FINAL

Endangered Species Act 2003/2003-2007 Implementation Plan for the Federal Columbia River Power System

APPENDIX: ACTION TABLE 2

Bureau of Reclamation
US Army Corps of Engineers
Bonneville Power Administration

October 2002

APPENDIX: 2003-2007 ACTION TABLES

Guide to Tables

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Guide to Action Tables

The Action Agencies have developed a database for planning and reporting of BiOp implementation measures. This database was used to produce the tables included in this Appendix. The database is undergoing continual refinement and some errors may be apparent. The Action Agencies are working together to maintain and update this database.

The tables provide detailed information about the Action Agencies' planned BiOp implementation projects. Each table shows a different grouping of the planned projects. To assist the reader, a sample of each Table is labeled below.

Table 1

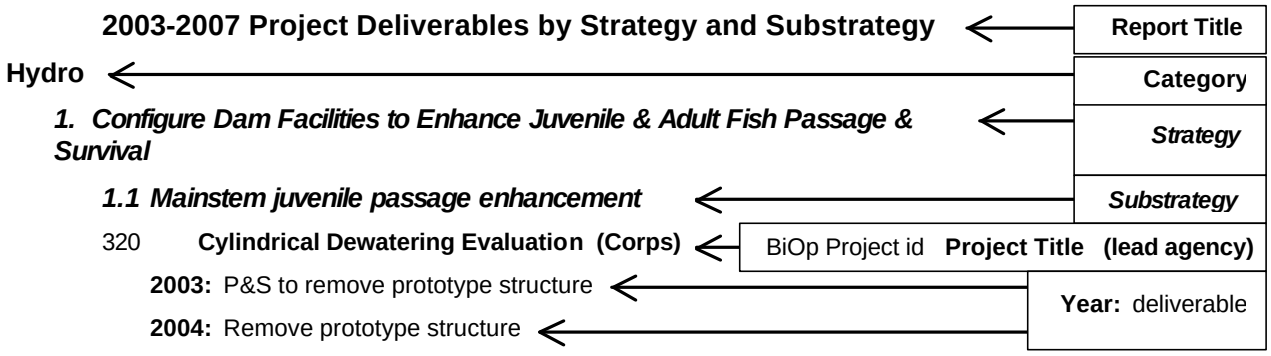

Table 2

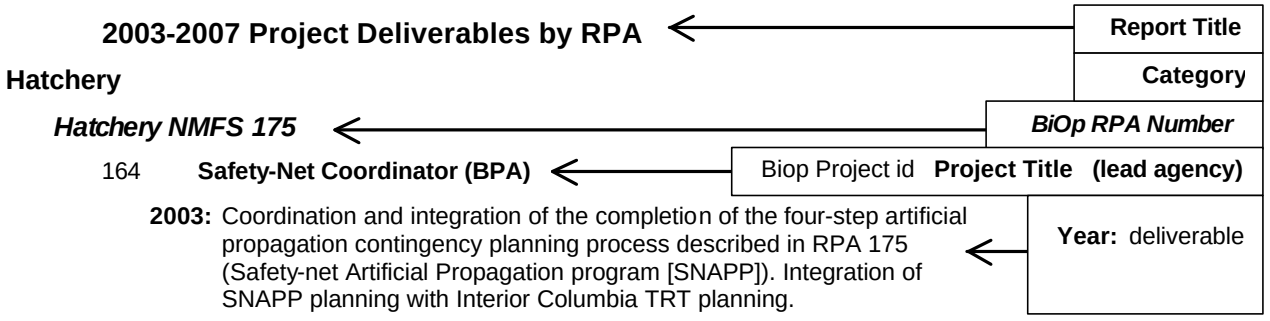

Table 3 includes five reports that provide cross-references between the Action Agency BiOp Project Id (a unique identifier generated by the database that is permanently assigned to each Action Agency project), NMFS and USFWS BiOp action numbers (assigned in the NMFS and USFWS BiOps), Provinces/Subbasins, and ESUs. Reports 1 through 4 are intended to be cross-referenced with the detailed Project summary information provided in Report 5.

A brief description of each report is included below.

Report 1: Action Agency Projects for each NMFS BiOp Action

The report lists each Action Agency BiOp Project Id that is associated with a NMFS BiOp Action. A comprehensive description of each Project can be found in Report 5.

Report 2: Action Agency Projects for each USFWS BiOp Action

The report lists each Action Agency BiOp Project Id that is associated with a USFWS BiOp Action. A comprehensive description of each Project can be found in Report 5.

Report 3: Action Agency Projects for each Province and Subbasin

The report lists each Action Agency BiOp Project Id that is associated with each subbasin within a Province. A comprehensive description of each Project can be found in Report 5.

Report 4: Action Agency Projects for each ESU

The report lists each Action Agency BiOp Project Id that is associated with each ESU. A comprehensive description of each Project can be found in Report 5.

Report 5: Action Agency Projects Summaries

In order by BiOp Project Id, this report lists the Action Agency project summaries. When used as a cross reference with Reports 1 to 4, the reader can glean more detailed project information about BiOp implementation than may be available in the narrative portion of the Plan.

Table 2a : 2003-2007 Project Deliverables by NMFS RPAs

RPA	*BiopID*	*Project Title*

Hydro

003

382 **Water Management Plan (CORPS)**

2003: 1. Prepare Water Management Plan. 2. Coordinate Water Management Plan with TMT.

2004: 1. Prepare Water Management Plan. 2. Coordinate Water Management Plan with TMT.

2005: 1. Prepare Water Management Plan. 2. Coordinate Water Management Plan with TMT.

2006: 1. Prepare Water Management Plan. 2. Coordinate Water Management Plan with TMT.

2007: 1. Prepare Water Management Plan. 2. Coordinate Water Management Plan with TMT.

005

486 **Water Quality Plan (CORPS)**

2003: Implement components of WQP

2004: Review and direct component implementation of WQP

2005: Insure integration of NWPPC provincial review projects into WQP

2006: Review and modify components of WQP

2007: Review and adjust modifications to WQP

006

345 **Non-Routine Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Prepare contract plans and specifications for painting juvenile fish facility dewatering structure.

2004: Contract for painting juvenile fish facility dewatering structure. Prepare contract plans and specifications for installing new water and sewer lines to juvenile fish facilities.

