review. In a letter dated January 12, 2005 the Nez Perce Tribe emphasized the lack of an explicit context for the Resident Fish Substitution Program as well as other programs and recommended specific language to address the issues. In a decision memorandum dated February 8, 2005, Council staff responded by noting that the implementation activities related to resident fish substitution are within the general scope of the objectives and strategies in the plan and may be pursued, if desired, in future project selection processes. Furthermore, the activities of this project are delineated in detail in the Nez Perce HGMP, draft Clearwater Subbasin Summary, Appendix H, section 2.1 in particular where mitigation aspects of this project are aligned with concepts and policies contained in NPPC 99-15. In addition, the original program language in measures 10.8D.1 and 10.8D.2 of the Council's 1995 Fish and Wildlife Program provides a basis for utilizing consumptive resident fisheries as a partial substitute to compensate for lost anadromous fisheries.

Addresses subbasin plan priorities

As indicated in the preceding consistency section resident fish substitution activities are within the general scope of objectives and strategies of the subbasin plan and therefore the work conducted by the NPT Resident Fish Substitution Program is a priority. In addition, in the vision statement that serves as the underlying guiding principle for the plan the first principle listed spells out the respect and recognition required in order to honor treaty-reserved rights, which include the fisheries harvest of the Nez Perce Tribe and in cases where this has been negatively impacted, as in the North Fork Clearwater River salmonid harvest due to the construction of Dworshak Dam, the mitigation efforts, such as resident fish substitution, used to alleviate the lost opportunities.

1996-077-02 - Lolo Creek Watershed (Expense) Nez Perce Tribe

Description: PROTECTING AND RESTORING THE LOLO CREEK WATERSHED WITHIN THE CLEARWATER SUBBASIN IS THE OVERALL GOAL OF THIS PROJECT. WE WILL ACHIEVE THIS WORKING WITHIN AN OVERALL WATERSHED APPROACH, COMPLETING FIVE OBJECTIVES IN MANY AREAS OF THE WATERSHED.

Consistency with subbasin plans

The Lolo Creek Watershed project, is consistent with many Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). A list of Problems, Objectives, and Strategies is as follows: Problem 2, Obj B, Strategies1-5 and 7 (pg 18, CSMP). This project addresses this problem by meeting it's objectives and strategies that identify and prioritize limiting factors within each PMU as well as implementing projects resulting from this prioritization. Problem 4, Obj E, Strategies 1-3 and Obj F, Strategies 2-4 (pg 22-23, CSMP) are consistent with this project. Problem 4 addresses native fish resident species within the Clearwater Subbasin. These improvements and protection measures have been prioritized through a watershed assessment. Problem 7, Obj O, Strategies 3,4,7; Obj P, Strategies 1-5; Obj Q, Strategies 1-3, 5, 6; Obj S, Strategies 1, 3-5; Obj U, Strategies 1-7 (pages 31-38, CSMP), are consistent with this project. This project restores water quantity, quality, connectivity and habitat complexity through various watershed restoration projects such as road decommissioning and improvements, culvert replacements, riparian planting and protection, and noxious weed treatment. Problem 10, Obj Z, Strategies 1,2,4 (pg 41, CSMP). This project addresses wetlands and riparian zones through planting and cattle exclusion. Problem 16, Obj JJ, Strategies 1-4 (pg 50, CSMP) are consistent with this project. This project reduces road impacts to the stream system through various road treatments. Problem 19, Obj MM, Strategies 1-2; Obj NN, Strategies 1-3 (pg 52-53, CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies. RME are conducted on Aquatic variables: II. Water Quality; III. Passage; IV. Habitat; VIII. Anadromous Fish; X. Terrestrial Habitat: In stream habitat & noxious weeds.

Addresses subbasin plan priorities

The Lolo Creek watershed lies in 3 PMUs. This project is consistent and addresses several High and Moderate Priorities within the identified PMUs. The Lolo Creek Watershed lies within PMUs FD-5, MX-4, and PR-1 (Figure 3, Clearwater Subbasin Management Plan (CSMP), page 135). For PMUs FD-4 and FD-5 this project addresses the following High priorities: Roads (including decommissioning and culverts);moderate priority that is addressed: Water Temperature (Table 7, CSMP, page 87). For PMU MX-4, this project addresses the following High priorities: water temperature, roads, and surface erosion. Within PMU MX-4, this project addresses Instream work under moderate priority. For PMU PR-1, this project addresses the following high priority: water temperature and for moderate priority landslide prone roads. This project will implement road decommissioning and road improvements, replacing fish barrier culverts, planting and maintaining riparian vegetation. Project personnel coordinate and comment on outside agencies activities within the watershed to make sure other activities are consistent with our watershed restoration goals.

1996-077-03 - Restore Fishing To Bear Creek (Expense) Nez Perce Tribe

Description: PROTECTING AND RESTORING THE SQUAW AND PAPOOSE CREEK WATERSHEDS IS THE OVERALL GOAL OF THIS PROJECT. WE WILL ACHIEVE THIS WORKING WITHIN AN OVERALL WATERSHED APPROACH, COMPLETING FOUR OBJECTIVES IN MANY AREAS OF THE WATERSHED.

Consistency with subbasin plans

The actions in this project are consistent with addressing several problems and objectives/strategies summarized as follows from the Clearwater Plan. Problem 2(p.18):Anadromous fish production is limited by habitat quantity, quality, and connectivity in portions of the Subbasin. Problem 4 (p.22) same as #2 but focuses on resident fish. Problem 7(p.31) summarizes problems #2 and #4. Strategies under objectives E, F, G (pp.22-24)of Problem 7 call for protecting and restoring habitat through restoration projects. Strategies under Objectives P, Q, S (pp.32-35) call for fish passage improvement, reducing stream temperature through restoring hydrologic function, and reducing instream sedimentation all utilizing on-going watershed-scale assessments to plan and priorite projects. Problem 11 (p.44) refers to the damage to resources by noxious weed invasion. Strategies under Objectives CC and DD (pp.44-45) call for inventory, assessment, prioritizing, treating noxious weeds, and monitoring noxious weeds. Problem 16 (p.50)refers to impairment of habitat as a result of logging, related transportation system, and fire suppression. Strategies under Objective JJ (p.50) call for planning and implementing road decommissioning. The need for monitoring habitat project work occurs through out the strategies stated for each identified problem.

Addresses subbasin plan priorities

Priorities for action are assigned by PMU designation which is a grouping of watersheds based on land ownership, known management history, and any known stream or watershed data. The project area contains the following PMU designations as defined by the Clearwater Subbasin Plan: MX-6, FD-5, FD-6, FD-7, FD-8, FD-9. The area is defined as having a high opportunity for effective restoration (Table 7 and 8 on pp.85-92). All PMUs with the exception of mixed ownership (MX-6) express a high priority to mitigate the impacts of roads and sediment or it is unknown for the general PMU. Temperature reduction is labeled as moderate priority in some PMUs or unknown. There is not enough data to determine instream work needs in the PMUs where it was included in analysis. Changes to vegetative structure rank from a moderate to high priority across the PMUs. Protection of existing high quality habitat in these areas is labeled high priority. The priorities are tabled in Table 7 and 8 on pages 85-92. A shorter summary table, Table 15 occurs on page 137 for the Clearwater Subbasin.

1996-077-05 - Restore Mccomas Meadows (Expense) Nez Perce Tribe

Description: RESTORING THE MEADOW CREEK (MCCOMAS MEADOWS) WITHIN THE CLEARWATER SUBBASIN IS THE OVERALL GOAL OF THIS PROJECT. WE WILL ACHIEVE THIS WORKING WITHIN AN OVERALL WATERSHED APPROACH, COMPLETING FOUR OBJECTIVES WITHIN THE MEADOW.

Consistency with subbasin plans

The McComas Meadows/Meadow Creek Watershed project, is consistent with many Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). A list of Problems, Objectives, and Strategies is provided. Problem 2, Obj B, Strategies1-5 and 7 (pg 18, CSMP). This project addresses this problem by meeting it's objectives and strategies that identify and prioritize limiting factors within each PMU as well as implementing projects resulting from this prioritization. Problem 4, Obj E, Strategies 1-3 and Obj F, Strategies 2-4 (pg 22-23, CSMP) are consistent with this project. Problem 4 addresses native fish resident species within the Clearwater Subbasin. These improvements and protection measures have been prioritized through a watershed assessment and EIS. Problem 7, Obj O, Strategies 3,4,7; Obj P, Strategies 1-5; Obj Q, Strategies 1-3, 5, 6; Obj S, Strategies 1, 3-5; Obj U, Strategies 1-7 (pages 31-38, CSMP), are consistent with this project. This project restores water quantity, quality, connectivity and habitat complexity through various watershed restoration projects such as road decommissioning and improvements, culvert replacements, riparian planting and protection, and noxious weed treatment. Problem 10, Obj Z, Strategies 1,2,4 (pg 41, CSMP). This project addresses wetlands and riparian zones through planting and cattle exclusion. Problem 16, Obj JJ, Strategies 1-4 (pg 50, CSMP) are consistent with this project. This project reduces road impacts to the stream system through various road treatments. Problem 19, Obj MM, Strategies 1-2; Obj NN, Strategies 1-3 (pg 52-53, CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies. RME are conducted on Aquatic variables: II. Water Quality; III. Passage; IV. Habitat; VIII. Anadromous Fish; X. Terrestrial Habitat: In stream habitat & noxious weeds.

Addresses subbasin plan priorities

The Meadow Creek watershed lies in 2 PMUs. This project is consistent and addresses several High and Moderate Priorities within the identified PMUs. The Meadow Creek Watershed lies within PMUs FD-1 and FD-4 (Figure 3, Clearwater Subbasin Management Plan (CSMP), page 135). For PMUs FD-1 and FD-4 this project addresses the following High priorities: Grazing Impacts and Roads; moderate priority that is addressed: Water Temperature (Table 7, CSMP, page 85 & 86). The project will implement road decommissioning and road improvements, replacing fish barrier culverts, planting and maintaining riparian vegetation. Project personnel coordinate and comment on outside agencies activities within the watershed to make sure other activities are consistent with our watershed restoration goals.

1996-086-00 - Clearwater Focus Program-Idscc (Expense) Idaho Soil and Water

Description: Develop and implement a comprehensive system to coordinate multip jurisdictions, agencies and private landowners in their effort to protect, restore, enhance anadromous fisheries habitat.

Consistency with subbasin plans

The Clearwater Focus Program co-cooordinators and Clearwater Policy Advisory Committee roles were defined in the Subbasin Inventory 2003. Roles were amended to the Subbasin Management Plan via the Clearwater Supplement 2004, p. 12, which was adopted Dec 2005. In addition to coordination and technical assistance provided, several other sections of the Clearwater Subbasin Management Plan will be implemented by this contract. They are: Problem 18, Objective LL, Strategies 1-3, p.52: Coordinate programs and projects across subbasin; Problem 19, Objective MM, Strategies 1-3, p.52: I.D. high priority habitat areas for protection & restoration with multiple agencies across all landownerships; Problem 21, Objectives PP, QQ, & RR pgs 58-60 connect to local groups, maximize social and economic benefits, and increase information and education within the subbasin and region.

Addresses subbasin plan priorities

The Clearwater Management Plan identifies restoration issues as relative priorities within each of the 23 Potential Management Units. 27 prioritizing exercises are also identified in the plan's objectives. The Focus Program has been defined in the plan to provide the structure to develop more finite priorities, coordinate project development, and with the Clearwater Policy Advisory Committee provide the venue through which interaction and coordination of provincial, state, and regional issues may be addressed. The Clearwater Policy Advisory Committee was convened to also provide a subbasin entity composed of resource managers and local governments to provide recommendations for project funding through the Council's program.

1997-060-00 - Clearwater Focus Watershed Np (Expense) Nez Perce Tribe

Description: DEVELOP AND IMPLEMENT A COMPREHENSIVE SYSTEM TO COORDINATE MULTIPLE JURISDICTIONS, MULTIPLE AGENCIES, AND MULTIPLE PRIVATE LANDOWNERS IN THEIR EFFORTS TO PROTECT, RESTORE, AND ENHANCE ANADROMOUS FISHERIES HABITAT.

Consistency with subbasin plans

This project, located within the entire treaty territory, is consistent with several Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). The following is a list of Problems, Objectives, and Strategies that are consistent with the project.

Problem 18, Objective LL, Strategies 1-3 (page 52 of the CSMP) are consistent with this project. Coordination of the Clearwater Policiy Advisory Committee as well as expanding these coordination efforts into the communities will help with developing programs consistent with community needs.

Problem 19, Objective MM, Strategies 1-3; Objective NN, Strategies 1-4 (pages 52-53 of the CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies and community groups.

Problem 21, Objective PP, Strategy 1-3; Objective QQ, Strategy 1-3; Objective RR, Strategies 1-4 (page 59 of the CSMP) are consistent with this project. This project participates on local watershed and technical advisory groups, as well as promotes education and stewardship of natural resources through various media outlets.

Addresses subbasin plan priorities

The Clearwater Subbasin Plan states that "projects have not been successful in conditions where the local groups are not supportive". This project is key in coordinating the involvement of local groups in watershed restoration efforts.

Since this project coordinates all watershed activities, it is a high priority for funding. This position is key in prioritizing activities throughout watersheds in the Nez Perce Treaty Territory.

1999-014-00 - Little Canyon Creek Habitat (Expense) Nez Perce Tribe

Description: Restore steelhead trout habitat in Little Canyon Creek subwatershed that are affected by upland agricultural land uses by implementing agricultural best management practices and coordinating ISCC, NRCS, and BPA funding sources.

Consistency with subbasin plans

According to the Clearwater Subbasin Management Plan (Ecovista 2003), high stream temperatures, sedimentation, and low summer stream flows are fisheries habitat concerns that have been associated with nonpoint source pollution from agricultural land uses in the Little Canyon Creek watershed.

Problem 2 (Managment Plan page 18): Anadromous fish production is limited by habitat quantity, quality and connectivity.
Problem 7 (Management Plan page 31): Water quantity and quality, connectivity, and habitat complexity are key environmental factors that limit the production of anadromous and resident fish species and aquatic wildlife.

Steelhead trout were federally listed as a threatened species in the Snake River Basin evolutionarily significant unit (EFU) on October 17, 1997, which includes the Clearwater River subbasin. Little Canyon Creek is the principal tributary to Big Canyon Creek. The Big Canyon Creek watershed has been identified as one of the top steelhead producing streams within the Nez Perce Reservation and in particular, the A-run steelhead trout.

Addresses subbasin plan priorities

Clearwater Subbasin Management Plan Prioritized Aquatic Issues:
· Water Temperature – High water temperatures inhibiting the distribution or survival of focal fish species; often related to watershed-scale disturbance or land uses, but may be due to natural factors in some areas.
· Instream - in channel habitat work/improvements; Priority may be listed as "Undefined" since the need for such work is generally site specific and not definable at broader scales
· Riparian/Wetland - Protection of existing resources is first priority. Restoration of additional riparian/wetland areas may improve fish habitat, hydrology/flows, wildlife habitats or other factors.

Priorities are addressed by Problem 2 (Managment Plan page 18): Anadromous fish production is limited by habitat quantity, quality and connectivity; and Problem 7 (Management Plan page 31): Water quantity and quality, connectivity, and habitat complexity are key environmental factors that limit the production of anadromous and resident fish species and aquatic wildlife. This project is consistent with the problem's objectives and strategies.

1999-015-00 - Big Canyon Fish Habitat (Expense) Nez Perce Tribe

Description: Restore steelhead trout habitat in the Nichols Canyon subwatershed affected by upland agricultural land uses by implementing agricultural best management practices and coordinating ISCC, NRCS, and BPA funding sources.

Consistency with subbasin plans

The project is consistent with and implements the following objectives and strategies listed in section 4.2.2 (Problem Statements, Objectives, and Strategies) listed in the Clearwater Subbasin plan:

Objective #	Strategy #	Page #
A	3	14
B	5,7	18
M	1,2,3	29
O	4	31
P	3	32
Q	1,2,3,5,6	33
S	1,3,4,5	35
T	2,4	36
U	2,4,5	37
V	1	38
W	3	38,39
X	1,3	39
Y	1,3	40,41
Z	2	41
AA	1,2,4,5	42
BB	1,2,3,4,6	42,43
CC	1,2,3,5,6,7	44
DD	1,2,3,4	45
EE	1,2,3,4	46
FF	2	46
GG	1,2,3	47
JJ	2	50
LL	1,2,3	53
NN	3	53
PP	1,2,3	58
QQ	2	59
RR	1,2,3,4	59

These strategies relate to aquatic and terrestrial species in the Clearwater Subbasin. The species of concern in the Big Canyon Creek watershed are steelhead trout. In addition, the assessment identified in-stream temperature, sediment, loss of riparian habitats, and alteration of environmental processes as limiting factors for anadromous fish (page 82). This project addresses each of these limiting factors through the collection of inventory and assessment data and installation of projects to improve the limiting factors.

Addresses subbasin plan priorities

The project completes priority work under the Clearwater Subbasin plan, because the project directly addresses priorities listed in the plan (page 82) including reduction of high density road areas, addressing sediment production through installation of BMPs, development of grazing plans and livestock exclusion areas for grazing impacts, addresses surface erosion through BMP installation, addresses flashy hydrology through installation of BMPs, protects and restores ponderosa pine stands, grass prairies through vegetative plantings and weed control, protects and restores wetland and riparian habitats therefore improving water temperature and instream habitat, and addresses exotic weeds through installation of BMPs. Project work is performed on private, federal, state and tribal ownerships. Project work

specifically addresses high priorities listed in tables 7,8, 9 of the subbasin plan (pages 85-96).

1999-016-00 - Protect/Restore Big Canyon Cr. (Expense) Nez Perce Tribe

Description: Restore Big Canyon Creek to a more healthy and productive system which is capable of sustaining a self perpetuating population of anadromous and resident fish.

Consistency with subbasin plans

This project is consistent with and implements the following:
* Prob 2, object B, strategy 1,2,4,5,7 (pg. 18) - coordination (1,2 - from goals above) and collect field data (8,9)
* Prob 7, object P, strategy 2,3 (pg. 32) - produce design (5)
* Prob 7, object Q, strategy 1,2,3,6 (pg. 33) - coordination (1), produce plan (4), collect data (9)
* Prob 7, object U, strategy 1,2,3,4,5,6,7 (pg. 37) - coordination (1,2), produce plan (4), rds decom (6), collect data (8,9)
* Prob 16, object JJ, strategy 1,2,4 (pg. 50) - decomm (6)
* Prob 18, object LL, strategy 1,2,3 (pg. 52) - coord (1,2)
* Prob 21, object PP, strategy 1,2,3 (pg. 58) - coord (2)
* Prob 21, object QQ, strategy 2 (pg. 59) - decomm (6)
* Aquatics II, 1 (pg. 64) - collect data (11,12)
* Aquatics IV, 1,2 (pg. 68,69) - collect data (11,12)
* Aquatics VIII, 1 (pg. 75) - collect data (11)
* Terrestrial X, 3,4 (pg.79) - produce plan (4), collect data (12)

This projects focus is on protecting and restoring habitat for threatened steelhead and spring chinook salmon and monitoring evlauating trends in stream health and fish populations.

Addresses subbasin plan priorities

The Big Canyon Creek Watershed is within Potential Management Units PR-6,7,8. Within PR-6, this project addresses the following issues;
* Water Temp - High Priority - goal 4 (produce plan on tribal lands to address temp)
* Sediment - High Priority - goal 6 (rd decommissioning)
* Grazing Impacts - Moderate - goal 4 (produce plan on tribal lands to address grazing implacts)
* Landslide Prone Roads - Moderate/Low - goal 6 (rd decommissioning)
* Riparian/Wetlands - Undefined - goal 4 (produce plan on tribal lands to protect riparian/wetland areas)
* Instream - Low - goal 5 (design fish passage barriers)

PR-7&8
* Same as above for;
* Water Temps (High Priority)
* Surface Erosion - High Priority - goal 4 (produce plan on tribal lands to address sed), 6 (rd decomm)
* Grazing Impacts (Low)
* Instream (Low)
* Riparian/Wetlands (undefined)

1999-017-00 - Rehabilitate Lapwai Creek (Expense) Nez Perce Tribe

Description: Restore Lapwai Creek to a more healthy and productive system which is capable of sustaining a self perpetuating population of anadromous and resident fish.

Consistency with subbasin plans

This project is consistent with and implements the following:
* Prob 2, object B, strategy 1,2,4,5,7 (pg. 18) - coordination (1,2 - from goals above) and collect field data (11,12)
* Prob 7, object O, strategy 4,5 (pg. 31) - coordination with BOR on flows (2), miles of fence (7)
* Prob 7, object P, strategy 2,3,5 (pg. 32) - produce design (5), replace barrier (10)
* Prob 7, object Q, strategy 1,2,3,6 (pg. 33) - coordination (1), produce plan (4), miles of fence (7), collect data (12)
* Prob 7, object U, strategy 1,2,3,4,5,6,7 (pg. 37) - coordination (1,2), produce plan (4), rds decom (6), miles of fence (7), replace barrier (10), collect data (11,12)
* Prob 10, object Z, strategy 2,4 (pg. 41) - miles of fence (7)
* Prob 10, object BB, strategy 1,2 (pg. 42,43) - miles of fence (7)
* Prob 11, object DD, strategy 1,2,3,4 (pg. 45) - acres treated (8)
* Prob 16, object JJ, strategy 1,2,4 (pg. 50) - decomm (6)
* Prob 18, object LL, strategy 1,2,3 (pg. 52) - coord (1,2)
* Prob 21, object PP, strategy 1,2,3 (pg. 58) - coord (2)
* Prob 21, object QQ, strategy 2 (pg. 59) - miles of fence (7), decomm (6)
* Aquatics II, 1 (pg. 64) - collect data (11,12)
* Aquatics IV, 1,2 (pg. 68,69) - collect data (11,12)
* Aquatics VIII, 1 (pg. 75) - collect data (11)
* Terrestrial X, 3,4 (pg.79) - produce plan (4), collect data (12)

This projects focus is on protecting and restoring habitat for threatened steelhead and spring chinook salmon and monitoring evlauating trends in stream health and fish populations.

