# Endangered Species Act 2001 Progress Report for the Federal Columbia River Power System

## Appendix C

### Tables of 2001 Actions

US Army Corps of Engineers
Northwestern Division

May 2002

## Table of Contents

## Appendix C - List of Actions

**Guide to Tables**

***Table 1:*** **Hydrosystem Actions**

***Table 2:*** **Habitat Actions**

***Table 3:*** **Hatchery Actions**

***Table 4:*** **Harvest Actions**

***Table 5:*** **Resident Fish Actions**

***Table 6:*** **RM&E Actions**

## Guide to Tables

The tables of Projects display activities that were implemented in Fiscal Year 2001 by category of hydrosystem, habitat, hatchery, harvest, resident fish, and RM&E. RM&E projects that apply basinwide or that span Hs are generally shown in the RM&E table, whereas those that are more project specific are assigned to the appropriate category. Some on-site projects that apply substantially to both anadromous species and to resident species (e.g., the Water Management Plans) are listed under both Hydro and Resident Fish.

Projects are organized within each table according to Strategy and Substrategy, with a cross-reference to the Biological Opinions (i.e., RPA Action Num). Some projects apply to multiple substrategies and therefore are listed more than once. Project ID Numbers from the Unified Plan database provide a unique identifier for each project, although some projects have not yet been assigned a number (“pending” or "unassigned"). Lead Agency shows the Action Agency with primary implementation responsibility, although many of the projects will be implemented cooperatively. Tribal, agency, university, and private subcontractors that are helping to implement many of the projects are not shown in the tables.

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Configuration-Adult Passage | Adult PIT Tag Monitoring @ Bonneville, etc. | 50 | 1676 | COE | Complete Prototype Installation and Begin Evaluation, Begin P&S for Full Bonneville Installation |
| Configuration-Adult Passage | Bonneville 2 Fish Units Intake Debris (adult passage improvement) | 6, 146 | 1627 | COE | Complete design report |
| Configuration-Adult Passage | Bonneville 2nd Powerhouse Adult Fishway Water Supply | 120,127 | 1668 | COE | Complete design report |
| Configuration-Adult Passage | Bonneville Adult Fallback | 60, 113 | 1667 | COE | Complete alternatives study |
| Configuration-Adult Passage | Feasibility of Removal of Ghost Fishing Nets | | 1771 | BPA | Contract Established in 2001 |
| Configuration-Adult Passage | Ice Harbor Adult Fishway Auxiliary Water Supply | 129 | 1675 | COE | Awarded multi year construction contract to purchase and install new pumps on the N. Shore and upgrade S Shore Elec. Scheduled completion in 03. |
| Configuration-Adult Passage | John Day - Monitoring facility/ adult holding eval | | 1803 | COE | Complete construction of storage building |
| Configuration-Adult Passage | John Day Ladder Temperature Project | 114 | 1671 | COE | Initiate analysis of problem |
| Configuration-Adult Passage | John Day North Shore - Adult Fishway Water Supply | 128 | 1669 | COE | Initiate analysis of problem |
| Configuration-Adult Passage | John Day Salmonid Holding and Jumping Project | 110,116 | 1670 | COE | Initiate design report including physical modeling |
| Configuration-Adult Passage | Little Goose Adult Fishway Auxiliary Water Supply | 129 | 1674 | COE | Completed upgrade designs and numerical modeling |
| Configuration-Adult Passage | Lower Granite Adult Fishway Auxiliary Water Supply | 129 | 1672 | COE | Completed design and began contract solicitation. |
| Configuration-Adult Passage | Lower Monumental Adult Fishway Auxiliary Water | 129 | 1673 | COE | Continued technical evaluation and numerical modeling. |
| Configuration-Adult Passage | McNary Adult PIT Tag Program | 50, 107 | 1677 | COE | Completed initial testing. Initiated design for both ladders |
| Configuration-Adult Passage | Mcnary/Ice Harbor Collection Channel Adult Fallback Project | 112 | 1666 | COE | Collected Additional RadioTelemetry Data. Implementation decision delayed pending validation of data in 02. Appears no significant problem exists. |
| Configuration-Adult Passage | The Dalles Adult Entrance Channel Dewatering Mod | 123, | 1665 | COE | Completed plans and specifications |
| Configuration-Adult Passage | The Dalles North Shore Auxiliary Water Supply | 129 | 1919 | COE | Initiate study |
| Configuration-Adult Passage | The Dalles Sluice Outfall & Auxiliary Water Supply | 122,70 | 1664 | COE | Completed design report, initiated revised outfall location study |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Configuration-Juvenile Passage | Avian Predation Study | 101 | 1828 | COE | Continued evaluation of tern relocation alternatives, limited by court injunction |
| Configuration-Juvenile Passage | Bonneville 1st Powerhouse FGE Improvements | 97,62,63 | 1634 | COE | Completed hydraulic modeling for letter report |
| Configuration-Juvenile Passage | Bonneville 1st Powerhouse JBS Improvements | 97 | 1630 | COE | Completed advertising package |
| Configuration-Juvenile Passage | Bonneville 1st Powerhouse Surface Bypass | 97,61,86, | 1633 | COE | Completed Bonneville decision document for ISRP Review |
| Configuration-Juvenile Passage | Bonneville 2nd Powerhouse FGE Improvements | 67 | 1635 | COE | Evaluated improvemetns in unit 15, prepared for 2nd year testing |
| Configuration-Juvenile Passage | Bonneville 2nd Powerhouse JBS Improvements | 65 | 1629 | COE | Completed follow-on construction |
| Configuration-Juvenile Passage | Bonneville 2nd Powerhouse Surface Bypass | 84,86,66 | 1632 | COE | Continued site selection report, design review, plans and specifications in preparation for 02 construction contract award. |
| Configuration-Juvenile Passage | Bonneville Flat Plate | 87 | 1637 | COE | Continued operation at B1 |
| Configuration-Juvenile Passage | Bonneville Juvenile Fish Bypass Studies | 82,83 | 1636 | COE | Continue spill efficiency/survival studies |
| Configuration-Juvenile Passage | Dalles Project Survival Study | 69 | 1658 | COE | Completed 2001 field tests for spillway and sluiceway survival. |
| Configuration-Juvenile Passage | Ice Harbor Spillway Survival Study | 82,83 | 1656 | COE | Continued research |
| Configuration-Juvenile Passage | John Day - Relocation evaluation (Ringold) | | 1798 | COE | Complete 4th of 5 releases and monitor initial adult returns. |
| Configuration-Juvenile Passage | John Day Extended Length Screens | 98,73,146 | 1662 | COE | Initiat construction of prototype for 02 evaluation |
| Configuration-Juvenile Passage | John Day Surface Bypass/Removable Spillway Weir | 140,86,134,35,98, 72,138 | 1701 | COE | Finalize design review, plans and specs - defer construction to evaluate egress |
| Configuration-Juvenile Passage | Little Goose Extended Submerged Bar Screens | 96,94 | 1640 | COE | Completed Installation of new Perf. Plates |
| Configuration-Juvenile Passage | Little Goose Pit-Tag System Modification | 53,94,87 | 1652 | COE | Completed Design and initiated construction contract solicitation. |
| Configuration-Juvenile Passage | Little Goose Trash Boom | 79, | 1655 | COE | Completed construction. Initiated baseline predator monitoring work. |
| Configuration-Juvenile Passage | Lower Granite Extended Submerged Bar Screens | 94,97 | 1641 | COE | Completed Installation of new Perf. Plates |
| Configuration-Juvenile Passage | Lower Granite Surface Bypass and Collection | 80,86,138,85,99 | 1639 | COE | Completed construction and installation of RSW. Conducted initiatl Hydraulic testing. |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Configuration-Juvenile Passage | Lower Monumental - Stilling basin repair | 6, 144 | 1799 | COE | Initiated Design for repairs |
| Configuration-Juvenile Passage | Lower Snake Feasibility Study | 147 | 1872 | COE | Completed Draft EIS. Continued work on preparation of FEIS |
| Configuration-Juvenile Passage | McNary - Juvenile facility improvements | 74 | 1801 | COE | Completed design and initiated contract solicitation for installation and test of 36-inch PIT-tag detector & replacement of fish release pipes. |
| Configuration-Juvenile Passage | McNary Cylindrical Dewatering Prototype Evaluation | 94,74,146, | 1653 | COE | 1st year of hydraulic & biological testing |
| Configuration-Juvenile Passage | McNary Extended Submerged Bar Screens | 96,74, | 1643 | COE | Completed Installation of new Perf. Plates |
| Configuration-Juvenile Passage | McNary Juvenile Fish Facility Debris | 74, | 1654 | COE | Completed analysis and decision made to purchase a debris removal vessel |
| Configuration-Juvenile Passage | The Dalles Sluice Outfall & Auxiliary Water Supply | 122,70 | 1664 | COE | Completed design report, initiated revised outfall location study |
| Configuration-Juvenile Passage | The Dalles Surface Bypass Studies | 69,86 | 1628 | COE | Completed 2001 field tests on "J" shape turbine occlusion device |
| Configuration-Project RM&E | Adult Fish Transition Pool Evaluations | 116 | 1682 | COE | Continued Raised Weir Evaluations at Lower Granite |
| Configuration-Project RM&E | Adult Lamprey Passage | 119 | 1683 | COE | Test prototype |
| Configuration-Project RM&E | Adult Temperature Evaluation | 116,34,114,115 | 1681 | COE | Continued research |
| Configuration-Project RM&E | Adult Upstream Migration Studies | 60, 107, 111, 113, 115, 116, 117, 118, 119 | 1805 | COE | Iniated evaluations |
| Configuration-Project RM&E | Fish Ladder Temperature Evaluation | 114 | 1680 | COE | Collect data. Prepare White Paper |
| Configuration-Project RM&E | Juvenile Salmon Transportation Evaluations | 185,191,195,46,45 ,181,182,52,49,47 | 1793 | COE | Several Anadromous Fish Evaluation Program (AFEP) studies focused on Juvenile Annual Review. An annual review of 2001 fish passage results were presented in Nov. 2001. |
| Configuration-Project RM&E | Separator Evaluation | 95,81,53 | 1646 | COE | Completed multi year evaluation |
| Configuration-Temperature and Dissolved Gas | Bonneville Gas Fast Track | 134 | 1698 | COE | Awarded phase 1 construction contract |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Configuration-Temperature and Dissolved Gas | John Day Gas Fast Track | 136 | 1714 | COE | Finalize design and plans and specs for deflectors, project on hold pending RSW decision. |
| Configuration-Temperature and Dissolved Gas | John Day Spill/Survival Studies | 82,83,71 | 1700 | COE | JBS survival tested, no spill studies due to drought. |
| Configuration-Temperature and Dissolved Gas | Little Goose Gas Fast Track Deflectors | 134,135, | 1660 | COE | Continued hydraulic modeling |
| Configuration-Temperature and Dissolved Gas | Lower Monumental Gas Fast Track Deflectors | 135,134,76 | 1659 | COE | Continued hydraulic modeling and design of end bay deflectors |
| Configuration-Temperature and Dissolved Gas | McNary Gas Fast Track Deflectors | 135,134, | 1661 | COE | Awarded construction contract for end bay deflectors. |
| Configuration-Temperature and Dissolved Gas | Modify Water Supply to Dworshak NFH | 33 | 1704 | COE | Initiated design for installation of a new Boiler System and System 1 Mods |
| Configuration-Temperature and Dissolved Gas | Chief Joseph Dam Spillway Modification | 136 | 1887 | COE | Awaiting funding |
| Configuration-Temperature and Dissolved Gas | The Dallles Gas Fast Track | 134 | 1699 | COE | Iniated spillway improvement alternative study |
| Configuration-Temperature and Dissolved Gas | Water Quality Plan, 1-Year | 5, 132 | 1696 | COE/USBR /BPA | Included "Water Quality Actions to Avoid Jeopardy" table" in 2002 Annual IP |
| O&M-Large Cap | Dworshak Dam-Modify Hatchery Water Supply System | 6, 144 | 1860 | COE | Designed phase 1 of reuse system modification. Initiated design of phase 2. |
| O&M-Large Cap | Ice Harbor Dam - Replace Adult Fishway Entrances and Hoists | 6, 144 | 1861 | COE | Designed and contracted fabrication of new entrance gates. Initiated design of new hoists. |
| O&M-Large Cap | Ice Harbor Dam - Rehab South Shore Fish Pumps | 6, 144 | 1861 | COE | Designed replacement of butterfly valve hydraulic system replacement. Initiated design of fish pump rehab. |
| O&M-Large Cap | John Day Dam - Rebuild Powerhouse Auxiliary Water Pumps | 6, 145 | 1862 | COE | Initiatiated design of fish pump rehab. |
| O&M-Large Cap | Lower Monumental Dam - Juvenile Transportation Facility Valve Access Platforms | 6, 144 | 1867 | COE | Finished design and awarded contract in FY01. Work will be completed in 1st quarter of FY02. |
| O&M-Large Cap | Large Cap O&M - Lower Monumental | 6, 144 | 1867 | COE | Lower Monumental Dam - Rehab Adult Fish Pumps |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| O&M-Large Cap | The Dalles Dam-Rehab North Shore Fish Ladder | 6, 145 | 1869 | COE | Procured new diffuser gratings in FY01. Installation scheduled for FY02. |
| O&M-Large Cap | The Dalles Dam-Replace North Shore Trash Rake | 6, 146 | 1869 | COE | Procured new diffuser gratings in FY01. Installation scheduled for FY02. |