2005: Award contract and install new water and sewer lines to juvenile fish facilities.

2006: Prepare contract plans and specifications for overhauling ESBs's.

2007: Award 2 year contract to overhaul ESBS, with 1/2 being overhauled in FY 2007.

Hydro

014

313 **Albeni Falls Operation (CORPS)**

2003: 1. Fill Albeni Falls to within 0.5 foot of the flood control rule on April 10. 2. Refill Albeni Falls by June 30

2004: 1. Fill Albeni Falls to within 0.5 foot of the flood control rule on April 10. 2. Refill Albeni Falls by June 30

2005: 1. Fill Albeni Falls to within 0.5 foot of the flood control rule on April 10. 2. Refill Albeni Falls by June 30

2006: 1. Fill Albeni Falls to within 0.5 foot of the flood control rule on April 10. 2. Refill Albeni Falls by June 30

2007: 1. Fill Albeni Falls to within 0.5 foot of the flood control rule on April 10. 2. Refill Albeni Falls by June 30

324 **Dworshak Operations (CORPS)**

2003: 1. Fill Dworshak to within 0.5 foot of the flood control rule on April 10. 2. Refill Dworshak by June 30. 3. Release water from Dworshak to attempt to maintain water temperatures at the Lower Granite forebay at or below 68 F. 4. Draft Limit at Dworshak observed. 5. Limit Dworshak outflow to minimum flow after summer operations.

2004: 1. Fill Dworshak to within 0.5 foot of the flood control rule on April 10. 2. Refill Dworshak by June 30. 3. Release water from Dworshak to attempt to maintain water temperatures at the Lower Granite forebay at or below 68 F. 4. Draft Limit at Dworshak observed. 5. Limit Dworshak outflow to minimum flow after summer operations.

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2006: 1. Fill Dworshak to within 0.5 foot of the flood control rule on April 10. 2. Refill Dworshak by June 30. 3. Release water from Dworshak to attempt to maintain water temperatures at the Lower Granite forebay at or below 68 F. 4. Draft Limit at Dworshak observed. 5. Limit Dworshak outflow to minimum flow after summer operations.

2007: 1. Fill Dworshak to within 0.5 foot of the flood control rule on April 10. 2. Refill Dworshak by June 30. 3. Release water from Dworshak to attempt to maintain water temperatures at the Lower Granite forebay at or below 68 F. 4. Draft Limit at Dworshak observed. 5. Limit Dworshak outflow to minimum flow after summer operations.

329 **Flow Objectives at McNary (CORPS)**

2003: 1. Attempt to meet the spring flow objective at McNary. 2. Attempt to meet the summer flow objective at McNary.

2004: 1. Attempt to meet the spring flow objective at McNary. 2. Attempt to meet the summer flow objective at McNary.

2005: 1. Attempt to meet the spring flow objective at McNary. 2. Attempt to meet the summer flow objective at McNary.

2006: 1. Attempt to meet the spring flow objective at McNary. 2. Attempt to meet the summer flow objective at McNary.

2007: 1. Attempt to meet the spring flow objective at McNary. 2. Attempt to meet the summer flow objective at McNary.

330 **Flow Objectives at Lower Granite (CORPS)**

2003: 1. Attempt to meet the spring flow objective at Lower Granite. 2. Attempt to meet the summer flow objective at Lower Granite.

2004: 1. Attempt to meet the spring flow objective at Lower Granite. 2. Attempt to meet the summer flow objective at Lower Granite..

2005: 1. Attempt to meet the spring flow objective at Lower Granite. 2. Attempt to meet the summer flow objective at Lower Granite

2006: 1. Attempt to meet the spring flow objective at Lower Granite. 2. Attempt to meet the summer flow objective at Lower Granite.

2007: 1. Attempt to meet the spring flow objective at Lower Granite. 2. Attempt to meet the summer flow objective at Lower Granite.

Hydro

014

341 **Libby Operations Andromous (CORPS)**

2003: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

2004: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

2005: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

2006: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

2007: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

374 **Priest Rapids Flow Objective (CORPS)**

2003: Attempt to meet the spring flow objective at Priest Rapids

2004: Attempt to meet the spring flow objective at Priest Rapids

2005: Attempt to meet the spring flow objective at Priest Rapids

2006: Attempt to meet the spring flow objective at Priest Rapids

2007: Attempt to meet the spring flow objective at Priest Rapids

586 **Grand Coulee (USBR)**

2003: 1. Fill Grand Coulee to within 0.5 feet of the April 10 flood control rule curve 2. Refill Grand Coulee to elevation 1290 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limits. 4. Limit summer draft to 1280 when the July final forcast exceeds 92 Maf and 1278 when the forecast is less than 92 maf.

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Hydro

014

590 **Hungry Horse Operations (USBR)**

2003: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet. 4. Limit Hungry Horse outflow to minimum flow after August 31. 5. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse

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015

318 **Chum Flows Below Bonneville Dam (CORPS)**

2003: Provide Chum flows below Bonneville Dam

2004: Provide Chum flows below Bonneville Dam

2005: Provide Chum flows below Bonneville Dam

2006: Provide Chum flows below Bonneville Dam

2007: Provide Chum flows below Bonneville Dam

016

318 **Chum Flows Below Bonneville Dam (CORPS)**

2003: Provide Chum flows below Bonneville Dam

2004: Provide Chum flows below Bonneville Dam

2005: Provide Chum flows below Bonneville Dam

2006: Provide Chum flows below Bonneville Dam

2007: Provide Chum flows below Bonneville Dam

RPA	BiopID	Project Title

Hydro

017

319 **Coordinate Water Management Decisions with TMT (CORPS)**

2003: Coordinate Water Management decisions with TMT

2004: Coordinate Water Management decisions with TMT

2005: Coordinate Water Management decisions with TMT

2006: Coordinate Water Management decisions with TMT

2007: Coordinate Water Management decisions with TMT

018

313 **Albeni Falls Operation (CORPS)**

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Hydro

018

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341 **Libby Operations Andromous (CORPS)**

2003: 1. Fill Libby to within 0.5 foot of the flood control rule by April 10. 2. Refill Libby by June 30. 3. Observed Draft Limit at Libby

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586 **Grand Coulee (USBR)**

2003: 1. Fill Grand Coulee to within 0.5 feet of the April 10 flood control rule curve 2. Refill Grand Coulee to elevation 1290 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limits. 4. Limit summer draft to 1280 when the July final forcast exceeds 92 Maf and 1278 when the forecast is less than 92 maf.