Addresses subbasin plan priorities

The Lapwai Creek Watershed is within Potential Management Units PR-4,7,8. Within PR-4, this project addresses the following issues;
* Water Use - High Priority - goal 2 (close involement with BOR/NOAA on returning flows into Sweetwater Creek from Irrigation District)
* Surface Erosion - High Priority - goal 4 (produce plan on tribal lands to address sed), 6 (rd decomm)
* Water Temp - Moderate Priority - goal 4 (produce plan on tribal lands to address temp), 7 (fence 4 miles of riparian/wetlands from cattle), 2 (close involvment with BOR/NOAA on returing flows into Sweetwater Creek from Irrigation District)
* Grazing Impacts - Moderate - goal 4 (produce plan on tribal lands to address grazing implacts), 7 (fence 4 miles of riparian/wetlands from cattle)
* Riparian/Wetlands - Moderate - goal 4 (produce plan on tribal lands to protect riparian/wetland areas), 7 (fence 4 miles of riparian/wetlands from cattle)
* Instream - Low - goal 5, 10 (design and replace fish passage barriers)

PR-7&8
* Same as above for;
* Water Temps (High Priority)
* Surface Erosion (High)
* Grazing Impacts (Low)
* Instream (Low)
* Riparian/Wetlands (undefined)

2000-028-00 - Eval Pacific Lamprey In Clearw (Expense) IDFG/IOSC

Description: The Pacific Lamprey life history is poorly known throughout its range. This project will collect information to add to Pacific Lamprey population status and life history in Idaho.

Consistency with subbasin plans

This project is consistent with the Clearwater Subbasin assessment and management plans. Pacific lamprey is identified as a focal species in the assessment plan (page 289). The project activities require coordination to exchange information and logistically coordinate field activities with other investigators in the Columbia River basin. The Clearwater River assessment (Problem 1, Obj. A, Strategy 1, page 6) states the need for participation in province and basinwide coordinated studies. The project has coordinated efforts with state and federal land management agencies. Project personnel will continue to be integral participants on the Columbia River Lamprey Technical Workgroup. The need to collect life history information, habitat utilization, abundance by life stage, population productivity assessment, and distributional field data through field investigations is documented in the Clearwater management plan by Section 4.2.2, Table 4, page 54); RM&E Table 5, Obj.A, Strategies 1 and 2, Obj. B-Strategies 1 and 3 (pages 55-57); Problem 1, Obj. A, Strategies 1 and 2 (page 14); Problem 2, Obj. B, Strategies 1 and 3 (page 18); Problem 3, Obj. D, Strategy 3 (page 21); Problem 7, Obj. Q, Strategy 1 (page 33); Problem 7, Obj. U, Strategy 1 (page 37); Problem 10, Obj. BB, Strategy 1 (page 42); Problem 19, Obj. MM, (page 52); and, Problem 21, Obj. RR, Strategies 1-4 (page 59). Under Section 4.3, VI, the proposed research for Pacific lamprey is delineated, (page 72). The project primary focus has been and will continue to be the collection of field data to better address the status and distribution of Pacific lamprey in the Clearwater subbasin. Pacific lamprey genetics in Idaho in relation to Columbia River populations is documented in the Clearwater Management Plan (Reseach item No. 3, page 72). As this project is undertaking, the development of conservation plans utilizing hatchery or other viable restoration schemes is addressed in the Clearwater Management Plan (Table 3, footnote 24, page 17).

Addresses subbasin plan priorities

The Clearwater Management Plan (Section 4.4, page 82) states, "In addition to out-of-subbasin factors which have the greatest impact on anadromous fish in the subbasin, five high priority factors primarily limit aquatic and terresterial species and habitats in the Clearwater subbasin; instream temperatures, sedimentation, loss of riparian habitats, changes in vegetative structure, and alteration of environmental processes." This project is addressing all of these items in defining habitat utilization and the role each plays in population abundance.

2000-034-00 - Protect N Lochsa Face Analysis (Expense) Nez Perce Tribe

Description: Protect and Restore the North Lochsa Face Watershed by working within an overall watershed approach, based on comprehensive studies of the analysis area. The overall goal of this project is to increase anadromous fish populations.

Consistency with subbasin plans

The actions in this project are consistent with addressing several problems and objectives/strategies summarized as follows from the Clearwater Plan. Problem 2(p.18):Anadromous fish production is limited by habitat quantity, quality, and connectivity in portions of the Subbasin. Problem 4 (p.22) same as #2 but focus on resident fish. Problem 7(p.31) summarizes problems #2 and #4. Strategies under objectives E, F, G (pp.22-24) call for protecting and restoring habitat through restoration projects. Strategies under Objectives P, Q, S (pp.32-35) call for fish passage improvement, reducing stream temperature through restoring hydrologic function, and reducing instream sedimentation all utilizing on-going watershed-scale assessments to plan and priorite projects. Problem 16 (p.50)refers to impairment of habitat as a result of logging, related transportation system, and fire suppression. Strategies under Objective JJ (p.50) call for planning and implementing road decommissioning. The need for monitoring habitat project work occurs through out the strategies stated for each identified problem.

Addresses subbasin plan priorities

Priorities for action are assigned by PMU designation which is a grouping of watersheds based on land ownership, known management history, and any known stream or watershed data. The project area contains the following PMU areas as defined by the Clearwater Subbasin Plan: FD-6, FD-7, FD-8, FD-9. The area is defined as having a high opportunity for effective restoration (Table 7 and 8 on pp.85-92). All PMUs express a high priority to mitigate the impacts of roads and sediment or it is unknown for the general PMU. Temperature reduction is labeled as moderate priority in some PMUs or unknown. There is not enough data to determine instream work needs in the PMUs where it was included in analysis. Changes to vegetative structure rank from a moderate to high priority across the PMUs. Protection of existing high quality habitat in these areas is labeled high priority. The priorities are tabled in Table 7 and 8 on pages 85-92. A shorter summary table, Table 15 occurs on page 137 for the Clearwater Subbasin.

2000-035-00 - Rehabilitate Newsome Creek - S (Expense) Nez Perce Tribe

Description: Protect and enhance Newsome Creek Watershed for the benefit of both resident and anadromous fish using an overall watershed approach. This project is a cooperative project between the Nez Perce Tribe and the Nez Perce National Forest.

Consistency with subbasin plans

This project, located within the Newsome Creek Watershed, is consistent with several Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). The following is a list of Problems, Objectives, and Strategies that are consistent with the project.

Problem 2, Objective B, Strategies1-5 and 7 (page 18 of the CSMP). This project addresses this problem by meeting it’s objectives and strategies that identify and prioritize limiting factors within each PMU as well as implementing projects resulting from this prioritization.

Problem 4, Objective E, Strategies 1-3 and Objective F, Strategies 2-4 (pages 22-23 of the CSMP) are consistent with this project. Problem 4 addresses native fish resident species within the Clearwater Subbasin. This project specifically addresses the above Objectives and Strategies through improvement and protection of habitat that is utilized by native fish species, in particular Westslope cutthroat trout and bull trout. These improvements and protection measures have been prioritized through a watershed assessment.

Problem 7, Objective O, Strategies 4,7; Objective P, Strategies 1-5; Objective Q, Strategies 1-3, 5, 6; Objective S, Strategies 1, 3-5; Objective U, Strategies 1-7 (pages 31-38 of the CSMP), are consistent with this project. This project restores water quantity, quality, connectivity and habitat complexity through various watershed restoration projects such as the stream and floodplain rehabilitation, road decommissioning and improvements as well as culvert replacements.

Problem 16, Objective JJ, Strategies 1-4 (page 50 of the CSMP) are consistent with this project. This project does an intense effort to reduce road impacts to the stream system as well as provide for terrestrial security.

Problem 19, Objective MM, Strategies 1-2; Objective NN, Strategies 1-3 (pages 52-53 of the CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies and community groups.

Problem 21, Objective RR, Strategies 1-4 (page 59 of the CSMP) are consistent with this project. This project promotes education and stewardship of natural resources through various media outlets.

Addresses subbasin plan priorities

The Newsome Creek watershed lies in 2 PMUs. This project is consistent and addresses several High and Moderate Priorities within the identified PMUs. For the Newsome Creek Watershed the PMUs are FD-2 and FD-4 (Table 17, Clearwater Subbasin Management Plan (CSMP), page 140).

For PMU FD-2 this project addresses the following High priorities; Mining Impacts, Roads, and Instream as well as the Moderate priority of Water Temperature (Table 7, CSMP, page 85). The project will implement stream, floodplain, and riparian restoration due to mining impacts, road decommissioning and road improvements as well as replacing fish barrier culverts.

For PMU FD-4 this project addresses the following Highest priority, Protecting Roadless; High Priority, Roads; and Moderate priority, Water Temperature (Table 7, CSMP, page 86). Project personnel coordinate and comment on other agency activities within the watershed to make sure other activities are consistent with our watershed restoration goals.

2000-036-00 - Protect And Restore Mill Creek (Expense) Nez Perce Tribe

Description: Enhance critical riparian areas thru re-vegetation and maintaining the cattle exclusion fence, and replacing/repairing culverts which pose a fish/aquatic barrier to restore quality habitat for chinook salmon, steelhead trout, bull trout and resident fish.

Consistency with subbasin plans

The Mill Creek Watershed project, is consistent with many Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). A list of Problems, Objectives, and Strategies is provided. Problem 2, Obj B, Strategies1-5 and 7 (pg 18, CSMP). This project addresses this problem by meeting it's objectives and strategies that identify and prioritize limiting factors within each PMU as well as implementing projects resulting from this prioritization. Problem 4, Obj E, Strategies 1-3 and Obj F, Strategies 2-4 (pg 22-23, CSMP) are consistent with this project. Problem 4 addresses native fish resident species within the Clearwater Subbasin. These improvements and protection measures have been prioritized through a watershed assessment and EIS. Problem 7, Obj O, Strategies 3,4,7; Obj P, Strategies 1-5; Obj Q, Strategies 1-6; Obj S, Strategies 1, 3-5; Obj U, Strategies 1-7 (pages 31-38, CSMP), are consistent with this project. This project restores water quantity, quality, connectivity and habitat complexity through various watershed restoration projects such as culvert replacements, riparian planting and protection, and noxious weed treatment. Problem 10, Obj Z, Strategies 1,2,4 (pg 41, CSMP). This project addresses wetlands and riparian zones through planting and cattle exclusion. Problem 12, Obj EE, Strategy 1,2,4 are addressed through fencing to reduce grazing impacts. Problem 16, Obj JJ, Strategies 1-4 (pg 50, CSMP) are consistent with this project. This project reduces road impacts to the stream system through various road treatments. Problem 19, Obj MM, Strategies 1-2; Obj NN, Strategies 1-3 (pg 52-53, CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies. RME are conducted on Aquatic variables: II. Water Quality; III. Passage; IV. Habitat; VIII. Anadromous Fish; X. Terrestrial Habitat: In stream habitat & noxious weeds.

Addresses subbasin plan priorities

The Mill Creek watershed lies in 1 PMU. This project is consistent and addresses several High and Moderate Priorities within the identified PMU. The Mill Creek Watershed lies within PMU FD-4 (Figure 3, Clearwater Subbasin Management Plan (CSMP), page 135). For PMU FD-4 this project addresses the following High priorities: Grazing Impacts and Roads; moderate priority that is addressed: Water Temperature (Table 7, CSMP, page 85 & 86). The project will implement replacing fish barrier culverts, planting and maintaining riparian vegetation. Project personnel coordinate and comment on outside agencies activities within the watershed to make sure other activities are consistent with our watershed restoration goals.

2002-060-00 - Nez Perce Harvest Monitoring (Expense) Nez Perce Tribe

Description: The objective is to develop and implement a comprehensive, biologically-sound monitoring program for the Nez Perce Tribe for the Columbia River Basin and tributaries.

Consistency with subbasin plans

The NPT Harvest Monitoring project encompasses several subbasins in multiple Provinces, including the Clearwater and Salmon Subbasins in the Mountain Snake Province, the Grand Ronde, Imnaha, and Hells Canyon Subbasins in the Blue Mountain Province, the Tucannon Subbasin in the Columbia Plateau Province, the Columbia Gorge and Columbia Lower Subbasins. This project is consistent with and implements Anadromous Fish Species Strategy 3.D.4 of the Clearwater Subbasin Management Plan (page 21). This strategy is to "Monitor and evaluate effectiveness of implementation of hatchery and natural production strategies." Earlier in the plan, Table 3 on page 16 lists anadromous fish adult return objectives for natural spawning, hatchery and harvest components. Clearly, harvest monitoring is an essential piece for evaluating effectiveness of meeting adult anadromous fish objectives.

This project is consistent with and implements Strategies 1A1-1A5 of the Imnaha Subbasin Management Plan (page 10) to improve focal species recruitment by addressing out of basin limiting factors, improving basin-wide coordination of management efforts, implementing a common (basin-wide)monitoring and evaluation program, ensuring adequate enforcement of conservation practices, laws, and regulations, and promoting the use of a mix of hatchery and natural production strategies. Harvest monitoring is an integral component of the specified monitoring and evaluation program.

Table 63, page 273, of the Grande Ronde Subbasin Management Plan Supplement identifies annual harvest as a key performance measure for monitoring objectives/strategies defined in Section 5.2.1 of the plan. Table 5-2 in Section 5.2.1 of the (pages 34 and 35) lists quantified objectives for hatchery, natural spawning and harvest components, similar the Clearwater Subbasin Management Plan.

Addresses subbasin plan priorities

As previously indicated, The NPT Harvest Monitoring project encompasses several subbasins in multiple Provinces. Using the Grande Ronde and Clearwater Subbasin Management Plans and Supplements as examples, harvest monitoring is essential to obtaining feedback information as to the effectiveness of actions towards meeting quantifiable objectives identified in the plans.

In the Grande Ronde Subbasin Management Plan Supplement, annual harvest data is explicitely identified as a key performance measure for monitoring objectives/strategies defined in the plan.

2002-061-00 - Restore Potlatch R Watershed (Expense) Latah SWCD

Description: To restore ecosystem functions, restore degraded habitat and protect natural habitat within the Potlatch River watershed in Idaho thereby improving water quality and quantity throughout the drainage.

Consistency with subbasin plans

The request for FY06 funding is consistent with the Clearwater Subbasin Management Plan (11/03) as outlined below. Due to space limitations, the strategies are not restated, but identified by reference number and associated page number.

Strategy B1 (p.18). The habitat surveys that have been undertaken, and those scheduled for FY06, are designed to identify the primary limiting factors within each geographic region of the priority watersheds within the Potlatch River.

Strategy B2 (p.18). The SVAP habitat surveys are designed to evaluate the range of possible treatments that will not only be effective for addressing defined limiting factors, but also those that are likely to be acceptable to the landowner and potential funding and permitting agencies.

Strategy S1 (p35). The SVAP surveys will identify sediment sources from private lands and identify programs to assist interested landowners with erosion control practices.

Strategy S3 (p. 35). The SVAP surveys will identify sediment sources from private lands. This information will be incorporated into the planning process for prioritization of sites for erosion control and sediment reduction practices.

Strategy U1 (p.37). SVAP surveys review habitat complexities associated with anadromous fish. Empahsis is placed on steelhead habitat.

Strategy U3 (p.37). The project is designed to prioritize efforts through the planning process and the project's technical advisory committee.

Strategies LL1 through LL3: (p.52): The development of the Potlatch Plan will actively involve private landowners, community and profession organizations, and integrate agencies for peer review and avoid program and project duplication.

Strategy MM1 (p.52): The project planning effort will incorporate a prioritization process within the Potlatch Plan to effectively and efficiently focus technical and financial resources (BPA and non-BPA) for habitat restoration and protection efforts.

Addresses subbasin plan priorities

The priorities within the Clearwater Subbasin Management Plan (11/03)are highlighted on page 54. The project's FY06 funding request will directly address the following priority activities.

Strategy B1 (p.18). Identify and prioritize primary limiting factors in each PMU by anadromous species life stage. The habitat surveys that have been undertaken, and those scheduled for FY06, are designed to identify the primary limiting factors within geographic regions of the priority watersheds within the Potlatch River. In addition, information geneated by Idaho DEQ through the TMDL process will be incorporated into the Potlatch Plan and provide additional subwatershed assessment information.

Strategy S3 (p. 35). Prioritize areas – inventory and prioritize areas where sediment reductions would be most beneficial to various target species. The SVAP surveys will identify sediment sources from private lands and identify programs to assist interested landowners with erosion control practices. Prioritization will consider sediment loads, feasibility of sediment reduction, willingness of private landowners to change management practices and ability to secure necessary technical and financial resources.

Strategy U3 (p.37). Prioritize problems and protection and restoration using the information generated by strategies.

The project is designed to prioritize efforts through the planning process and the project's technical advisory committee. Prioritization will be summarized within the final Potlatch River Plan.

2002-068-00 - Evaluate Nez Pt Stream Habitat (Expense) Nez Perce Tribe

Description: WME will implement habitat surveys and fish snorkel stations in order to characterize quantity and quality of available spawning and rearing habitat and will evaluate stream response to watershed restoration and/or management activity.

Consistency with subbasin plans

The actions in this project are consistent with addressing several problems and objectives/strategies summarized as follows from the Clearwater Plan. Problem 2(p.18):Anadromous fish production is limited by habitat quantity, quality, and connectivity in portions of the Subbasin. Under problem 2, Strategies #2,3,4,and 7 (p. 18)recommend developing index streams across the Clearwater Subbasin, developing monitoring protocols, and monitoring habitat improvement projects. Problem 4 (p.22) same as Prob#2 but focus on resident fish. Under problem 4, Objectives F (p.23), strategy 3 and 4 as well as Obj.G (p.23), strategy 5 call for evaluating biological response to habitat work as well develop monitoring strategies to evaluate the effectiveness of projects. Problem 7(p.31) summarizes problems #2 and #4. Strategies under objectives P, Q, S (pp.32-35) call for developing methods of project monitoring. Problem 16 (p.50)refers to impairment of habitat as a result of logging, related transportation system, and fire suppression. Strategies under Objective JJ (p.50) monitoring the impact of roads. The need for monitoring habitat project work occurs through out the strategies stated for each identified problem. Proposed research and monitoring is summarized in Table 5 on page 55 of the Plan.

Addresses subbasin plan priorities

Monitoring and types of monitoring are not prioritized specifically like habitat restoration actions in the Clearwater Subbasin Plan. In general monitoring is treated as a high priority for both the terrestrial and aquatics section. Detailed monitoring needs are described in Section 4.3: Research, Monitoring, and Evaluation Plan (p.62). The aquatics section (Section 4.3.1 pg. 63) calls for water quality monitoring (p.64), effectiveness monitoring for temperature reduction projects (p.65), water quantity and passage monitoring (p.66), and general habitat monitoring (p. 68).

2002-070-00 - Lapwai Cr Anadromous Habitat (Expense) Nez Perce Soil and Water

Description: The project will implement BMPs on agricultural lands to reduce sediment, nutrients, and stream temperature. In addition, the project will improve low summer flows by installing BMPs for water retention in the uplands.

Consistency with subbasin plans

Consistency:

The project is consistent with and implements the following objectives and strategies listed in section 4.2.2 (Problem Statements, Objectives, and Strategies) listed in the Clearwater Subbasin plan:

Objective # Strategy # Page #
Objective A; strategy 3; page 14
Objective B; strategy 5,7; page 18
Objective M; strategy 1,2,3; page 29
Objective O; strategy 1,3,4,7; page 31
Objective P; strategy 1,2,3; page 32
Objective Q; strategy 1,2,3,5,6, page 33
Objective S; strategy 1,3,4,5; page 35
Objective T; strategy 1,2,3,4,5; page 36
Objective U; strategy 1,2,3,4,5;page 37
Objective V;strategy 1; page 38
Objective W; strategy 1,2,3,5;page 38,39
Objective X; strategy 1,3;page 39
Objective Y;strategy 1,3; page 40,41
Objective Z;strategy 2,4;page 41
Objective AA;strategy 1,2,4,5; page 42
Objective BB;strategy 1,2,3,4,6; page 42,43
Objective CC;strategy 1,2,3,4,5,6,7; page 44
Objective DD;strategy 1,2,3,4; page 45
Objective EE;strategy 1,2,3,4; page 46
Objective FF;strategy 2; page 46
Objective GG;strategy 1,2,3; page 47
Objective II;strategy 5; page 49
Objective JJ;strategy 1,2; page 50
Objective LL;strategy 1,2,3; page 53
Objective NN;strategy 3;page 53
Objective OO;strategy 1;page 58
Objective PP;strategy 1,2,3;page 58
Objective QQ;strategy 2;page 59
Objective RR;strategy 1,2,3,4; page 59

These strategies relate to aquatic and terrestrial species in the Clearwater Subbasin. The species of concern in the Lapwai Creek watershed are steelhead trout. In addition, the assessment identified in-stream temperature, sediment, loss of riparian habitats, and alteration of environmental processes as limiting factors for anadromous fish (page 82). This project addresses each of these limiting factors through the collection of inventory and assessment data and installation of projects to improve the limiting factors.

Addresses subbasin plan priorities

Priority:

The project completes priority work under the Clearwater Subbasin plan, because the project directly addresses priorities listed in the plan (page 82) including reduction of high density road areas, addressing sediment production through installation of BMPs, development of grazing plans and livestock exclusion areas for grazing impacts, addresses surface erosion through BMP installation, addresses flashy hydrology through installation of BMPs, protects and restores ponderosa pine stands, grass prairies through vegetative plantings and weed control, protects and restores wetland and riparian habitats therefore improving water temperature and instream habitat, and addresses exotic weeds through installation of BMPs. Project work is performed on private, federal, state and tribal ownerships. Project work specifically addresses high priorities listed in tables 7,8, 9 of the subbasin plan (pages 85-96).

2002-072-00 - Protect & Restore Red River Ws (Expense) Nez Perce Tribe

Description: Restore and protect the Red River Watershed for the benefit of both resident and anadromous fish using an overall watershed approach. Restoration and protection efforts will be done cooperatively with the Nez Perce National Forest.

Consistency with subbasin plans

This project, located within the Red River Watershed, is consistent with several Problems, Objectives, and Strategies outlined in the Clearwater Subbasin Management Plan (CSMP). The following is a list of Problems, Objectives, and Strategies that are consistent with the project.

Problem 2, Objective B, Strategies1-5 and 7 (page 18 of the CSMP). This project addresses this problem by meeting it’s objectives and strategies that identify and prioritize limiting factors within each PMU as well as implementing projects resulting from this prioritization.

Problem 4, Objective E, Strategies 1-3 and Objective F, Strategies 2-4 (pages 22-23 of the CSMP) are consistent with this project. Problem 4 addresses native fish resident species within the Clearwater Subbasin. This project specifically addresses the above Objectives and Strategies through improvement and protection of habitat that is utilized by native fish species, in particular Westslope cutthroat trout and bull trout. These improvements and protection measures have been prioritized through a watershed assessment.

Problem 7, Objective O, Strategies 4,7; Objective P, Strategies 1-5; Objective Q, Strategies 1-3, 5, 6; Objective S, Strategies 1, 3-5; Objective U, Strategies 1-7 (pages 31-38 of the CSMP), are consistent with this project. This project restores water quantity, quality, connectivity and habitat complexity through various watershed restoration projects such as road decommissioning and improvements, campground improvements as well as culvert replacements.