| O&M-Nonroutine | Seattle District-VarQ EIS and Associated Studies | 22 | 1850 | COE | Planning, scheduling and internal EIS scoping initiated. Notice of intent to prepare an EIS completed. Prescoping meetings conducted with Tribes and Federal agencies. Scoping meetings scheduled for FY02. |
| O&M-Nonroutine | Walla Walla District - Develop Preventative Maintenance Program | 6, 145 | 1849 | COE | 5 year O&M plan and preventative maintenance plan developed. |
| O&M-Nonroutine | Walla Walla District - Remove Obstructions From Turbine Environment | 6, 146 | 1849 | COE | Inspected turbine environment when turbine units were dewatered for maintenance. |
| O&M-Nonroutine | Portland District-Remove Obstructions From Turbine Environment | 91 | 1884 | COE | Inspected turbine environment when turbine units were dewatered for maintenance. |
| O&M-Nonroutine | Portland District-Implement New Fish Counting Actions | 191 | 1884 | COE | Counted winter steelhead passage |
| O&M-Nonroutine | Portland District - Develop Preventative Maintenance Program | 6, 145 | 1884 | COE | 5 year O&M plan and preventative maintenance plan developed. |
| O&M-Nonroutine | Ice Harbor Dam-Adult Fishway Hydraulic Evaluation | 120 | 1861 | COE | Initiated evaluation, continues in FY02 |
| O&M-Nonroutine | Bonneville Dam-Repair Bradford Island/Cascades Island Ladder Systems | 126 | 1886 | COE | Work continued on repairing diffuser valves, procuring new bulkheads, and investigating corrections to damaged concrete. |
| O&M-Nonroutine | Bonneville Dam-Additional Fish Counting | 191 | 1886 | COE | Counted winter steelhead passage |
| O&M-Nonroutine | Bonneville Dam - Maintain Submersible Traveling Screens | 6, 144 | 1886 | COE | Work completed |
| O&M-Nonroutine | Bonneville Dam - Annual Fishway Overhaul | 6, 144 | 1886 | COE | Work completed |
| O&M-Nonroutine | Bonneville Dam - O&M of the Smolt Monitoring Facilities | 6, 144 | 1886 | COE | Work completed |
| O&M-Nonroutine | Bonneville Dam - Purchase Spare Roller Chain | 6, 144 | 1886 | COE | Work completed |
| O&M-Nonroutine | Bonneville Dam - Maintain STS/VBS Inspection System | 6, 144 | 1886 | COE | Work completed |
| O&M-Nonroutine | Bonneville Dam - Refurbish STS's | 6, 145 | 1886 | COE | Initiated refurbishment of 2nd powerhouse STS's. |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| O&M-Nonroutine | Implementation Plan Coordination | 10.2 | 1887 | COE/BPA/USBR | The Action Agencies Completed the 5-Year Implementation Plan the Summer of 2001 and the 2002 Annual Plan was issued in November 2001. RPA action from both the USFWS and NMFS BiOps were addressed in the Implementation Plans. Most of the staff effort to complete this progress report occured in FY2002. |
| O&M-Nonroutine | Chief Joseph Dam - ESA Consultation | 6, 144 | 1887 | COE | Consultation completed as required. |
| O&M-Nonroutine | John Day Dam - O&M of the Smolt Monitoring Facilities | 6, 144 | 1889 | COE | Work completed |
| O&M-Nonroutine | John Day Dam - Maintenance of Juvenile Bypass System | 6, 144 | 1889 | COE | Work completed |
| O&M-Nonroutine | Little Goose Dam-AFEP (Steelhead Kelt Study) | 109 | 1891 | COE | Study completed |
| O&M-Nonroutine | Little Goose Dam-Adult Fishway Hydraulic Evaluation | 120 | 1891 | COE | Initiated evaluation, continues in FY02 |
| O&M-Nonroutine | Lower Granite Dam-Adult Fishway Hydraulic Evaluation | 120 | 1892 | COE | Initiated evaluation, continues in FY02 |
| O&M-Nonroutine | Lower Monumental Dam-Adult Fishway Hydraulic Evaluation | 120 | 1893 | COE | Initiated evaluation, continues in FY02 |
| O&M-Nonroutine | McNary Dam-Replace Fish Ladder Tilting Weir Controls | 125 | 1894 | COE | Initiated design of new control system. Design wil be completed in FY02 |
| O&M-Nonroutine | The Dalles Dam-Replace North Shore Diffuser Gratings | 125 | 1895 | COE | Procured new gratings in FY01. Installation scheduled for FY02. |
| O&M-Nonroutine | The Dalles Dam-Concrete Bulkheads | 145 | 1895 | COE | Procured steel bulkheads for fishway entrances. |
| O&M-Nonroutine | The Dalles Dam - Replace North and South Entrance Gates | 6, 145 | 1895 | COE | Procured new bulkheads for some of the entrances for dewatering fishways. |
| O&M-Operations | Fish Passage Plan (FPP) | 6, 144 | 1687 | COE | Fish Passage Plan coordinated with NMFS and other regional interests and issued. |
| O&M-Operations | Portland District - Fish Counting and Hauling | 40,191 | 1848 | COE | Programs conducted as planned. |
| O&M-Operations | Portland District - Operate Fish Passage Facilities | 6, 144 | 1848 | COE | Facilities operated according to FPP criteria. |
| O&M-Operations | Walla Walla District - Juvenile Fish Transportation Program | 40,191 | 1849 | COE | Program conducted as planned and coordinated with region. Included emergency spring transport at McNary and longer barging of Snake River fish. |
| O&M-Operations | Walla Walla District - Operate Fish Passage Facilities | 6, 144 | 1849 | COE | Facilities operated according to FPP criteria. |
| O&M-Operations | Walla Walla District - Debris Control | 6, 146 | 1849 | COE | Debris control was accomplished as part of regular project O&M activities. |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| O&M-Operations | 1 and 5-Year O&M Plans Issued | 6 | 1688 | COE | Prepared 5 year O&M plans. |
| O&M-Operations RM&E | Portland District - Anadramous Fish Evaluation Program | 93,114 | 1848 | COE | Various studies conducted in FY01. |
| O&M-Operations RM&E | Walla Walla District - Anadramous Fish Evaluation Program | 93,114 | 1849 | COE | Various studies conducted in FY01. |
| O&M-Operations RM&E | Kelt Studies | 109 | 1679 | COE | Studies conducted at Lower Granite and McNary dams in FY01. |
| O&M-Routine | Portland District - Maintain Fish Passage Facilities | 6, 144 | 1848 | COE | Fish passage facilities maintained in FY01. |
| O&M-Routine | Portland District - ESA Coordination | 6, 144 | 1848 | COE | Coordination completed as required. |
| O&M-Routine | Walla Walla District - Maintenance of Fish Passage Facilities | 6, 144 | 1849 | COE | Fish passage facilities maintained in FY01. |
| O&M-Routine | Seattle District - Endangered Species Act Coordination | 6, 144 | 1916 | COE | Coordination completed as required. |
| O&M-Transmission Support | Columbia Falls Transmission Reinforcement | 56 | 1781 | BPA | Hungry Horse -Columbia Falls Transmission line upgraded to reduce lightning outages |
| O&M-Transmission Support | New Generation Caused Transmission Reinforcement | 57 | 1791 | BPA | NEPA studies for several new transmission lines that would integrate proposed new energy resources were started in 2001. Examples: Starbuck-Lower Monumental 500-kV line; Wallula-McNary 500-kV line; McNary-John Day 500-kV line; Anaconda-Silver Bow 230-KV line, and several shorter length lines associated with proposed wind projects and west side combustion turbines. |
| O&M-Transmission Support | Schultz-Hanford Transmission Line | 55 | 1782 | BPA | EIS Scoping Completed, Consultant Conducting Environmental Studies |
| O&M-Transmission Support | West of Hatwai Transmission Reinforcement | 56 | 1784 | BPA | BPA Project Planning Studies |
| RM&E-Critical Uncertainties | Delayed Mortality of Juveniles | 47,185,186,189 | 1638 | COE | Continued Research |
| RM&E-Critical Uncertainties | Estuary studies - Initiate evaluations in 2002 | 105 | 1805 | COE | Continue evaluations |
| RM&E-Critical Uncertainties | Multiple Bypass Accumulative Impacts | 46,187,189 | 1645 | COE | Evaluate 2001 Passage Survival |
| RM&E-Critical Uncertainties | System - Estuary PIT recovery /Transp/In-river | 104 | 1804 | COE/BPA | Continued evaluations |
| RM&E-Critical Uncertainties | Turbine Passage Survival Program | 93,89,90,111,59,91,64,88 | 1649 | COE | Model tested draft tube alternatives, designed McNary 2nd year test program |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management | Do not spill at Lower Snake projects if flow is below 85 Kcfs | 40 | 1842 | COE | As specified in the BiOp spill for juvenile fish passage was not required at the three lower snake collector projects because the projected seasonal average flow was lower than 85 kcfs. |
| Water Management | Provide Spring Spill as recommended by NMFS | 54 | 1905 | COE/BPA | The spill for juvenile fish passage was limited this year due to the low water supply and the power emergency.As specified in the BiOp spill for juvenile fish passage was not required at the three lower snake collector projects because the projected seasonal average flow was lower than 85 kcfs. At McNary spring spill began May 25th and ended June 15th. During this time period McNary spilled every other night 30 kcfs (when juvenile fish were not being collected). At John Day spring spill began May 25th and ended June 15th. During this time period the project spilled 30% of outflow from 1800 - 0600. The average spill amunt was 15.5 kcfs. At the Dalles spring spill started May 16th and ended June 15th. During this time period the project spilled 30% of project outflow around the clock for an average spill of 41.7 kcfs. From May 22th to May 25th during the day the spill was held at a constant level between 30% and $40% to support a juvenile fish test. At Bonneville spring spill started May 16th and ended June 15th. During this time the project spilled 50 kcfs around the clock. |
| Water Management | Provide Summer spill as recommended by NMFS | 42 | 1907 | COE/BPA | The spill for juvenile fish passage was limited this year due to the low water supply and the power emergency. No summer spill occured at John Day. At the Dalles summer spill began July 24th and ended August 31st. During this time period the project was to spill 30% of the outflow around the clock when at least a minimum of 15 kcfs would be spilled. On August 8th the spill percentage was changed to 40%. The average spill during this period was 30.3 kcfs. At Bonneville summer spill started July 24th and ended August 31st. From July 24th to August 8th a spill level of 45 kcfs was provided from 2000 to 0100 each evening. After August 8th the spill was increased to 50 kcfs for 24 hours a day. On August 8th and 9th during the day no spill was allowed due to work related to the construction of flow deflectors. |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Flow Management | Accommodate Chum Spawning Below Bonneville Dam | 15 | 1824 | COE/BPA/USBR | Chum operation started approximately Oct 30th. During the Nov - Dec. 2000 time period the chum flow was controlled by both a minimum flow and a minimum tail water elevation. In November the minimum flow was 113.2 kcfs and the average flow was 131.8 kcfs. The minimum tailwater was 10.5 ft. and the average tailwater was 11.2 ft. In December the minimum flow was 124.5 kcfs and the average flow was 145.2 kcfs. The minimum tailwater elevation was 11.2 ft and the average was 13 ft. . From January 5th the chum flow was controlled by a minimum tailwater elevation. In January the minimum tailwater was 11.5 ft. and the average tailwater was 12.1 ft. in February the minimum tailwater elevation was 11.6 ft. and the average tailwater elevation was 11.9 ft. In March (while the chum operation was going on) the minimum tailwater elevation was 11.3 ft and the average tailwater elevation was 11.5 ft. The Chum operation ended March 16th as coordinated by TMT |
| Water Management-Flow Management | Accommodate Chum Spawning Below Bonneville Dam | 16 | 1824 | COE/BPA/USBR | Chum flows were provided in 2001. All Chum operations were coordinated with TMT. Grand Coulee was drafted to support chum flows and regional emergency power needs. Flow augmentation for chum was discontinued 3/18/01. |
| Water Management-Flow Management | Acquire Water for instream use from USBR's Upper Snake River basin projects and Hells Canyon Complex | 32 | 1825 | USBR | BOR delivered 90.4 kaf acquired from its uncontracted space, water banks, and natural flow rights. |
| Water Management-Flow Management | Draft Dworshak to cool summer water temperatures at the Lower Granite forebay. | 19 | 1844 | COE/BPA | Water was released from Dworshak for summer flow augmentation and temperature control from 7/2/01 - 8/20/01 |
| Water Management-Flow Management | Dworshak Summer Draft Limit of 1520 ft. Observed | 19 | 1874 | COE | On Aug. 31st Dworshak was at Elev. 1520.45 ft. |
| Water Management-Flow Management | Grand Coulee Summer Draft Limit of 1280 or 1278 ft. observed | 19 | 1876 | USBR | The July Final April- Aug forecast at The Dalles was 48.1 Maf so the summer draft limit was 1278. On Aug. 31st Grand Coulee was at Elev. 1278.3 ft. |
| Water Management-Flow Management | Hungry Horse Summer Draft Limit of 3540 ft. observed | 19 | 1877 | USBR | On Aug. 31st Hungry Horse was at Elev. 3539.46 ft. |
| Water Management-Flow Management | Libby Summer Draft Limit of 2439 ft. observed | 19 | 1878 | COE | On Aug. 31st Libby was at Elev. 2434.92 ft. This was due to providing Bull Trout Minimum flows of 6 kcfs. From July 1st to August 31st. |
| Water Management-Flow Management | Manage Dworshak to Assure Refill | 19 | 1874 | COE | Full pool at Dworshak is 1600. On June 30th Dworshak was at elevation 1587.35 ft. In order to aid in refill, Dwoshak released minimum outflow from April 3rd to June 30th. |