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Hydro

019

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020

339 **John Day Minimum Pool Operation (CORPS)**

2003: Operate John Day pool at minimum level that allows irrigation for dates specified.

2004: Operate John Day pool at minimum level that allows irrigation for dates specified.

2005: Operate John Day pool at minimum level that allows irrigation for dates specified.

2006: Operate John Day pool at minimum level that allows irrigation for dates specified.

2007: Operate John Day pool at minimum level that allows irrigation for dates specified.

361 **Lower Snake projects Minimum Operating Pool operation (CORPS)**

2003: Operate Lower Snake projects at MOP during fish season

2004: Operate Lower Snake projects at MOP during fish season

2005: Operate Lower Snake projects at MOP during fish season

2006: Operate Lower Snake projects at MOP during fish season

2007: Operate Lower Snake projects at MOP during fish season

Hydro

021

377 **Shift Flood Control to Maximize Snake River Water Storage (CORPS)**

2003: Consider shifting flood control requirements from Brownlee and Dworshak to Grand Coulee

2004: Consider shifting flood control requirements from Brownlee and Dworshak to Grand Coulee

2005: Consider shifting flood control requirements from Brownlee and Dworshak to Grand Coulee

2006: Consider shifting flood control requirements from Brownlee and Dworshak to Grand Coulee

2007: Consider shifting flood control requirements from Brownlee and Dworshak to Grand Coulee

022

590 **Hungry Horse Operations (USBR)**

2003: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet. 4. Limit Hungry Horse outflow to minimum flow after August 31. 5. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse

2004: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet 4. Limit Hungry Horse outflow to minimum flow after August 31. 5. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse

2005: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet. 4. Limit Hungry Horse outflow to minimum flow after August 31. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse.

2006: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet 4. Limit Hungry Horse outflow to minimum flow after August 31. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse.

2007: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet 4. Limit Hungry Horse outflow to minimum flow after August 31. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse.

023

589 **Banks Lake Operations (USBR)**

2003: Reduce pumping to Banks Lake in August allowing the Lake to elevation 1565 feet.

2004: Reduce pumping to Banks Lake in August allowing the Lake to elevation 1565 feet.

2005: Reduce pumping to Banks Lake in August allowing the Lake to elevation 1565 feet.

2006: Reduce pumping to Banks Lake in August allowing the Lake to elevation 1565 feet.

2007: Reduce pumping to Banks Lake in August allowing the Lake to elevation 1565 feet.

RPA	BiopID	Project Title

Hydro

024

500 **Canadian Treaty Storage Agreement - Request/Negotiate Additional Storage (BPA)**

2003: Request/Negotiate Additonal Storage

2004: Request/Negotiate Additonal Storage

2005: Request/Negotiate Additonal Storage

2006: Request/Negotiate Additonal Storage

2007: Request/Negotiate Additonal Storage

546 **Request/Negotiate 1 MAF of Treaty storage with BC Hydro (CORPS)**

2003: 1 MAF of Treaty storage has been requested and negotiated with BC Hydro

2004: 1 MAF of Treaty storage has been requested and negotiated with BC Hydro

2005: 1 MAF of Treaty storage has been requested and negotiated with BC Hydro

2006: 1 MAF of Treaty storage has been requested and negotiated with BC Hydro

2007: 1 MAF of Treaty storage has been requested and negotiated with BC Hydro

025

501 **Non-Treaty Storage Agreement with Canada-Request Additional Storage (BPA)**

2003: Requst/Negotiate Non-Treaty Storage

2004: Requst/Negotiate Non-Treaty Storage

2005: Requst/Negotiate Non-Treaty Storage

2006: Requst/Negotiate Non-Treaty Storage

2007: Requst/Negotiate Non-Treaty Storage

547 **Up to 3.5 MAF flow augmentation from Candian storagein July and Auugst (CORPS)**

2003: BC Hydro will evaluate future study subject to BC Water Use Planning Process

2004: BC Hydro will evaluate future study subject to BC Water Use Planning Process

2005: BC Hydro will evaluate future study subject to BC Water Use Planning Process

2006: BC Hydro will evaluate future study subject to BC Water Use Planning Process

2007: BC Hydro will evaluate future study subject to BC Water Use Planning Process

Hydro

026

499 **Report on use of Additional Canadian Storage To support mainstream flow objectives (BPA)**

2003: Complete feasibility report, request & negotiate shaping/storage

2004: Complete feasibility report, request & negotiate shaping/storage

2005: Complete feasibility report, request & negotiate shaping/storage

2006: Complete feasibility report, request & negotiate shaping/storage

2007: Complete feasibility report, request & negotiate shaping/storage

027

439 **Reclamation Water Contracts (USBR)**

2003: None

2004: Consult on Lucky Peak contract renewals

2005: None

2006: None

2007: None

028

440 **Pursue water conservation at USBR projects (USBR)**

2003: Schedule and implement projects

2004: Schedule and implement projects

2005: Schedule and implement projects

2006: Schedule and implement projects

2007: Schedule and implement projects

029

441 **Investigate Unauthorized Use of USBR Water (USBR)**

2003: Resolve use issues on a case-by-case basis.

2004: Resolve use issues on a case-by-case basis.

2005: Resolve use issues on a case-by-case basis.

2006: Resolve use issues on a case-by-case basis.

2007: Resolve use issues on a case-by-case basis.

RPA	BiopID	Project Title

Hydro

030

444 **Okanogan Project ESA Consultation with NMFS (USBR)**

2003: Submit BA to NMFS and FWS. Receive draft BiOps.

2004: Receive final BiOps. Complete Record of Decision

031

448 **Banks Lake Drawdown Study (USBR)**

2003: Complete Final EIS, Issue ROD

032

449 **Water Acquisition from Reclamation's Snake River Projects (USBR)**

2003: Provide up to 427 kaf for flow augmentation.

2004: Provide up to 427 kaf for flow augmentation.