Problem 16, Objective JJ, Strategies 1-4 (page 50 of the CSMP) are consistent with this project. This project does an intense effort to reduce road impacts to the stream system as well as provide for terrestrial security.

Problem 19, Objective MM, Strategies 1-2; Objective NN, Strategies 1-3 (pages 52-53 of the CSMP) are consistent with this project. Personnel associated with this project are key in coordinating activities and prioritizing restoration/protection activities between several agencies and community groups.

Problem 21, Objective RR, Strategies 1-4 (page 59 of the CSMP) are consistent with this project. This project promotes education and stewardship of natural resources through various media outlets.

Addresses subbasin plan priorities

The Red River Watershed lies in 3 PMUs. This project is consistent and addresses several High and Moderate Priorities within the identified PMUs. For the Red River Watershed the PMUs are FD-2, FD-3, and FD-5 (Table 17, Clearwater Subbasin Management Plan (CSMP), page 140).

For PMU FD-2 this project addresses the following High priorities; Roads and Instream as well as the Moderate priority of Water Temperature (Table 7, CSMP, page 85). The project will implement stream and riparian restoration (small scale) due to campground overuse, road decommissioning and road improvements as well as replacing a fish barrier culvert.

For PMU FD-3 this project addresses the following High Priority, Instream and Riparian/Wetland; and Moderate priority, Roads and Water Temperature (Table 7, CSMP, page 86). See above for restoration project descriptions.

For PMU FD-5 this project addresses the following Highest Priority, Protecting Roadless; High Priority, Roads; and Moderate Priority, Water Temperature (Table 7, CSMP, page 87). Project personnel coordinate and comment on other agency activities within the watershed to make sure other activities are consistent with our watershed restoration goals.

2002-074-00 - Restore Crooked Fork Creek (Expense) Nez Perce Tribe

Description: This project will protect, restore, and return critical spawning and rearing habitat using a holistic approach beginning with a comprehensive watershed assessment, which will target restoration projects. Projects coordinated with USFS and PCTC.

Consistency with subbasin plans

The actions in this project are consistent with addressing several problems and objectives/strategies summarized as follows from the Clearwater Plan. Problem 2(p.18):Anadromous fish production is limited by habitat quantity, quality, and connectivity in portions of the Subbasin. Problem 4 (p.22) same as #2 but focuses on resident fish. Problem 7(p.31) summarizes problems #2 and #4. Strategies under Problem 7, objectives E, F, G (pp.22-24) call for protecting and restoring habitat through restoration projects. Strategies under Objectives P, Q, S (pp.32-35) call for fish passage improvement, reducing stream temperature through restoring hydrologic function, and reducing instream sedimentation all utilizing on-going watershed-scale assessments to plan and priorite projects. Problem 11 (p.44) refers to the damage to resources by noxious weed invasion. Strategies under Objectives CC and DD (pp.44-45) call for inventory, assessment, prioritizing, treating noxious weeds, and monitoring noxious weeds. Problem 16 (p.50)refers to impairment of habitat as a result of logging, related transportation system, and fire suppression. Strategies under Objective JJ (p.50) call for planning and implementing road decommissioning. The need for monitoring habitat project work occurs through out the strategies stated for each identified problem.

Addresses subbasin plan priorities

Priorities for action are assigned by PMU designation which is a grouping of watersheds based on land ownership, known management history, and any known stream or watershed data. The project area contains the following PMU areas as defined by the Clearwater Subbasin Plan: MX-6, FD-5, FD-6, FD-7, FD-8, FD-9. The area is defined as having a high opportunity for effective restoration (Table 7 and 8 on pp.85-92). All PMUs with the exception of mixed ownership (MX-6) express a high priority to mitigate the impacts of roads and sediment or it is unknown for the general PMU. Temperature reduction is labeled as moderate priority in some PMUs or unknown. There is not enough data to determine instream work needs in the PMUs where it was included in analysis. Changes to vegetative structure rank from a moderate to high priority across the PMUs. Protection of existing high quality habitat in these areas is labeled high priority. The priorities are tabled in Table 7 and 8 on pages 85-92. A shorter summary table, Table 15 occurs on page 137 for the Clearwater Subbasin.

1989-098-00 - Salmon Studies Id Rvrs Idfc (Expense) IDFG

Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

Consistency with subbasin plans

Salmon Subbasin:
Strategy 1A2 Page 20 “Determine (SARs).” The ISS program PIT tags Chinook for its own use and for Projects 199602000 and 199005500.

Strategy 2A2 Page 24 “Continue ongoing programs where intervention has already occurred and support the refinement of genetic techniques.” The ISS project continues to monitor the effects hatchery supplementation on rebuilding and introgression in small populations.

Strategy 3A1 Page 25 “Use new and existing projects (ISS and GPM) to further the knowledge of egg to smolt survival.” The ISS project is named as a primary contributor of this data.

Strategy 3A2 Page 25 “Determine juvenile or smolt per female measures.” The ISS program directly estimates both the number of spawners and progeny.

Strategy 3C1 Page 25 “Quantify adult and juvenile abundance information.” The ISS program does this through screw traps, weirs, and carcass collection.

Strategy 3C2 Page 25 “Determine SARs for Chinook.” See 1A2 above.

Strategy 3C3 Page 25 “Determine population productivity.” The program directly estimates productivity in the Salmon basin (e.g., redds/spawner, juveniles/adult and adult/adult).

Strategy 3C4 Page 25 “Measure reproductive success of hatchery salmon.” The ISS program has an ongoing project measuring reproductive contribution of natural, supplementation and hatchery strays.

Clearwater Subbasin:
Strategy 1A1 Page 14 “Examine mortality associated with differential migration timing.” The ISS program PIT tags wild Chinook in the basin that directly contribute to these analyses.

Strategy 3C2 Page 19 “Develop knowledge of hatchery/wild interactions.” ISS continues to monitor production and productivity in streams with and without direct hatchery influence.

Strategy 3D4 Page 21 “Continue existing natural production strategies.” The ISS project continues to monitor the effectiveness of hatchery supplementation to rebuild natural populations.

Addresses subbasin plan priorities

Salmon Subbasin:
While the Technical Team stated that prioritization was not feasible (Page 154) their identification of research needs (Tables 12&13) and performance measures to evaluate success (Table 15) are in fact de facto identification of high priority RM&E needs.

Table 13. The ISS program measures all the identified Performance Measures for Research Needs 1 & 3 and all but juvenile rearing distribution for Research Needs 4 & 5.

Table 15. The ISS program also contributes to Key Performance Measures identified with the following Objectives: 1A, 1B, 2A, 4C, 7A, 8A, 8B, 8D, 9A, 10A, 11A, 12A, 12B, 17C, 18A, 18B, 28A, 30A, 45A, 46B.

Clearwater Subbasin:
The ISS program contributes directly to the following “high priority RM&E needs” (Page 61) identified for this subbasin:

(Page 63) I.1. “Investigate effects of loss of nutrients...” The ISS program is specifically named in the Management Plan for collecting data pertinent to this goal (population estimates and productivity measures).

(Page 63) I.2. “Determine migrational characteristics and timing…” The ISS program is specifically named in the Management Plan for collecting data pertinent to this goal (PIT tagging in American and Red rivers and Crooked Fork and Colt Killed creeks).

(Page 63) I.3. “Develop appropriate monitoring…” The ISS program is specifically identified as in the Management Plan for collecting data pertinent to this goal (estimated number of spawners and/or redds and estimates of the number of resulting juveniles).

(Page 70) V.1. “Quantify salmon stray rates…” ISS juveniles were CWT marked and will provide a direct measure of straying. The ISS program has submitted a proposal to assess the reproductive contribution of hatchery strays that could be used in the subbasin.

1989-098-02 - Salmon Studies Id Rvrs Npt (Expense) Nez Perce Tribe - Lapwai

Description: Evaluates hatchery supplementation as a recovery - restoration tool for spring and summer chinook salmon. Quantifies key population status and performance varibles, including early-life history and smolt- toadult survival rates.

Consistency with subbasin plans

Salmon River Sub-basin: The project is consistent with and implements Aquatic Strategies 1A1, 1A2, and 1A3 (Mgt. Plan page 20). These strategies relate to Objective 1A; to increase the numbers of spawning adults to achieve recovery goals. This project is using supplementation to evaluate the rebuilding of extirpated populations and enhancing existing populations. Aquatic Strategies 2A1, 2A4, and 2A7 (Mgt. Plan pages 23-25). These strategies relate to Objective 2A; improve understanding and definitions of small populations. This project is building population information on 31 individual streams. Aquatic Strategies 3A1, 3A2, and 3A3 (Mgt. Plan page 25). These strategies relate to Objective 3A; address data gaps to measure freshwater survival and productivity. This project is evaluating egg to smolt survival and population productivity. Aquatic Strategies 3C1, 3C2, 3C3, 3C4, and 3C5 (Mgt. Plan pages 25-27). These strategies relate to Objective 3C; address data gaps to measure progress towards delisting and full recovery. This project quantifies abundances, determines stream specific SARs and productivity, evaluates population productivity, and measures reproductive success. This project adds to information needs as listed in Mgt Plan (Table 13, pg 120). This project is listed as an on-going primary program for coordination with proposed research due to its established index sites and/or trend data for population status (RM&E Aquatics, 4.3.1; pp 63-77)
Clearwater River Sub-basin: The project is consistent with and implements Anadromous Fish Species Strategies 1.A.1 and 1.A.2 related to Problem 1.A. (Mgt Plan pg 14) to increase the number of naturally spawning adults by supplementation and 2.B.4 related to Problem 2.B. (Mgt Plan pg 18) to develop monitor indices by determining juvenile abundances, conducting redd counts and carcass surveys: 3.C.2 related to Problem 3.C (Mgt Plan pg19) to develop knowledge of interactions between hatchery and wild fish by conducting juvenile hatchery and natural survival, origins of escapement, and genetic evaluation of adults: 3.D.1 related to Objective D (Mgt Plan pg 21) for natural population augmentation and rebuilding, reintroduction and research.

Addresses subbasin plan priorities

The Salmon Subbasin Management Plan prioritization process utilizes an environmental framework approach to prioritization and does not address biological characteristics explicitly. They do acknowledge this shortcoming:
"The weakness in this approach, however, is that the focus on environmental limiting factors and problem statements does not adequately address or balance biological limiting factors within the prioritization framework."
The plan caveats the entire prioritization process with this request:
"Filling key data gaps will further improve the accuracy of prioritization processes. ….. The general agreement among the Technical Team members was that to conduct a scientifically valid prioritization, certain information that is not currently available would be needed (e.g., basic egg to fry, parr, presmolt, and smolt survival information, population-specific adult abundance and productivity key performance data)."
The ISS project goals scientifically address all data gaps listed above and will be invaluable in providing data for the prioritization process.

1989-098-03 - Salmon Studies Id Rvrs Sbt (Expense) Shoshone Bannock Tribe

Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

Consistency with subbasin plans

Index of Juvenile
Abundance (Density)
Raw measure (secondary). Number of fry, parr, or smolts per unit area of rearing habitat.
Juvenile Emigrant Abundance
Raw measure (primary). Estimates of the total number of fry, parr, or smolts emigrating from tributary streams (e.g., determined from rotary screw trap estimates).

Smolt-to-Adult Return Rate
Raw measure (secondary): Number of adults from a given brood year returning to a point (e.g., LGR dam) divided by the number of smolts that left this point 1-3 years prior,
integrated over all return years.

Juvenile freshwater survival rate (egg-to fry/parr/smolt, parr-to smolt)
Derived or raw measure: Derived if estimated using information from independent programs (e.g., redd counts, fecundity estimates, and parr estimates collected in separate
studies for the same tributary could be used to estimate an egg to parr survival rate). Raw measure if estimated in studies (e.g., use of instream incubation boxes to estimate
survival-to-emergence (an index of egg-to-fry survival), or release of wild adult spawners to fenced-off stream areas followed by estimates of fry or parr abundance from those
spawners to estimate egg-to-fry, or egg-to-parr survival rates).
Juvenile Survival to first mainstem dam
Raw measure (secondary): Survival rate measure estimated from detection of PIT tagged smolts at first mainstem dam, or model derived survival rates based on detections at first
and second mainstem dams (e.g., using SURPH, Steve Smith NOAA). Smolts or parr are tagged in the tributary rearing areas.

Distribution (within tributaries)
Raw measure: Tributary spawner distribution – extensive estimates of where spawners are found within a tributary.
Subbasin spawner distribution - presence/absence surveys
across multiple tributaries within a subbasin.
Stray Rate Derived or raw measure (secondary): Carcass surveys of spawning grounds, or weir sampling, looking for marks or tags or taking scale and tissue samples for DN

Addresses subbasin plan priorities

2A1. Preserve the genetic integrity of existing wild stocks in the Salmon
Subbasin. Preserve the genetic diversity of existing wild stocks in the Salmon Subbasin. Protect and monitor abundance and productivity of wild stocks in the subbasin that have not been influenced by hatchery Salmon

Aquatic Objective 3A: Address data gaps necessary to measure freshwater survival and productivity.
Strategies:
3A1. Use new and existing projects (ISS and GPM) to further the knowledge of
egg to smolt survival and the mechanisms that affect survival.
3A2. Determine juvenile or smolt per female measurement to further knowledge
of freshwater productivity.

3C1. Quantify population specific adult and juvenile abundance information for

focal species on a representative set of index streams.
3C2. Determine population-specific smolt-to-adult return (SAR) rates for chinook salmon and steelhead on a representative set of index streams.
3C3. Determine population productivity (e.g., spawner to spawner ratios and/or lambda) on a representative set of index streams.

1991-028-00 - Pit Tagging Wild Chinook (Expense) NOAA Fisheries

Description: Collect time series information to examine migrational characteristics of wild ESA-listed Snake River spring/summer chinook salmon stocks. Mark wild spring/summer chinook salmon parr with PIT-tags annually; intercept and decode tagged smolts as they pass

Consistency with subbasin plans

Project 199102800 is consistent with the Salmon Subbasin Mangement Plan per Strategies and Objectives statements on pages 23 and 24. Strategies: 2A1, states: "Preserve the genetic integrity of existing wild stocks in the Salmon Subbasin. Preserve the genetic diversity of existing wild stocks in the Salmon Subbasin. Protect and monitor abundance and productivity of wild stocks in the subbasin that have not been influenced by hatchery intervention." Aquatic Objective 3A, states: "Address data gaps necessary to measure freshwater survival and productivity." Strategies: 3A1, states: "Use new and existing projects to further the knowledge of egg-to-smolt survival and the mechanisms that affect survival." Finally, 3A3, states: "Use information developed in the Strategies to aid in the definition of project prioritization."

Addresses subbasin plan priorities

In the discussion section on page 26 of the Salmon Subbasin Management Plan, priority needed research and monitoring is discussed. Project 199102800 goals of characterizing stage-specific migrational timing/survival and how it relates to environmental conditions within the streams and weather/climate data, relates directly to the priorities discussed in this section. In this discussion, there is an emphasis on addressing Biological Opinion Tier 1, 2, and 3 questions for listed species research, monitoring, and evaluation and understanding mechanisms that affect freshwater survival. The discussion further states: "Basic egg to fry, parr, presmolt and smolt survival information for focal species is poorly understood in the Salmon subbasin. Information needs to be collected to quantify survival, and the natural variation in survival within spectrum of degraded to high quality habitat conditions. Understanding more refined life stage survival may allow an understanding of the mechanisms that affect survival in freshwater habitats. It also may allow an understanding of the improvements in survival that may result from various types of habitat rehabilitation activities."

1991-071-00 - Sockeye Salmon Hab & Limnologi (Expense) Shoshone Bannock Tribe

Description: Increase carrying capacities of Snake River sockeye salmon rearing lakes (Redfish, Pettit, and Alturas). Evaluate the effects of nutrient additions and fish stocking on the lake's ecosystems.

Consistency with subbasin plans

Smolt-to-Adult Return Rate
Raw measure (secondary): Number of adults from a given brood year returning to a point (e.g., LGR dam) divided by the number of smolts that left this point 1-3 years prior,
integrated over all return years.

Juvenile freshwater survival rate (egg-to fry/parr/smolt, parr-to smolt)
Derived or raw measure: Derived if estimated using information from independent programs (e.g., redd counts, fecundity estimates, and parr estimates collected in separate
studies for the same tributary could be used to estimate an egg to parr survival rate). Raw measure if estimated in studies (e.g., use of instream incubation boxes to estimate
survival-to-emergence (an index of egg-to-fry survival), or release of wild adult spawners to fenced-off stream areas followed by estimates of fry or parr abundance from those
spawners to estimate egg-to-fry, or egg-to-parr survival rates).
Juvenile Survival to first mainstem dam
Raw measure (secondary): Survival rate measure estimated from detection of PIT tagged smolts at first mainstem dam, or model derived survival rates based on detections at first
and second mainstem dams (e.g., using SURPH, Steve Smith NOAA). Smolts or parr are tagged in the tributary rearing areas.

Age–at–Return Raw measure (primary): Age distribution of spawners on spawning ground determined from length or scale analysis from carcass surveys.
Age–at-Emigration Raw measure (primary): Age distribution of emigrants (e.g., proportion of emigrants at fry, parr, pre-smolt, and smolt stages) from tributaries determined from rotary screw trap or weir collection, scale collection,or inferences from size.
Size-at-Return Raw measure (primary): Size distribution of spawners on spawning ground determined from length or scale analysis from carcass surveys.
Size-at-Emigration Raw measure (primary): Size distribution (length, weight) of emigrants (e.g., proportion of emigrants at fry, parr, presmolt, and smolt stages) from tributaries determined f

Addresses subbasin plan priorities

2.2 Guiding Principles

Protect, enhance, and restore habitats to sustain and recover native aquatic and terrestrial species diversity and abundance with emphasis on the recovery and delisting of Endangered Species Act listed species.

Aquatic Objective 3B: Compare freshwater conditions among populations to more accurately define habitat rehabilitation needs.

1991-072-00 - Redfish Lake Sockeye Salmon Ca (Expense) IDFG

Description: Establish captive broodstocks of Redfish Lake sockeye salmon. Spawn adults to produce future broodstocks, eggs, juveniles, and adults for supplementation.

Consistency with subbasin plans

Salmon Subbasin Plan Consistency: Aquatic Objective 1B, Strategies 1B1 through 1B4 (pg 21): The project is using artificial propagation to minimize short- and long-term genetic, ecological, and life history effects on the population. Innovative techniques are being used to meet the goals identified in Table 6 of the Salmon Subbasin Plan. Aquatic Objective 2A, Strategies 2A1 and 2A2 (pgs 23 and 24): The project is working with the University of Idaho and NOAA geneticists to preserve the genetic integrity of the population. Aquatic Objective 3A, Strategies 3A1 and 3A2 (pg 25): Project M&E efforts contribute to the region's understanding of smolt-to-adult survival and other measures of productivity.
2004 FCRPS BiOp Section 9.0, page 9-1: NOAA recommendation to increase program production by 150,000 sockeye smolts. Appendix F, page F-8: NOAA recommendation to develop new facilities to produce an additional 200,000 smolts.
The Updated Proposed Action (UPA): calls for the Action Agencies to fund safety net programs for Snake River Sockeye (pg 4). The UPA also lists "the continued operation of the existing safety-net program for Snake River sockeye" as a performance objective. Production of an additional 150,000 smolts is also called for (pg 15). The Action agencies committed to funding the program as long as NOAA Fisheries determines it to be an effective and essential contribution (pg 86). The Action Agencies also agreed to fund an expansion in smolt production for the program (150,000 smolts, pg 86).
The Draft Implementation Plan: Implementation language for the UPA can be found on the following pages of the Implementation Plan: Page 3: (Hatchery Actions, and Research, monitoring and evaluation sections). Page 5: (Hatchery Measures section). Page 30: (Section E. Hatchery Actions for Snake River Sockeye). Page 32: (Near- and long-term priorities for Snake River Sockeye). Page 54: (Addressing sockeye salmon conservation recommendations from the Biological opinion)

Addresses subbasin plan priorities

Aquatic prioritizations are not provided in the Salmon Subbasin Plan (see section beginning on page 153).

1991-073-00 - Idaho Natural Production Monit (Expense) IDFG

Description: The INPMEP collects, manages, and analyzes data describing the status and survival of spring/summer chinook salmon and steelhead populations in Idaho. The INPMEP provides long-term monitoring information necessary to evaluate recovery efforts.

Consistency with subbasin plans

This project produces information relevant to problems discussed in the Clearwater and Salmon management plans. Indeed, INPMEP data supported the deliberations of the subbasin planning teams. For example, the Clearwater Sub-basin Inventory describes the GPM database as "... the most requested data by other agencies and consultants." (Sec7.1.2.1, p60).

The Salmon Sub-basin Management Plan contains several strategies requiring data such as produced by INPMEP. We currently address Strategy 1A2 (p20) on a regional level (Accomplishment 3). INPMEP contributes towards Strategy 1B4 (p21) by M&E of wild populations. The INPMEP tissue archive will be invaluable for assessing current genetic status for Strategy 2A1 (p23; see Accomplishment 4, Goal 4). GPM is mentioned in Strategy 3A1 (p25). We currently are investigating Strategy 3A2 (p25) as documented in Accomplishment 2 and Goal 2. Objective 3C (p 25) is a main focus of INPMEP. We address Strategies 3C1-3. Lastly, INPMEP can contribute anadromous productivity information to Strategy 4A5 (p27) and Strategy 4C1 (p28).

INPMEP information can be similarly applied in the Clearwater Sub-basin Management Plan. SAR estimates are mentioned in Objective A (p14). Objective A also calls the establishment of index stocks for monitoring (Strategy A2); the aggregate stock-recruit relationship (Accomplishment 2) and population-specific adult age data (Accomplishment 3) developed by INPMEP will be invaluable in this regard. GPM data is specifically mentioned as addressing Objective B (Strategy B3, p18). This project also provides data useful for evaluating biological responses to habitat improvement projects (Strategy B4, p18). Objective D (p21) calls for the use of natural production strategies. Strategy 3D4 (p21) includes monitoring and evaluation of natural production, which is the eponymous goal of INPMEP. Lastly, the Clearwater Sub-basin Management Plan addresses bull and westslope cutthroat trout conservation (Objectives E & F, p22-23). As previously noted, GPM data have been used for this purpose already.