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| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Flow Management | Manage Dworshak to Assure Refill | 19 | 1874 | COE | Dworshak was on one turbine operation except from 12/10/00 to 12/12/00 (power emergency), 1/18/01 (unit testing), 1/22/01 to 2/2/01 (power emergency), 2/13/01 to 2/19/01 (power emergency), and from 7/2/01 - 8/30/01 releasing water for summer flow augmentation. |
| Water Management-Flow Management | Manage Grand Coulee to Assure Refill by 7/4 | 19 | 1876 | USBR | Grand Coulee did not fill to flood control or full due to releases for chum and power. 4/10 flood control=1283.3', Actual=1219.9'. Full=1290', 6/30 Actual=1281.4' |
| Water Management-Flow Management | Manage Hungry Horse Assure Refill by 6/30 | 19 | 1877 | USBR | Hungry Horse did not fill to flood control or to full due to drought.<br>4/10 flood control = 3555.1, Actual = 3489.7<br>Full=3560', 6/30 Actual = 3441.4' |
| Water Management-Flow Management | Manage Libby to Assure Refill by 6/30 | 19 | 1878 | COE | Full pool at Libby is 2459 ft. On June 30th Libby was at elevation 2431.07 ft. due to dry conditions. |
| Water Management-Flow Management | Provide Minumum Bull Trout flows at Hungry Horse | 19 | pending | COE/USBR | The 495 cfs minimum was met all but 15 days since 12/20/2000 (minimum flow was 465 cfs). Daily rate met except for power emergency (2/8/01) and transmission stability (7/6/01-7/13/01, and 7/21/01). Hourly rates not exceeded. Columbia Falls: minimum flow of 3260 cfs (based on 1304 kaf forecast) met all but 2 days since 10/01/2000 (minimum flow was 3000 cfs for <2hours. |
| Water Management-Flow Management | Provide recommended spring flows at Lower Granite | 14 | 1900 | COE/BPA/USBR | The April final forecast for Apr - Jul for Lower Granite was 10.0 maf. Based on this the spring flow objective was 85 kcfs. The Lower Granite flow during the spring time period was 47.47 kcfs. Limited storage for flow augmentation was available in 2001 due to drought and support of chum/power flows. |
| Water Management-Flow Management | Provide recommended spring flows at McNary | 14 | 1901 | COE/BPA/USBR | The April final forecast for Apr - Aug for The Dalles was 49.6 maf. Based on this the spring flow objective was 220 kcfs. The McNary flow during the spring time period was 123.94 kcfs. Limited storage for flow augmentation was available in 2001 due to drought and support of chum/power flows. |
| Water Management-Flow Management | Provide recommended spring flows at Priest Rapids - The recommended objective in 2001 was to be consistent with LWG and MCN. | 14 | 1902 | COE/BPA/USBR | The flow during the time period was 76.71 kcfs |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Flow Management | Provide recommended summer flows at Lower Granite | 14 | 1903 | COE/BPA/USBR | The June final forecast for Apr - Jul for Lower Granite was 10.8 maf. Based on this the summer flow objective was 50 kcfs. The Lower Granite flow during the summer time period was 25.39 kcfs. Limited storage for flow augmentation was available in 2001 due to drought and support of chum/power flows. |
| Water Management-Flow Management | Provide recommended summer flows at McNary | 14 | 1904 | COE/BPA/USBR | The summer flow objective for McNary is 200 kcfs. The Mcnary flow during this time period was 90.98 kcfs. Limited storage for flow augmentation was available in 2001 due to drought and support of chum/power flows. |
| Water Management-Juvenile Transport | All juvenile fish collected were transported | 40 | 1826 | COE | All fish collected at Snake River transport sites were transported due to the drought condition. |
| Water Management-Juvenile Transport | Bypass Juvenile Spring Migrants collected at McNary Dam (pending results of McNary Transport Evaluation) | 41 | 1836 | COE | During the spring juvenile fish were collected and transported every other day starting May 1st. Hurson to provide details |
| Water Management-Other Actions | Banks Lake Drawdown Study | 31 | 1694 | USBR | Reclamation issued NOI to prepare EIS, conducted public scoping meeting, and began NEPA analyses. |
| Water Management-Other Actions | Coordinate Water Management Decisions with TMT | 3 | 1840 | COE/BPA/USBR | Over 40 TMT meetings and conference calls took place. |
| Water Management-Other Actions | Develop TDG Model | 133 | pending | COE | Update TDG production relationships, Update the SYSTDG users manual and documentation, Technical review of the model, Statistical summary of historic gas data. |
| Water Management-Other Actions | Evaluate Flood Control Operations to Reduce River Ecosystem Effects | 35 | 1846 | COE | Flood Control Study proceeding |
| Water Management-Other Actions | Implement VARQ at Hungry Horse | 19, 22 | 1852 | USBR | VarQ did not influence HGH operation in 2001 due to drought conditions |
| Water Management-Other Actions | Implement VARQ at Libby | 19, 22. 8.1.d | 1853 | COE/USBR/BPA | Libby VarQ Study Proceeding. |
| Water Management-Other Actions | Install Screens at Burbank #2 and #3 Pump Plants | 38 | 1708 | USBR | Design work was completed and construction contract awarded. Construction will commence after 2001 irrigation season. Screens will be in place for the 2002 season. |
| Water Management-Other Actions | Investigate drafting Dworshak to 1500' Elevation | 34 | 1855 | COE | Dworshak draft to 1500 study proceeding |
| Water Management-Other Actions | Investigate Unauthorized Use of USBR Water | 29 | 1858 | USBR | Boise Project: Black Canyon Irrigation District - 1,943 acres identified excess above permits - annual fines during 3-year phase out. Umatilla Project EIS for requested boundary extension of 17,565 acres underway for the four irrigation districts. Vale Project: 200 acres determined ineligible by Vale Irrigation District, and terminated service. |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Other Actions | Investigate Listed Fish in Columbia Basin Project Wasteways | 37 | 1707 | USBR | Anadromous fish habitat was evaluated in several CBP wasteways. The study has been completed and limited habitat for fall chinook was identified in 2 systems. |
| Water Management-Other Actions | Monitor TDG Effects | 131 | pending | COE | Monitor and Report TDG in FCRPS system, Update the SYSTDG users manual and documentation, |
| Water Management-Other Actions | Pursue Water conservation at USBR Projects | 28 | 1910 | USBR | BOR partnered with several irrigation districts, canal companies, and others to complete 59 conservation projects that have potential to increase in-stream flows or increase availability of water for flow augmentation. BOR provided about $1.27 million (about 50% cost share) for projects that include system automation and measurement, canal lining, piping, drip irrigation, and other efficiency improvements. Some of the actions were accomplished in basins that do not include BOR projects (Walla Walla, Wallowa, Lemhi), but do have potential to benefit listed species |
| Water Management-Other Actions | Request Shaping and Release of water behind Treaty Storage Projects | 26 | 1912 | COE/BPA | An agreement was negotiated and executed on November 30, 2000. Per the terms of the agreement, no water was stored during 2001 in Arrow Treaty space because Grand Coulee had available space for flow augmentation storage. |
| Water Management-Other Actions | Request/Negotiate 1 MAF of Treaty storage with BC Hydro | 24 | 1913 | COE/BPA | An NTS agreement with BC Hydro was not excuted because BPA and BC Hydro were unable to store NTS water during the spring of 2001 due to the drought conditions. |
| Water Management-Other Actions | Request/Negotiate non-Treaty storage with BC Hydro | 25 | 1914 | COE/BPA | U.S. and Canadian Entities worked to complete a report for the Entity Chairs on the feasibility of additional summer releases (July & August) fromn Canadian reservoirs. A draft report has been completed and the final report is expected to be issued in early 2002. |
| Water Management-Other Actions | Return Flow Quality From Columbia Basin Project | 39 | 1709 | USBR | Water quality monitoring plan submitted to NMFS in July 2001. |
| Water Management-Other Actions | Review of TDG Monitoring Stations | 132 | pending | COE | Initiated scoping of study. |
| Water Management-Other Actions | Revise Storage Diagrams for Libby | 36 | 1915 | COE | Initiated scoping of study. |
| Water Management-Other Actions | USBR to Consult with NMFS Before Making Uncontracted Water/Storage Space Agreements | 27 | 1829 | USBR | There was no contract activity related to this RPA action in 2001 |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Other Actions | USBR to Consult with NMFS on Chief Joseph Irrigation Project | 30 | 1830 | USBR | Consultation Completed |
| Water Management-Other Actions | USBR to Consult with NMFS on Deschutes, Crooked River, Arnold Project | 30 | 1831 | USBR | Draft BA was submitted to NMFS |
| Water Management-Other Actions | USBR to Consult with NMFS on Okanogan Project | 30 | 1832 | USBR | Feasibility Study authority enacted. |
| Water Management-Other Actions | USBR to Consult with NMFS on Tualatin Project | 30 | 1833 | USBR | Consultation Initiated. BA being drafted |
| Water Management-Other Actions | USBR to Consult with NMFS on Umatilla Project | 30 | 1834 | USBR | BA was submitted to NMFS |
| Water Management-Other Actions | USBR to Consult with NMFS on Yakima Project | 30 | 1835 | USBR | BA was submitted to NMFS |
| Water Management-Other Actions | Varq Flood Control Operation | 22 | 1695 | COE/USBR/BPA | Planning, scheduling and internal EIS scoping initiated. The Corps completed an EA, issued a public notice and initiated EIS scoping of VARQ implementation and conducted pre-scoping meetings with Colville, Spokane, and Salish-Kootenai Tribes, and EPA. Scoping meetings were scheduled (& convened 1Q FY 2002)) at Bonners Ferry, Libby, Kalispell, Grand Coulee, Eureka, Newport WA, and Portland. |
| Water Management-Other Actions | Water Acquisition From Reclamation's Upper Snake R | 32 | 1693 | USBR | BOR delivered 90.4 kaf acquired from its uncontracted space, water banks, and natural flow rights. |
| Water Management-Other Actions | Water Management Plan (1 & 5-Year Plans) | 3 | 1689 | COE/USBR/BPA | A 2001 Water Management Plan was produced in draft and updated in May in response to drought and power emergency conditions. |
| Water Management-Reservoir Operations | Continue Winter Egg-Fry Survival Study on Lake Pend Oreille - In the fall/winter 2002 Albeni Falls has been maintained at elevation 2,055 feet | 19 | 1839 | COE | The Lake Pend Oreille IdahoClub, Inc. and the U.S. Army Corps of Engineers reached an agreement to draft no lower than 2053' in winter 2001. The agreement was approved by the court. |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Reservoir Operations | FCRPS projects are within 0.5 foot of the flood control rule April 10 and have refilled by June 30 | 14, 18 | 1875 | COE/USBR | Libby - The April 10th flood control elevation was 2448 ft. on April 10th Libby was at 2386.68 ft. Full pool at Libby is 2459 ft. On June 30th Libby was at elevation 2431.07 ft. Hungry Horse - The April 10th flood control elevation was 3556.73 ft. on April 10th Hungry Horse was at 3489.34 ft. Full pool at Hungry Horse is 3560 ft. On June 30th Hungry Horse was at elevation 3541.35 ft. Albeni Falls - The Albeni Falls flood control rule curve has an upper rule curve elevation of 2056 ft. and a lower elevation of 2052 ft. on April 10th. On April 10th the Hope gage reading was 2053.73 ft. Full pool at Albeni Falls is 2062.5 ft. On June 30th Albeni Falls was at elevation 2062.13 ft (Hope Gage). Dworshak - The April 10th flood control elevation was 1592.2 ft. on April 10th Dworshak was at 1516.74 ft. Full pool at Dworshak is 1600 ft. On June 30th Dworshak was at elevation 1587.35 ft. Grand Coulee - The April 10th flood control elevation was 1283.3 ft. on April 10th Grand Coulee was at 1220.2 ft. |
| Water Management-Reservoir Operations | Feasibilty Analysis of Flood Operations for Salmon | 35 | 1705 | COE | No Work in 01 |
| Water Management-Reservoir Operations | Implement VarQ at Hungry Horse | 19 | 1827 | USBR | VarQ did not influencd HGH operaton in 2001 due to drought conditions. |
| Water Management-Reservoir Operations | John Day Pool operated at lowest elevation possible and still provide irrigation pumping during dates specified | 20 | 1859 | COE | Operation was not requested in 2001. |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Reservoir Operations | Lower Snake projects operated at MOP during fish season | 20 | 1873 | COE | LWG pool was held in the range MOP + 1 (734) - MOP + 2 (735) (due to navigation concerns) starting 4/12/01. On 5/2/01 the upper range was extended to Mop +2.5 to allow for more outflow at night. On 5/15/01 an emergency exceedence of MOP was granted due to a unit outage at IHR. Another MOP exceedence was granted 6/21/01 because of a line outage. Another MOP exceedence was granted from 6/22/01 to 6/25/01 for work on the navigation lock. Two mop exceedences were granted from 9/3/01 - 9/4/01 and from 9/16/01 to 9/17/01 due to low inflowws. Mop operation ended 9/20/01. LGS pool was held in the range MOP (633) - MOP + 1 (634) starting 4/12/01 On 5/15/01 an emergency exceedence of MOP was granted due to a unit outage at IHR. Another MOP exceedence was granted 6/21/01 because of a line outage. Mop operation ended 9/5/01. LMN pool was held in the range MOP (537) - MOP + 1 (538) starting 4/12/01 On 5/15/01 an emergency exceedence of MOP was granted due to a unit outage at IHR.<br><br>An emergency exceedence was granted of MOP was granted from 5/17/01 to 5/19/01 due to high inflows. Mop operation ended 9/5/01.IHR pool was held in the range MOP + 1 (438) - MOP + 2 (439) (due to navigation concerns) starting 4/12/01 On 5/15/01 an emergency exceedence of MOP was granted due to a unit outage at IHR. An emergency exceedence was granted of MOP was granted from 5/17/01 to 5/19/01 due to high inflows. Mop operation ended 9/5/01. |
| Water Management-Reservoir Operations | Operate Banks Lake to reduce August pumping from Grand Coulee | 23 | 1896 | USBR | Banks Lake was drafted to 1565" |
| Water Management-Reservoir Operations | Operate Turbine units at 1% efficiency range during fish passage | 58 | 1897 | COE/BPA | Due to inflows being less than needed, at LWG, LGS, and LMN, operating outside of1% was necessary to pass no more than inflow from 9/4/01 - 10/23/01. |
| Water Management-Reservoir Operations | Shift Flood Control to Maximize Snake River Water Storage - Shifting flood control requirements from Brownlee and Dworshak to Grand Coulee | 21 | 1917 | COE/USBR | No flood control shift occurred this year. |