2005: Provide up to 427 kaf for flow augmentation.

2006: Provide up to 427 kaf for flow augmentation.

2007: Provide up to 427 kaf for flow augmentation.

033

323 **Modify Dworshak National Fish Hatchery System 1 Reuse System (CORPS)**

2003: Finish construction of Phase 1 and Phase 2 modifications to hatchery.

034

312 **Adult Temperature Evaluation (CORPS)**

2003: Report on effects between MCN and LGR

2006: Final Report - Effects of Dworshak Releases

035

540 **Evaluate Flood Control Operations to Reduce River Ecosystem Effects (CORPS)**

2003: Flood Control Study proceeding

2004: Flood Control Study proceeding

2005: Flood Control Study proceeding

2006: Flood Control Study proceeding

2007: Flood Control Study proceeding

Hydro

036

548 **Revise Storage Diagrams for Libby (CORPS)**

2003: Prepare forecast procedure for January through June using SOI parameter.

2004: Explore use of new forecast procudre to devlope alternate storage reservation diagram at Libby

037

450 **Columbia Basin Project Wasteway and Drain Investigation (USBR)**

2003: Issue final report

039

451 **Return Flow Quality from Columbia Basin Project (USBR)**

2003: Monitor return flows

2004: Monitor return flows

2005: Monitor return flows

2006: Monitor return flows

2007: Develop remediation plan, if needed

040

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

557 **Spill for Juvenile Fish Passage (CORPS)**

2003: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2004: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2005: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2006: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2007: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

RPA	BiopID	Project Title

Hydro

041

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

042

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

557 **Spill for Juvenile Fish Passage (CORPS)**

2003: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2004: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2005: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2006: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2007: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

043

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

Hydro

044

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

045

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

046

338 **Operation and Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

Hydro

047

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

321 **Delayed Mortality of Juveniles (CORPS)**

2005: Final Report

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

048

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

049

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

050

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

Hydro

050

235 1989-107-00 **Statistical Support for Salmonid Survival Studies (CORPS)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2004: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2005: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2006: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2007: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

Hydro

050

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

331 **Ice Harbor Adult Pit (CORPS)**

2003: Construction complete.

522 **Adult PIT tag program (Bonn, The dalles, John Day) (CORPS)**

2003: complete biological evaluations, initiate modifications to Bonn system, initiate design for John Day system

2004: complete installation at John Day, initiate design for the The Dalles system

2005: complete The Dalles installation

2006: complete evaluations

RPA	BiopID	Project Title

Hydro

052

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

557 **Spill for Juvenile Fish Passage (CORPS)**

2003: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2004: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2005: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2006: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

2007: 1. Provide Spill for juvenile fish passage as specified 2. Don't spill at Lower Snake Projects if flow projected to be below 85 kcfs.

053

340 **Corps of Engineers' Juvenile Fish TransportationProgram (CORPS)**

2003: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2004: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2005: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2006: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

2007: Implement juvenile fish tranpsortation program in accordance with operating criteria and regional coordination.

362 **Lower Snake River Juvenile Bypass System Improvements (CORPS)**

2003: Complete Initial Evaluation Report

2004: Complete Contract Documents

2005: Complete Construction

RPA	BiopID	Project Title

Hydro

055

304 **Schultz-Wautoma 500-kV Transmission Line (BPA)**

2003: Complete Final EIS/Record of Decision

2004: Complete Construction

2005: Complete Environmental Mitigation

056

300 **Grand Coulee Bell 500-kV Transmission Line (BPA)**

2003: Complete Final EIS/Record of Decision

2004: Complete Construction

057

301 **Hungry Horse Transmission Stability Study (BPA)**

2003: Conduct System Engineering Studies

2004: Submit Feasibilty Report & Recommendations to USFWS

302 **Libby Transmission Stability Study (BPA)**

2003: Conduct System Engineering Studies

2004: Submit Feasibility Report and Recommendations to USFWS

058

373 **Operate Turbine units at 1% efficiency range (CORPS)**

2003: Operate Turbine units at 1% efficiency range during time specified

2004: Operate Turbine units at 1% efficiency range during time specified

2005: Operate Turbine units at 1% efficiency range during time specified

2006: Operate Turbine units at 1% efficiency range during time specified

2007: Operate Turbine units at 1% efficiency range during time specified

Hydro

059

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

060

508 **Bonneville juvenile fish studies (CORPS)**

2003: research report

2004: research report

2005: final research report

521 **Adult migration studies (CORPS)**

2003: continue adult passage telemetry and headburn studies and complete bioenergetic field work

2004: complete bioenergetic model , headburn evaluations, and telemetry study field work

2005: final headburn report, continue bioenergetic modeling

2006: final telemetry study report

061

524 **Bonneville 1st PH Surface Bypass (CORPS)**

2003: remove prototype PSC

2004: TBD, based on sluiceway testing in 03

2005: TBD

2006: TBD

2007: TBD

Hydro

062

523 **Bonneville 1st PH FGE (CORPS)**

2003: testing w/new prototype porosity plate

2004: testing w/new prototype porosity plate

2005: initiate permanent ESBS installation (tentative)

2006: continue ESBS installation (tentative)

2007: complete ESBS installation (tentative)

063

523 **Bonneville 1st PH FGE (CORPS)**

2003: testing w/new prototype porosity plate

2004: testing w/new prototype porosity plate

2005: initiate permanent ESBS installation (tentative)

2006: continue ESBS installation (tentative)

2007: complete ESBS installation (tentative)

525 **Bonneville 1st PH JBS improvements (CORPS)**

2003: prepare construction plans and specifcations

2004: complete plans and specs, initiate construction (tentatve)

2005: continue construction

2006: complete constreuction, initiate monitoring

2007: continue monitoring

064

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

RPA	BiopID	Project Title

Hydro

065

526 **Bonneville 2nd PH JBS improvements (CORPS)**

2003: complete follow-on improvements

066

502 **Bonneville 2nd PH surface bypass (corner collector) (CORPS)**

2003: continue construction

2004: complete construction, initiate post-const. monitoring

2005: continue monitoring

2006: complete monitoring

067

504 **Bonneville 2nd PH FGE improvements (CORPS)**

2003: complete evaluations , initiate P&S for permanent facilities if warranted

2004: initiate construction (tentative)