Addresses subbasin plan priorities

No priorities were assigned in the aquatic portion of the Salmon Sub-basin Plan (Sec 6.1.1, p153). Data gaps were identified but not prioritized (Sec 4.1, p112). Research needs identified were not necessarily connected to objectives and strategies to be regarded as important (Sec 4.2, p118). Data gaps were discussed above. INPMEP gathers data appropriate for addressing several identified research needs. The tissue archive will be invaluable for addressing genetics questions (eg Needs 2 & 3 in Table 13, p120). Juvenile abundance and adult age structure are discussed in Needs 4 & 5. INPMEP also gathers these data. These issues are further discussed under Other RM&E Information Needs (p121). Lastly, Table 15 (p125-131) identifies 'Key Performance Measures' to evaluate strategies implemented, which is a de facto prioritization of information needs. INPMEP data can be applied to at least one of the performance measures listed for all the objectives listed in Table 15. In fact, for 80% of the objectives listed in Table 15, we currently estimate over half of the performance measures listed (and all in some cases).

Similarly, no priorities were assigned in the Clearwater Sub-basin Plan Research, Monitoring, and Evaluation Plan (Sec4.3, p61). However, data gathered by INPMEP is suitable for many of the Proposed Research topics in the Aquatics Research, Monitoring, and Evaluation Plan (Sec 4.3.1, p 63-77). A majority of these items mention coordination with ongoing anadromous population status M&E programs, which is what INPMEP is. Our planned modifications of the GPM program will address research items I.2 (p63), I.3 (p63-64), II.1.b (p64), II.3 (p65), III.1 (p66), IV.2 (p69-70), and VIII.1 (p75). Age information, such as collected by INPMEP, will address Management Plan research items IV.2b (p69) and VIII.1 (p75). The INPMEP tissue archive will enable several genetics items to be addressed (V.1, p70; VIII.2, p75).

1992-026-03 - Model Watershed Studies - Lemh (Expense) ISCC/IOSC

Description: Provide local coordination and guidance for implementation of on-the-ground projects that improve and enhance anadromous and resident fish habitat.

Consistency with subbasin plans

The USBWP is consistent with the Salmon Subbasin Plan as it relates to coordination of specific actions to address the aquatic objectives listed on pages 33-39. These objectives include: 9B, 9C, 9D, 10A, 12A, 12B, 14A, 14B, 15A, 16A, 17B, 20A, 21A, 22A, 23A, 24A, 25A, 27A, 28A, 30A, 30B, 31A, 31B, 32A, 34A, 34B, 35A, 36A, 37A, 38B, 40A, 41A, and 41B.

Addresses subbasin plan priorities

It is the Upper Salmon Basin Planning Team's contention that this collaborative approach is the most effective means of accomplishing the Salmon Subbasin Plan's vision while maintaining community support on a wide level and that this collaborative method should continue under the guidance of the USBWP Technical Team and Advisory Committee.

1992-040-00 - Redfish Lake Sockeye Broodstoc (Expense) NOAA Fisheries

Description: Incubate and rear Redfish Lake sockeye salmon captive broodstocks. Provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed endangered stock in Idaho.

Consistency with subbasin plans

Salmon Subbasin plan Consistency: Aquatics Objective 1B, Strategies 1B2 through 1B3 (pg21): The project is using artificial propagation and innovative techniques to meet the goals identified in Table 6 of the Salmon Subbasin Plan. Aquatic Objective 2A, Strategies 21A, 2A2, 2A5 (pgs 23 and 24): Along with its IDFG partners the project is applying safety net hatchery intervention through continuation of the ongoing captive broodstock programs and developing new smolt release programs to meet interim abundance and delisting goals. These programs provide the gene conservation measures needed to meet the Salmon subbasin plan's goal of preventing the irreversible loss of genetic diversity.
The Updated Proposed Action (UPA): The hatchery actions in this document calls for the Action Agencies to continue funding of both existing safety net programs for Snake River Sockeye (pg 4, 66, & 86) listing "the continued operation of the existing safety-net program for Snake River sockeye" as a performance objective. In addition, the document calls for the construction of additional sockeye smolt rearing facilities and funding the production of an additional 150,000 smolts (pg 15 & 86).
The 2004 FCRPS BiOp concurs with these UPA's for Snake River Sockeye salmon (pg 6-66& 6-135. In addition, increasing program production by another 150,000 sockeye smolts and developing a second smolt rearing facility is a BiOp conservation recommendation (Section 9.0, pages 9-1 & Appendix F, pg F-8).
The Draft Implementation Plan: Implementation language for the UPA can be found on the following pages of the Implementation Plan: Page 3 (Hatchery Actions, and Research, monitoring and evaluation sections). Pg. 5 Hatchery Measures section). Pg. 30: (Section E. Hatchery Actions for Snake River Sockeye). Pg. 32 Near-and long term priorities for Snake River Sockeye. Pg. 54(Addressing sockeye salmon conservation recommendations for the Biological opinion).

Addresses subbasin plan priorities

The Salmon Subasin Plan does not provide Aquatic Prioritizations (see section beginning on page 153).

1994-015-00 - Idaho Fish Screening Improveme (Expense) IDFG

Description: Enhance passage of juvenile and adult fish in Idaho's anadromous fish corridors by consolidation and elimination of irrigation diversions. Minimize impact of irrigation diversion dams, screen pump intakes and loss of fish to irrigation canals.

Consistency with subbasin plans

This project is consistent with the 2000 Columbia River Basin Fish and Wildlife Program and the Salmon Subbasin Management Plan. This project performs stream investigations identified in strategy 1A1 to assist meeting Aquatic Objective 1A (p.20). Stream investigation work establishes baseline data for monitoring and evaluation meeting Strategy 1A3. To address Aquatic Objective 2A (p.23), Strategy 2A3 and 2A4 will be performed on tributaries where projects are planned. Consistent with Aquatic Objective 9A(p.48), Strategy 9A1,9A3,9A7,9A10,and 9A11 will be performed. Project has work identified in priority watersheds (p.51) Challis, Thompson, Warm Springs, Bohannon, Wimpey, Kenney,and Valley. Aquatic Objectives 12A and 12B (p.53) will be addressed by implementing Strategies 12A1,12B1, and 12B2. Our FY2006 project includes 16 fish screens, removal of 3 diversions, and improved fish passage at nine other diversions. To improve survival at screened diversions, strategy 14A1 and 14A6 will be performed. Screens will be of appropriate size for the diverted flow, and evaluations will be made for bull trout. Aquatic Objective 28A (p.63) will be addressed by implementing Strategy 28A1 on several tributaries including Big Casino Creek, Goat Creek, Iron Creek, and Meadow Creek. Aquatic Objective 35B will be addressed by removing barriers on Kenney and Bohannon Creek (Lemhi Tribs). Objective 41B strategy includes projects on upper Salmon River tribs to improve connectivity. Socioeconomic Objective 63A is incorporated into our project by implementing Strategy 63A4. Most project supplies are purchased locally, project components are fabricated locally, and construction projects are bid and administered under Idaho Public Works. This project uses Strategy 66A1, 66A3,66A4,and 66A5 to meet Socioeconomic Objective 66A(p.106). Stakeholders, irrigators, and agencies are involved throughout the planning and implementation process. The project is coordinated with many agencies.

Addresses subbasin plan priorities

This project is consistent with many of the priorities established in the Salmon Subbasin Management Plan. The Salmon Subbasin Management Plan Aquatic Prioritizations (p.153) refer back to Table 7 and Table 8 of the plan as the highest priorities (p.154). Further, the technical team provided a questionnaire to assist ranking in the upper Salmon River basin (p.154). Of the 115 possible points available in the questionnaire, the specific components of our project provides benefits averaging 85pts for each action. Referring back to Table 7, our project addresses Aquatic Objective 9A,12A,12B,(p.33); and Aquatic Objective 28A (p.35). Under Table 8(p.43), our project addresses many limiting factors including barriers (p.43) that are identified in Objectives 28A,35B,and 41B. This project has work identified in priority watersheds (p.51) on Challis, Thompson, Warm Springs, Bohannon, Wimpey, Kenney,and Valley Creeks. Specific projects involve diversion barrier removal and/or improvements and installing fish screens on diversions. Many of the individual actions within this project involve extensive coordination with other agencies. For example, the screen installations and diversion improvements on Kenny Creek(Lemhi trib) will be performed following a pipeline installation project by USBWP meant to reduce conveyance losses and reduce irrigation water consumption. The total reconnection of this stream also includes a project by IDWR involving a water lease. All these actions by various agencies are essential to completion of these types of projects. These cooperative projects are consistent with Aquatic Objective 12B. The project involves several actions specific to priorities identified under Problem 28 and corresponding to strategy 28A1 to alleviate the problem. All projects will produce positive effects on three listed species, bull trout, Chinook salmon, and steelhead. Other native species such as cutthroat trout also derive positive benefits from this project.

1994-017-00 - Idaho Model Watershed Habitat (Expense) Lemhi/Custer Soil & Water/IOSC

Description: To protect, enhance and restore anadromous and resident fish habitat in a sustainable manner that balances resource protection and landuse practices. Emphasis is on holistic watershed assessment &implementation projects that maximize regional benefits.

Consistency with subbasin plans

Custer SWCD Projects relate to the Sub-basin Plan. Assessment Page 3-12 Upper Salmon: Concerns include sediment load, water temperatures and barriers. All three concerns are addressed by actions proposed in the FY2006 proposed projects. Page 3-14 East Fork Salmon River: Concerns include altered riparian habitat, increased sedimentation, increased limiting factor expressions temperatures and migration barriers. All four concerns are addressed by actions proposed in the FY2006 proposed projects. Page 3-18: Pahsimeroi: Primary Impacts to aquatic habitat quality are altered riparian areas, increased fines, altered hydrology (primarily through dewatering). Approximately 61% of the drainage within the watershed have less than satisfactory riparian vegetation. These concerns are addressed by actions proposed in the FY2006 proposed projects.(Above information provided by Custer SWCD)

Addresses subbasin plan priorities

Custer SWCD Projects for FY06: Three divesions improvemnt projects are proposed for the East Fork and will help address concerns of increased limiting factors of temperatures and migration barriers. One Fish Ladder Repair in the Upper Salmon Basin will help address concerns for water temperatures and barriers in the Upper Salmon. An instream Diversion Elimination in Pashimeroi will address altered hydrology (primarily through dewatering)by providing water instream for an increased area of the river. Three fencing projects in the Pahsimeroi will improve riparian vegetation which the plan sites as having 61% of the riparian area in Pahsimeroi as unsatisfactory. Two fencing projects in the Upper Salmon will help to increase vegetative cover and improve water temperatures which is the major limiting factor in that reach.The Sub-basin Plan identifies the #2 Limiting Factor in the basin as Grazing/Browsing by livestock and #3 altered hydrologic resigmes (impoundments, water managements, channel modifications and diversions)(Page 16). The above stated projects adressess thes limiting factors. In addition, the Guding Principles identified in the Sub-Basin Plan includes: Providing an opportunity for local natural resource based economies to coexist and participate in recovery of aquatic and terrestrial speices. (Page 15)Soil and Water Conservation Districts were formed upon this same priciple in dealing with all natural resourcs.(Above information provided by Custer SWCD)

1994-017-00 - Idaho Model Watershed Habitat (Expense) Lemhi/Custer Soil & Water/IOSC

Description: To protect, enhance and restore anadromous and resident fish habitat in a sustainable manner that balances resource protection and landuse practices. Emphasis is on holistic watershed assessment &implementation projects that maximize regional benefits.

Consistency with subbasin plans

Actions undertaken by this project in the Lemhi and midsalmon panther watersheds addresses fourteen of the 42 aquatic environmental problem statements listed in table 7 page 33-40 of the salmon subbasin plan. Objectives include 9c, 9d, 10a, 12a & b, 14a & b, 20a, 23a, 34a & b, 35b, 36a, 37a, 38b, 40a, and 41a & b.

Addresses subbasin plan priorities

This project accomplishes priority actions based on addressing limiting factors as listed in the Salmon subbasin summary table 23 page 79 and salmon subbasin plan pages 33-40.

1994-050-00 - Salmon River Habitat Enhance (Expense) Shoshone Bannock Tribe

Description: Maintain habitat improvements, evaluate benefits; coordinate evaluation of land/water stewardship activities, planning, implementation, monitoring, evaluation of new improvements; monitor populations of Salmon River Basin anadromous fish.

Consistency with subbasin plans

This plan is consistent with and implements much of the Salmon Subbasin Management Plan including data gaps and research needs. Specifically this project implements the following performance measures (Table 15, pages 125-131); Aquatic Objectives (AO) 1A - strategies to determine population specific smolt-to-adult rates for anadromous salmonids on a set of index streams; (AO) 2A- strategies to continue ongoing programs and collect steelhead data; (AO) 8A - strategies to protect existing riparian habitat the is currently classified as properly functioning and enhance and rehabilitate riparian habitat that is currently classified as at risk or not functioning; (AO) 8C - strategies to stabilize known problem areas though riparian plantings and protect from herbivory; (AO) 8D; through strategies to rehabilitate riparian vegetation to PFC and promote riparian development thought exclusion and riparian pastures; (AO) 9A - strategies to improve the irrigation efficiency, develop irrigation management plans with irrigators to create the most efficient program, and provide adequate flows to support spawning and rearing life history stages of focal salmonid species; (AO) 10A - strategies for riparian management and to treat legacy effects from mining-related sedimentation; (AO) 11A - strategies to implement mitigation approaches such as slope recontouring, or export of waste material; (AO) 12A - strategies to reconnect waterways; (AO) 12B - through strategies to improve irrigation projects; (AO) 13A - strategies to modify diversion operations; (AO) 14A - strategies to permanently secure water transactions; (AO) 17C - strategies to control livestock access to encourage establishment of mature riparian vegetation; (AO) 18B - strategies to promote projects to reconstruct the floodplain and channel to historic conditions; (AO) 28A - strategies to install fish friendly diversions; (AO) 45A - strategies to protect existing functional riparian areas and rehabilitate non-functioning riparian areas where feasible; and (AO) 46B - strategies to investigate seasonal habitat use and availability by focal species relative to sediment impacts.

Addresses subbasin plan priorities

This project accomplishes the highest priority work because, through Section 3 of the subbasin assessment, the subbasin plan identified work within this projects areas and with this projects focal species (Chinook salmon, steelhead trout, and bull trout) as highest priority. Channel structure (floodplain, rool/riffle ratio, and large woody debris) and chemicals ranked as highest priority in the Yankee Fork Salmon River (Table 3-2, page 3-13). Sediment (increased fines), water quality (temperature), riparian (shade and streambank stability), and barriers were identified in Herd Creek as highest priority (Table 3-4, page 3-16). Chemicals in Panther Creek were identified as highest priority (Table 3-15, page 3-31). In addition the subbasin assessment identified upper middle for Salmon River (Bear Valley Creek) as property functioning and in need of protection (Section 3, Table 3-10, page 3-26).

Work is also accomplished in the Lemhi and Pahsimeroi watersheds though participation with the Upper Salmon River Basin Watershed Project Technical Team.

1996-043-00 - Johnson Creek Artificial Propa (Expense) Nez Perce Tribe - Lapwai

Description: Enhance and monitor a weak but recoverable stock of native summer chinook salmon in Johnson Creek. Construct facilities for adult collection and holding, juvenile rearing and smolt acclimation.

Consistency with subbasin plans

Consistency:
The project is consistent with and implements Aquatic Strategies 1A1, 1A2, and 1A3 Mgt. Plan page 20). These strategies relate to Objective 1A; to increase the numbers of spawning adults to achieve recovery goals. Aquatic Strategies 1B2, 1B3, and 1B4 (Mgt. Plan pages 21-23). These strategies relate to Objective 1B; achieve goals through application of artificial propagation programs. Aquatic Strategies 2A1, 2A2, 2A4, 2A5, and 2A7 (Mgt. Plan pages 23-25). These strategies relate to Objective 2A; improve understanding and definitions of small populations. Aquatic Strategies 3A1, 3A2, and 3A3 (Mgt. Plan page 25). These strategies relate to Objective 3A; address data gaps to measure freshwater survival and productivity. Aquatic Strategies 3C1, 3C2, 3C3, 3C4, and 3C5 (Mgt. Plan pages 25-27). These strategies relate to Objective 3C; address data gaps to measure progress towards delisting and full recovery.

Addresses subbasin plan priorities

Priority:
The Salmon Subbasin Management Plan prioritization process utilizes an environmental framework approach to prioritization and does not address biological characteristics explicitly. They do acknowledge this shortcoming:
"The weakness in this approach, however, is that the focus on environmental limiting factors and problem statements does not adequately address or balance biological limiting factors within the prioritization framework."
The plan caveats the entire prioritization process with this request:
"Filling key data gaps will further improve the accuracy of prioritization processes. ….. The general agreement among the Technical Team members was that to conduct a scientifically valid prioritization, certain information that is not currently available would be needed (e.g., basic egg to fry, parr, presmolt, and smolt survival information, population-specific adult abundance and productivity key performance data)."
The JCAPE project goals scientifically address all data gaps listed above and will be invaluable in providing data for the prioritization process.
In addition to the Salmon Subbasin Plan, the NOAA Fisheries Draft 2005 – 2007 Implementation Plan, Section E (Hatchery Actions), states; Implement a Safety-Net Program as an Interim Measure to Avoid Extinction, recommends that the JCAPE project continue as a Near-Term Priority (2007). BPA currently funds the JCAPE project near-term implementation action for Snake River spring/summer Chinook safety-net program.

1997-001-00 - Idaho Chinook Salmon Captive R (Expense) IDFG

Description: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and conservation levels of adult spawners in three drainages.

Consistency with subbasin plans

Salmon Subbasin Plan Consistency: Aquatic Objective 1B, Strategies 1B1 through 1B4 (pg 21): The project is using artificial propagation to minimize short- and long-term genetic, ecological, and life history effects on the population. Innovative techniques are being used to meet the goals identified in Table 6 of the Salmon Subbasin Plan. Aquatic Objective 2A, Strategies 2A1 and 2A2 (pgs 23 and 24): The project is working with the University of Idaho and NOAA geneticists to preserve the genetic integrity of the population. Aquatic Objective 3A, Strategies 3A1 and 3A2 (pg 25): Project M&E efforts contribute to the region's understanding of smolt-to-adult survival and other measures of productivity.
The Updated Proposed Action (UPA): calls for the Action Agencies to fund safety net programs for Snake River spring/summer Chinook (pg 4). The UPA also lists "the continued operation of the existing safety-net program for Snake River spring/summer Chinook salmon" as a performance objective. Page 66 states that BPA will continue to fund this safety-net program (Lemhi, EFSR, WFYF stocks) as long as NOAA Fisheries determines it to be effective. The Draft Implementation Plan: Implementation language for the UPA can be found on the following pages of the Implementation Plan: Page 3: (Hatchery Actions, and Research, monitoring and evaluation sections). Page 28 and 29: (Near- and long-term priorities for this program [Lemhi, EFSR, WFYF stocks]). The Implementation Plan specifically calls for this program to be funded.

Addresses subbasin plan priorities

Aquatic prioritizations are not provided in the Salmon Subbasin Plan (see section beginning on page 153).

1997-030-00 - Listed Stock Adult Escapement (Expense) Nez Perce Tribe - Lapwai

Description: Monitor abundance-based adult salmon spawner information over time, with a passive temporary facility using underwater time-lapse video technology.

Consistency with subbasin plans

Information from this project is consistent with and implements the following Aquatic strategies from the Salmon Subbasin Management Plan (p. 20, 21, and 23-25): 1) 1A2 by determining population specific smolt-to-adult return rates, 2) 1B4 to evaluate program effectiveness in meeting numerical goals identified in Table 6, 3) 2A1 monitoring abundance and productivity of wild stocks in the subbasin, 4) 2A4 by identifying a lack of knowledge on population size or filling data gaps on focal species, 5) 3C1 population specific adult salmon abundance information on chinook salmon to measure progress towards delisting and recovery, 6) 3C2 population specific smolt-to-adult return rates, and 7) adult abundance data is used in deriving juvenile or smolt per female data (strategy 3A2), spawner to spawner ratios (strategy 3C3), and in assessing delisting criteria (strategy 3C5). The project is also consistent with the data gaps identified as strategies to achieve aquatic biological objectives (Table 10) in the Research, Monitoring and Evaluation Plan section (p. 110-114), and strategies and information needs outlined in Table 15 in the Monitoring and Evaluation section (p. 123-131)for use in evaluating success of implemented strategies in achieving aquatic objectives in the Salmon subbasin.

Addresses subbasin plan priorities

The Salmon River Subbasin Plan did not prioritize research, monitoring and evaluation work. However, specific reference to the types of information required are provided in the Aquatic objectives and strategies (p. 20-27), the Research, Monitoring and Evaluation Plan section (p. 110-114), and the Monitoring and Evaluation section (p. 123-131). The goals of this project are directly related to Aquatic strategies 1A2, 1B4, 2A1, 2A4, 3C1, and 3C2. Information from this project, combined with other project data, will derive other key performance measures identified in Aquatic strategies 3A2, 3C3, and 3C5. The Salmon Subbasin Management Plan specifically states that "….the focus on environmental limiting factors and problem statements does not adequately address or balance biological limiting factors within the prioritization framework" (p. 154). Information collected by this project is consistent with the biological problem statements, biological objectives, and limiting factors presented in Table 5 (p. 18-19) of the Salmon Subbasin Management Plan. This project provides adult salmon abundance information necessary to evaluate biological limiting factors of out-of-basin effects, increased extinction risk, and data gap reduces the effectiveness of species management.

1997-038-00 - Listed Stock Chinook Salmon Ga (Expense) Nez Perce Tribe - Lapwai

Description: Preserve Salmonid Gametes through cryogenic techniques to maintain genetic diversity in populations with low levels of abundance and at high risk of extirpation. Establish a Regional Salmonid Germplasm Repository for populations listed under the ESA.

Consistency with subbasin plans

Biological problem statements, objectives and limiting factors in the Salmon River subbasin.

Page 21. Aquatic objective 1B. Achieve goals defined in Table 6 for the Salmon subbasin through the application of artificial propagations programs. Minimize short- and long-term genetic, ecological and life history effects on wild populations.

Page 23. Strategy 2A1. Preserve the genetic integrity of existing wild stocks in the Salmon River subbasin. Apply gene conservation measures (cryopreservation) to prevent irretrievable loss of genetic diversity.

Page 24. Strategy 2A2. Continue ongoing and develop new programs in areas where intervention has already occurred…. Support the refinement of genetic preservation techniques such as captive broodstock, cryopreservation and artificial propagation.

Research, Monitoring and Evaluation Plan.

Page 113. Objective 2A – Method 3. Apply gene conservation measures (cryopreservation) to prevent irretrievable loss of genetic diversity.

Page 121. RM&E releative to Artificial Propagation Projects.
2. Refine genetic preservation techniques in conservation hatchery and conventional hatchery programs, captive broodstock programs and cryopreservation programs.