## Table 1: Hydrosystem Actions

| Strategy | Project Title | RPA Action Num | Project ID Number | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|
| Water Management-Spill Operations | Provide Spring spill as specified for McNary | 41 | 1906 | COE/BPA | At McNary spring spill began May 25th and ended June 15th. During this time period McNary spilled every other night 30 kcfs (when juvenile fish were not being collected). |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Improve Mainstem Habitat | Mainstem Watershed Health | 155 | 1737 | 200102600 | Coastal Cutthroat Trout in Columbia R above Bonneville Dam | BPA | 2001 Gorge Provincial Review Project. Survey Columbia River tributaries above Bonneville Dam for coastal cutthroat trout to determine population status, to identify limiting factors, and to understand the role of current and past human and natural disturbances affecting status. Implementation work initiated. |
| Improve Mainstem Habitat | Mainstem Watershed Health | 155 | 1458 | 199900301 | Salmon Spawning Below Lower Columbia Dams-ODFW | BPA | Ongoing Project. Mapped ground water upwelling, conducted in-season analysis and flow recommendation. |
| Improve Mainstem Habitat | Mainstem Watershed Health | 157 | 1458 | 199900301 | Salmon Spawning Below Lower Columbia Dams-ODFW | BPA | Ongoing Project. Mapped ground water upwelling, conducted in-season analysis and flow recommendation. |
| Improve Mainstem Habitat | Mainstem Watershed Health | 157 | 1764 | 200105300 | Reintro of Columbia R Chum Salmon in Duncan Creek | BPA | 2001 High Priority Project. Construction of spawning channel is complete and was successfully used for spawning in the fall of 2001. This project enhanced spawning areas historically used by chum salmon in Duncan Creek. It also jump started the population by incubating eggs from adjacent stocks at this site and conducted annual spawning ground counts and estimated fry production. |
| Improve Mainstem Habitat | Subbasin Planning and Assessment | 156 | *unassigned* | | Fund a study of the feasibility, biological benefits and ecological risks of habitat modification to improve spawning conditions for chum and chinook salmon in the Ives Island area. | BPA | |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Improve Mainstem Habitat | Subbasin Planning and Assessment | 156 | 1554 | 200001200 | Eval Factors Limiting Col R Chum Salmon Population | BPA | Ongoing Project. Produced abundance estimates and determined biological characteristics, determined characteristics of areas used for spawning and egg incubation by chum salmon, evaluated movements of adult chum salmon between spawning areas in Hardy Creek, Hamilton Creek, Hamilton Springs, and Columbia River, constructed a chum salmon spawning channel adjacent to Hardy Creek on Pierce National Wildlife Refuge, and evaluated substrate in Hardy Creek and Hamilton Springs. |
| Improve Mainstem Habitat | Subbasin Planning and Assessment | 149 | *unassigned* | | Pasco, WA, Section 1135 | COE | Feasibility study begun. FY01 feasibility study will continue in FY02 on a project to improve aquatic and terrestrial habitat on a two mile stretch of the Columbia River north shore near Pasco, Washington. Construction begins '02. |
| Improve Mainstem Habitat | Subbasin Planning and Assessment | 154 | *unassigned* | | Pasco, WA, Section 1135 | COE | Feasibility study begun. FY01 feasibility study will continue in FY02 on a project to improve aquatic and terrestrial habitat on a two mile stretch of the Columbia River north shore near Pasco, Washington. Construction begins '02. |
| Protect & Enhance Estuary Habitat | Estuary Water Quality | 160 | *unassigned* | | Brownsmead, Clatsop County OR, Section 1135 | COE | Planning continued for project to improve water flow and circulation in the sloughs within dikes of Clatsop Diking Improvements Companies 7 and 1. |
| Protect & Enhance Estuary Habitat | Estuary Water Quality | 160 | *unassigned* | | Columbia River Estuary Demonstration Projects | COE | Worked with LCREP and others to identify and prioritize estuary habitat restoration projects for implementation in '02. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Estuary Habitat | Estuary Water Quantity | 162 | *unassigned* | 199801400 | Ocean Survival of Salmonids Relative to Migrational Timing, Fish Health, predation, and Oceanographic Conditions in the Columbia River Plume and Adjacent Coastal Waters. | BPA | Sub-contract to Oregon Graduate Institute for development of the estuary/plume conceptual model. The main contract is with NMFS. The project will 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. |
| Protect & Enhance Estuary Habitat | Estuary Water Quantity | | *unassigned* | 199801400 | Marine Fish Predation of Juvenile Salmonids off the Mouth of the Columbia River | BPA | Ongoing project. This study will identify and document the relationships between the distribution, abundance, and food habits of marine fish predators and forage fishes off the Columbia River and salmonid ocean survival. The work is performed by NMFS, Newport, Oregon. |
| Protect & Enhance Estuary Habitat | Estuary Water Quantity | | *unassigned* | 199801400 | Canada-USA Shelf Salmon Survival Study | BPA | Ongoing project. Contract with Canadian government. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 161 | *unassigned* | 200008000 | Estuary research - acoustic tags, continental shelf (KinTama, David Welch). | BPA | 2001 Innovative Project. This project will evaluate new acoustic tracking technology to verify its capabilities for use on the West Coast and design an acoustic monitoring network to track movement of salmon smolts into the ocean and along the continental shelf to areas of ocean residency. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 161 | *unassigned* | | Estuary research - tracking fish up the continental shelf | BPA | |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 158 | *unassigned* | | Research: Salmonid survival research using acoustic tags | COE | First year activities complete, focused on developing new acoustic tags and detection array system for estuary environment |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 158 | *unassigned* | | Research: Estuarine Habitat and Juvenile Salmon Research | COE | First year research complete, current and historic linkages in lower Columbia and estuary, relationship between habitat and presence, use and benefit to juvenile salmonids |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 158 | *unassigned* | | Research: Evaluation of relationship of time of ocean entry, physical, and biological characteristics of the estuary and plume environment and adult return rates. | COE | Preparation for research to examine relationship among time of juvenile ocean entry, physical and biological characteristics of estuary and nearshore ocean plume environment and smolt-to-adult return rates for yearling chinook and coho. Fish to be tagged in winter '01. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 159 | *unassigned* | | General Investigation: Columbia River mile 0 to 145 | COE | General Investigation study begun of the Columbia River from river mile 0 to 145 |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | General Investigation: Columbia River mile 0 to 145 | COE | General Investigation study begun of the Columbia River from river mile 0 to 145 |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | SW Washington Streams | COE | Preliminary discussions with potential partners for ecosystem restoration work. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | Skipanon River, Warrenton OR Section 206 | COE | Preliminary restoration planning phase of project to restore 30 acres of aquatic, riparian and floodplain habitat along the lower Skipanon River. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | Brownsmead, Clatsop County OR, Section 1135 | COE | Planning continued for project to improve water flow and circulation in the sloughs within dikes of Clatsop Diking Improvements Companies 7 and 1. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 161 | *unassigned* | | Research: Salmonid survival research using acoustic tags | COE | First year activities complete, focused on developing new acoustic tags and detection array system for estuary environment |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 161 | *unassigned* | | Research: Estuarine Habitat and Juvenile Salmon Research | COE | First year research complete, current and historic linkages in lower Columbia and estuary, relationship between habitat and presence, use and benefit to juvenile salmonids |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 161 | *unassigned* | | Research: Evaluation of relationship of time of ocean entry, physical, and biological characteristics of the estuary and plume environment and adult return rates. | COE | Preparation for research to examine relationship among time of juvenile ocean entry, physical and biological characteristics of estuary and nearshore ocean plume environment and smolt-to-adult return rates for yearling chinook and coho. Fish to be tagged in winter '01. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | Columbia River Estuary Demonstration Projects | COE | Worked with LCREP and others to identify and prioritize estuary habitat restoration projects for implementation in '02. |
| Protect & Enhance Estuary Habitat | Estuary Watershed Health | 160 | *unassigned* | | Columbia River Estuary Workshop | COE | Workshop held in Astoria OR in June 2001 to bring together knowledgeable people with and interest/involvement in estuary protection, restoration, research, etc. Developed criteria for prioritizing potential restoration sites. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | *N/A* | 1, 7, 13, 149, 152 | *N/A* | | Establish High Priority Subbasin Program | USBR | Developed budget needs, evaluated program needs, and hired coordinators to initiate the high priority subbasin program which is a new program for USBR. Assigned staff to Federal Habitat Team and other coordination forums; prepared 5-year, annual plan, and progress report materials. Held internal workshops to educate staff and managers. Developed subbasin entry schedule for first year subbasins and subsequent years. Identified process to be used to comply with Federal environmental laws, permits, and related requirements. Initiated coordination meetings with states and tribes. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | "Asotin Creek Subbasin Summary" completed. GIS maps of fish distribution, projects completed by type and funding source, and graphs with percentages show the results of a coordinated effort to protect and restore priority habitat. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | WCC Limiting Factors Analysis beginning for WRIA #35 which includes Asotin County. This process will pull together all available written and known information on the streams and how they pertain to anadromous salmonids. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1721 | 200101100 | Habitat Diversity in Alluvial Rivers | BPA | 2001 Innovative Project. Developing innovative remote sensing and modeling tools for quantitative functional assessment of aquatic habitats by intagrating spatialtemporal interactions between channels, floodplain and groundwater. Contract signed 6/22/01. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1724 | 200101400 | Waterbody and Aquatic Habitat Characterization Utilizing High Resolution Satellite Imagery and Aerial Imagery | BPA | 2001 Innovative Project. Demonstrate the practical use of new commercial high resolution satellite and aerial imagery in the assessment of waterbody physical habitat, geomorphology and water quality impairment potential. Develop a guidance manual for field and office use. Contract let 6/18/01. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1298 | 199705600 | Lower Klickitat Riparian and In-Channel Habitat Enhancement Project | BPA | 2001 Gorge Provincial Review Project. This project will identify and prioritize reaches for restoration activites; protect, restore, and enhance priority reaches to increase riparian, wetland, and stream habitat values; adaptively maintain and, where appropriate, manage sites to ensure protection of habitat values; and monitor habitat conditions to ensure desired habitat levels are reached and maintained. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1212 | 199608600 | Clearwater Focus Program | BPA | Coordinated subbasin summary review and distribution. Coordinated organizational meetings for agencies preparing for the Mountain Snake Provincial Review. Coordinate and facilitate Clearwater Review process |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1317 | 199706000 | Clearwater Subbasin Focus Watershed Program - NPT | BPA | Completed final draft of Clearwater Subbasin Summary; completed draft plan for monitoring and evaluation plus facilitated the finalization of subbasin assessment, facilitated the preparation of Ecosystem Assessments at the Watershed Scale (EAWS) proposals for several Clearwater watersheds; coordinated terrestrial committee to add terrestrial component to Clearwater Assessment. Completed Lapwai and Big Canyon Assessments; coordinated with the Clearwater National Forest in the development and finalization of a Master Challenge Cost Share Agreement; and, coordinated the development of a NOAA grant that was funded for $50,000. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 710 | 199202604 | Investigate Life History of Spring Chinook Salmon and Summer Steelhead in the Grande Ronde River Basin and Monitor Salmonid Populations and Habitat | BPA | Maintained Grande Ronde, Lostine, and Minam River and Catherine Creek traps. We estimated steelhead and chinook salmon smolt production, described spring in-basin migration patterns, and compared among tributary populations. Determined summer abundance of juvenile steelhead in Catherine Creek and North Fork Catherine Creek. PIT-tagged O.mykiss and spring chinook salmon captured in traps and obtained detection data from mainstem dams. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 946 | 199405900 | Yakima Basin Environmental Education | BPA | Educate teachers and students about local watershed issues and involve them in positive action projects. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1295 | 199705300 | Toppenish-Simcoe Instream Flow Restoration and Assessment | BPA | Began 2nd year of screw trap operation, expanded yet again total mileage of steelhead spawning surveys, further refined comprehensive water budget model, updated Project Management Plan and GIS, explored water replacement options with BIA and landowners. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1425 | 199803400 | Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Reestablish Safe Access into Tributaries of the Yakima Subbasin | BPA | As Lead Agency, YN implemented YKFP operations; managed and directed all YN management, administrative, science and technical personnel; participated in all activities affecting Project planning, management and administration. |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1475 | 199901600 | Protect and Restore Big Canyon Creek Watershed | BPA | Planned - Final Big Canyon Creek Watershed Assessment |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1476 | 199901700 | Protect and Restore Lapwai Creek Watershed | BPA | Planned - Survey of all roads within Nez Perce Tribal lands for watershed restoration opportunities |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1568 | 200002600 | RAINWATER WILDLIFE AREA | BPA | Initiated Subbasin Planning and NPPC Project Proposal Development |
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1576 | 200003400 | Protect and Restore The North Lochsa Face Analysis Area Watersheds | BPA | 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. Accomplishments include finalize partnering agreement with the Clearwater National Forest; survey approximately 20 miles and obliterate 10 miles of roads within North Lochsa Face Analysis Area; complete long-term monitoring plan and begin data collection. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Subbasin Planning and Assessment | 154 | 1577 | 200003500 | Rehabilitate Newsome Creek Watershed - South Fork Clearwater River | BPA | 170 miles of roads were surveyed with 5.8 miles of road has been slated for decommissioning. NEPA work has been completed, as well as consultation. Contract preparation and implementation are next steps to occur. |
| Protect & Enhance Tributary Habitat | Tributary Passage and Diversion Improvements | 149/152 | *N/A* | | Lemhi Subbasin High Priority Subbasin Enhancement | USBR | Established subbasin office, initiated NEPA, evaluated workload, participated in NWPPC assessment. Automated L-6 diversion, initiated modification engineering work at L-3A and L-3 diversions and L-3 wasteway, initiated investigation of L-6/S14 exchange, initiated headgate replacement at L-13, initiated screen replacements at L-13 and L-35A, initiated water quality monitoring. |
| Protect & Enhance Tributary Habitat | Tributary Passage and Diversion Improvements | 149/152 | *N/A* | | Methow Subbasin High Priority Subbasin Enhancement | USBR | Established subbasin office, initiated NEPA, evaluated workload. Initiated engineering technical assistance to Barkley Ditch Co and Twisp Valley Water and Power Co to improve fish passage at existing diversion dams on the Methow and Twisp Rivers, respectively. Initiating engineering technical assitance to landowners and Beaver/Frazer Watershed group in fish passage at various Beaver Creek sites. Initiated an appraisal study with Colville Tribes and Okanogan ID for lower Salmon Creek fish passage improvements |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Passage and Diversion Improvements | 149/152 | *N/A* | | Upper John Day High Priority Subbasin Enhancement | USBR | Established subbasin office, initiated NEPA, evaluated workload. Initiated discussions with ODFW John Day screen shop to develop partnership agreements to facilitate additional output. Completed new agreement with Warm Springs Tribe to help facilitate subbasin work. Initiated engineering technical assistance at diversion on Bear Creek to improve access to Bear Creek. |
| Protect & Enhance Tributary Habitat | Tributary Passage and Diversion Improvements | 149/152 | *N/A* | | Middle Fork John Day High Priority Subbasin Enhancement | USBR | See above for establishment of subbasin office, NEPA, workload. Also initiated engineering technical assistance for several screens and barriers at Oxbow Ranch. |