2005: complete construction (tentative)

2006: complete post-construction monitoring (tentative)

068

519 **The Dalles project survival study (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: final research report

524 **Bonneville 1st PH Surface Bypass (CORPS)**

2003: remove prototype PSC

2004: TBD, based on sluiceway testing in 03

2005: TBD

2006: TBD

2007: TBD

Hydro

068

527 **The Dalles spillway survival improvement s (CORPS)**

2003: construct spillwall(s) (tentative), test, complete alternatives analysis (tentative)

2004: potential additional tests and /or P&S for permanernt facilities (tentative)

2005: potential additional tests and /or P&S for permanernt facilities (tentative)

2006: potential permanent construction (tentative)

2007: potential permanent construction (tentative)

069

530 **The Dalles surface bypass (CORPS)**

2003: roof test , complete prototype tests

2004: decsion to proceed with permanent construction, P&S , initiate construction

2005: continue construction

2006: continue construction

2007: complete construction, operational

070

518 **The Dalles sluiceway outfall relocation and emergency AWS (CORPS)**

2003: complete reaanlysis, update design report and make decision to proceed

2004: prepare P&S (tentative)

2005: complete P&S, initiate construction (tentative)

2006: continue construction (tentative)

2007: complete construction (tentative)

071

516 **John Day survival and passage efficiency studies (CORPS)**

2003: complete survival and efficiency tests

2004: initiate project configuration decision document

2005: complete decision document (tentative)

Hydro

072

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

073

515 **John Day Screens (CORPS)**

2003: complete prototype testing

2004: complete P&S for permanent screens, award contract (tentative)

2005: continue construction, test debris issues (tentative)

2006: continue construction (tentative)

2007: complete construction, 1st year post-construction tests (tentative)

074

320 **Cylindrical Dewatering Evaluation (CORPS)**

2003: P&S to remove prototype structure

2004: Remove prototype structure

366 **McNary Juvenile Bypass System Outfall (CORPS)**

2003: Complete Technical Report

367 **McNary Juvenile Fish Facility Debris (CORPS)**

2003: Acquire debris removal craft.

2004: Design final gatewell system

2005: Install final gatewell system

076

357 **Lower Monumental Flow Deflectors (CORPS)**

2003: Complete Deflector Construction

Hydro

076

358 **Lower Monumental Juvenile Bypass System Outfall (CORPS)**

2003: Complete Modeling and Technical Report

078

356 **Lower Monumental Extended Submerged Bar Screens (CORPS)**

2003: Prepare Design Documentation Report

2004: Construct ESBS/VBS Prototypes. Test

2005: Prepare P&S

2006: Prepare final DDR. Initate Contracts

2007: Complete Installations

079

347 **Little Goose Trash Boom (CORPS)**

2003: Complete High Flow Sampling

2004: Complete Final Report

080

354 **Lower Granite Surface Bypass and Collection (CORPS)**

2003: RSW Test with BGS installed.

2004: Multiple Deliverables. See Summary

2005: Multiple Deliverables. See Summary

2006: Multiple Deliverables. See Summary

2007: Multiple Deliverables. See Summary

081

351 **Lower Granite Juvenile Bypass System (CORPS)**

2003: Complete Design Documentation Report

2004: Complete P&S

2005: Initiate Construction

2006: Complete Construction

Hydro

082

370 **McNary Juvenile Survival (CORPS)**

2003: 1800

2004: 2000

508 **Bonneville juvenile fish studies (CORPS)**

2003: research report

2004: research report

2005: final research report

516 **John Day survival and passage efficiency studies (CORPS)**

2003: complete survival and efficiency tests

2004: initiate project configuration decision document

2005: complete decision document (tentative)

519 **The Dalles project survival study (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: final research report

527 **The Dalles spillway survival improvement s (CORPS)**

2003: construct spillwall(s) (tentative), test, complete alternatives analysis (tentative)

2004: potential additional tests and /or P&S for permanernt facilities (tentative)

2005: potential additional tests and /or P&S for permanernt facilities (tentative)

2006: potential permanent construction (tentative)

2007: potential permanent construction (tentative)

545 **Lower Monumental Survival/Efficiency Study (CORPS)**

2004: Report of 2003 study

2005: Report of 2003 study

Hydro

083

370 **McNary Juvenile Survival (CORPS)**

2003: 1800

2004: 2000

508 **Bonneville juvenile fish studies (CORPS)**

2003: research report

2004: research report

2005: final research report

516 **John Day survival and passage efficiency studies (CORPS)**

2003: complete survival and efficiency tests

2004: initiate project configuration decision document

2005: complete decision document (tentative)

519 **The Dalles project survival study (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: final research report

527 **The Dalles spillway survival improvement s (CORPS)**

2003: construct spillwall(s) (tentative), test, complete alternatives analysis (tentative)

2004: potential additional tests and /or P&S for permanernt facilities (tentative)

2005: potential additional tests and /or P&S for permanernt facilities (tentative)

2006: potential permanent construction (tentative)

2007: potential permanent construction (tentative)

545 **Lower Monumental Survival/Efficiency Study (CORPS)**

2004: Report of 2003 study

2005: Report of 2003 study

RPA	BiopID	Project Title

Hydro

084

502 **Bonneville 2nd PH surface bypass (corner collector) (CORPS)**

2003: continue construction

2004: complete construction, initiate post-const. monitoring

2005: continue monitoring

2006: complete monitoring

085

354 **Lower Granite Surface Bypass and Collection (CORPS)**

2003: RSW Test with BGS installed.

2004: Multiple Deliverables. See Summary

2005: Multiple Deliverables. See Summary

2006: Multiple Deliverables. See Summary

2007: Multiple Deliverables. See Summary

086

147 2001-010-00 **Using Induced Turbulence to Assist Juvenile Migrating Salmon (BPA)**

2003: end of project

354 **Lower Granite Surface Bypass and Collection (CORPS)**

2003: RSW Test with BGS installed.