Addresses subbasin plan priorities

The Technical Team agreed that a scientifically valid prioritization was not possible until certain biological information (e.g., basic egg to fry, par presmolt, etc) was available and any prioritization attempts would be more of less meaningless until out-of-basin effects were addressed (Salmon Subbasin Management Plan - SSMP, page 153). In addition, the Technical Team agreed that complexities associated with a subasin as large as the Salmon River subbasin made it unfeasible to prioritize between watersheds and therefore focused on environmental limiting factors. The weakness of this approach is that it does not adequately address or balance biological limiting factors within the prioritization framework (SSMP, page 154). This project is strictly biological in scope and therefore the priority was not adequately addressed in the Prioritization section of the subbasin plan. Using a biological approach outlined in other sections of the subbasin plan, the prioritization of work conducted in this project include, 1) benefit to multiple species, both anadromous and resident; 2) objectives focus on multiple subbasins within the Snake River basin (Salmon River, Clearwater River, Grande Ronde, Imnaha River and Tuccannon River subbasins); 3) long-term effectiveness and; 4) the project takes actions toward correcting the loss of diversity caused by localized extirpation of species or persistent small population sizes.

1999-019-00 - Restore Salmon River (Challis, (Expense) Custer Soil & Water Conservation Dis

Description: Restore the channelized river corridor to a natural meandering form in balance with watershed processes that will restore geomorphic diversity, reduce bank erosion, lower summer temperatures and improve fish habitat, with local watershed group.

Consistency with subbasin plans

According to the Sub-basin Plan (Assessment Page 3-13 and 14)The primary limiting factors in this reach are the lack of access to floodplain and side channel habitat from barriers and alteration of the channel (through dicking)altered riparian habitat function and sediment. (see table 3-3 page 3-14)Work proposed under this contract is anticipated to improve floodplain function, develop side channels,increase riparian cover thereby reducing temperatures.

Addresses subbasin plan priorities

Limiting factors idetified in the Sub-Basin Plan include Altered hydrologic regime, Grazing/Browsing of domestic animals, Land-use conversions. The goals of this project are anticipated to improve floodplain function, develop side channels,increase riparian cover thereby reducing temperatures. The Sub-basin plan notes on Page 157 that the Salmon Terrestrial Technical Team developed guiding principles for prioritization in the Salmon Sub-basin. the #1 priority was to Prioritize areas for protection and restoration at a watershed scale. This project is an attempt to address a 12-Mile reach of stream and develope an overall management plan for this reach of river. It must be noted, however, that implementation of projects on private land is voluntary.

1999-020-00 - Analyze Persistence/Dynamics S (Expense) USFS Rocky Mountain Research Stati

Description: Results will advance current understanding of the relationship between the distribution, pattern, and persistence of chinook salmon and landscape patterns. **Note: the most appropriate RPA for this project is RME Action 180.

Consistency with subbasin plans

Research Project #1999-020-00 provides a key deliverable consisting of a spatially continuous, temporally robust (1995-2004), basin wide Chinook salmon redd count in the Middle Fork Salmon River (MFSR) drainage. This deliverable directly addresses the following Salmon Subbasin Plan Objectives and strategies:

Aquatic Objective 2A:

Strategy 2A1. monitor abundance and productivity of wild stocks- pg 23

Strategy 2A2. identify where there is a lack of knowledge pertaining to the population size of anadromous species- pg 24

Strategy 2A7. evaluate effectiveness of ongoing programs- pg 24

Aquatic Objective 3C:

Strategy 3C1. quantify population specific adult abundance- pg 25

Strategy 3C3. determine population productivity- pg 25

Our analysis incorporates historical (since 1957) as well as present salmon population data and also addresses:

Aquatic Objective 1A:

Strategy 1A2. develop historic run reconstruction data- pg 20

The analysis is designed to assess the factors influencing the persistence of and amount of area required to support Chinook salmon populations so directly addresses:

Aquatic Objective 2A: improve understanding and definition of small populations- pg 23

We are relating the location, size, and quality of key salmon spawning habitats to basin geomorphic features. This research program has direct application to habitat conservation and rehabilitation efforts in the basin. For example, below we list just a sample of the objectives our research will inform by providing information to describe substrate and wood in undisturbed spawning habitats:

Aquatic Objective 8A: increase the number of pieces of LWD- pg 33

Aquatic Objective 38B: reduce sediment in spawning gravels- pg 37

This research provides the following “Key Performance Measures” cited on pages 125-127 as being critical for a Monitoring and Evaluation Plan: redd counts, adult-adult ratios, adult spawner spatial distribution, adult spawner abundance, physical habitat, water temperature, and stream network.

Finally, this research provides an annual, continuous sample of redds that may be used to estimate the number and spatial distribution of adult salmon. As a result, it provides information that may be useful to address:

Aquatic Objective 7A: spatially assess the impact of carcass related nutrient reductions ….- pg 33

Addresses subbasin plan priorities

On page 153 of the Salmon Subbasin Plan, the following needs were identified: population-specific adult abundance and productivity key performance data. This research directly addresses both of those needs. This research also directly addresses several of the “considerations for rankings” listed on page 154 (spatial structure, abundance, productivity, and diversity).

This research directly addresses key performance measures cited on page 26 as lacking for anadromous fish in the Salmon Subbasin, specifically: 1) addressing key BIOP questions for research, monitoring, and evaluation and 2) providing unbiased and precise estimators of abundance and productivity targets.

Further, this research addresses identified research needs (pg 120) including performance measures of adult spawner

spatial distribution and population growth rate (lambda).

Finally, this research addresses at least three critical needs identified in Regional Program documents. 1) the need for long-term information to assess trends in wild Chinook salmon populations; 2) the need for evaluation of broadscale population sampling and inventory methods; and 3) the need for analysis of the spatial structure of wild Chinook salmon populations. This research provides a georeferenced dataset of the network-scale distribution of Chinook salmon redds across a large wilderness basin. Spatially continuous sampling designs, when temporally replicated as this one, provide tremendous utility for answering questions regarding dynamic ecological systems at scales in which important biophysical processes operate. The wide range of priorities to which this dataset is applicable demonstrates its uniqueness within the Columbia River Basin.

2002-049-00 - Eval Precision Bias Chinook (Expense) USFS Rocky Mountain Research Stati

Description: Results will assess redd count bias and precision and will have important implications for improving chinook salmon redd surveys across the Snake River basin. **Note: the most appropriate RPA for this project is RME Action 180.

Consistency with subbasin plans

Research Project #2002-049-00 evaluates the bias and precision of aerial and ground-based Chinook salmon redd counts in the Middle Fork Salmon River (MFSR) drainage and directly addresses the following Salmon Subbasin Plan Objectives and strategies:

Aquatic Objective 2A:
Strategy 2A1. monitor abundance and productivity of wild stocks- pg 23
Strategy 2A2. identify where there is a lack of knowledge pertaining to the population size of anadromous species- pg 24
Strategy 2A7. evaluate effectiveness of ongoing programs- pg 24
Aquatic Objective 3C:
Strategy 3C1. quantify population specific adult abundance- pg 25
Strategy 3C3. determine population productivity- pg 25

This research provides the following "Key Performance Measures" cited on pages 125-127 as being critical for a Monitoring and Evaluation Plan: redd counts, adult size at return, adult run timing, adult spatial distribution, physical habitat, and water temperature.

Addresses subbasin plan priorities

On page 153 of the Salmon Subbasin Plan, the following statement is made: "The general agreement among the Technical Team members was that to conduct a scientifically valid prioritization, certain information that is not currently available would be needed …..". Despite the widespread use of redd counts to calculate measures of population performance, little is known regarding the accuracy of aerial and ground-based Chinook salmon redd counts or the factors that decrease precision and introduce bias. Our research is validating the primary methods (aerial and ground-based redd counts) used to monitor populations and meet two of the listed needs (population-specific adult abundance and productivity key performance data). Similarly, our research directly addresses the methods used to meet needs for several of the "considerations for rankings" listed on page 154 (spatial structure, abundance, productivity, and diversity).

This research also directly addresses key performance measures cited on page 26, specifically: 1) addressing key BIOP questions for research, monitoring, and evaluation and 2) providing unbiased and precise estimators of abundance and productivity targets.

Further, this research addresses the methods used to meet identified research needs (pg 120) including performance measures of adult spawner spatial distribution and population growth rate (lambda).

Finally, this research addresses at least three critical needs identified in Regional Program documents. 1) the need for long-term information to assess trends in wild Chinook salmon populations; 2) the need for evaluation of broadscale population sampling and inventory methods; and 3) the need for analysis of the spatial structure of wild Chinook salmon populations.

2002-069-00 - Protect & Restore Little Salmo (Expense) Nez Perce Tribe - Lapwai

Description: Protect valuable riparian corridor and fluvial aquatic habitat while increasing habitat quality and quantity within the mainstem Little Salmon river basin.

Consistency with subbasin plans

The project is consistent with and implements:
- Problem 12, Aquatic Objective 12A, strategies 1 and 2 (Mgmt. Plan pg. 53)
- Problem 59, Objective 59A, strategies 1,2, and 4 (Mgmt. Plan pg. 96)

Addresses subbasin plan priorities

The Little Salmon Watershed is listed as one of the top 5 most impacted watersheds in the subbasin (Mgmt plan. pg. 157). The construction of Hwy 95 through the Little Salmon River corridor has created a structural barrier that precludes passage of anadromous fish from below the falls to above the falls. "The Salmon Fisheries Technical Team considered structural barriers and tributary connectivity to be among the most important and readily addressable factors currently limiting aquatic focal species in the Subbasin. The expected biological benefits to cost ratio likely would be favorable and biologic response would be immediate." (Mgmt. Plan pg. 162)

The Management Plan (pg. 153) suggests that "...filling key data gaps will further improve the accuracy of the prioritization process." The completion of a Watershed Assessment will fill key data gaps in the Little Salmon Watershed and allow the Watershed Division as well as other agencies to identify and prioritize projects that will assist with the restoration and protection of aquatic and terrestrial species in the Little Salmon Watershed.

2005-xxx-x2 - Snake River Sockeye Smolt Program at Oxbow Hatchery (E ODFW

Consistency with subbasin plans

Salmon Subbasin Plan Consistency: Aquatic Objective 1B, Strategies 1B1 through 1B4 (pg 21): The project is using artificial propagation to minimize short- and long-term genetic, ecological, and life history effects on the population. Innovative techniques are being used to meet the goals identified in Table 6 of the Salmon Subbasin Plan. Aquatic Objective 2A, Strategies 2A1 and 2A2 (pgs 23 and 24): The project is working with the University of Idaho and NOAA geneticists to preserve the genetic integrity of the population. Aquatic Objective 3A, Strategies 3A1 and 3A2 (pg 25): Project M&E efforts contribute to the region's understanding of smolt-to-adult survival and other measures of productivity.
2004 FCRPS BiOp Section 9.0, page 9-1: NOAA recommendation to increase program production by 150,000 sockeye smolts. Appendix F, page F-8: NOAA recommendation to develop new facilities to produce an additional 200,000 smolts.
The Updated Proposed Action (UPA): calls for the Action Agencies to fund safety net programs for Snake River Sockeye (pg 4). The UPA also lists "the continued operation of the existing safety-net program for Snake River sockeye" as a performance objective. Production of an additional 150,000 smolts is also called for (pg 15). The Action agencies committed to funding the program as long as NOAA Fisheries determines it to be an effective and essential contribution (pg 86). The Action Agencies also agreed to fund an expansion in smolt production for the program (150,000 smolts, pg 86).
The Draft Implementation Plan: Implementation language for the UPA can be found on the following pages of the Implementation Plan: Page 3: (Hatchery Actions, and Research, monitoring and evaluation sections). Page 5: (Hatchery Measures section). Page 30: (Section E. Hatchery Actions for Snake River Sockeye). Page 32: (Near- and long-term priorities for Snake River Sockeye). Page 54: (Addressing sockeye salmon conservation recommendations from the Biological opinion)

Addresses subbasin plan priorities

Aquatic prioritizations are not provided in the Salmon Subbasin Plan (see section beginning on page 153).

1982-013-01 - Coded Wire Tag - Psmfc (Expense) Pacific States Marine Fisheries Comm

Description: Recovery of CWTs and PitTags from salmonids sampled in the commercial/sport fisheries (Col. R and Oregon ocean), spawning grounds and hatcheries. Provides critical stock identification information required to evaluate the status of Columbia Basin stocks.

Consistency with subbasin plans

The CWT Recovery Program is a 'Mainstem/Systemwide Project' but its goals and objectives are very consistent with basic subbasin planning. In specific, the Council's 2000 Fish and Wildlife Program's basinwide vision is to "...recover, rebuild, and mitigate impacts on fish and wildlife." through subbasin plans. And impacts of the four Hs (Hydropower, Habitat, Hatcheries, and Harvest) on distinct fish populations (stocks) can not be effectively monitored and evaluated without some type of stock identification tool. To this end, CWTs and Pit Tags both play an essential role as stock identification tools. CWTs are particularly valuable for monitoring and evaluating hatchery and wild production, harvest rates, stock contributions to the various fisheries, and stock status in terms of recovery efforts.

The CWT recovery program also provides critical information for evaluating studies on stock selection, disease and diet evaluations, rearing density studies, and life history parameters, including straying patterns. In addition, the federal ESA depends on CWT marked hatchery fish to function as surrogates for wild stocks that are listed as threatened or endangered.

The key point is that the CWT is a tool for stock identification. As such, it serves a wide variety of purposes, including the 2000 Fish and Wildlife Program and the NMFS Biological Opinion objectives, as well as those of harvest management. In short, virtually every measure or objective that requires stock identification can be aided by the use of CWT information, provided that the fish are marked.

Addresses subbasin plan priorities

Project not specifically related to a single subbasin plan (see above).

The concise answer is that the CWT Recovery Program goals and objectives will be in lock step with those subbasin rebuilding programs that are using CWT marked fish to monitor and evaluate their local salmon and steelhead stocks.

Quoting the ISRP Final Review (ISRP 2002-14), the Independent Scientific Review Panel noted that "The Coded-wire Tag Program is a huge program that annually conducts a large number of activities that are essential to the Basin, and the data provided has been widely utilized over many years." This explains in large part why the CWT Recovery Program has consistently been rated at the highest priority level in terms of being funded in previous program reviews.

Lastly RPA 174 calls for a comprehensive marking strategy for salmon and steelhead produced in the Columbia Basin. The CWT Recovery Project is an on-going data collection and data management program conducted by ODFW, WDFW, and PSMFC that fully supports the annual assessment of hatchery and wild salmon populations throughout the Columbia Basin. In specific, the goal of this project is to sample statistically valid numbers of chinook and coho in the Columbia River and Oregon coastal commercial and recreational fisheries and the escapement. Annually, the CWT recovery data from marked groups are used to estimate survival, catch distribution, ocean escapement, and returns to hatcheries and spawning grounds. These data also document long-term trends for evaluation of hatchery stocks as surrogates for critical wild stocks, and for comparison with other long-term data sets from throughout the west coast.

1982-013-02 - Coded Wire Tag - Odfw (Expense) ODFW

Description: Apply coded-wire tags to production releases of coho and chinook salmon at ODFW Columbia Basin hatcheries for stock assessment of hatchery and wild salmon populations. Evaluate survival, contribution and stray rates of hatchery reared salmon.

Consistency with subbasin plans

The work of this project is not directly related to specific strategies and/or objectives in a subbasin plan. The groups of hatchery fish marked with an Ad+CWT by this program are released in the following 5 subbasins; Columbia Estuary, Columbia Lower, Willamette, Sandy and Umatilla. Within the subbasin plans, hatchery specific management is deferred to a Hatchery and Genetic Management Plan (HGMP) as called for under federal ESA management. Although mostly still in draft form, each HGMP describes monitoring and evaluation plans for the hatchery program, including marking and tagging of fish for post-release monitoring. The marking and tagging plans described in HGMPs for ODFW Columbia Basin hatchery programs include the Ad+CWT groups funded by this BPA project.

In 1999 the NPPC published the "Artificial Production Review" (APR Council Document 99-15). This review established 10guiding principles for artificial production programs. Basin wide marking and tagging programs, including this project, contribute toward implementation of Guidelines 2 (evaluation) and 9 (harvest) of the APR. The ISAB also published a review of hatcheries in 1999 (Council Document 99-4). This BPA tagging program contributes toward implementation of 2 of the 20 guidelines identified in the ISAB review. Guideline 17 calls for a program to monitor performance of hatchery fish from release to return. Guideline 19 calls for regular audits of the performance of hatchery programs. Again the coded-wire tagging conducted by this BPA project, in conjunction with other marking and sampling programs, will contribute toward both of these guidelines.

Addresses subbasin plan priorities

Not applicable, see above consistence response.

1982-013-03 - Coded Wire Tag - Usfws (Expense) USFWS

Consistency with subbasin plans

This Service directed project contributes along with similar ODFW (1983-013-02) and WDFW (1982-013-04) projects towards the PSMFC Coded Wire Tag project (1982-013-01) to provide ongoing coded wire tag database information for Pacific Northwest hatchery programs and fishery management and falls within the Systemwide subbasin plan.

Addresses subbasin plan priorities

1982-013-04 - Coded Wire Tag - Wdfw (Expense) WDFW - Olympia

Description: Apply coded-wire tags to production of coho and chinook salmon at WDFW Columbia Basin hatcheries for stock assessment of hatchery and wild populations. Evaluate survival, contribution and stray rates of hatchery reared fish and compare to wild fish.

Consistency with subbasin plans

The project is consistent with and implements Hatchery Strategies H.S2., H.S3., and H.S4. Hatchery Measures H.M7 (Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan Volume 1 – Regional Plan pages A-252-253 and A-255). This project strives to give a measure of individual hatchery effectiveness and enables accurate enumaeration of naturally spawning production which is essential for monitoring recovery progress.

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan by the marking of juvenile hatchery fish with a coded-wire-tag prior to release enables future identification of adult fish encountered in a fishery or in the escapement areas. Identifying individual fish as hatchery or naturally produced on the spawning grounds enables accurate enumeration of naturally spawning production, which is essential for monitoring recovery progress.

1983-319-00 - New Marking & Monitoring Tech (Expense) NOAA Fisheries

Description: Determine the biological and technical feasibility of using PIT-tag technology to obtain information on juvenile and adult salmonids. Develop ancillary equipment to expand the PIT-tag system's capabilities to meet CRB resource stakeholder needs.

Consistency with subbasin plans

The work for this project is not related to a subbasin plan because it addresses on research and development issues that have systemwide application.

Project 198331900 has been the primary route of funding for the development of PIT-tag detection systems and increasing the application of the technology over the years. Both the Remanded 2000 Biological Opinion and the Action Agencies' Updated Proposed Alternative for Operation of the FCRPS indicate that the PIT tag is a critical tool used in research, monitoring and evaluation (RME) activities. RME studies help to estimate survival to determine if the hydropower performance standards are being met each year and are critical to minimize the incidental take of endangered and threatened salmonid stocks at FCRPS hydroelectric sites.

Furthermore, having PIT-tag detection in the corner collector at Bonneville Dam is a critical need for researchers estimating reach survival of juvenile salmon. Without this system, survival rates for juvenile salmon cannot be estimated with a reasonable amount of statistical certainty. Researchers are already reporting an increase in the uncertainty of their reach survival estimates due to the new Corner Collector, as it provides a safe passage route for significant percentage of fish but does not have PIT tag detection capabilities. As a result the percentage of PIT detection at Bonneville Dam overall has decreased.

Improvements in PIT-tag technology are needed to improve survival estimates as well as to expand the information that can be collected to provide the fisheries managers with the data necessary for them to make informed decisions.

Addresses subbasin plan priorities

Because of the dependency on the PIT-tag data that are collected, this project has always been critical for helping most if not all management plans meet their priority goals.

1986-050-00 - Evaluate Sturgeon Physical Hab (Expense) ODFW

Description: Restore and mitigate for hydrosystem-caused loss loss of white sturgeon productivity through intensive fisheries management, supplementation, and modified hydropower system operation. Assess success of mitigation and restoration efforts.

Consistency with subbasin plans

White sturgeon are listed as focal species in the Lower Middle Columbia, the Columbia Gorge, and the Lower Columbia/Estuary subbasin plans. Project activities are concentrated in areas covered by the Lower Middle Columbia and Columbia Gorge plans.

The project is consistent with and implements white sturgeon mainstem objectives and strategies of the Lower Middle Columbia subbasin plan (Section 8.3.2). Specific strategies addressed include:

· Supplement less productive impounded white sturgeon populations through capture of juvenile white sturgeon from below Bonneville Dam and transporting them into The Dalles and John Day reservoirs to compensate for year class failures.
· Identify the need for and evaluate the success of white sturgeon population recovery activities (stock assessments).
· Continue to monitor harvest levels and adjust fishing regulations as necessary between Bonneville and McNary dams.

The project is also consistent with and implements white sturgeon objectives, strategies, and RM&E needs identified in the Columbia Gorge subbasin plan (Section 5.2.1). Specific strategies and RM&E needs addressed include:

· Manage white sturgeon in Bonneville Reservoir for sustainable harvest. This strategy relates to objectives 1 through 5 (pages 78-79).
· Maintain intensive management of fisheries for impounded white sturgeon populations. This RM&E need addresses objectives 1 through 5.
· Continue mark-recapture surveys to estimate population abundance. This RM&E need addresses objectives 1 through 5.

Addresses subbasin plan priorities

This project accomplishes priority work identified in the Lower Middle Columbia and Columbia Gorge subbasin plans. In the Lower Middle Columbia plan, supplementing impounded populations and evaluating the success of population recovery activities both ranked “high” in their relative contribution to causal relationships affecting white sturgeon populations. Continuing to monitor harvest levels and adjusting fishing regulations ranked “medium” in its relative contribution. In the Columbia Gorge plan, managing white sturgeon for sustainable harvest was considered an “urgent need”.

1987-127-00 - Smolt Monitoring By Non-Feder (Expense) Pacific States Marine Fisheries Comm

Description: Daily passage data through the mainstem, Snake, Columbia and mid-Columbia Rivers to facilitate fish passage management decisions, including Biological Opinion implementation, is collected daily. Sampling and marking occur at 8 sites of the larger region.

Consistency with subbasin plans

The SMP is consistent and relative to all sub-basin plan priorities for sub basins producing and enhancing habitat for anadromous fish. The evaluation of benefits from sub-basin improvements in anadromous fish production will be addressed directly by the SMP. The SMP will provide valuable information regarding the juvenile downstream passage experience of juvenile anadromous fish from sub-basins above Bonneville Dam. This data will be valuable to sub-basin hatchery and habitat projects and the managers evaluation of benefits of these projects. The SMP provides valuable information back to the sub-basins that will have utility in the implementation and development of plans for the individual sub-basin.