| Protect & Enhance Tributary Habitat | Tributary Passage and Diversion Improvements | 149/152 | *N/A* | | Upper Salmon High Priority Subbasin Enhancement | USBR | As early action items (subbasin not scheduled to be initiated until 2002), completed engineering work for consolidation of S-13 and S-14 irrigation diversions, headgate and screen replacements at S-14, S-11 and S-12 consolidation and headgate and screen replacement, and screen replacements at SEF-4, SEF-10, SEF-11, BSC-3, BSC-4, and BSC-5 on the Salmon East Fork River and Big Springs Creek in the Pahsimeroi basin. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 133 | 198402100 | Protect and Enhance Anadromous Fish Habitat in The John Day Subbasin | BPA | Constructed 136 miles of riparian livestock exclosure fencing protecting and enhancing 77 miles of stream and 2005 acres of riparian habitat. Planted 7,450 riparian trees and shrubs, installed 3,040 instream structures and restored 1.8 mi. of |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1095 | 199601100 | Walla Walla River Juvenile and Adult Passage Improvements | BPA | Cost shared construction of Nursery Bridge Dam fish ladder on the Walla Walla River |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1095 | 199601100 | Walla Walla River Juvenile and Adult Passage Improvements | BPA | Designed Garden City/Lowden II screens and ditch consolidation on the Walla Walla River |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1095 | 199601100 | Walla Walla River Juvenile and Adult Passage Improvements | BPA | Designed Milton Ditch consolidation |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1095 | 199601100 | Walla Walla River Juvenile and Adult Passage Improvements | BPA | Cost shared construction of new intake screens for City of Walla Walla water supply on Mill Creek |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1095 | 199601100 | Walla Walla River Juvenile and Adult Passage Improvements | BPA | Contracted for operation and maintenance of BPA funded passage facilities in Walla Walla Basin |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1402 | 199801800 | John Day Watershed Restoration | BPA | Completed construction of four permanent diversions, four pumping stations, four infiltration galleries, and one return-flow cooling project. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1575 | 200003300 | Walla Walla River Fish Passage Operations | BPA | Provided technical input on passage and trapping facility designs on an annual basis. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1575 | 200003300 | Walla Walla River Fish Passage Operations | BPA | Operated and monitored juveniles screen sites, juvenile bypasses, and adult ladders annually to ensure adequate passage conditions exist.. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1575 | 200003300 | Walla Walla River Fish Passage Operations | BPA | Operated adult trapping facilities and provided return data annually. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200106400 | Improve Stream Flow and Passage for Simcoe Creek Steelhead | BPA | 2001 Action Plan. Tribe is working on contract language for permanent protection of increased flow for fish. Project will maintain stream flows by providing replacement stock water during the summer, and facilitate upstream and downstream passage of steelhead by screening two canals and laddering two diversion dams. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200106500 | Hancock Springs Passage and Habitat Restoration Improvements | BPA | 2001 Action Plan. Draft SOW complete, BA being drafted, Draft NEPA checklist complete. Project will increase juvenile salmonid access to, and enhance the habitat of a spring fed off-channel to the upper Methow River. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200106700 | Restore Passage Lower Lemhi / Salmon Rivers | BPA | 2001 Action Plan. The work statement and budget have been sent to BPA Procurement. The objective of this project is to conserve 13 cfs of flow in critical reach of Lemhi River for adult and juvenile chinook salmon migration by changing the source of irrigation water for affected properties from the Lemhi River at L-6 diversion to the Salmon River at S-14 diversion. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200106300 | Methow Basin Screening | BPA | 2001 Action Plan. SOW/budget prepared and submitted to contracting. This project will provide fish screen facilities upgrades, and new fish screen construction, on Methow River Basin irrigation diversions (Foghorn, Rockview , McKinney Mountain, Kumn Holloway) and equipment upgrades for completion of these projects. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 25026 | Yakima Tributary Access and Habitat Program | BPA | 2001 Action Plan. BPA intends to fund the completion of a Strategic Plan in FY02. This project will include fish enhancements (fish passage screens and riparian habitat) at selected high priority locations on Yakima tributaries through a collaborative approach of local, state, federal & tribal interests. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1747 | 200103600 | Ames Creek Restoration | BPA | 2001 High Priority Project. This project will breach an old mill dam to provide fish passage and restore stream habitat in the old mill pond. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1749 | 200103800 | Gourley Creek Dam Fish Ladder | BPA | 2001 High Priority Project. This project will open up about 4 miles of high quality habitat for ESA listed salmonid above an existing fish passage barrier. Gourley Creek, is identified as a focal watershed and a high priority for protection and restoration in the SBW assessment. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200103900 | Install Fish Screens to Protect ESA-listed Steelhead and Bull Trout in the Walla Walla Basin | BPA | 2001 High Priority Project. We received a draft NEPA checklist from sponsor and seek clarification on a few key items. This program will protect two ESA-listed salmonid species by providing cost share for installing WDFW- and NMFS-approved fish screens, for 197 Walla Walla Basin irrigation diversions. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200104200 | Farmers Irrigation District Main-stem Hood River Fish Screen Project | BPA | 2001 High Priority Project. Contract has been let and work is expected to be completed before September 30, 2002. This project will replace the existing noncompliant drum screens with a horizontal fixed plate screen to meet or exceed current NMFS juvenile fish screening criteria. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | *unassigned* | 200105200 | Restoration of Anadromous Fish Access to Hawley Creek | BPA | 2001 High Priority Project. Contractor is working with landowners. This project will reconnect Hawley Creek to the Lemhi River, reduce water temperatures, and facilitate stream channel and riparian habitat restoration for anadromous and resident species in Hawley Creek by improving irrigation methods and increasing instream flows. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1762 | 200105100 | Reconnect Little Morgan Creek to the mainstem Pahsimeroi River | BPA | 2001 High Priority Project. Engineering firm is preparing a draft design and coordinating with land owners. Project is on schedule to be completed by December 30. This project will reestablish 14.3 miles of historical anadromous habitat and provide an isolated bull trout population access to the mainstem river and will provide information on recolonization rates by anadromous stocks into a isolated drainage. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1735 | 200102400 | Upstream Migration Passage of Salmon and Steelhead | BPA | 2001 Gorge Provincial Review Project. This project will pin-point areas of difficult fish passage under different flow regimes using EMG telemetry and to examine movements, habitat use, and energetic consumption of fish during the upstream migration |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1298 | 199705600 | Lower Klickitat Riparian and In-Channel Habitat Enhancement Project | BPA | 2001 Gorge Provincial Review Project. This project will identify and prioritize reaches for restoration activites; protect, restore, and enhance priority reaches to increase riparian, wetland, and stream habitat values; adaptively maintain and, where appropriate, manage sites to ensure protection of habitat values; and monitor habitat conditions to ensure desired habitat levels are reached and maintained. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 1736 | 200102500 | Salmonid Production in Restored Rattlesnake Creek | BPA | 2001 Gorge Provincial Review Project. 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. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 476 | 198902700 | Power Repay Umatilla Basin Project | BPA | Power cost reimbursement for the Umatilla Basin Project has occurred annually. Enhanced fish passage flows in the lower 50 miles of the Umatilla River, from McKay Creek to the mouth. |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 672 | 199107500 | Yakima Phase II Screens - Construction* | BPA | Screen construction completed at LaFortune/Powell and Wilson Creek/Bull Ditch diversions |
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 682 | 199200900 | OPERATE & MAINTAIN (O&M)YAKIMA BASIN PHASE II FISH SCREENS | BPA | Four new sites will be added (Chapman Nelson, Lewis, Powell LaFortune, Wilson) for a total of 25. Spring startup, routine and emergency maintenance, and recordkeeping was performed on all sites. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary passage and diversion improvements | 149 | 682 | 199200900 | OPERATE & MAINTAIN (O&M)YAKIMA BASIN PHASE II FISH SCREENS | BPA | Four new sites will be added (Chapman Nelson, Lewis, Powell LaFortune, Wilson) for a total of 25. Spring startup, routine and emergency maintenance, and recordkeeping was performed on all sites. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 137 | 198402500 | GRANDE RONDE BASIN FISH HABITAT ENHANCEMENT PROJECT | BPA | Restored 0.5 miles of incised stream to natural channel conditions with improved floodplain connectivity. An additional 4.5 miles of natural channel design projects are in progress. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1731 | 200102000 | Fifteen Mile Creek Riparian Fencing/Stream Survey | BPA | 2001 Gorge Provincial Review Project. This project will construct approximately 30 miles of riparian protection fence over a three year period along Fifteenmile Creek and it's tributaries; and will conduct a physical stream survey of 90 miles of privately owned stream in the Fifteenmile Subbasin. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1732 | 200102100 | Fifteen Mile Creek Riparian Buffers | BPA | 2001 Gorge Provincial Review Project. This project will provide for continued operation and maintenance of all completed habitat restoration measures within the Fifteenmile Subbasin. Continue photo documentation of habitat recovery and the collection of stream temperature data. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 752 | 199206200 | Yakama Nation - Riparian/Wetlands Restoration | BPA | Completed wetland restoration on Areas 2, 10, and 11 (1,200 acres). |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 926 | 199403900 | Watershed Restoration Planner | BPA | Installed three ISCO sediment samplers in Prairie Creek.. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1034 | 199506001 | Protect and Enhance Wildlife Habitat in Squaw Creek Watershed | BPA | HEP Report and Management plan scheduled for completion. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1273 | 199703400 | Monitoring Fine Sediment Grande Ronde and John Day Rivers | BPA | Annual report documents same results as in 2000, but with more data. Documented improving trend in surface fines from 1998-2001 in Grande Ronde and Granite Creek, but a deteriorating trend for same period in NFJDR. Catherine Creek data exhibits no trend. Article summarizing project results in process for submission to a peer-reviewed journal. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1474 | 199901500 | Restoring Anadromous Fish Habitat in Big Canyon Watershed | BPA | Contracts written. Field inventories and conservation plan development. Installation of BMPs. BMP effectiveness, stream temperature, and photomonitoring monitoring of installed practices |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1472 | 199901300 | Ahtanum Creek Watershed Assessment | BPA | Continued 5-foot screwtrap operation, increased discharge collection frequency to twice weekly, expanded steelhead spawning survey coverage, began analysis Landsat Thematic Image data, expanded Project GIS, expanded coho spawning survey coverage. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 152 | 1473 | 199901400 | Little Canyon Creek Subwatershed-Steelhead Trout Habitat Improvement Project | BPA | Little Canyon Creek Watershed Assessment-sponsored by Lewis SCD, performed by USDA-NRCS |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Milton-Freewater Walla Walla River, OR, Section 1135 | COE | Preparatory work for '02 construction to add up to 10.5 acres of floodplain with setback levees over 1 mile of river |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Grande Ronde, LaGrande OR, Section 1135 | COE | Preparatory work for '02 construction to develop 2 1/2 mile stretch of river, structures to improve width to depth ratio, creation of pools, vegetation and water temp improvements |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Ladd Marsh Grande Ronde Ladd Creek, Section 206 | COE | Preparatory work for '02 construction to restore original channel and reestablish functions in 2 sections totaling 1mile of creek. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | East Birch Creek Umatilla County OR, Section 206 | COE | Completed preparatory work and began construction (to be completed in '02) to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 1.2 mile reach. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Salmon River, Challis, Idaho, Section 206 | COE | Preliminary designs completed for project to restore salmind habitat quality, reduce unnatural bank erosion, restore natural channel and geomorphic function in a 12 mile reach of Salmon River near Challis, ID |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Salmon River, Challis, Idaho, Section 206 | COE | Preliminary designs completed for project to restore salmind habitat quality, reduce unnatural bank erosion, restore natural channel and geomorphic function in a 12 mile reach of Salmon River near Challis, ID |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Trout Creek, Section 206 | COE | Feasibility study completed, for project to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 3 mile reach of Trout Creek. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Salmon Creek, Vancouver, WA Section 206 | COE | Feasibility study completed, for project to improve riparian structure and native plant communities, create secondary channel and wetland areas on about 100 acres. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Fox Creek, Rainier, Oregon Section 1135 | COE | Construction begun on project to daylight approximately 500' of Fox Creek, riparian restoration |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 149 | *unassigned* | | Steigerwald Lake, Camas, Washougal, WA | COE | Preliminary planning phase of project to improve fish passage, riparian and floodplain function |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Milton-Freewater Walla Walla River, OR, Section 1135 | COE | Preparatory work for '02 construction to add up to 10.5 acres of floodplain with setback levees over 1 mile of river |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Grande Ronde, LaGrande OR, Section 1135 | COE | Preparatory work for '02 construction to develop 2 1/2 mile stretch of river, structures to improve width to depth ratio, creation of pools, vegetation and water temp improvements |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Ladd Marsh Grande Ronde Ladd Creek, Section 206 | COE | Preparatory work for '02 construction to restore original channel and reestablish functions in 2 sections totaling 1mile of creek. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | East Birch Creek Umatilla County OR, Section 206 | COE | Completed preparatory work and began construction (to be completed in '02) to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 1.2 mile reach. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Salmon River, Challis, Idaho, Section 206 | COE | Preliminary designs completed for project to restore salmind habitat quality, reduce unnatural bank erosion, restore natural channel and geomorphic function in a 12 mile reach of Salmon River near Challis, ID |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Salmon River, Challis, Idaho, Section 206 | COE | Preliminary designs completed for project to restore salmind habitat quality, reduce unnatural bank erosion, restore natural channel and geomorphic function in a 12 mile reach of Salmon River near Challis, ID |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Trout Creek, Section 206 | COE | Feasibility study completed, for project to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 3 mile reach of Trout Creek. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Salmon Creek, Vancouver, WA Section 206 | COE | Feasibility study completed, for project to improve riparian structure and native plant communities, create secondary channel and wetland areas on about 100 acres. |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Fox Creek, Rainier, Oregon Section 1135 | COE | Construction begun on project to daylight approximately 500' of Fox Creek, riparian restoration |
| Protect & Enhance Tributary Habitat | Tributary Water Quality | 154 | *unassigned* | | Steigerwald Lake, Camas, Washougal, WA | COE | Preliminary planning phase of project to improve fish passage, riparian and floodplain function |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 149 | 341 | 198802200 | Umatilla River Fish Passage Operations | BPA | Oversite and coordination of the Umatilla Basin Project flow enhancement effort has occurred annually to provide increased flows during critical migration periods. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | 1768 | 200105600 | Trout Creek 2001 Streamflow Enhancement | BPA | 2001 Action Plan. Enhance streamflows in Trout Creek for the summer of 2001 through a combination of an instream rotation agreement and instream water right leases. Contract package to BPA Procurement 9/25/01. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200106900 | John Day Basin Streamflow Enhancement Project, Summer 2001 | BPA | 2001 Action Plan. The contract is in place. This project enhanced streamflows in Middle Ford John Day River and Bridge Creek for the summer of 2001 through instream water right leases. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | 1765 | 200105400 | Supplement Flows in Buck Hollow Creek | BPA | 2001 Action Plan. Contract package to Procurement on July 11, 2001. This project enhanced streamflows in Trout Creek for the summer of 2001 through a combination of an instream rotation agreement and instream water right leases. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200106400 | Improve Stream Flow and Passage for Simcoe Creek Steelhead | BPA | 2001 Action Plan. Tribe is working on contract language for permanent protection of increased flow for fish. Project will maintain stream flows by providing replacement stock water during the summer, and facilitate upstream and downstream passage of steelhead by screening two canals and laddering two diversion dams. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200106100 | Touchet River Flow Acquisition | BPA | 2001 Action Plan. Water right from 78 acres of farmland along the Touchet River. Water right will be purchased, dedicated to instream flow and protected in Washington State's Trust Water Right Program. SOW prepared. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200106200 | Acquire Lostine River water rights | BPA | 2001 Action Plan. Project will increase flows, passage conditions, habitat in the Lostine River by purchasing water rights from willing landowner. Work negotiated with landowner through Nez Perce Tribe. Legal expertise has determined, in cooperation with Oregon Water Resources, that instream flow can be protected. Water right appraisal has been completed. Contract expected by 10/31/2001. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200107100 | Increase Naches River In-stream Flows By Purchasing Wapatox Water Right | BPA | 2001 Action Plan. Cost share with Bureau of Reclamation to purchase and retire PacifiCorp's Wapatox Power Plant to benefit salmon and steelhead by increasing instream flows and enhance spawning and rearing habitat in the Naches River. Follow up continuing on policy issues including power replacement costs. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200106800 | Transfer Lemhi Water Users (L-6 to Salmon River (S-14) | BPA | 2001 Action Plan. The objective of this project is to change the source of water for these properties from the Lemhi River at L-6 diversion to the Salmon River at S-14 diversion. This would leave an additional 13 cfs of water flows through the critical reach of the Lemhi. The work statement and budget have been sent to Procurement. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 152 | *unassigned* | 26016 | Stream Gauging in the Entiat Subbasin | BPA | 2001 Action Plan. Purchase, establish, and operate stream gages in eight critical reaches of the Okanogan. The operations will include installation of the gages, telemetry, data recording, and associated activities. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 152 | *unassigned* | 26017 | Stream Gauging in the Okanogan Subbasin | BPA | 2001 Action Plan. Purchase, establish, and operate stream gages in eight critical reaches of the Okanogan. The operations will include installation of the gages, telemetry, data recording, and associated activities. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | *unassigned* | 200107500 | Increase In-Stream Flows to De-watered Stream Reaches in the Walla Walla Basin. | BPA | 2001 High Priority Project. This project will work with private landowners and irrigation districts to implement 4 innovative, realistic, measurable solutions to improve flow on critical de-watered stream reaches. Procurement package was sent for processing on January 3rd, 2002. Expect obligation of funds shortly. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 151 | 1734 | 200102300 | Fifteen Mile Subbasin Water Right Acquisition | BPA | 2001 Gorge Provincial Review Project. Acquire 2 cfs of existing Fifteenmile Creek Subbasin water rights on a voluntary basis and transfer to instream water rights under Oregon state law; target acquisitions to maximize fulfillment of habitat objectives for instream flows. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 149 | *N/A* | | Lemhi Subbasin High Priority Subbasin Enhancement | USBR | Initiated hydrologic studies, streamflow gaging station established at L-5, leased 21.3 cfs water from Idaho Water Bank for instream flow below L-6. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 149 | *N/A* | | Methow Subbasin High Priority Subbasin Enhancement | USBR | Completed water measurement structures for 11 Methow Valley ditches to assist with monitoring diversion rates. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | | | 26029 | Stream Gauging in the Wenatchee Subbasin | | 2001 Action Plan. |