2004: Multiple Deliverables. See Summary

2005: Multiple Deliverables. See Summary

2006: Multiple Deliverables. See Summary

2007: Multiple Deliverables. See Summary

502 **Bonneville 2nd PH surface bypass (corner collector) (CORPS)**

2003: continue construction

2004: complete construction, initiate post-const. monitoring

2005: continue monitoring

2006: complete monitoring

Hydro

086

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

519 **The Dalles project survival study (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: final research report

Hydro

087

235 1989-107-00 **Statistical Support for Salmonid Survival Studies (CORPS)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2004: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2005: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2006: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2007: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

Hydro

087

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

088

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

Hydro

089

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

090

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

091

375 **Remove Obstructions from Turbine Environments (CORPS)**

2003: Inspect turbine units areas during annual maintenance activitiees. Romove obstrucitons when found and make necessary modifications for maintenance activities.

2004: Inspect turbine units areas during annual maintenance activitiees. Romove obstrucitons when found and make necessary modifications for maintenance activities.

2005: Inspect turbine units areas during annual maintenance activitiees. Romove obstrucitons when found and make necessary modifications for maintenance activities.

2006: Inspect turbine units areas during annual maintenance activitiees. Romove obstrucitons when found and make necessary modifications for maintenance activities.

2007: Inspect turbine units areas during annual maintenance activitiees. Romove obstrucitons when found and make necessary modifications for maintenance activities.

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

Hydro

093

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

094

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

RPA	BiopID	Project Title

Hydro

094

362 **Lower Snake River Juvenile Bypass System Improvements (CORPS)**

2003: Complete Initial Evaluation Report

2004: Complete Contract Documents

2005: Complete Construction

095

376 **Separator Evaluation (CORPS)**

2003: Perform outyear testing if required

2004: Perform outyear testing if required

2005: Perform outyear testing if required

2006: Perform outyear testing if required

2007: Complete Removal

096

343 **Little Goose Extended Submerged Bar Screens (CORPS)**

2003: Complete ESBS Improvements.

349 **Lower Granite Extended Submerged Bar Screens (CORPS)**

2003: Complete Improvements

363 **McNary Extended Submerged Bar Screens (CORPS)**

2003: Project personnel complete ESBS improvements

Hydro

097

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

502 **Bonneville 2nd PH surface bypass (corner collector) (CORPS)**

2003: continue construction

2004: complete construction, initiate post-const. monitoring

2005: continue monitoring

2006: complete monitoring

Hydro

097

523 **Bonneville 1st PH FGE (CORPS)**

2003: testing w/new prototype porosity plate

2004: testing w/new prototype porosity plate

2005: initiate permanent ESBS installation (tentative)

2006: continue ESBS installation (tentative)

2007: complete ESBS installation (tentative)

524 **Bonneville 1st PH Surface Bypass (CORPS)**

2003: remove prototype PSC

2004: TBD, based on sluiceway testing in 03

2005: TBD

2006: TBD

2007: TBD

525 **Bonneville 1st PH JBS improvements (CORPS)**

2003: prepare construction plans and specifcations

2004: complete plans and specs, initiate construction (tentatve)

2005: continue construction

2006: complete constreuction, initiate monitoring

2007: continue monitoring

098

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

Hydro

098

515 **John Day Screens (CORPS)**

2003: complete prototype testing

2004: complete P&S for permanent screens, award contract (tentative)

2005: continue construction, test debris issues (tentative)

2006: continue construction (tentative)

2007: complete construction, 1st year post-construction tests (tentative)

099

356 **Lower Monumental Extended Submerged Bar Screens (CORPS)**

2003: Prepare Design Documentation Report

2004: Construct ESBS/VBS Prototypes. Test

2005: Prepare P&S

2006: Prepare final DDR. Initate Contracts

2007: Complete Installations

100

483 1990-077-00 **Northern Pikeminnow Management Program (BPA)**

2003: 1. Decrease predation on juvenile salmonids in the Columbia River basin by implementing a public sport-reward fishery for northern Pikeminnow in the lower Columbia and Snake rivers. 2. Decrease predation on juvenile salmonids in the Columbia River basin by implementing angling for northern Pikeminnow at lower Columbia and Snake river dams, and by implementing site-specific removal at other areas where they concentrate. 3. Estimate percent reduction in predation

2004: 1. Decrease predation on juvenile salmonids in the Columbia River basin by implementing a public sport-reward fishery for northern Pikeminnow in the lower Columbia and Snake rivers. 2. Decrease predation on juvenile salmonids in the Columbia River basin by implementing angling for northern Pikeminnow at lower Columbia and Snake river dams, and by implementing site-specific removal at other areas where they concentrate. 3. Estimate percent reduction in predation 4. Conduct full biological evaluation to determine extent, if any, of intra-or interspecific compensation (3-5 year interval).

2005: 1. Decrease predation on juvenile salmonids in the Columbia River basin by implementing a public sport-reward fishery for northern Pikeminnow in the lower Columbia and Snake rivers. 2. Decrease predation on juvenile salmonids in the Columbia River basin by implementing angling for northern Pikeminnow at lower Columbia and Snake river dams, and by implementing site-specific removal at other areas where they concentrate. 3. Estimate percent reduction in predation

2006: 1. Decrease predation on juvenile salmonids in the Columbia River basin by implementing a public sport-reward fishery for northern Pikeminnow in the lower Columbia and Snake rivers. 2. Decrease predation on juvenile salmonids in the Columbia River basin by implementing angling for northern Pikeminnow at lower Columbia and Snake river dams, and by implementing site-specific removal at other areas where they concentrate. 3. Estimate percent reduction in predation

2007: 1. Decrease predation on juvenile salmonids in the Columbia River basin by implementing a public sport-reward fishery for northern Pikeminnow in the lower Columbia and Snake rivers. 2. Decrease predation on juvenile salmonids in the Columbia River basin by implementing angling for northern Pikeminnow at lower Columbia and Snake river dams, and by implementing site-specific removal at other areas where they concentrate. 3. Estimate percent reduction in predation

Hydro

101

315 **Avian Predation Measures at Mainstem Columbia and Snake River Projects (CORPS)**

2003: Implement measures in FPP, and contract with USDA to discourage avian predation at projects. Non-routine - remove net-frames from the tailraces of the Bonneville powerhouses.

2004: Implement measures in FPP, and contract with USDA to discourage avian predation at projects.

2005: Implement measures in FPP, and contract with USDA to discourage avian predation at projects.

2006: Implement measures in FPP, and contract with USDA to discourage avian predation at projects.