Addresses subbasin plan priorities

The SMP does not conflict with any priorities in any sub basin plan upstream of Bonneville Dam and the SMP and FPC can contribute valuable information back to each sub basin as they begin to evaluate the benefits of their sub basin activities, regardless of the priority assigned within each subbasin of evaluation of benefits of activities.

1987-127-00 - Smolt Monitoring By Non-Feder (Expense) Pacific States Marine Fisheries Comm

Description: Daily passage data through the mainstem, Snake, Columbia and mid-Columbia Rivers to facilitate fish passage management decisions, including Biological Opinion implementation, is collected daily. Sampling and marking occur at 8 sites of the larger region.

Consistency with subbasin plans

This project is part of the Smolt Monitoring Project (1987-127-00) conducted by PSMFC/FPC which falls within the systemwide subbasin plan and is an integral part of the ongoing passage and survival monitoring program.

Addresses subbasin plan priorities

1988-108-04 - Streamnet (Cis/Ned) (Expense) Pacific States Marine Fisheries Comm

Description: Provide data and data services to the FWP by 1) compiling essential, regionally consistent biological data, 2) creating access to data via the Internet, StreamNet Library, and custom products, and 3) giving technical support to FWP activities.

Consistency with subbasin plans

StreamNet is consistent with subbasin plans, partly because StreamNet data were used during the planning process. The finished subbasin plans do not specifically address the need for a data delivery system to share regionally consistent fish data. However, there is an unstated need for all routine fish monitoring and assessment data to be available so that trends can be followed within and across subbasins, and to roll up to ESU or basin levels the data need to be in consistent formats and fully georeferenced. StreamNet does these for the routine fish management data collected by the region's fish management agencies. In addition, StreamNet has acquired and posted the data that resulted from subbasin planning in Oregon and anticipates participating in acquiring and posting these data from the other states. These efforts will be done in coordination with other data management efforts that deal with other kinds of data that relate to fish monitoring, such as habitat monitoring and fish population modeling.

The 2000 Hydrosystem BiOp called for a regional data delivery system under RPA 198. While not much progress has been made toward developing a comprehensive data system, StreamNet is poised to collaborate with its development, under the assumption that the existing data management programs will of necessity serve as key components within such a system. We continue to collaborate with regional data management efforts in anticipation of them contributing to or leading to a regional data delivery system. Until then, StreamNet is already functioning as a regionally consistent data delivery system from the field management agencies to public dissemination for specific fish related data.

Addresses subbasin plan priorities

The subbasin plans did not specifically address the priority of regional scale infrastructure projects, which would include StreamNet and other data management projects. However, we do provide a means of acquiring and disseminating fish data that will prove essential for following the trends that result from habitat restoration and other work in the individual subbasins. Thus, we support all subbasin priorities, and will participate in efforts to evaluate the effectiveness of restoration efforts in the subbasins.

1988-108-04 - Streamnet (Cis/Ned) (Expense) Pacific States Marine Fisheries Comm

Description: Provide data and data services to the FWP by 1) compiling essential, regionally consistent biological data, 2) creating access to data via the Internet, StreamNet Library, and custom products, and 3) giving technical support to FWP activities.

Consistency with subbasin plans

This project is part of the StreamNet project (1988-108-04) conducted by PSMFC which falls within the Systemwide subbasin plan and is an integral part of the basin-wide information database project.

Addresses subbasin plan priorities

1989-062-01 - Annual Work Plan Cbfwa (Expense) CBFWA

Description: Coordinate fish and wildlife participation in regional mitigation activities in implementation of the FWP, FY2001 project and funding recommendations, rolling provincial review, subbasin planning, program amendment recommendations, FSOC, NPMP, etc.

Consistency with subbasin plans

The CBFWA project is consistent with the Northwest Power Act (NPA) and the 2000 Fish and Wildlife Program (Program):

The NPA directs the Council to request in writing from the region's fish and wildlife managers measures, objectives, and "fish and wildlife management coordination and research and development (including funding)" (NPA, 839b(h)(2)). This passage has been referenced by our Members to define CBFWA's role in the Program.

The current Program calls for subbasin plans that include a Management Plan with biological objectives that "are consistent with legal rights and obligations of fish and wildlife agencies and tribes with jurisdiction over fish and wildlife in the subbasin, and agreed upon by co-managers in the subbasin" (page 41). In the Implementation Provisions, under Roles of the Fish and Wildlife Managers, the Program states that "(C)urrently, the fish and wildlife managers, through the Columbia Basin Fish and Wildlife Authority, develop a draft annual program implementation work plan from the projects proposed for funding" and later in that paragraph"(T)he Council anticipates that the fish and wildlife managers will continue to organize themselves and jointly provide these recommendations in the work plan to the Council" (page 46). Finally, under the Tribal Rights, Water Rights, and the Role of the Fish and Wildlife Agencies, in the Recognition of the Tribal Role"(T)he Council also recognizes that implementation of this program will require significant interaction and cooperation with the tribes" and later in the Role of the Fish and Wildlife Agencies "(T)he Northwest Power Act envisions a strong role for fish and wildlife agencies and Indian tribes in developing the provisions of this program" (page 53). CBFWA provides the coordination necessary to support the fish and wildlife managers (including tribes) participation and contribution to the Fish and Wildlife Program as a unified voice.

Addresses subbasin plan priorities

The CBFWA project facilitates regional coordination among the fish and wildlife agencies and tribes with jurisdiction over fish and wildlife in the Columbia River Basin and seeks unanimous consensus on important regional, provincial and subbasin level issues in regards to implementing the Council's Fish and Wildlife Program. This project supports the Northwest Power Act by providing coordination and attempting to develop a "unified fish and wildlife management plan", that the Council can rely on for development of their fish and wildlife program. This unified plan varies in scope and detail but is provided when the authorized fish and wildlife managers speak with one voice.

The CBFWA project supports subbasin planning and the 2000 Fish and Wildlife Program in many ways. At the regional level, CBFWA will be integral in developing work plans and project reviews for Research, Monitoring and Evaluation, Mainstem actions, and Decision Support activities. At the subbasin level, CBFWA can provide uniform and consistent implementation standards across the region, as well as provide logistical support and information to the subbasin level work groups. CBFWA can also facilitate the development of consensus based agreement on subbasin level objectives.

1989-096-00 - Genetic M&E Prog For Sal/Steel (Expense) NOAA Fisheries

Description: Direct and indirect estimates for reproductive success. Estimate selection gradients in hatchery and wild. Monitor changes in hatchery, natural (supplemented), and wild (unsupplemented) populations. Evaluate effectiveness of hatchery supplementation.

Consistency with subbasin plans

This project address reproductive success of hatchery fish spawning in nature, including captive broodstock and conventional programs. The research takes place the following sub-basins: Asotin, Grande Ronde, Imnaha, Salmon, Lower Snake, Tucannon. The genetic effects of artificial propagation in general, and relative reproductive success in particular, are critical elements of all these sub-basin plans. Indeed, the northeast Oregon plans borrowed text passages directly from our proposals and work statements. The work is closely coordinated and planned with input from comanagers in respective sub-basins.

Addresses subbasin plan priorities

Relative reproductive success of naturally-spawning hatchery fish is absolutely critical to risk assessment and recovery planning. This project addresses BiOp RPAs 179, 180, 182, 184, 199,1036, 1193, as well as specific elelments of the Tribal Recovery Plan, Wy Kan Ush May Wa Kish Wit. Because this work is so closely coordinated with state and tribal comanagers, our research goals tend to align perfectly with their highest information priorities (or we shift our focus).

1989-107-00 - Statistical Support For Salmon (Expense) U of W

Description: Improve monitoring and evaluation capabilities by developing better measurement tools and study designs to estimate juvenile and adult salmonid survival and survival relationships. Provide statistical guidance to investigators in the Columbia Basin.

Consistency with subbasin plans

Work not related to a subbasin plan.

This project is consistent with FWP Strategy 6, hydrosystem passage and operations, by facilitating Strategy 9, research, monitoring, and evaluation. This project is consistent with and implements the Research, Monitoring, and Evaluation efforts from the Final UPA for the FCRPS Biological Opinion Remand, Section IV (pages 88-103). Tasks are listed below.

Provides consistent application of statistical methodologies for survival estimation across all salmon life-cycle stages to assure comparable performance measures and assessment of results through time. Maximizes learning and adaptive management opportunities. Improves and maintains the ability to responsibly evaluate the success of implemented Columbia River FWP salmonid mitigation programs and dentify future mitigation options.

Improves analytical capabilities to conduct research on survival processes of wild and hatchery chinook salmon and steelhead during smolt outmigration. Improves monitoring and evaluation capabilities and assist in-season river management to optimize operational and fish passage strategies to maximize survival.

Extends statistical support to estimate ocean survival and in-river survival of returning adults when adult detection facilities are in place. Provides statistical guidance in implementing a river-wide adult PIT-tag detection capability.

Develops statistical methods for survival estimation for all potential users and makes this information available through peer-reviewed publications, statistical software, and technology transfers to organizations such as NOAA Fisheries, the Fish Passage Center, US Fish and Wildlife Service, US Geological Survey (USGS), US Army Corps of Engineers (USACE), Public Utility Districts (PUDs), the Independent Scientific Advisory Board (ISAB), and other members of the Northwest fisheries community.

Provides, maintains, and improves statistical software for tag analysis and user support.

Addresses subbasin plan priorities

This project accomplishes priority work identified by the FCRPS Biological Opinion Remand (Remand), Section IV (pages 88-103) as critical to reaching the long- and short-term targets listed in the 2005-2007 Implementation Plan for the FCRPS ESA Updated Proposed Action (Section V.A., pages 39-40).

Under “RM&E Strategy 1: Status Monitoring” (pg. 88, Remand), “regional monitoring of status information such as adult and juvenile fish abundance, distribution, and survival, or environmental conditions that have been identified as key measures of fish performance, is needed for an effective performance based approach.” The main goal of this project is to develop the analytical tools (such as SURPH) and statistical theory to effectively and accurately perform this task on a system-wide or subbasin level, within tributary or hydrosystem corridor.

In that same vein, “RM&E Strategy 2: Action Effectiveness Monitoring and Research” again states that research on the effects of hydrosystem and non-hydrosystem actions require a quantitatively rigorous approach (pg. 92, Remand) with well-designed experiments and adequate replication. Programs such as SampleSize 1.3 developed by this project were designed to assist researchers in this, and must be continually adapted to appropriately fit changing conditions.

Finally, RM&E Strategy 3 defines critical uncertainties “related to the assessment methods and data required to evaluate future population performance and needed survival improvements. Projects under this strategy are associated with BiOp actions that address large, systematic research needs and improvements in analytical methods required for

more robust and confident assessments of population status and needed survival improvements for each ESU" (pg. 100, Remand). The tools and theory developed by this project specifically address this goal, with the intent of making analyses easier and more defensible for all researchers in the Columbia Basin.

1990-077-00 - Dev Of Sytemwide Pred Control (Expense) Pacific States Marine Fisheries Comm

Description: Reduce predation on juvenile salmonids by implementing fisheries to harvest northern pikeminnow in the mainstem Columbia and Snake rivers. Monitor effects of fisheries on predation by northern pikeminnow and other resident fish.

Consistency with subbasin plans

This work not related to a subbasin plan

Addresses subbasin plan priorities

This work not related to a subbasin plan

1990-080-00 - Columbia Basin Pit-Tag Informa (Expense) Pacific States Marine Fisheries Comm

Description: Develop, operate, maintain and enhance a long-term Columbia River Basin database on PIT tag information and provide operations and maintenance support for the collection of PIT tag information at PIT tag interrogation sites.

Consistency with subbasin plans

This work is not related to a specific subbasin plan. This work is required in order to successfully implement many subbasin plans.

There are many references in "Biological Opinion on Remand, Appendix G, Research/Monitoring Actions Persuant to the 2004 FCRPS Biological Opinion" to data from PIT Tags and specifically PTAGIS. (See http://www.salmonrecovery.gov/R_biop_final.shtml).

Addresses subbasin plan priorities

Based upon the reliance on PIT tags as described in the BiOp document referenced above, and based upon the fact that over 80 FWP projects rely on reliable interrogation systems and database management systems for PIT tag mark/recapture data storage and retrieval, that PTAGIS is a priority project.

1990-093-00 - Genetic Analyses Of Oncorhynch (Expense) U of Idaho

Description: Provide biological and genetic information on O. nerka and O. tshawytscha samples collected throughout the Snake and Columbia Basins to be used in the overall recovery of endangered Snake River sockeye salmon and threatened Salmon River chinook salmon.

Consistency with subbasin plans

This project, though not in the Salmon subbasin, is consistent with and directly supports the IDFG and NOAA-fisheries projects #199107200, 199700100 and 199204000 on captive broodstock programs for Redfish Lake sockeye and chinook salmon captive rearing, which are consistent with the R, M and E relative to artificial propagation projects as listed in the Salmon Subbasion Plan on page 122 Item #2: refine genetic preservation techniques in conservation hatchery and conventional hatchery programs, captive broodstock programs and cryopreservation programs. Item #5 Monitor and evaluate artificial propagation programs to describe program effectiveness of ongoing mitigation and conservation hatchery programs. Additonally this program is consistent with Section 5.1 Endangered Species Act Considerations (Page 139 and specifically sockeye salmon section 5.1.2.3 page 142)

Addresses subbasin plan priorities

This program directly supports the IDFG and NOAA-Fisheries projects #199107200, 199700100 and 199204000 for the aritficial propagation of Endangered Redfish Lake sockeye salmon and Threatened Salmon River chinook salmon captive rearing projects. Thus, priority for the support provided by this project may be referenced in Section 5.1 Endangered Species Act Considerations (Page 139 and specifically sockeye salmon section 5.1.2.3 page 142).

1991-029-00 - Post-Release Survival Of Fall (Expense) USFWS

Description: Facilitate implementation of federal and tribal fall chinook salmon recovery plans by monitoring and evaluating post-release attributes and survival of natural and hatchery juvenile fall chinook in the Snake River and Hanford Reach of the Columbia River.

Consistency with subbasin plans

Project 199102900 is system-wide in scope. It is listed specifically in the 2005―2007 Implementation Plan for the Federal Columbia River Power System Endangered Species Act Updated Proposed Action. The page numbers and references are given hereafter.

Page 39: Monitor emergence, growth, migration timing, and survival of Snake River fall Chinook salmon.

Page 40: Study the effect of summer flow augmentation on water temperature, water velocity, and juvenile fall Chinook salmon migratory behavior and survival in Lower Granite Reservoir.

Page 40: A comprehensive evaluation of Snake River fall Chinook salmon transportation is planned to begin when RSWs or other surface-oriented passage is provided at the Snake River collector dams to provide more favorable passage conditions. Note: This study began in 2005 and was dependent on project 199102900.

Page 41: Table 2. Monitor and evaluate post-release attributes and survival of natural and hatchery fall Chinook salmon in the Snake River (Project 199102900).

Addresses subbasin plan priorities

Work not related to a subbassin plan because this project is system-wide in scope.

1991-051-00 - M&E Statistical Support For Li (Expense) U of W

Description: Develops statistical methods for monitoring and evaluating salmonid recovery plans. Provides added-value analyses and statistical support to address fisheries regional issues. Provides smolt migration timing predictions on the internet.

Consistency with subbasin plans

Work not related to a subbasin plan.

This project is consistent with and implements the Research, Monitoring, and Evaluation efforts from the Final UPA for the FCRPS Biological Opinion Remand, section IV (pages 88-103) and with the Council's scientific principles of ecological management (i.e., Principle 7).

This program strives to understand the dynamics of the aquatic systems and anthropogenic effects by analyzing historical tagging data and providing real-time access to the monitoring data to the public, fisheries managers, and the TMT. Under the Hydrosystem Passage and Operations section of the CRBFWP, this program has made the following contributions:

(a) Developed, measured, and monitored juvenile fish passage.
(b) Monitored and evaluated adult passage, and provided technical support to the installing adult PIT-tag counters.
(c) Evaluated the effects of flow and spill strategies on outmigration success.
(d) Assist the BPA in preparing an annual report on flow augmentation.
(e) Provided mitigation information and specialized data summaries to the TMT.
(f) Investigated biological measures of mainstem operations.
(g) Investigated key uncertainties associated with mainstem migration and transportation.

Under the Council's Ocean Condition section, this program has made the following coordinated contributions:

(a) Improved understanding of conditions salmon face in the ocean.
(b) Identified factors critical to ocean survival.
(c) Helped distinguish ocean effects from other effects on adult returns.
(d) Distinguished the effects of ocean-related mortality from that caused in the freshwater part of the life cycle.

Equally important, this program has contributed to the Council's call for "Research, monitoring and evaluation" in all three critical areas they have identified:

(a) Identify and resolve key uncertainties.
(b) Monitor and evaluate.
(c) Make information readily available.

Addresses subbasin plan priorities

This project accomplishes priority work identified by the FCRPS Biological Opinion Remand (Remand), Section IV (pages 88-103) as critical to reaching the long- and short-term targets listed in the 2005-2007 Implementation Plan for the FCRPS ESA Updated Proposed Action (Section V.A., pages 39-40).

Under RM&E Strategy 1 (Status Monitoring) (pg. 88, Remand), "regional monitoring of status information such as adult and juvenile fish abundance, distribution, and survival, or environmental conditions that have been identified as key measures of fish performance, is needed for an effective performance based approach." Program RealTime specifically addresses Substrategy 1.3 (hydrosystem corridor monitoring) to "monitor wild Snake River spring/summer Chinook and salmon smolt migrations", "monitor … migration timing … of Snake River fall Chinook", and "provide in-season statistical support, real-time run predictions, and annual review of run-timing predictions" (pg. 90, Remand). In addition, survivals and travel times from release site to Bonneville Dam for a number of species & stock are estimated and posted on DART.

The objective of RM&E Strategy 2 (Action Effectiveness Monitor. & Research) is to assess the effects of hydrosystem and non-hydrosystem actions on fish production, survival, fish condition, and habitat condition in a quantitatively rigorous approach. Numerous analyses have been completed by this project to address items under Substrategy 2.1 (hydrosystem), including effectiveness of transportation, and survival of juveniles salmonids through new generation turbines at Bonneville and Wanapum Dams.

Finally, RM&E Strategy 3 identifies areas of uncertainty in biological assessments of survival conditions and needed survival improvements for ESA listed populations. Analyses from this project have addressed areas such as delayed differential mortality of transported smolts (D) and the extent of extra mortality (pg. 100, Remand), and ocean survival relationships.

1993-029-00 - Survival Est For Passage Throu (Expense) NOAA Fisheries

Description: Provide precise measurements of survival of juvenile salmon as they pass through dams and reservoirs in the Snake and Columbia Rivers

Consistency with subbasin plans

Work not related to a Subbasin Plan. This project is systemwide in scope.

This project (1993-029-00) is listed specifically in the 2005-2007 Implementation Plan for the Federal Columbia River Power System Endangered Species Act Updated Proposed Action, dated May, 2005 from the U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration, page 43.

The survival estimates generated by this project will be used to help determine success of failure in meeting annual Performance Standards for operation of the FCRPS. Under the Adult and Juvenile Fish Survival Through the Hydrosystem section, the Implementation Plan calls for (page 8 and 9):

Report on adult and juvenile system survival estimates based on the best available empirical survival data.

Use survival models to extrapolate empirical survival estimates to obtain system level survival estimates.

Use surrogates as indicators for ESUs where empirical data is limited or not available.

Addresses subbasin plan priorities

Work not related to a Subbasin Plan. This project is systemwide in scope.

1993-056-00 - Demonstration Of Captive Salmo (Expense) NOAA Fisheries

Description: Improve effectiveness and assess risks of captive broodstock programs as a tool for recovery of depleted salmon stocks

Consistency with subbasin plans

This project was funded under the Mainstem/Systemwide Province in FY03 and provides science-based guidance for BPA-funded captive broodstock programs in the Salmon River, Grande Ronde River, and Tucannon River Subbasins. The project addresses critical needs identified in the Northwest Power Planning Council's 2000 Fish and Wildife Program, the ISAB Review of Salmon and Steelhead Supplementation (ISAB 2003-3 Supplementation Report), and the 2004 Updated Proposed Action for the FCRPS Biological Opinion Remand. Linkages to these documents are described below.

Addresses subbasin plan priorities

The ISAB Review of Salmon and Steelhead Supplementation (ISAB 2003-3 Supplementation Report) identified several risks of supplementation, which includes captive broodstocks. The captive broodstock research project directly addresses i) genetic risks by quantifying the effects of inbreeding and inbreeding depression, ii) disease risks by developing methods to control or prevent bacterial kidney disease, and iii) demographic risks by quantifying the reproductive success of captively reared Chinook salmon and developing methods to correct deficiencies in maturational development. The ISAB concluded that "…supplementation be implemented in an experimental adaptive management framework." This project provides critical information for determining the benefits and risks of current captive broodstock and conservation hatchery practices. The direct linkages with the captive broodstock projects through the Technical Oversight Committee Process ensures that captive broodstock programs have the latest and best scientific information available to adaptively manage the programs.

The project addresses the need stated in the NWPPC 2000 Fish and Wildlife Program that fish reared in hatcheries for the purpose of recovery clearly benefit the population. The research project benefits the Fish and Wildlife Program by providing scientifically based recommendations on how best to culture and reintroduce salmon for restoration purposes.

The 2004 Updated Proposed Action for the FCRPS Biological Opinion Remand identifies two hatchery strategies: 1) implementation of a safety-net program to avoid extinction, and 2) reduce potentially harmful effects of artificial production to aid recovery through hatchery reform. These strategies will continue to rely heavily on the research results generated by the captive broodstock research project. The project will continue to guide the methods of intervention, culture, and reintroduction for safety-net programs.

1994-033-00 - Fish Passage Center (Expense) Pacific States Marine Fisheries Comm

Description: Provide the fishery agencies and tribes with technical expertise regarding hydrosystem operations, analysis of smolt monitoring data, for daily, weekly and monthly fish passage management decisions, and regional fish passage data base management.

Consistency with subbasin plans

The FPC project is consistent and contributes value added to all sub-basin plans that enhance habitat and or hatcheries, to increase anadromous fish production from that basin. The SMP data and FPC analysis will provide valuable data and information back to each sub basin regarding the downstream passage characteristics of the particular stocks of anadromous fish in each subbasin.

Addresses subbasin plan priorities

The SMP and FPC do not conflict with any priorities in any sub basin plan upstream of Bonneville Dam and the SMP and FPC can contribute valuable information back to each sub basin as they begin to evaluate the benefits of their sub basin activities, regardless of the priority assigned within each subbasin of evaluation of benefits of activities.

1996-005-00 - ISAB (Expense) NPCC

Description: Provide independent scientific advice and recommendations on issues related to regional fish and wildlife recovery programs under the Northwest Power Act and the Endangered Species Act.