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 152 | *unassigned* | 26029 | Stream Gauging in the Wenatchee Subbasin | | 2001 Action Plan. Purchase, establish, and operate stream gages in eight critical reaches of the Wenatchee. The operations will include installation of the gages, telemetry, data recording, and associated activities. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Water Quantity | 152 | *unassigned* | 26029 | Stream Gauging in the Wenatchee Subbasin | | 2001 Action Plan. Purchase, establish, and operate stream gages in eight critical reaches of the Wenatchee. The operations will include installation of the gages, telemetry, data recording, and associated activities. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 563 | 199004401 | Lake Creek Land Acquisition and Enhancement | BPA | Purchase of property. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 607 | 199009200 | Protect and Enhance the Wanaket Wildlife Mitigation Area. | BPA | Through a co-operator funded agreement, created an additional 2 acres of wetland habitats, added 3 additional irrigation headgates to improve water control, and removed 20 acres of Russian olive to increase ease of irrigation operations and maintenance. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 607 | 199009200 | Protect and Enhance the Wanaket Wildlife Mitigation Area. | BPA | Completion of management plan update, emphasizing shrub-steppe/grassland enhancements, protection of recently enhanced wetland habitats, and wildlife protection through access and travel management. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | Continue spring rooted tree planting projects on Asotin Creek 29,300 native trees and shrubs planted |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | GIS Mapping: projects completed within Asotin County from all funding sources by project type since 1996, fish species distribution, land use and ownership, precipitation, and watershed locations. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | Received final copy of "Asotin Creek Inventory and Assessment Report" from NRCS. It compares the stream and riparian conditions from 1994 - 2000. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | WDFW pre- and post-habitat monitoring final report "Asotin Creek Instream Habitat Alteration Projects - 2000 Habitat Evaluation & Snorkeling Surveys & Water Temperature Monitoring". |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 897 | 199401805 | Continued Coordination and Implementation of Asotin Creek Watershed Projects | BPA | BMP projects completed: 400 ac 5-yr direct seed, 133 ac direct seed, 1 sediment basin, 2960 ft. terraces |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1205 | 199608000 | NE Oregon Wildlife Mitigation Project -- "Precious Lands" | BPA | Removed 0.5 miles of old barbed wire fence that posed a threat to wildlife and personnel. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 137 | 198402500 | GRANDE RONDE BASIN FISH HABITAT ENHANCEMENT PROJECT | BPA | Restored 0.5 miles of incised stream to natural channel conditions with improved floodplain connectivity. An additional 4.5 miles of natural channel design projects are in progress. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1731 | 200102000 | Fifteen Mile Creek Riparian Fencing/Stream Survey | BPA | 2001 Gorge Provincial Review Project. This project will construct approximately 30 miles of riparian protection fence over a three year period along Fifteenmile Creek and it's tributaries; and will conduct a physical stream survey of 90 miles of privately owned stream in the Fifteenmile Subbasin. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1732 | 200102100 | Fifteen Mile Creek Riparian Buffers | BPA | 2001 Gorge Provincial Review Project. This project will provide for continued operation and maintenance of all completed habitat restoration measures within the Fifteenmile Subbasin. Continue photo documentation of habitat recovery and the collection of stream temperature data. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 752 | 199206200 | Yakama Nation - Riparian/Wetlands Restoration | BPA | Completed wetland restoration on Areas 2, 10, and 11 (1,200 acres). |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1474 | 199901500 | Restoring Anadromous Fish Habitat in Big Canyon Watershed | BPA | Contracts written. Field inventories and conservation plan development. Installation of BMPs. BMP effectiveness, stream temperature, and photomonitoring monitoring of installed practices |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1578 | 200003600 | Protect & Restore Mill Creek | BPA | Construction of 1 mile of cattle exclusion fence |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | *unassigned* | 200106500 | Hancock Springs Passage and Habitat Restoration Improvements | BPA | 2001 Action Plan. Draft SOW complete, BA being drafted, Draft NEPA checklist complete. Project will increase juvenile salmonid access to, and enhance the habitat of a spring fed off-channel to the upper Methow River. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1746 | 200103500 | Protect Bear Valley Wild Salmon, Steelhead, Bull Trout Spawning and Rearing Habitat | BPA | 2001 High Priority Project. Project protects critical spawning, rearing and migratory habitats for wild chinook salmon, steelhead trout, bull trout and westslope cutthroat trout in the Bear Valley Basin by permanently closing the Bear Valley and Deer Creek allotments to livestock grazing. Appraisal is completed, will be working with permitees, project should be completed in a couple of months. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 1751 | 200104000 | Wagner Ranch Acquisition | BPA | 2001 High Priority Project. This project acquires Wagner Ranch to provide a contiguous corridor of habitat along the lower mainstem John Day River. The MOA and acquisition are completed; processing the contract for O&M and a Management Plan. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 1752 | 200104100 | Forrest Ranch Acquisition | BPA | 2001 High Priority Project. The Project acquires approximately 4,295 acres of land, 25.22 cfs of water, and 12.17 miles of river habitat on the upper Middle Fork and upper mainstem John Day Rivers. Property has been designated the highest priority in the John Day basin since 1971. Appraisal and Environmental Survey completed. NEPA in process,close to complete. Cultural survey and public involvement completed. Earnest Money Agreement completed binding owner to the sale. MOA being negotiated with legal counsel of the Tribe and BPA. MOA expected by January 31, 2002 |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 1754 | 200104300 | Acquire 27,000 Camp Creek Ranch at Zumwalt Prairie | BPA | 2001 High Priority Project. The project will secure, restore and protect steelhead, bull trout, redband trout and chinook habitat on tributaries to the Imnaha River, including entire Camp Creek watershed. Restore and protect 27,000 acres of wildlife habitat on the Zumwalt Prairie. The Conservation easement language has been finalized, appraisal, ELA, CR requirements are complete. Prepared to complete land transaction with TNC. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 1755 | 200104400 | Conservation Easement, Baker Ranch, Salmon River East Fork | BPA | 2001 High Priority Project. Project will protect riparian areas, restore stream banks & save 70 cfs in the east fork of the Salmon through a 740 acre ranch. Conservation easement will eliminate the use of water from 7 irrigation diversions, saving $647,000 of cost of 7 fish screens and a bridge. IDFG is in negotiations with landowner, they are ready to get appraisal for the easement, waiting to do cultural resources. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1409 | 199802100 | Hood River Fish Habitat | BPA | 2001 Gorge Provincial Review Project. This project will implement habitat improvement actions that will support wild fish and supplementation efforts within the Hood River subbasin. Since 1996 have completed 2.2 miles of riparian fence exclosure on Neal Creek (Kirby property) and 0.7 miles on Baldwin Creek (Snyder property) and riparian area has been recovering, completed 250 feet of bioengineered rip rap to stabilize bank, plantings along on Neal Creek (Kirby property) with 90% survival for bank stabilization and riparian vegetation restoration, removed a portion of the Tony Creek Dee Mill diversion concrete apron, removed stop logs, and constructed a jump pool providing access to three stream miles for spring chinook salmon, winter steelhead, bulltrout, and resident trout, completed a preliminary feasibility evaluation for the East Fork Irrigation District in developing a pipe bypass system on Neal Creek which will eliminate the need for a diversion and irrigation canal screen on Neal |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1733 | 200102200 | Fifteen Mile Cr Orchard Pesticide Pollution Risk | BPA | 2001 Gorge Provincial Review Project. Accelerate the implementation of Integrated Fruit Management in orchards that use new generation pesticides and sprayer technology to reduce the risk of pollution to land and aquatic resources from pesticides affecting salmon and steelhead. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 825 | 199304000 | Fifteenmile Creek Habitat Restoration Project | BPA | 2001 Gorge Provincial Review Project. Provide for continued operation and maintenance of all completed habitat restoration measures within the Fifteenmile Subbasin. Continue photo documentation of habitat recovery and the collection of stream temperature data. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1403 | 199801900 | Wind River Watershed Restoration | BPA | 2001 Gorge Provincial Review Project. The project is restoring habitat within the Wind River subbasin to support healthy populations of wild steelhead. Since 1997 coordinated the Wind River Watershed Council and it's Technical Advisory Committee, measured sediment composition in 17 subbasins, processed 310 core samples and evaluated for fines (USFS); conducted stream survey of 9 streams, 20,600 m (USGS); assessed density of juvenile steelhead and other fish species in 7 streams by electrofishing covering 5.8 km; assessed density of juvenile steelhead and other fish species in 4 streams by electrofishing covering 2.1 km and 6 mainstem reaches (0.1 m each) by snorkeling; ongoing monitoring of adult steelhead at Trout Creek trap site;ongoing monitoring of adult steelhead at Shipherd Falls trap site; ongoing monitoring of stream temperatures at 31 sites with continuous temperature loggers; ongoing operation of four smolt traps to determine steelhead smolt production; |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 752 | 199206200 | Yakama Nation - Riparian/Wetlands Restoration | BPA | Completed acquisition of Priority Area 6 and other properties (3,000 acres) |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 153 | 926 | 199403900 | Watershed Restoration Planner | BPA | Reviewed 34 project proposals for the Oregon Watershed Enhancement Board's technical committee for Region 5. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1034 | 199506001 | Protect and Enhance Wildlife Habitat in Squaw Creek Watershed | BPA | Two BIA-administered grazing allotments, totalling approximately 20,000 acres and 1,056 Animal Unit Months purchased and rested from use. Allotment rest provides an estimated 588 Habitat Units of protection credit. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1201 | 199607705 | Restore McComas Meadows/Meadow Creek Watershed | BPA | Ongoing project. Protect and restore critical riparian/stream habitat in Meadow Creek thru streambank stabilization, riparian re-vegetation, road decommissioning, culvert replacement/repair, and native plant restoration. Re-vegetation (2,500 trees planted); Tributary channel relocation planned. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1208 | 199608300 | CTUIR Grande Ronde Subbasin Restoration | BPA | McCoy Meadows - Initiated bridge construction (bridge scheduled for completion by August 2001). Conducted post phase 2 construction review. Maintained and operated temporary irrigation system. Established veg monitoring plots in phase 2 project area. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1263 | 199702500 | Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan | BPA | Provided cost-share to continue operation of seven mainstem flow gages in the Lostine and Wallowa rivers and Bear Creek. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1263 | 199702500 | Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan | BPA | Provided cost-share for a weed abatement project in the lower Grande Ronde River corridor with the USFS, BLM, Wallowa Resources, and private landowners. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1263 | 199702500 | Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan | BPA | Contracted for preliminary design of a riparian restoration project in Prairie Creek. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1263 | 199702500 | Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan | BPA | Contracted for a survey and preliminary design for the replacement of three culverts (fish passage barriers) on Grouse Creek. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1293 | 199705100 | Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Yakima Side Channels | BPA | As Lead Agency, YN implemented YKFP operations; managed and directed all YN management, administrative, science and technical personnel; participated in all activities affecting Project planning, management and administration. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1411 | 199802200 | Pine Creek Ranch | BPA | Property enrolled in Wildlife Habitat Conservation Management Program through approval of plan by ODFW and Wheeler County. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1411 | 199802200 | Pine Creek Ranch | BPA | PFC Assessment of Pine Creek conducted with National Riparian Service Team. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1411 | 199802200 | Pine Creek Ranch | BPA | Baseline HEP will be conducted in Spring 2001. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1557 | 200001500 | Oxbow Ranch Management and Implementation | BPA | The CTWSRO acquires the property from TNC and begins assessment of baseline condition |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1563 | 200002100 | Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions | BPA | Completed easement agreements with the City of La Grande for management of portions of Becker property; other agreements in progress. BPA funds transferred to TNC as reimbursement for expenses incurred; title for all three properties transferred to ODFW. Developed Statement of Work; Contracted first-year restoration and O&M funds. Conducted baseline HEP with multi-agency HEP Team. Five-Year Management Plan and Baseline HEP Report in progress. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1567 | 200002500 | Eagle Lakes Ranch Acquisition And Restoration | BPA | This project protects and restores proper function to shrub steppe and wetland habitats. Public notification for NEPA. Designation of specific areas for BPA, LCWF, and MBF purchase. Purchase agreement executed with landowner. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 | 1568 | 200002600 | RAINWATER WILDLIFE AREA | BPA | This project protects, enhances, and mitigates 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. Completed Draft Management Plan and HEP Analysis and initiated public review. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Milton-Freewater Walla Walla River, OR, Section 1135 | COE | Preparatory work for '02 construction to add up to 10.5 acres of floodplain with setback levees over 1 mile of river |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Grande Ronde, LaGrande OR, Section 1135 | COE | Preparatory work for '02 construction to develop 2 1/2 mile stretch of river, structures to improve width to depth ratio, creation of pools, vegetation and water temp improvements |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Ladd Marsh Grande Ronde Ladd Creek, Section 206 | COE | Preparatory work for '02 construction to restore original channel and reestablish functions in 2 sections totaling 1mile of creek. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | East Birch Creek Umatilla County OR, Section 206 | COE | Completed preparatory work and began construction (to be completed in '02) to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 1.2 mile reach. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Walla Walla General Investigation | COE | Requested funding for feasibility study for project to increase instream flows to benefit listed slamonids and allow reintroduction of Chinook salmon. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Trout Creek, Section 206 | COE | Feasibility study completed, for project to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 3 mile reach of Trout Creek. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Salmon Creek, Vancouver, WA Section 206 | COE | Feasibility study completed, for project to improve riparian structure and native plant communities, create secondary channel and wetland areas on about 100 acres. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Fox Creek, Rainier, Oregon Section 1135 | COE | Construction begun on project to daylight approximately 500' of Fox Creek, riparian restoration |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 149 | *unassigned* | | Reevaluate Lower Snake Compensation Plan | COE | Requested funding to begin '02 evaluation |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 151 | *unassigned* | | Reevaluate Lower Snake Compensation Plan | COE | Requested funding to begin '02 evaluation |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Milton-Freewater Walla Walla River, OR, Section 1135 | COE | Preparatory work for '02 construction to add up to 10.5 acres of floodplain with setback levees over 1 mile of river |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Grande Ronde, LaGrande OR, Section 1135 | COE | Preparatory work for '02 construction to develop 2 1/2 mile stretch of river, structures to improve width to depth ratio, creation of pools, vegetation and water temp improvements |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Ladd Marsh Grande Ronde Ladd Creek, Section 206 | COE | Preparatory work for '02 construction to restore original channel and reestablish functions in 2 sections totaling 1mile of creek. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | East Birch Creek Umatilla County OR, Section 206 | COE | Completed preparatory work and began construction (to be completed in '02) to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 1.2 mile reach. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Walla Walla General Investigation | COE | Requested funding for feasibility study for project to increase instream flows to benefit listed slamonids and allow reintroduction of Chinook salmon. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Trout Creek, Section 206 | COE | Feasibility study completed, for project to restore salmonid habitat, reduce unnatural bank erosion, restore natural channel and geomorphic function in 3 mile reach of Trout Creek. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Salmon Creek, Vancouver, WA Section 206 | COE | Feasibility study completed, for project to improve riparian structure and native plant communities, create secondary channel and wetland areas on about 100 acres. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 154 | *unassigned* | | Fox Creek, Rainier, Oregon Section 1135 | COE | Construction begun on project to daylight approximately 500' of Fox Creek, riparian restoration |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 and 153 | *N/A* | | Tualatin River Subbasin Enhancement | USBR | Completed designs for 34 acres (Dennis Property) to restore hardwood wetland, seasonal wetland, stormwater treatment, and diversion screens; Completed design and construction management (Morand Unit Wetland Restoration) to create 9 acres of restored seasonal wetlands and hardwood forest habitat; renegotiated Tualatin Project mitigation agreement with ODFW and Washington County to redirect toward fishery needs. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 and 153 | *N/A* | | Yakima River Subbasin Enhancement | USBR | Evaluating the effects of winter Yakima Project operations on redd success; completing 3-year study of limnology of five Project reservoirs to evaluate effects on rearing bull trout; measuring entrainment of bull trout at Rimrock Lake and improved Lake elevations in August 2001 to provide entry to Tieton River; subordinated power at Chandler powerplant during 01 spring salmonid migrations; experimented with gate operaton at Roza Powerplant to move juvenile salmonids more quickly through Roza Dam pool; evaluated Chandler canal screen and fish bypass to improve fish passage operations during drought conditions; purchased three parcels of property (309 acres on Taneum creek, 200 acres on Lower Wenas Creek, 146 acres in Union Gap reach) with irrigation water rights transferred to instream flows. Also initiated feasibility study on Kennewick and Columbia Irrigation Districts pump exchange project to leave water in lower 50 miles of Yakima River. Completed diversion water |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 and 153 | *N/A* | | Umatilla River Subbasin Enhancement | USBR | Continued feasibility study of Umatilla Phase III to provide additional flows in the Umatilla River for anadromous fish. |
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 and 153 | *N/A* | | Lower Deschutes Subbasin Enhancement | USBR | Continued to serve on implementation team for Warm Springs Reservation Water Rights Settlement Agreement which guarantees minimum streamflows in the Metolius and Lower Deschutes Rivers. |