2007: Implement measures in FPP, and contract with USDA to discourage avian predation at projects.

102

149 1997-024-00 **Avian Predation on Juvenile Salmonids (BPA)**

2003: 1. Survey of managed Caspian tern colonies in the Columbia River estuary and along the WA coast; 2. Food habits, energy requirements, and smolt consumption rates of Caspian terns nesting in the estuary; 3. Foraging distribution and range, and habitat use of Caspian terns in the estuary and along the WA coast; 4. Survey of double-crested cormorants and glauscous-winged/western gulls nesting colonies on the mainstem above John Day Dam; 5. Food habits, energy requirements, and smolt consumption rates of double-crested cormorants. Increased emphasis on inland colonies and development of management alternatives to reduce predation in these locales.

103

149 1997-024-00 **Avian Predation on Juvenile Salmonids (BPA)**

2003: 1. Survey of managed Caspian tern colonies in the Columbia River estuary and along the WA coast; 2. Food habits, energy requirements, and smolt consumption rates of Caspian terns nesting in the estuary; 3. Foraging distribution and range, and habitat use of Caspian terns in the estuary and along the WA coast; 4. Survey of double-crested cormorants and glauscous-winged/western gulls nesting colonies on the mainstem above John Day Dam; 5. Food habits, energy requirements, and smolt consumption rates of double-crested cormorants. Increased emphasis on inland colonies and development of management alternatives to reduce predation in these locales.

107

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

521 **Adult migration studies (CORPS)**

2003: continue adult passage telemetry and headburn studies and complete bioenergetic field work

2004: complete bioenergetic model , headburn evaluations, and telemetry study field work

2005: final headburn report, continue bioenergetic modeling

2006: final telemetry study report

Hydro

107

582 **Adult Passage Counting and Trapping at Zosel Dam (BPA)**

2003: Assess feasibility of conducting adult fish passage counts at Zosel Dam using current technology. Design Adult Trapping Facilities.

2004: Contruct/Fabricate/Install Adult Trapping Facilities. Evaluate Trapping Facilities at Zosel Dam. Evaluate Adult Counting Facilities at Zosel Dam.

2005: Evaluate Adult Counting Facilities at Zosel Dam.

109

521 **Adult migration studies (CORPS)**

2003: continue adult passage telemetry and headburn studies and complete bioenergetic field work

2004: complete bioenergetic model , headburn evaluations, and telemetry study field work

2005: final headburn report, continue bioenergetic modeling

2006: final telemetry study report

110

511 **John Day salmon holding and jumping (CORPS)**

2003: complete construction

2004: biological evaluation

2005: complete evaluations

111

520 **Turbine passage studies (CORPS)**

2003: complete second Bonn MGR test, complete phase i, scope and initiate phase II

2004: TBD

2005: TBD

2006: TBD

2007: TBD

Hydro

113

506 **Bonneville adult fallback (CORPS)**

2003: complete telemetry studies

2004: initiate design (tentative)

2005: complete design, P&S and initiate construction (tentative)

2006: continue construction (tentative)

2007: Complete construction, initiate testing (tentative)

114

326 **Fish Ladder Temperature Evaluation (CORPS)**

2003: Complete Summary Report

512 **John Day Ladder Temperature (CORPS)**

2003: initiate alternatives and design report (tentative)

2004: complete design report, complete P&S (tentative)

2005: complete construction (tentative)

2006: complete post-construction tests (tentative)

2007: final report (tentative)

115

312 **Adult Temperature Evaluation (CORPS)**

2003: Report on effects between MCN and LGR

2006: Final Report - Effects of Dworshak Releases

521 **Adult migration studies (CORPS)**

2003: continue adult passage telemetry and headburn studies and complete bioenergetic field work

2004: complete bioenergetic model , headburn evaluations, and telemetry study field work

2005: final headburn report, continue bioenergetic modeling

2006: final telemetry study report

116

327 **Fish Ladder Transition Pool Evaluation (CORPS)**

2003: Complete Final Report

Hydro

116

511 **John Day salmon holding and jumping (CORPS)**

2003: complete construction

2004: biological evaluation

2005: complete evaluations

117

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

Hydro

117

316 **Non-Routine Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2004: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2005: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Design corrections for repair of second powerhouse adult fish ladder north monolith. Dredge second powerhouse forebay upstream of the AWS fish water units intakes.

2006: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Repair second powerhouse fish ladder north monolith.

2007: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Complete repair of second powerhouse fish ladder north monolith.

337 **Non-Routine Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Rebuild powerhouse AWS fish water pumps.

2004: Rebuild powerhouse AWS fish water pumps.

2005: Rebuild powerhouse AWS fish water pumps.

2006: Rehabilitate 1/3 of STS and VBS

2007: Rehabilitate 1/3 of STS and VBS

379 **Non-Routine Maintenance of The Dalles Lock and Dam Fish Passage Facilities (CORPS)**

2003: Begin installation of new lifting cable and extensions for the main entrance gates.

2005: Contract for new window cleaning brushes for the fish count stations windows. Prepare designs for rehabilitating the north shore fish ladder. Procure new main fish ladder entrance gates. Prepare designs for new weir guides.

2006: Install new window cleaning brushes on the fish count stations windows. Contract for rehabilitation of the north shore fish ladder. Install new main fish ladder entrance gates. Install new weir guides.

2007: Finish contract for the rehabilitation of the north shore fish ladder.

118

521 **Adult migration studies (CORPS)**

2003: continue adult passage telemetry and headburn studies and complete bioenergetic field work

2004: complete bioenergetic model , headburn evaluations, and telemetry study field work

2005: final headburn report, continue bioenergetic modeling

2006: final telemetry study report

Hydro

118

582 **Adult Passage Counting and Trapping at Zosel Dam (BPA)**

2003: Assess feasibility of conducting adult fish passage counts at Zosel Dam using current technology. Design Adult Trapping Facilities.

2004: Contruct/Fabricate/Install Adult Trapping Facilities. Evaluate Trapping Facilities at Zosel Dam. Evaluate Adult Counting Facilities at Zosel Dam.

2005: Evaluate Adult Counting Facilities at Zosel Dam.