Consistency with subbasin plans

In 2004, the ISRP and ISAB reviewed the draft subbasin plans for their scientific soundness and consistency with the Council's Fish and Wildlife Program and the Subbasin Planning Technical Guide. In FY06, the ISAB will likely participate in reviews of Council efforts to establish provincial objectives and related NMFS TRT efforts that should inform implementation and future revision of subbasin plans.

Addresses subbasin plan priorities

See above.

1996-019-00 - Technical Management Team (Tmt (Expense) U of W

Description: Implement certain non-discretionary actions to provide single-point, Internet-based access to a subset of information to guide and support BPA's independent decisions pertaining to its responsibilities under the Power Act and Endangered Species Act

Consistency with subbasin plans

This project is not directly related to a specific subbasin plan, but the data integration and analysis tools do assist with subbasin planning.

Addresses subbasin plan priorities

1996-020-00 - Pit Tagging Spring/Summer Chin (Expense) Pacific States Marine Fisheries Comm

Description: Adult and juvenile PIT tag recovery data are analyzed to compare survival estimates for transported fish of known origin, downriver stocks, wild and hatchery transported fish and fish handled and not handled at dams.

Consistency with subbasin plans

The CSS study is consistent with sub-basin plans for tributaries above Bonneville Dam providing valuable data to sub basin entities regarding the migration survival and smolt to adult returns of groups' Chinook salmon from their sub basins. This provides value added to the sub basin plans particularly as it applies to the assessment of benefits of the habitat, hatchery and other sub-basin projects for anadromous fish.

Addresses subbasin plan priorities

The CSS study represents and reflects the individual priority that each sub-basin has placed upon evaluating the benefits of sub basin projects to increased production of anadromous fish.

1996-020-00 - Pit Tagging Spring/Summer Chin (Expense) Pacific States Marine Fisheries Comm

Description: Adult and juvenile PIT tag recovery data are analyzed to compare survival estimates for transported fish of known origin, downriver stocks, wild and hatchery transported fish and fish handled and not handled at dams.

Consistency with subbasin plans

This project is part of the PIT tagging Comparitive Survival Study (1996-020-00) conducted by PSMFC/FPC which falls within the systemwide subbasin plan and is an integral part of the ongoing fish passage and smolt monitoring program.

Addresses subbasin plan priorities

1996-021-00 - Gas Bubble Disease Mon & Resea (Expense) Alec Maule

Description: Provide support for the Smolt Monitoring Program (SMP) monitoring juvenile salmonids for signs of gas bubble disease. Activities include (1) care and maintainence of equipment, (2) training, and (3) QA/QC

Consistency with subbasin plans

work not related to subbasin plan

Addresses subbasin plan priorities

work not related to subbasin plan

1996-067-00 - Manchester Spring Chinook Capt (Expense) NOAA Fisheries

Description: Rear Snake River spring/summer chinook salmon captive broodstocks from Idaho's Salmon River sub-basin and Oregon's Grande Ronde River sub-basin. Provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of these ESA-listed stocks.

Consistency with subbasin plans

Salmon Subbasin Plan consistency: Aquatics Objectives 1B, Strategies 1B2 through 1B3 (pg 21) and 2A, Strategies 21A, 2A2, 2A5 (pgs 23 and 24): The project is using artificial propagation and innovative techniques to meet the goals identified in Table 6 of the Salmon Subbasin Plan. The project is applying safety net hatchery intervention to meet interim abundance and delisting goals. These programs provide the gene conservation measures needed to meet the Salmon subbasin's plan's goal of preventing irreversible loss of genetic diversity.
Grande Ronde Subbasin Plan consistency: 5.2.2 Fish Production /Population Strategies (pg 264) and Fish Production Goals (Section 3.23.4.2 pg 86-94). The Manchester seawater rearing project plays a key role in Grande Ronde spring Chinook salmon captive broodstock program (pgs 90-92) efforts to restore Chinook salmon populations in the basin. In addition, the Manchester captive broodstock component plays a key role in the subbasin plan for supplying native broodstock for the NE Oregon Hatchery conservation program (Table 37 pg 88).
Updated Propose Action for the FCRPS BiOp: Hatchery Actions (pg 66) Continued funding of the Grand Ronde river and Salmon River safety net programs for Snake River spring/summer Chinook is called for.
The 2004 FCRPS BiOp (pg 6-66)concurs with the above UPA and determined that the safety-net program for this ESU is effective at reducing the short-term risk of extinction.
Other Plans: The use of captive broodstocks as an artificial propagation tool to aid in the recovery of anadromous runs of Snake River chinook salmon is an action called for by many objectives and goals of the NWPPC's Salmon Subbasin Summary (Mountain Snake Province), Grande Ronde Subbasin Summary (Blue Mountain Province), Artificial Propagation Summary for the Mainstem/Systemwide Province, and the 2000 Columbia Basin Fish and Wildlife Program.

Addresses subbasin plan priorities

The Salmon Subbasin Plan does not provide Aquatic Prioritizations (see section beginning on page 153). The Grande Ronde Subbasin Plan does not rank its Fish Production/Population Strategies Priotorizations (pg 264-265). This subbasin plan does call out the Manchester Spring/Summer Chinook project in its Production priorities (Chinook Broodstock Strategy and Management, pgs 92-93) as a key supplier of broodstock for the Northeast Oregon Hatchery (pgs 87-88) and Grande Ronde Endemic Supplementation program (pgs 89-92).

1997-023-00 - Independent Scientific Review (Expense) Pacific Northwest Electric Power

Consistency with subbasin plans

In 2004, the ISRP and ISAB reviewed the draft subbasin plans for their scientific soundness and consistency with the Council's Fish and Wildlife Program and the Subbasin Planning Technical Guide. In FY06, the ISRP will likely review proposals/programs intended to implement the subbasin plans.

Addresses subbasin plan priorities

The ISRP reviews of proposals submitted to implement subbasin plans should help ensure that subbasin plan priorities are being implemented in a scientifically sound manner.

1997-024-00 - Avian Predation On Juvenile Sa (Expense) OSU - Contract Administration

Description: Develop a management plan to reduce avian predation on juvenile salmonids. Implement chosen management options and evaluate their efficacy through continued monitoring of smolt losses to birds.

Consistency with subbasin plans

Work not related to subbasin plan; part of Mainstem/Systemwide.

Addresses subbasin plan priorities

Work not related to subbasin plan; part of Mainstem/Systemwide.

1998-004-01 - Columbia Basin Bulletin (Expense) Intermountain Communications

Description: Delivers by email to policymakers, stakeholders, and the public a weekly electronic newsletter containing objective, summary information about Columbia Basin fish and wildlife issues.

Consistency with subbasin plans

The Columbia Basin Bulletin is a Mainstem/Systemwide Province project and is not related to a subbasin plan.

Both the Northwest Power Act and the Northwest Power and Conservation Council’s Fish and Wildlife Program stress the need for public education, public outreach, and public involvement. The Columbia Basin Bulletin is a public information tool that meets that mandate in a cost-efficient manner.

Federal Agencies, too, stress that information management and coordination will play a key role in the success of Council and federal recovery efforts. Information sharing and coordination is a key component of an Adaptive Management approach to implementation of Council and Federal programs.

In addition, the Biological Opinion for the FCRPS emphasizes broad stakeholder participation in habitat restoration to “engender a broadly supported, unified effort.”

Addresses subbasin plan priorities

1998-031-00 - Implement Wy-Kan-Ush-Mi Wa-Kis (Expense) Columbia River Inter-Tribal Fish Co

Description: Track and coordinate tribal watershed projects, coordinate habitat improvements with fish production, conduct and coordinate watershed assessment, design monitoring plans, and develop public outreach and education on watershed restoration.

Consistency with subbasin plans

Although this is a Coordination/Data Management project and doesn't have a direct relationship to a specific subbasin plan we feel that this project has a relationship to all of the Columbia Basin plans to a degree. CRITFC will be involved with the subbasin plan roll-up process, the implementation of the plans, identifying the linkages of the plans with other processes such as the 1855 treaties, US vs. OR, the Northwest Power Act and the Pacific Salmon Treaty, development of the recovery plans using the AHA model, the PNAMP group, and continuing to develop cost share/partnership opportunities with the Tribes.

Addresses subbasin plan priorities

Everything stated above are in some way subbasin plan priorities of all of the plans. All of the work under this project relates to the CRITFC tribal restoration plan "Wy-Kan-Ush-Mi Wa-Kish-Wit", the 1855 Treaties, outcomes out of US vs. Oregon, the Northwest Power Act, the Pacific Salmon Treaty and the Council's 2000 Fish and Wildlife Program.

1999-003-01 - Salmon Spawning Below Lower Co (Expense) Pacific Northwest National Laborator

Description: Monitor, protect, and enhance the spawning populations of fall chinook and chum below Bonneville Dam. Search for evidence of fall chinook spawning below The Dalles, John Day, and McNary dams.

Consistency with subbasin plans

The project is consistent with and implements Habitat Strategies EH.S4 and Habitat Measures EH.M4 (Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan Volume 1 – Regional Plan pages A-245 and A-246), Hydropower Strategies D.S1 and Hydropower Measures D.M2 (Regional Plan page A-248), and Harvest Measures F.M5 (Regional Plan page A-251). Further, the supplement to the Lower Columbia River Mainstem management plan identifies the two most important strategies (page 2-1):

1. Reduce the effects of the Columbia River hydrosystem.
2. Protect and restore habitat

The supplement also identified several key physical objectives in support of each strategy, including "Maintain favorable water flow and temperature throughout mainstem incubation, spawning, and migration periods" (page 2-6), and "Protect existing rearing and spawning habitat to ensure no further net degradation" (page 2-9). While not yet accepted, the Lower Mid Columbia Mainstem/Habitat Subbasin plan addresses Fall Chinook needs. This plan however does not include provisions for the mainstem spawning fall Chinook discovered spawning below The Dalles and McNary Dams in November and December of 2004. This new research has not yet been published and size of the populations have not yet been quantified. The Lower Mid Columbia Subbasin Plan does mention 1043 redds estimated to have been excavated in 2003 but does not include any provisions to protect or enhance the population.

The projects objectives are closely related to the management plan strategies and objectives identified above, and will continue to address critical data gaps that must be filled in order for the subbasin management plans to effectively implement strategies that will rebuild and maintain healthy fall Chinook and chum salmon populations.

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan and is directly referred to in the plan on page A-248, under D.M. "Fall Chinook and chum salmon have recently been observed spawning naturally in the Columbia River mainstem below Bonneville Dam; these spawning aggregations represent an important component of natural production in the lower river. Fluctuating water levels could be negatively impacting this population through redd dewatering, lack of access to prime spawning areas, and stranding of juveniles. It has become apparent that data concerning this population is necessary to determine how flows and temperatures might effect this population and to develop management plans to protect these stocks.

This project addressed RPA Action 15, 156, and 199 under the NOAA Fisheries 2000 FCRPS BiOp and would continue to contribute to the ESA commitments made by BPA and the FCRPS Action Agencies under NOAA Fisheries' revised 2004 BiOp. The objectives of this project are consistent with the near-term RM&E hydrosystem targets included in the FCRPS Action Agencies' 2005-2007 Implementation Plan (IP). The project is specifically listed for continued implementation in Table 22 of the IP and would help provide status monitoring for restoring Columbia River chum and fall Chinook salmon spawning habitat.

1999-003-01 - Salmon Spawning Below Lower Co (Expense) Pacific Northwest National Laborator

Description: Monitor, protect, and enhance the spawning populations of fall chinook and chum below Bonneville Dam. Search for evidence of fall chinook spawning below The Dalles, John Day, and McNary dams.

Consistency with subbasin plans

The project is consistent with and implements Habitat Strategies EH.S4 and Habitat Measures EH.M4 (Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan Volume 1 – Regional Plan pages A-245 and A-246), Hydropower Strategies D.S1 and Hydropower Measures D.M2 (Regional Plan page A-248), and Harvest Measures F.M5 (Regional Plan page A-251). This project strives to increase understanding of influences on salmonids by operations of the Columbia River hydro system.

Addresses subbasin plan priorities

The project accomplishes priority work under the subbasin plan and is directly referred to in the plan on page A-248, under D.M. "Fall Chinook and chum salmon have recently been observed spawning naturally in the Columbia River mainstem below Bonneville Dam; these spawning aggregations represent an important component of natural production in the lower river. Flow from Bonneville prevents dewatering and decreased flows in redds during incubation, as well as increasing the potential spawning sites available for adults.

2000-017-00 - Recondition Wild Steelhead Kel (Expense) Columbia River Inter-Tribal Fish Co

Description: Develop and test methods to recondition steelhead kelts and assist fishery managers in implementing these methods to help rebuild wild populations throughout the Basin.

Consistency with subbasin plans

This project was included in the mainstem and systemwide provincial review and is included in the revised Biop. The concept of reconditioning kelt steelhead is mentioned in several subbasin plans and this project is specifically cited in the following subbasin plans.
1. Columbia Lower Mid Subbasin Plan --outlines strategies for improving the survival of steelhead kelts, mature, spawned out fish that have the potential to spawn again. p.315
2. Columbia Upper Mid Subbasin Plan -- pg 70
3. Deschutes Subbasin Plan -- pg 5-6
4. Entiat Subbasin Plan --
5. Upper Columbia Basin pg 56,60
6. Hood River Subbasin Plan
7. Klickitat Subbasin Plan pg 347-348
8. Methow Subbasin Plan pg 362
9. Okanogan Subbasin Plan pg 116
10. Umatilla Subbasin Plan pg G-10
11. Walla Walla Subbasin Plan pg 32
12. Yakima Subbasin Plan pg chapter 2-193

Addresses subbasin plan priorities

This work is a high priority in at least __ subbasin plans including
1. Rock Creek pg 347-348 in the Columbia Lower Mid Subbasin Plan.
2. Okanogan Subbasin pg 63-64; 328; 331; 404
3. Klickitat Subbasin pg 347-348
4. Yakima Subbasin chapter 4-36.

2001-003-00 - Adult Pit Detector Installatio (Expense) Pacific States Marine Fisheries Comm

Description: Provides for procurement of PIT tag interrogation system electronic components and labor for assembly and installation in adult fish ladders at Ice Harbor, Lower Granite and the Dalles in FY02/03 and at John Day, Lower Monumental and Little Goose in FY03.

Consistency with subbasin plans

This work is not related to a specific subbasin plan. This work is required in order to successfully implement many subbasin plans.

There are many references in "Biological Opinion on Remand, Appendix G, Research/Monitoring Actions Persuant to the 2004 FCRPS Biological Opinion" to data from PIT Tags and specifically PTAGIS. (See http://www.salmonrecovery.gov/R_biop_final.shtml).

Addresses subbasin plan priorities

Based upon the reliance on PIT tags as described in the BiOp document referenced above, and based upon the fact that over 80 FWP projects rely on reliable interrogation systems and database management systems for PIT tag mark/recapture data storage and retrieval, that PTAGIS is a priority project.

2001-046-00 - Applied Fish Science Center (Capital) Columbia River Inter-Tribal Fish Co

Description: To enhance the capacity for critical research and development of supplementation methods and consequent links to natural productivity, leading to HGMPs, Benefit/Risk analyses and population management plans.

Consistency with subbasin plans

Please see "other comments"

Addresses subbasin plan priorities

Please see "other comments"

2001-055-00 - Salmonid Response To Fertiliza (Expense) NOAA Fisheries

Description: Experimentally evaluate the effects of marine derived nutrients on populations of Snake River spring/summer chinook salmon using three enhancement strategies: carcasses, carcass analogs, and inorganic nutrients

Consistency with subbasin plans

NA - funded before Subbasin plans were written.
However, some subbasin plans include implememntation and/or evaluations of nutrient additions that will draw upon the results of these studies.

Addresses subbasin plan priorities

This was an innovative project and is not part of any subbasin plan.

2002-013-01 - Water Entity (Rpa 151) Nwppc (Expense) National Fish & Wildlife Foundation

Consistency with subbasin plans

The CBWTP is implementing water right transactions throughout the Columbia Basin, consistent with 16 different subbasin plans in which local entities are developing water transactions. Given the character limit for this text box, it is not possible to fully demonstrate how this project is consistent with each of the 16 subbasin plans. These subbasin plans describe inadequate streamflows as a limiting factor and water right transactions as a response strategy. For example, Methow Subbasin Plan (pg. 355), 5.7.1 Spring Chinook, Objective 4: Strategy 8 - Increase and require spring flow augmentation; Okanogan Subbasin Plan (pg. 37), Assessment Unit: O4—Loup Loup, Strategy 1-1E - Pursue methods to acquire permanent water rights for in-stream use (i.e. water banking, increasing storage capacity, easement purchase and trust water donations); John Day Subbasin Plan (pg. 257), Section 5.2.2.4., Strategies C1 and C2--In-stream water right leases and acquisitions, and irrigation efficiency projects; Grande Ronde Subbasin Plan (pg. 262), Section 5.2.1.2.: Habitat Objectives and Strategies--Low Flow Condition strategy, Reduce irrigation withdrawals through an integrated program of irrigation efficiency improvements, diversion point consolidations, water right leasing and water right purchase, where applicable with willing landowners; Salmon Subbasin Plan, Aquatic Objective 9A: By 2010, complete stream reach-specific designations (and maintenance) of streamflows that are adequate for life history stages of focal species, and are sufficient for providing channel maintenance, 9A2: Lease or acquire water rights, 9A5: Use existing water banks to secure flows in appropriate areas, 9A6: Provide adequate flows to support spawning and rearing life stages of focal species. Consistency to the subbasin plans for muc of Montana is not possible due to the lack of subbasin plans for most areas. We have information demonstrating project consistency with the other 12 subbasin plans in which water transactions are in development. This information is available upon request.

Addresses subbasin plan priorities

To varying degrees, the 16 subbasin plans prioritize water right transactions as key response to the limiting factor of inadequate streamflows. Again, given the character limit for this text box, it is not possible to fully demonstrate how this project is a priority within each of the 16 subbasin plans. Examples: John Day Subbasin Plan (pg. 251), Table 75: Ranking of strategies--Improving in-stream flow ranked 3rd, improving fish passage ranked 2nd; Umatilla Subbasin Plan (pg. 5-29 to 5-30), identifies Birch Creek as a priority geographic area for Steelhead species. Priority management strategies in the area include: "Purchase water rights from willing sellers," (ranked 2nd) and "Increase water conservation and irrigation efficiency" (ranked 3rd); Walla Walla Subbasin Plan (pg. 10), Section 1.3: Imminent Threat-type projects are a first priority and "Dry Stream Reaches" is one of the three identified Imminent Threats; Entiat Subbasin Plan (pg. 175), Section 7.6.3: Recommendations for Management--Strategies, Objectives, and Near-term Opportunities include reduce impact, and increase efficiency of water withdrawal during August and September by 2020. Transactions completed under the CBWTP are a priority as they concentrate on increasing flow and also affect fish passage depending on the specific agreement. We have information demonstrating project consistency with the other 12 subbasin plans. This information is available upon request.

2002-032-00 - Fall Chin Passage Lower Granit (Expense) USFWS

Description: Describe passage timing, genetic lineage, scale patterns, and locations of fall chinook salmon that hold over in Lower Granite Reservoir during the winter.

Consistency with subbasin plans

Project 200203200 is system-wide in scope. It is listed specifically in the 2005―2007 Implementation Plan for the Federal Columbia River Power System Endangered Species Act Updated Proposed Action.

Page 41; Table 2: Describe passage timing, genetic lineage, scale patterns, and locations of fall Chinook salmon that hold over in Lower Granite Reservoir during the winter.

Addresses subbasin plan priorities

Project 200203200 is system-wide in scope and not specifically related to a subbasin plan.

2003-005-00 - Hatchery & Genetics Mgmt Plan (Expense) NOAA Fisheries

Consistency with subbasin plans

Production and approval of HGMPs and prioritization of actions is consistent with the intent of both subbasin plans and the Artificial Production Review Evaluation (APRE).

Addresses subbasin plan priorities

Priorities (for hatchery changes) both within and among subbasins will be taken into account when NPCC/BPA recommends changes for any hatchery program.

2003-009-00 - Canada USA Shelf Salmon Survival (Expense) Canada Dept of Fisheries and Ocean

Consistency with subbasin plans

The research proposed in the present request for funding renewal in Fiscal Year 2006 is a continuation of a research and monitoring program focusing on the effects of ocean conditions and climate on the distribution, migration, growth, and production of Pacific salmon. As such, this work is not related to a subbasin plan, but falls rather under the Ocean Province of the Mainstem/Systemwide.

In the 2000 Fish and Wildlife Program, the Council considered that the ocean environment was an integral component of the Columbia River ecosystem and recognized that marine ecosystems were variables in space and time. The timing of ocean migration also varies among salmon populations, which expose them to different ocean conditions. The Council concluded that a better understanding of the conditions experienced by salmon in the ocean environment and of the factors that are critical to their survival was required to provide insight on the actions that can be undertaken inland and in freshwater to enhance salmon returns to the Columbia River. Further, the results obtained from studying linkages between salmon survival and ocean variability can be directly incorporated into stock assessment to forecast salmon return and can help fishery managers to provide defensible harvest policies while preserving biodiversity and the productive capacity of ecosystems.

Addresses subbasin plan priorities

The research proposed in the present request for funding renewal in Fiscal Year 2006 is a continuation of a research and monitoring program focusing on the effects of ocean conditions and climate on the distribution, migration, growth, and production of Pacific salmon and is consistent with the primary strategy of the Biological Objectives on Ocean Conditions (2000 Fish and Wildlife Program, section C.8). It is also consistent with the Biological Opinion on Research, Monitoring and Evaluation which emphasize the necessity of "establishing causal relationships between habitat attributes and population response" (2000 Biological Opinion, section 9.4.2.8) and with RPA Action Item 190 and 195 (2000 Biological Opinion, section 9.6.5.3.5.1 and 9.6.5.3.6).

2003-017-00 - Integrated Status/Effect Progr (Expense) NOAA Fisheries

Consistency with subbasin plans

Subbasin plans call for status and trends monitoring of salmonid habitat and populations. This project provides these data for multiple subbasins.

Addresses subbasin plan priorities

Subbains plans prioritize restoration strategies, this project provides data to assess effect of restoration strategies in multiple subbasins.

2003-036-00 - Cbfwa Monitor/Eval Program (Expense) CBFWA

Consistency with subbasin plans

CSMEP does not directly address a specific subbasin plan, but its results will be directly applicable to all subbasin plans. Templates are being developed by focusing on the Lower Snake River Basin. CSMEP biometricians will review the subbasin plans for this area for guidance on the nature of the effectiveness monitoring templates they design (e.g., for habitat action effectiveness evaluation).