## Table 2: Habitat Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | BPA Project ID | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|---|
| Protect & Enhance Tributary Habitat | Tributary Watershed Health | 150 and 153 | *N/A* | | Grande Ronde Subbasin Enhancement | USBR | As part of an on-going program under discretionary funding, USBR initiated several engineering technical assistance projects in the Lostine River in partnership with Grande Ronde Model Watershed Projects including: Poley-Allen Diversion, Miles Ditch diversion lining, Miles-Foster pipeline, Cross Country Canal siphon, Lostine Ditch Pipeline, Fitzpatrick Ditch Pipeline, Jones Ranch erosion control, Lostine River Ranch pond discharge temperature improvement, Westside Ditch Pipeline, and Lostine headgate automation program. Also in the Grande Ronde subbasin, initiated engineering technical assistance at Clearwater-Tully Hill-Bear Creek Pipeline, Swackhammer diversion rehabilitation, Teter Ranch erosion control project, and Griffin Ranch erosion control. In the Wallowa watershed, initiated Brink-Levois-Voss pipeline and McKinley pipeline. Worked in partnership with the Associated Ditch Company on a potential project to rehabilitate Wallowa Dam which would have |

## Table 3: Hatchery Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Hatchery Reform | Develop HGMPs | 169 | | HGMPs for LSRCP hatcheries (Mountain Snake & Blue Mountain Provinces) | BPA | Proposals for developing HGMPs for the LSRCP hatcheries were submitted to the Provincial Review process. |
| Comprehensive Marking Plan | | 174 | | Marking Strategy Oversight Group | BPA | An agency/tribal oversight group was established to guide and coordinate development of a comprehensive marking strategy for artificially-produced Columbia Basin salmon and steelhead. |
| Use a Safety Net Program | | 175 | 1277 | Listed Stock Chinook Salmon Gamete Preservation | BPA | Continued to acquire male gamete genetic material for preservation; 398 chinook and 295 steelhead. 2000 Annual Report submitted. |
| Use a Safety Net Program | | 175 | 1549 | Infrastructure for FDA Registration of Erythromycin | BPA | Continued dialogue with FDA on erythromycin registration. Catalogued both peer-reviewed and gray literature on erythromycin. Maintained a conduit between Northwest erythromycin users and FDA. |
| Use a Safety Net Program | | 175 | 1760 | Safety Net Coordinator | BPA | An agency/tribal oversight group was established. The group developed a list of 38 salmon and steelhead populations that will proceed to extinction risk analysis, the first step of the four-step safety-net planning process. |

## Table 3: Hatchery Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Use a Safety Net Program | | 175 | 359 | NE Oregon Hatchery Master Plan - Nez Perce | BPA | Predesign for Grande Ronde and Imnaha chinook salmon completed by consultant. Step 2 submittal made to NPPC. Decision about moving to step 3 expected January 2002. NEPA coverage changed from an EA to an EIS, to be completed by mid-2003. Master planning work started on coho and steelhead for Grand Ronde and Imnaha. |
| Use a Safety Net Program | | 175 | 363 | NE Oregon Outplanting Facilities Plan - ODFW | BPA | Work continued on hatchery master plans for Walla Walla and Umatilla production. |
| Use a Safety Net Program | | 175 | 609 | Genetic Analyses of Columbia & Snake Sockeye | BPA | Project provided DNA analyses and other genetic information and assistance needed by Snake River sockeye and spring/summer chinook salmon captive broodstock and captive rearing (safety-net) programs |
| Use a Safety Net Program | | 175 | 669 | Redfish Lake Sockeye Rearing and Trapping | BPA | Maintained captive broodstocks of Snake River sockeye salmon and produced juveniles and adults for release in Redfish Lake and other Sawtooth Valley, ID, lakes |

## Table 3: Hatchery Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Use a Safety Net Program | | 175 | 723 | Redfish Lake Sockeye Broodstock Rearing/Research | BPA | Maintained captive broodstocks of Snake River sockeye salmon and produced juveniles and adults for release in Redfish Lake and other Sawtooth Valley, ID, lakes. |
| Use a Safety Net Program | | 175 | 1155 | Johnson Creek Artificial Propagation Enhancement | BPA | O&M: Continued smolt supplementatin program; progress on project; sites identified, agencies support program. M&E: Continued comprehensive assessment of wild fish. |
| Use a Safety Net Program | | 175 | 1186 | - | BPA | Maintained ESA-Listed stocks of Snake River spring/summer chinook salmon while habitat improvements are under way and provided for a geographically separate captive brood population to insure against a catastrophic loss should that occur at one site. Prepared Annual Monitoring and Evaluation Report. |

## Table 3: Hatchery Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Use a Safety Net Program | | 175 | 1231 | Idaho Chinook Salmon Captive Rearing | BPA | Maintained ESA-Listed stocks of Snake River spring/summer chinook salmon while habitat improvements are under way and provided for a geographically separate captively reared population to insure against a catastrophic loss should that occur at one site. Prepared Annual Monitoring and Evaluation Report. |
| Use a Safety Net Program | | 175 | 1379 | Grande Ronde Supplementation Facilities- O&M - NPT | BPA | Operated weir and acclimation facilities at Lostine river sites. Trapped 444 chinook salmon. 133,000 Lostine captive progeny (99 BY) released . M&E conducted on adult and smolt migrations. |
| Use a Safety Net Program | | 175 | 1380 | Grande Ronde Supplementation - O&M -CTUIR | BPA | Operated weir and acclimation facilities at Upper Grande Ronde river and Catharine Creek sites. Trapped 135 chinook salmon. Upper Grande Ronde and CC captive progeny (99 BY) released . M&E conducted on adult and smolt migrations. |

## Table 3: Hatchery Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Use a Safety Net Program | | 175 | 1386 | Grande Ronde Captive Brood O&M / M&E | BPA | Maintained ESA-Listed stocks of Snake River spring/summer chinook salmon while habitat improvements are under way and provide for a geographically separate captive brood population to insure against a catastrophic loss should that occur at one site. Prepared Annual Monitoring and Evaluation Report. |
| Use a Safety Net Program | | 175 | 1390 | Pittsburg Landing Acclimation Facility - Snake River | BPA | Juvenile acclimation release continues at full capacity; adult count at Lower Granite dam show distinct increase from supplementation |
| Use a Safety Net Program | | 175 | 1391 | Captive Broodstock Artificial Propagation | BPA | Five generation sequence continues; juvenile release goal increased; adult response on supplementation occuring as noted by weir counts; NWPPC Step 1 completed |
| Use a Safety Net Program | | 175 | 1561 | Tucannon River Spring Chinook Captive Broodstock | BPA | Maintained ESA-Listed stocks of Snake River spring/summer chinook salmon while habitat improvements are under way. Provide for captive brood population to insure against a catastrophic loss in the environment. Annual Monitoring and Evaluation Report for 2000 uploaded. |

# Table 4: Harvest Projects

| Strategy | Substrategy | RPA Action Number | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Develop Fishing Techniques | Gear Efficacy | 164 | 1717 | Evaluate Live Capture Selective Harvest | BPA | Initiated two studies to test the feasibiity and effectiveness of tooth-tangle net gear and floating trawl gear at reducing take of ESA salmonids |
| Develop Fishing Techniques | Incidental Mortality | 167 | 1450 | NMFS Net Exchange Program | BPA | Continued to measure use of larger-mesh gillnets in Tribal fisheries and evaluate the effectiveness of alternate gillnet mesh strata using 2001 data. |
| Develop Fishing Techniques | Incidental Mortality | 167 | 1813 | Scope of Research on Gear Impacts to Salmonids | BPA | Initiated one project to assess the full impact of selective fisheries (gear and methods) on the spawning success of ESA listed stocks. |
| Harvest Management Decisions | Unaccounted Harvest Mortality | 167 | 1771 | Feasibility of Removal of Ghost Fishing Nets | BPA | Initiated one project to locate and remove any ghost nets in Management Zone 6. Project will continue in 2002. |
| Sustainable Fisheries | Value Added Projects | C/R 11.13 | 1816 | Identify fishery economic development strategies | BPA | Provided ice for spring tribal commercial fishery in Mgt. Zone 6. |
| Sustainable Fisheries | Terminal Fishing Locations | C/R 11.12 | 846 | Columbia River Terminal Fisheries Research - ODFW/WDFW | BPA | Continued implementation of three projects to provide additional hatchery production and resultant terminal sport/commercial fishing opportunities in the Lower Columbia Estuary |

## Table 5: Resident Fish Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.2.a.9<br>8.3.d<br>8.4.a<br>8.4.b | 377 | Kootenai R. sturgeon studies, conserv'n aquaculture | BPA | Continued M&E of sturgeon survival, movement, growth, etc. in the Kootenai R. Collected data on water velocities and substrates in the Kootenai R. near sturgeon spawning areas. |
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.1.f<br>8.4.b | 936 | Improving the Kootenai R. ecosystem | BPA | Developed arrangement with BC to partially fund fertilization of Kootenay Lake. Continued physical and biological monitoring. Performed mesocosm study. |
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.1.e | 1883 | Negotiate Libby/Arrow Storage Swap | BPA | A swap was not possible in FY01 because of drought. |
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.2.a.1<br>8.2.a.8<br>8.2.a.9<br>8.3.d<br>8.4.b | pending | Kootenai R. Fisheries Recovery Investigations | BPA | Continued M&E of Kootenai white sturgeon natural spawning needs and success. |
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.2.a.8<br>10.A.1.1<br>8.3.d | pending | Mitigation for Libby Dam | BPA | Continued M&E program for effects on bull trout and other species of Libby flows provided for sturgeon spawning, although those flows did not occur in FY01 because of drought. |

## Table 5: Resident Fish Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Conditions below Libby Dam that facilitate KWS natural reproduction and juvenile survival | 8.1.a<br>8.1.c<br>8.1.d<br>8.1.e<br>8.1.g<br>8.2.a.1<br>8.2.a.2<br>8.2.a.3<br>8.2.a.4<br>8.2.a.7<br>8.2.c<br>8.3.a<br>8.3.c<br>8.3.f<br>8.3.g<br>8.3.h<br>10.4<br>10.5<br>10.A.1.1<br>10.A.1.2<br>11.A.1.1.a<br>11.A.1.1.b<br>11.A.1.1.c<br>11.A.1.2.a<br>11.A.1.3.c<br>11.A.1.4.d | 1689 | Annual Water Management Plan (1-WMP) | COE | 8.1.a - Done. No sturgeon pulse occurred this year because of the low water supply.<br>8.1.c - The April - August runoff forecast for Libby was 3.2 Maf (1 Jun). At this level no sturgeon flows are required.<br>8.1.d - VARQ at Libby has not been implemented.<br>8.1.e - No Libby / Arrow swap occurred this year.<br>8.2.a.1 - Libby Spill test did not occur this year.<br>8.2.c - No sturgeon pulse was required this year due to low water supply forecast.<br>8.3.b - No sturgeon pulse was required this year due to low water supply forecast.<br>8.3.f - Very little if any daily load following occurred.<br>8.3.g - No sturgeon pulse was required this year due to low water supply forecast.<br>10.A.1.1 - Ramp Rates were observed. Some exceptions occured due to coordinated power emergencies and equipment problems at the project.<br>11.A.1.1a - On Aug. 31st Libby was at Elev. 2434.92 ft. This was due to providing bull trout minimum flows of 6 kcfs. |
| Promote the Reproduction and Recruitment of Kootenai River White Sturgeon (KWS). | Kootenai River white sturgeon conservation hatchery program | 8.2.a.9<br>8.3.d<br>8.4.a<br>8.4.b | 377 | Kootenai R. sturgeon studies, conserv'n aquaculture | BPA | Released 4,000 age 1+ juvenile sturgeon from 11 families. Propagated 10 families of young-of-year juveniles from 5 females. Continued M&E of post-release survival, movement, growth, etc. of hatchery produced juvenile sturgeon. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.1.4.a<br>11.A.1.4.b<br>11.A.1.4.d | 934 | Lake Pend Oreille kokanee mitigation research | BPA | Continued M&E for kokanee reproduction and survival. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.3.2.a | 1795 | Effects of Dworshak Withdrawal on BT Distribution | COE | AFEP-funded radio-telemetry study of bull trout distribution in Dworshak reservoir |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.2.1.a<br>11.A.3.1.b<br>11.A.3.1.c | 1780 | Adult fish counting at Corps dams (regular) | COE | Observed for bull trout movement by fishway counting stations. |

## Table 5: Resident Fish Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.2.1.b<br>11.A.3.1.a | pending | Non-federal smolt monitoring | BPA | Monitored occurrence of bull trout in the Smolt Monitoring Program facilities. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.2.1.b<br>11.A.3.1.a | pending | Juvenile Fish Transportation | COE | Monitored occurrence of bull trout in the juvenile fish facilities at mainstem Corps dams. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 8.2.a.1<br>8.2.a.8<br>8.2.a.9<br>8.3.d<br>8.4.b | pending | Kootenai R. Fisheries Recovery Investigations | BPA | Continued some M&E of bull trout use of the mainstem Kootenai R. in Idaho. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 10.A.1.2 | pending | Hungry Horse Mitigation | BPA | Continued studies and IFIM modeling of bull trout use of the South Fork Flathead R. and bull trout populations in Hungry Horse Reservoir. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.2.1.b<br>11.A.3.1.a | pending | Fish Passage Center | BPA | Continued to design and oversee the Smolt Monitoring Program, including collection of data on incidental bull trout in the samples. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.1.4.a | 1839 | Continue Winter Egg-Fry Survival Study on Lake Pend Oreille | COE | In FY01 (same as Water Year '01), which began before the BiOp was issued, the elevation of Lake Pend Oreille was held at approximately 2053'. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Determine the extent to which bull trout use and are affected by FCRPS dams and reservoirs | 11.A.2.1.d<br>11.A.2.1.e | pending | Bull trout assessment in the Columbia R. Gorge, WA | BPA | Tributary surveys continued. Bull trout populations found in the headwaters of some tributaries, although adfluvial life history type (I.e., use of mainstem reservoirs) has not been documented. |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Operate and modify FCRPS dams to protect, provide, and reconnect bull trout habitats. | 10.A.1.2 | 1899 | Provide bull trout flows and assure Hungry Horse refill | BOR | Hungry Horse: The 495 cfs minimum was met all but 15 days since 12/20/2000 (minimum flow was 465 dfs). Columbia Falls: Minimum flow of 3260 dfs (based on 1304 kaf forecast) met all but 2 days since 10/01/2000 (minimum flow was 3000 dfs for , 2 hours). Hungry Horse did not fill to flood control due to drought. 4/10 flood control:=3555.1' Actual=3489.7' Full:=3560' 6/30 Actual=3441.4' |
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Operate and modify FCRPS dams to protect, provide, and reconnect bull trout habitats. | 10.A.1.2 | 1908 | Provide USFWS an annual operational schedule for Hungry Horse | BOR | BOR preparing annual plan (2002 Water Management Plan) |

## Table 5: Resident Fish Actions

| Strategy | Substrategy | RPA Action Number | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Determine the Impacts of the FCRPS on Bull Trout and Mitigate for Those Impacts. | Operate and modify FCRPS dams to protect, provide, and reconnect bull trout habitats. | 11.A.1.1.b | 1689 | Annual Water Management Plan (1-WMP) | COE | The April - August runoff forecast for Libby was 3.2 Maf (1 Jun). At this level the flows the minimum flows between the sturgeon pulse and salmon flows is 6 kcfs. An outflow level of 6 kcfs or greater occurred from July 3rd until Sept. 30th, except for one day when the flow was 5.7 kcfs. (This was due to problems with the automatic control of the units) |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Status - Track the status of fish populations and their environment relative to required performance standards | Tributary Habitat | 190 | | Evaluate Small Stream PIT Detection (BPA Project 200101200) | BPA | A small-stream prototype PIT-tag detection system was developed. This innovative system was developed for detecting larger tags than those commonly used in the basin. |
| Status - Track the status of fish populations and their environment relative to required performance standards | Tributary Habitat | 183 | | Evaluate relationships between estuary, plume and near-shore ocean conditions and juvenile salmon growth and survival. | BPA | RPA 196 addresses juvenile and adult use of the estuary. Projects addressing this RPA continue to develop data and analysis of these relationships including physical and biological conditions and predation. Project 199801400 reports are on the web. See also related RPA 194. |
| Status - Track the status of fish populations and their environment relative to required performance standards | Tributary Habitat | 183 | | Evaluate relationships between estuary, plume and near-shore ocean conditions and juvenile salmon growth and survival. | BPA | RPA 197 addresses juvenile and adult use of the Columbia River plume and near shore ocean. Projects addressing this RPA continue to develop data and analysis of these relationships including physical and biological conditions; predation; and continental shelf migration, growth and survival to the Gulf of Alaska. Project 199801400 reports are on the web. See also related RPA 194. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 184 | | New Monitoring and Marking Techniques (BPA Project No 198331900) | BPA | An adult PIT-tag detection system was installed at Bonneville's WA-shore ladder. Preliminary evaluations found greater than 90% detection for most species. A small-stream prototype PIT-tag detection system for remote applications was developed. |
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 184 | | Development of a regionally coordinated RME Program that includes status monitoring | BPA | AA and NMFS Technical Oversight Workgroup formed and initial steps taken to identify the scope and structure of the RME program. |
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 184 | | Development of a regionally coodinated plan for a data management system | BPA | Identified key steps with NMFS and NWPPC, and identified Information Technology facilitation requirements |
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 184 | 633 | Post-Release survival of Fall Chinook in the Snake River (BPA project 199102900) | BPA | Project continued to monitor and evaluate hatchery fall chinook salmon in the Snake River and determine post-release attributes relative to supplementation efforts. Reports from Project 199102900 up to date and on BPA web site. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 193 | | Installation of Adult PIT Detectors (BPA project 198331900) | BPA | Adult pit monitors were installed and tested at Bonneville Dam. Assessment included evaluation of effeciency measurements for spring, summer, fall chinook and steelhead. McNary was evaluated for feasibility of installation. |
| Status - Track the status of fish populations and their environment relative to required performance standards | System Level | 195 | | Adult fish counting program (Corps) | COE | Routine counting of adult fish continued at mainstem in 2001, including bull trout. The Annual Fish Passage Report will be available in CY2002. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 193 | | Forrest property diversion dam removal and passage study. | BOR | Developed RFQ and general scope of work. Initiated scoping. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 180 | | Lower S. Fork John Day flow effectiveness study of diversion dam removal, water augmentation, and diversion screens. | BOR | Developed RFQ and general scope of work. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 198 | | Biological evaluation of Northern Pikeminnow Management Program (BPA project 9007700) | BPA | The Project continued to implement removal fisheries and evaluate its effect on pikeminnow predation of juvenile salmonids, including consumption, growth, fecundity, mortality, and compensation. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Estimate juvenile fish survival through powerhouses and spillways (multiple; project titles vary) | BPA | Several projects continued to evaluation juvenile passage survival through various routes at select dams (Bonneville, The Dalles, John Day, Ice Harbor) using PIT-tagged and radio-tagged fish. Assessments include project and route specific survival. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Reach Survival Studies (BPA project 199302900-NMFS; 199602000-PSMFC/CBFWA) | BPA | Projects continued mark and recapture tagging studies to evaluate reach and system survival rates of juvenile hatchery and wild spring/summer chinook, hatchery fall chinook, and steelhead in the Snake and Columbia River system. Survival rates were obtained for some select hatchery groups and some run-of river groups. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Smolt Monitoring Program (BPA projects 198712700, 199701501) | BPA | Projects continued collection of daily juvenile passage data through the mainstem, Snake, Columbia and mid-Columbia rivers to facilitate fish passage management decisions, including Biological Opinion implementation. Sampling and marking continued at 11 sites of the larger region. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Biological evaluation of caspian tern predation on juvenile salmonids | BPA | The project continued to monitor the distribution, abundance, and feeding ecology of caspian terns and to evaluate the effectiveness of management actions to reduce predation of juvenile salmonids. |
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Develop conceptual model of relationship between estuarine conditions and salmon population structure and resilience. | BPA | The project continues characterization of the estuary and plume to evaluate their role in supporting juvenile salmon growth and survival during the first year of life in the ocean. This task is an integral part of project 199801400 and addressed in RPAs 196 and 197. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | System Level | 184 | | Evaluation of adult salmon and steelhead migration past dams, through reservoirs, and into tributaries (Corps prject ADS-00-xx) | COE | The project continued monitoring of adult passage throughout the FCRPS using radio-tagged fish. Project specific passage route and timing, tributary turn-off, conversion between dams, and passage success to natal streams or hatchery racks was assessed. Includes evaluation of fallback and unaccounted loss through each reach |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 191 | 535 | Salmon Supplementation in Idaho- Shoshone-Bannock | BPA | Project continued to monitor changes in natural production of adults and juvenile chinook in West Fork Yankee Fork Salmon River, East Fork Salmon River, and Upper East Fork Salmon River. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 192 | 569 | Performance/Stock Productivity Impacts of Hatchery Supplementation | BPA | Project continued to evaluate costs and benefits for alternative sources of hatchery broodstocks for supplementation, test for domestication selection, and determine if modifications of the hatchery program can improve fitness of hatchery fish for reproducing and rearing in streams. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 100 | 650 | The Natures (Natural Rearing Enhancement Systems) Project | BPA | Project continued to define criteria for setting quality of hatchery fish for supplementation. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 107 | 1042 | YKFP - Yakima / Klickitat Fisheries M & E | BPA | The project continued monitoring and evaluating innovative supplementation efforts on Upper Yakima River spring chinook salmon and its impacts on juvenile post release survival, natural production/reporductive success, ecological interactions, and genetics. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 82, 83 | 1559 | Recondition Wild Steelhead Kelts | BPA | 500 wild kelts were collected at Chandler juvenile fish facility on the Yakima River in the spring, feeding trials were conducted, 100+ kelts were reconditioned and released in Nov. 2001, and another 50+ non-maturing survivors were retained for further reconditioning. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | | 1772 | M&E of Chinook & Steelhead Outplanting | BPA | Monitorerd steelhead and chinook adult outplants |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | | 1728 | Reintroduction Success of Steelhead from Captive Propagation and Release Strategies | BPA | Laboratory research facilities were constructed at the project site in preparation for 2002 juvenile steelhead behavioral experiments. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 102 | 532 | Idaho Supplementation Studies | BPA | Project continued to monitor changes in natural production of adults and juvenile chinook in Crooked Fork, Colt Killed, Marsh, creeks and Pahsimeroi, Lemhi, Upper and South Fork Salmon Rivers. Continued monitoring of steelhead supplementation in the upper Salmon, Red, South Fork Red, and Clearwater Rivers and in Fish and Boulder creeks. |
| Effectiveness - Identify the physical and biological responses to management actions | Hydro Corridor | 189 | 842 | Research on Captive Broodstock Programs for Pacific Salmon | BPA | Project continued to generate information needed to overcome some of the barriers that limit the yield of viable offspring from Pacific salmon broodstock reared in captivity and evaluate some of the genetic consequences of captive broodstock programs. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | Estuary and Ocean | 196 | 921 | Assess Chinook Restoration (Snake River Basin) | BPA | Project continued to assess summer and fall chinook spawning, incubation, growth, outmigration timing, and survival for evaluating recovery and restoration potential through supplementation in the Clearwater, Grande Ronde, Salmon, and Imnaha rivers. Reports from Project 199403400 forthcoming in FY02. |
| Effectiveness - Identify the physical and biological responses to management actions | Estuary and Ocean | 197 | 64 | Nez Perce Tribal Hatchery Monitoring & Evaluation | BPA | Completed 6th year baseline summary; monitored adult supplementation actions; expanded database multi-species interaction; complied with ISRP M&E Acton Plan |
| Effectiveness - Identify the physical and biological responses to management actions | Estuary and Ocean | 194 | 530 | Genetic M&E Program for Salmon & Steelhead | BPA | Project continued to evaluate the genetic consequences of using hatchery fish to supplement natural populations of chinook salmon and steelhead in the Snake River and its tributaries such as the Grande Ronde and Imnaha rivers. |
| Effectiveness - Identify the physical and biological responses to management actions | Estuary and Ocean | 187 | 533 | Salmon Supplementation Studies in Idaho - USFWS | BPA | Project continued to monitor changes in natural production of adults and juvenile chinook salmon in Clear and Pete King Creeks and effectiveness of parr releases from Clearwater Hatchery. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Effectiveness - Identify the physical and biological responses to management actions | Estuary and Ocean | 187 | 534 | Salmon Supplementation Studies in Idaho- Nez Perce | BPA | Project continued to monitor changes in natural production of adults and juvenile chinook in Secesh River and Lake, Johnson, Papoose, Squaw Lolo, Eldorado, Yoosa, and Newsome creeks. |
| Resolve critical uncertainties in the methods and data required for the evaluation of future population performance and needed survival improvements | System Level | 184 | | Long-term survival and disease susceptibility of yearling chinook salmon with different juvenile passage histories (BPS-00-9; BPA-00-10). | BPA | Project was initiated in 2001 and includes juvenile assessment with salt water rearing challenge tests for disease susceptability, and survival. 2001 was a set-up year of the facilities and pilot test of the program. |
| Resolve critical uncertainties in the methods and data required for the evaluation of future population performance and needed survival improvements | System Level | 184 | | Innovative project: Feasibility study for Pacific Ocean Salmon Tracking. | BPA | The feasibility of using sonic tags is being tested in the top rated ISRP innovative project. The technique would allow tracking of individual fish and specific stocks and identify their ocean foraging grounds. An interim report for project 200008000 is on the web. |

## Table 6: Research, Monitoring and Evaulation Actions

| Strategy | Substrategy | RPA Action Num | Project ID Number | Project Title | Lead Agency | 2001 Accomplishments |
|---|---|---|---|---|---|---|
| Resolve critical uncertainties in the methods and data required for the evaluation of future population performance and needed survival improvements | System Level | 184 | | Salmonid survival below Bonneville Dam, including potential mechanisms of delayed hydrosystem mortality (EST-P-01) | BPA | The project was initiated in 2001. The program identified index sites for testing, testing gear suitibility, and deployed physical monitoring sites for future years testing. Currently, sampling is ongoing. |
| Resolve critical uncertainties in the methods and data required for the evaluation of future population performance and needed survival improvements | System Level | 184 | | CoE AFEP proposal: Evaluation of the relationship among time of ocean entry, physical, and biological characteristics of the estuary and plume environment, and adult return rates (EST-P-02-03). | COE | The program was initiated in 2001. The focus of 2001 included equipment purchase and set up, tagging and rearing fish in preparation for 2002 release. |