A direct benefit for subbasin planning is the growing CSMEP data inventory meta-database. This meta-data set identifies fish monitoring data and CSMEP biometricians have or will reviewed it for its strengths and weaknesses for answering monitoring questions.

CSMEP is intended to provide a collaborative integration of M&E activities across the Basin, in response to both the NOAA-F and USFWS biological opinions, as well as the NPCC Fish and Wildlife Program. This requires close co-ordination with many programmatic entities in the development of annual and quarterly work plans, and adaptation to the constantly evolving M&E activities of other entities. These programmatic entities include:

• Pacific Northwest Aquatic Monitoring Partnership (PNAMP) provides a forum for coordinating monitoring activities and developing common monitoring approaches.
• NPCC F & W Program representatives focussed on M & E, sub-basin planning and data management (e.g. North-west Environmental Data Network).
• RME Workgroups responsible for M & E and data management in the 2000 NMFS Biological Opinion on the FCRPS, and the Federal Caucus' Basinwide Recovery Strategy.
• NOAA-F TRTs involved with recommending M & E for both status and action effectiveness.
• USFWS RMEG (Recovery, Monitoring and Evaluation Group), which is developing M & E strategies to respond to the USFWS Biological Opinion on bull trout, and bull trout recovery plans.
• Sub-basin planning efforts, particularly as related to M & E efforts.
• Stock assessment work by groups concerned with harvest (e.g. U.S. v. Oregon TAC).
• Groups conducting effectiveness assessments of the effects of habitat restoration actions on survival (e.g. EDT modeling efforts, NOAA-Fisheries).
• Tribal groups actively involved with M&E processes, including CRITFC member tribes (Nez Perce, Warm Springs, Umatilla, Yakama) and the UCUT (Upper Columbia United Tribes) such as the Colville Confederated Tribes.

Addresses subbasin plan priorities

2003-038-00 - Eval Restor Of Snake R Chinook (Expense) US DOE

Consistency with subbasin plans

While this project focuses on fall Chinook salmon spawning habitat in the mainstem lower Snake River, the project is not related to the Lower Snake Subbasin Plan. The authors of the Lower Snake Subbasin Plan determined that, "Planning strategies to address mainstem issues are considered beyond the scope of this subbasin plan, and will be addressed through other forums, e.g. mainstem amendment process" (Lower Snake Subbasin Plan Executive Summary, pg. 2). This project is consistent with the mainstem habitat biological objectives and priorities set forth in the Council's 2003 Mainstem Amendments to the Columbia River Basin Fish and Wildlife Program. This project is evaluating the restoration potential of Snake River fall Chinook salmon spawning habitat, which directly aligns with the Mainstem Amendments Plan that "…emphasizes protecting and restoring mainstem spawning and rearing habitats…" (pg. 11) and contains an objective to, "Increase the amount of spawning habitat for fall Chinook core populations in the lower and mid-Columbia area and in the lower Snake area" (pg. 12).

This project addressed NOAA's 2000 FCRPS BiOp RPA 155, and would continue to contribute to the ESA commitments made by BPA and the FCRPS Action Agencies under NOAA's revised 2004 BiOp. This project is identified in the Crosswalk of Draft UPA (August 2004, page 30) as the project that is implementing RPA 155. The objectives of this project are consistent with and are integral components for implementing the 2005-2007 Final Implementation Plan for the FCRPS Updated Proposed Action (May 2005). This project is specifically identified in the Implementation Plan (page 41, Table 22) as one of the hydrosystem RM&E projects that the Action Agencies will implement in the 2005-2007 timeframe to address their UPA commitments. Continuation of this project would help reduce critical hydrosystem uncertainties and provide status monitoring for restoring Snake River fall Chinook salmon spawning habitat.

Addresses subbasin plan priorities

The objectives of this project are well aligned with the mainstem habitat biological objectives and priorities set forth in the Council's 2003 Mainstem Amendments to the Columbia River Basin Fish and Wildlife Program (pgs. 11-12). Similarly, the Council's 2003 Mainstem Amendments adopts the actions of this project as one of the specific strategies for mainstem habitat improvements (page 17).

This project accomplishes high priority work under the Action Agencies Final Updated Proposed Action for the FCRPS BiOp Remand (24 November 2004). The Final UPA identifies "Restoration potential of Snake River fall Chinook salmon spawning habitat" as one of the priorities that the Action Agencies will continue to fund as part of their "RME Strategy 3: Critical Uncertainties Research" (page 101).

2003-041-00 - Eval Salmon Thru Snake R Dams (Expense) NOAA Fisheries

Consistency with subbasin plans

This work is not related to any subbasin plan.

Addresses subbasin plan priorities

This work is not related to a subbasin plan.

2003-050-00 - Eval Of Reprod Of Steelhead (Expense) U of W

Consistency with subbasin plans

work not related to a subbasin plan - work is related to Mainstem and Systemwide Province Draft Artificial Production Program Summary for the Northwest Power Planning Council (CBFWA 2002)

Addresses subbasin plan priorities

2003-054-00 - Repro Of Steelhead In Hood Riv (Expense) OSU

Consistency with subbasin plans

This project is identified as having applicability system wide, rather in one particular subbasin. However, it is also a key component of the Research, Monitoring and Evaluation objective of the Hood River Subbasin Plan (section 6.5, see especially p. 200-201). A key goal of the Hood River Production Program (HRPP) is to use a hatchery supplementation strategy to increase natural production of summer and winter steelhead (e.g section 6.3.1 p. 194-195). The supplementation strategy is to be applied through 2010 when the strategy will be evaluated in order to determine if it has worked as planned and should be continued. Our data are providing a direct assessment of the production attributable to added hatchery fish. These data will provide an unambiguous test of the hypothesis that adding single-generation hatchery fish to a wild fish population provides a demographic boost to the wild population. Our preliminary data suggest the strategy has been successful in the case of the winter run (i.e. fitness of single-generation hatchery fish was similar to that of wild fish). We still need several more years of data on returning adults to assess whether the same is true for the summer run supplementation program, and to assess the year-to-year variability of our results. We also need to carry the study into the F2 generation to determine if a multi-generation supplementation strategy is advisable or whether it should be stopped after one generation.

Addresses subbasin plan priorities

This research project was originally solicited through a BPA request for studies to implement reasonable and prudent alternatives Action 182 under NOAA Fisheries' 2000 Biological Opinion on the operation of the Columbia River power system (the need to determine the relative reproductive success of hatchery-origin and natural origin anadromous salmonids in the Columbia basin). This genetics project was recommended for funding with high rank because the results will be of general applicability to supplementation programs throughout the basin, not just in the Hood River. Thus, although our research is consistent with, and a priority under, the Hood River subbasin plan, it is also a priority RM&E project for predicting the success of supplementation studies systemwide.

2003-060-00 - Eval Repro Success Snake Rvr C (Expense) WDFW - Olympia

Consistency with subbasin plans

This research project relates directly to components of the Snake River Hells Canyon Subbasin Management Plan (May 2004). In this plan, Objective 2A, strategies 2A4 (continue to develop stock-specific knowledge of interactions between hatchery and wild fish), 2A7 (maximize natural and artificial production effectiveness in the subbasin) and 2A8 (monitor and evaluate effectiveness of implementation of artificial and natural production strategies; see Sections 5, pg.18 & 6,Tables 7 & 8, pgs. 59 & 63) are specifically addressed by our study design, and results will guide actions needed to achieve strategy goals. This project also directly addresses fish enhancement objectives and strategies to achieve them presented in the Lower Snake Mainstem Subbasin Plan (May 2004; see pgs. 136-137.)

Addresses subbasin plan priorities

The Snake River Hells Canyon Subbasin Management Plan, Section 8.1, pg 79, states that: "Aquatic concerns in mainstem habitats are collectively considered a high priority for protection and improvement of current conditions to enhance fish and wildlife status in the subbasin. Mainstem habitats are used by all focal aquatic species and are the primary habitats used by all life history stages of two focal aquatic species (fall chinook and white sturgeon). Based on Technical Team discussions regarding the importance of mainstem habitats to all species and on the interconnectedness of limiting factors within those habitats, no relative priorities have been assigned to mainstem areas or aquatic limiting factors within mainstem habitats." Goals for our project include understanding and improving productivity of fall Chinook in mainstem habitaits. Our project is also concerned with conserving fall Chinook genetic diversity, which is a factor in achieving long-term sustainability of the population in the context of habitat variability.

2003-062-00 - Eval Repro Success Kelt Steel (Expense) Columbia River Inter-Tribal Fish Co

Consistency with subbasin plans

This project was included in the mainstem and systemwide review and is included in the revised Biop. The concept of reconditioning kelt steelhead is mentioned in several subbasin plans and this project is specifically cited in the following subbasin plans.
1. Columbia Lower Mid Subbasin Plan --outlines strategies for improving the survival of steelhead kelts, mature, spawned out fish that have the potential to spawn again. p.315
2. Columbia Upper Mid Subbasin Plan -- pg 70
3. Deschutes Subbasin Plan -- pg 5-6
4. Entiat Subbasin Plan --
5. Upper Columbia Basin pg 56,60
6. Hood River Subbasin Plan
7. Klickitat Subbasin Plan pg 347-348
8. Methow Subbasin Plan pg 362
9. Okanogan Subbasin Plan pg 116
10. Umatilla Subbasin Plan pg G-10
11. Walla Walla Subbasin Plan pg 32
12. Yakima Subbasin Plan pg chapter 2-193

Addresses subbasin plan priorities

The project is a priority in the Okanogan, Yakima, and Klickitat Subbasin Plans. This project will provide information that is necessary for evaluation prior to full scale implementation of artifical kelt steelhead reconditioning.

2003-063-00 - Repro Success Abernathy Creek (Expense) USFWS

Consistency with subbasin plans

This project is not related to a subbasin plan. However, this project's goal is to "Determine the natural reproductive success of natural-origin and hatchery-origin steelhead in Abernathy Creek, WA". This proposed work responds directly to the Federal Columbia River Power System, RPA Action No. 182 which reads as follows: "The Action Agencies and NMFS shall work within regional priorities and congressional appropriations processes to establish and provide the appropriate level of FCRPS funding for studies to determine the reproductive success of hatchery fish relative to wild fish. At a minimum, two to four studies shall be conducted in each ESU. The Action Agencies shall work with the Technical Recovery Teams to identify the most appropriate populations or stocks for these studies no later than 2002. Studies will begin no later than 2003."
In addition, this project is consistent with comments regarding artificial production raised in Columbia River Basin Fish and Wildlife Program, Council document 2000-19 which states that: "the critical issue that the region faces on artificial production is whether artificial production activities can play a role in providing significant harvest opportunities throughout the basin while also acting to protect and even rebuild naturally spawning populations. Artificial production must be used in a manner consistent with ecologically based scientific principles for fish recovery. Fish raised in hatcheries for harvest should have a minimal impact on fish that spawn naturally. Fish reared in hatcheries or by other artificial means for the purpose of supplementing the recovery of a wild population should clearly benefit that population."

Addresses subbasin plan priorities

This project is not related to a subbasin plan. However, this project's goal is to "Determine the natural reproductive success of natural-origin and hatchery-origin steelhead in Abernathy Creek, WA". This proposed work responds directly to the Federal Columbia River Power System, RPA Action No. 182 which reads as follows: "The Action Agencies and NMFS shall work within regional priorities and congressional appropriations processes to establish and provide the appropriate level of FCRPS funding for studies to determine the reproductive success of hatchery fish relative to wild fish. At a minimum, two to four studies shall be conducted in each ESU. The Action Agencies shall work with the Technical Recovery Teams to identify the most appropriate populations or stocks for these studies no later than 2002. Studies will begin no later than 2003". In addition, this project may help to answer questions regarding artificial production raised in Columbia River Basin Fish and Wildlife Program, Council document 2000-19 which states that: "Fish reared in hatcheries or by other artificial means for the purpose of supplementing the recovery of a wild population should clearly benefit that population. The science on this issue is far from settled. Improperly run, artificial production programs can do damage to wild fish runs. However, when fish runs fall to extremely low levels, artificial production may be the only way to keep enough of that population alive in the short term so that it has a chance of recovering in the long term. What is not so clear is the extent to which artificially produced fish can be mixed with a wild population in a way that sustains and rebuilds the wild population."
And "Artificial production must be implemented within an experimental, adaptive management design that includes an aggressive program to evaluate the risks and benefits and address scientific uncertainties".

2003-114-00 - Acoustic Tracking For Survival (Expense) Kinatama Corp

Consistency with subbasin plans

This work is not related to a subbasin plan. It should be noted that the NWPPC has put significant effort into categorizing the freshwater habitat of the Columbia-Snake system into a series of provinces and sub-basins. However, an ocean province is lacking from this planning hierarchy, despite Columbia River salmon spending most of their life in the ocean, and salmon abundances being strongly controlled by events happening in the ocean.

Addresses subbasin plan priorities

There have been repeated directions by Congress to consider the effect of the ocean on salmon. In addition, several key priorities identified in the BiOP can only be addressed by the technical capabilities of the POST array. As salmon from all of the FCRPS subbasins migrate to sea and spend most of their life there, POST can apply equally well to all of them.

2004-002-00 - PNAMP (Expense) USGS

Consistency with subbasin plans

Addresses subbasin plan priorities

PNAMP is relevant to monitoring needs of all subbasin plans in that PNAMP strives to provide a forum for coordination of aquatic resource monitoring. To this end, PNAMP works to: improve communication between monitoring programs across state, tribal, and federal organizations.; improve scientific information needed to inform resource policy and management questions and decisions; seek efficiencies and cost-effectiveness across monitoring programs through compatible and cooperative monitoring efforts; promote science-based credibility of monitoring and assessment efforts; share resources and information between monitoring programs across state, tribal, and federal organizations.

Specifically, PNAMP strives to meet these goals by providing a forum for technical experts to come together to advance aquatic monitoring (PNAMP technical workgroups) and provide specific technical products (such as PNAMP guidance to NPCC 2004: “Considerations for Monitoring in Subbasin Plans from the Pacific Northwest Aquatic Monitoring Partnership”; projects such as watershed monitoring protocol comparison project).

PNAMP also relates to directives within the Council’s 2000 Fish and Wildlife Program regarding regional coordination of RME activities and is explicitly cited in the 2005 – 2007 Implementation Plan for the FCRPS ESA UPA as an important element of regional coordination of RME. PNAMP has also been cited by the Washington Governor’s Forum on Monitoring and the Oregon Plan Monitoring Team as an important element of regional coordination.

2005-002-00 - Lower Granite Adult Trap Modification (Capital) US Corps of Engineers

Consistency with subbasin plans

Work is not related to a subbasin plan. The modification of the Lower Granite Dam adult salmon/steelhead trap is an action in the Action Agencies' 2004 Updated Proposed Action for the FCRPS Biological Opinion Remand and an offsite artificial propagation measure in NOAA Fisheries' 2004 Biological Opinion: Consultation on Remand for Operation of the Columbia River Power System and 19 Bureau of Reclamation Projects in the Columbia Basin.

Addresses subbasin plan priorities

Please see comments above.

2005-002-00 - Operation of Lower Granite Trap O&M (Expense) NOAA Fisheries

Consistency with subbasin plans

Work not specifically related to a Subbasin Plan. This project is systemwide in scope.

This project (2005-002-00) is listed specifically in the 2005-2007 Implementation Plan for the Federal Columbia River Power System Endangered Species Act Updated Proposed Action, dated May, 2005 from the U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration, pages 37 and 38, Table 20.

"BPA and the Corps will fund their appropriate share of the annual operation and maintenance costs for the trapping program in 2005 and 2006, at current trap capacity. As soon as the trapping facility is expanded, possibly in 2006 but no later than 2007, BPA and Corps will fund their appropriate share of operation and maintenance costs of the expanded facility."

and

"Continue to fund operation and maintenance of the expanded adult trap facilities to maintain the biological benefits to the ESU, assuming the hatchery management actions associated with the benefits continue to be supported by the U.S. v. Oregon parties and NOAA Fisheries".

Addresses subbasin plan priorities

Work not specifically related to a Subbasin Plan. This project is systemwide in scope.

2005-011-00 - Federally Funded Hatchery Energy Efficiency Improvement BPA

Consistency with subbasin plans

NA

Addresses subbasin plan priorities

NA

2005-011-00 - Federally Funded Hatchery Energy Efficiency Improvement BPA

Consistency with subbasin plans

N/A

Addresses subbasin plan priorities

N/A

2005-xxx-x5 - Habitat Evaluation Project (Expense) CBFWA

Consistency with subbasin plans

This work is generally related to all subbasin plans in that terrestrial habitat projects identified in the plans will generate habitat unit (HU) credit towards BPA's mitigation obligation. The HEP team determines how much credit BPA receives for each project by conducting unbiased, independent, and consistent HEP surveys throughout the Region. This work is also consistent with the Council's 2000 Fish and Wildlife Program and is consistent with all MOAs/mitigation agreements between BPA and wildlife management entities, which stipulate that management entities will provide HU credits to BPA for mitigation projects involving terrestrial habitats.

Addresses subbasin plan priorities

This work is an integral part of all subbasin plan terrestrial habitat priorities in that BPA receives HU credit for all terrestrial habitat projects. As previously stated, The HEP team determines how much credit BPA receives for each project by conducting unbiased, independent, and consistent HEP surveys throughout the Region. This work is also consistent with the Council's 2000 Fish and Wildlife Program and is consistent with all MOAs/mitigation agreements between BPA and wildlife management entities, which stipulate that management entities will provide HU credits to BPA for mitigation projects involving terrestrial habitats.

1992-010-00 - Habitat Imprvmnt/Enhnmnt - For (Expense) Shoshone Bannock Tribe

Description: Provide conditions to maintain a self-perpetuating tribal subsistence and trophy trout fishery through implementation of habitat restoration, enhancement, and protection activities on the Fort Hall Reservation.

Consistency with subbasin plans

Project 92-10 BPA Fort Hall Stream Restoration is consistent with the plan and its strategies for aquatic resources starting on page 3-11 to 3-14 of the Plan.

Addresses subbasin plan priorities

Priority status for project 92-10 is demonstrated through the work of restoring and enhancing and protecting Yellowstone cutthroat habitat in the Upper Snake Basin. Also consistent with the vision of the Plan

1995-057-00 - S Idaho Wildlife Mitigation (Capital) IDFG; Shoshone-Bannock Tribes; Sh

Description: Protect, enhance, and maintain wildlife habitats to mitigate construction losses for Palisades, Minidoka, Anderson Ranch, and Black Canyon hydroelectric projects (a total of 52,292 unannualized HU). This project has been ongoing since 1997.

Consistency with subbasin plans

CITATIONS:
Chapter 4 Table 4.18 lists terrestrial biological objectives for the Owyhee subbasin including:
1. Identify parcels for acquisition or conservation easement
2. Identify sites for habitat enhancement activities
3. Protect 2500 HUs of wildlife habitat and associated aquatic habitat through fee-title acquisition or conservation easement
4. Protect 500 HUs of wildlife habitat and associated aquatic habitat through habitat enhancement activities

Chapter 4 pp422-423 and pp36-37:
4.3.2 Specific Approach for Implementation – Near Term (3-5 years) Objectives and Strategies
Near Term (2005-2007) Strategy 1: Continue implementation of ongoing projects.
1.1. Build on the strength of the objectives, strategies and actions incorporated into successful ongoing projects (2005-2007).

4.4.2.2.2 Riparian and Wetland Habitats (Ch 4 p115)
Problem 1. The loss and degradation of riparian and wetland areas in the Owyhee subbasin has negative effects on fish and wildlife species that utilize these habitats. Improper grazing, roads, and water use have been identified as the primary factors limiting the quality of this habitat type in the subbasin.
Objective 1.1. Minimize effects of improper grazing in riparian and wetland habitats.
Strategy 1.1.1.
3. Protect riparian and wetland habitat through land acquisition, conservation easements.

4.4.2.2.3 Shrub-steppe Habitat (Ch 4 p118)
Problem 2. Degradation, fragmentation, and loss of native shrub-steppe habitat in the Owyhee subbasin adversely affects associated terrestrial species. Improper grazing, fire, noise pollution, nonnative invasive plants and noxious weeds have been identified as the primary factors limiting the quality of this habitat type and terrestrial species in the subbasin.
Objective 2.1. Minimize impacts of improper livestock grazing to native shrub-steppe habitat and terrestrial species within the Owyhee subbasin.
Strategy 2.1.1. Implement various livestock grazing management actions appropriate to specific sites (refer to following bulleted list) to enhance shrub-steppe habitat conditions.

- Protect shrub-steppe habitat through land acquisition, conservation easements

Addresses subbasin plan priorities

Participants in the subbasin plan writing process were reluctant to prioritize projects; however, it was stressed that continuing ongoing BPA projects was a near term goal. SIWM has been a successful ongoing program in reducing BPA's wildlife HU debt.

1995-057-00 - S Idaho Wildlife Mitigation (Expense) IDFG

Description: Protect, enhance, and maintain wildlife habitats to mitigate construction losses for Palisades, Minidoka, Anderson Ranch, and Black Canyon hydroelectric projects (a total of 52,292 unannualized HU). This project has been ongoing since 1997.

Consistency with subbasin plans

This project is consistent with and implements biological objectives 1 through 4 on p.3-1; Riparian/Wetland objectives A-1 (p.3-14), strategies a, c, d, e, f, h, i, and j on pp.3-14 to 3-15; A-5 (p.3-18), strategies a, b, d, e, f, and g on pp. 3-18 to 3-19; D-1, strategy b on p. 3-20; E-1, strategies a and b on p. 3-21;

Open water/ponds objectives A-1, strategies b, c, f, and j on pp. 3-22 to 3-23; B-1, strategy a on pp. 3-23 to 3-24;

Shrub-steppe objectives A-1, strategies a and b on p.3-31; A-2 strategy a on p. 3-32; B-1, strategies a, b, and c on p.3-32.

Addresses subbasin plan priorities

The project accomplishes high-priority work under the Columbia Basin Fish and Wildlife Program and the subbasin plan, because this ongoing project fulfills legal obligations to protect, mitigate, and enhance wildlife and protect existing HUs on properties previously purchased with Council-approved BPA funding.

The prioritization framework of the draft Upper Snake Province subbasin plans is limited to establishing a process primarily to identify priorities for future mitigation projects, not ongoing projects. Regardless, the need and high-priority to protect previous mitigation investments is obvious.

1995-057-02 - S Idaho Wildlife Mitigation (Expense) Shoshone Bannock Tribe

Description: Protect, enhance, restore and maintain wildlife habitats to mitigate for construction losses at Palisades and Minidoka dams.

Consistency with subbasin plans

Consistent with plan to acquire and enhance wildlife habitat in Middle and Upper Snake.

Addresses subbasin plan priorities

Goals match plan priorities in maintaining and enhancing wildlife habit.