119

237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

Hydro

119

517 **Adult Lamprey Passage (CORPS)**

2003: complete season's test program

2004: initiate final design report

2005: complete design report and P&S, initiate construction

2006: complete constructin

2007: complete biological testing

120

381 **Improve Operations of Adult Fishway Main Entrances (CORPS)**

2003: Implement fishway operational improvements and modifications as required. Continue updating Portland Distict hydraulic models with preparation of a report with recommendations for physical and operational improvements.

2004: Implement fishway operational improvements and modifications as required.

2005: Implement fishway operational improvements and modifications as required.

2006: Implement fishway operational improvements and modifications as required.

2007: Implement fishway operational improvements and modifications as required.

121

378 **Spare Parts for Fish Passage Facilities (CORPS)**

2003: Procure spare parts as required. Contractor deliver spare winding for McNary Dam adult fish pumps.

2004: Procure spare parts as required.

2005: Procure spare parts as required.

2006: Procure spare parts as required.

2007: Procure spare parts as required.

122

518 **The Dalles sluiceway outfall relocation and emergency AWS (CORPS)**

2003: complete reaanlysis, update design report and make decision to proceed

2004: prepare P&S (tentative)

2005: complete P&S, initiate construction (tentative)

2006: continue construction (tentative)

2007: complete construction (tentative)

Hydro

123

529 **The Dalles adult entrance channel dewatering mods (CORPS)**

2003: complete construction

125

322 **Automated Alarm System for Adult Collection Channel Diffuser Systems (CORPS)**

2003: Contract and install prototype monitoring and alarm system if determined feasible. Continue inspection of diffuser gratings as routine adult fishway maintenance. Correct any diffuser grating problems when found.

2004: Implement monitoring and alarm system at additonal projects as required. Continue inspection of diffuser gratings as routine adult fishway maintenance. Correct any diffuser grating problems when found.

2005: Implement monitoring and alarm system at additonal projects as required. Continue inspection of diffuser gratings as routine adult fishway maintenance. Correct any diffuser grating problems when found.

2006: Implement monitoring and alarm system at additonal projects as required. Continue inspection of diffuser gratings as routine adult fishway maintenance. Correct any diffuser grating problems when found.

2007: Implement monitoring and alarm system at additonal projects as required. Continue inspection of diffuser gratings as routine adult fishway maintenance. Correct any diffuser grating problems when found.

126

316 **Non-Routine Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2004: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2005: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Design corrections for repair of second powerhouse adult fish ladder north monolith. Dredge second powerhouse forebay upstream of the AWS fish water units intakes.

2006: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Repair second powerhouse fish ladder north monolith.

2007: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Complete repair of second powerhouse fish ladder north monolith.

127

505 **Bonneville 2nd PH emergency AWS (CORPS)**

2003: complete construction

Hydro

128

513 **John Day N. Shore AWS (CORPS)**

2003: complete design report, decision

2004: complete P&S, initiate construction (tentative)

2005: continue construction (tentative)

2006: complete construction

2007: biological evaluation

129

332 **Ice Harbor Emergency Auxiliary Water Supply (CORPS)**

2003: Complete Phase 2 Construction - Install North Shore Pumps #1 #2 and #3.

342 **Little Goose Auxiliary Water Supply (CORPS)**

2003: Initiate Construction

2004: Complete Construction

348 **Lower Granite Emergency Auxiliary Water Supply (CORPS)**

2003: Phase I Construction, Gear Reducer Demolition/Installation. Complete Construction

355 **Lower Monumental Auxiliary Water Supply (CORPS)**

2003: Complete P&S. Award Contract

2004: Initiate Construction

2005: Complete Construction

131

148 1996-021-00 **Gas Bubble Disease Research and Monitoring of Juvenile Salmonids (BPA)**

2003: TBD

550 **Redudant TDG Monitors - Dworshak to McNary Dam (CORPS)**

2003: Procurement of additional TDG instruments/ Physical Infrastructure modifications

2004: Physical infrastructure modifications

2005: Ongoing QA/QC and Maintenance

2006: Ongoing QA/QC and Maintenance

2007: Ongoing QA/QC and Maintenance

RPA	BiopID	Project Title

Hydro

132

551 **Review of Forebay Monitors Lower Granite to McNary (CORPS)**

2003: Begin field investigations and analysis, Identify recommended relocations

2004: Continue field investigations and analysis,Prepare memorandum and coordinate with agencies

2005: Implement field relocations

2006: Continue remaining relocations

134

344 **Little Goose Flow Deflectors (CORPS)**

2003: Complete Design. Award Construction Contract.

2004: Complete Construction.

350 **Lower Granite Flow Deflectors (CORPS)**

2003: Test General Model. Complete Technical Report

357 **Lower Monumental Flow Deflectors (CORPS)**

2003: Complete Deflector Construction

364 **McNary Flow Deflectors (CORPS)**

2003: Complete Design of North Shore Training Wall

2004: Complete Construction of Training Wall

370 **McNary Juvenile Survival (CORPS)**

2003: 1800

2004: 2000

487 **Bonneville Spillway Flow Deflectors (CORPS)**

2003: complete decision on additional bays, initiate construction (tentative)

2004: complete construction (tentative)

2005: post-construction tests(tentative)

2006: call it a wrap up

Hydro

134

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

135

344 **Little Goose Flow Deflectors (CORPS)**

2003: Complete Design. Award Construction Contract.

2004: Complete Construction.

350 **Lower Granite Flow Deflectors (CORPS)**

2003: Test General Model. Complete Technical Report

357 **Lower Monumental Flow Deflectors (CORPS)**

2003: Complete Deflector Construction

364 **McNary Flow Deflectors (CORPS)**

2003: Complete Design of North Shore Training Wall

2004: Complete Construction of Training Wall

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

Hydro

138

354 **Lower Granite Surface Bypass and Collection (CORPS)**

2003: RSW Test with BGS installed.

2004: Multiple Deliverables. See Summary

2005: Multiple Deliverables. See Summary

2006: Multiple Deliverables. See Summary

2007: Multiple Deliverables. See Summary

514 **John Day surface bypassspillway improvements (CORPS)**

2003: complete egress test

2004: award bay 1 and 20 spillway deflectors (tentative)

2005: complete deflectors, 1st year test (tentative)

2006: complete 2nd year test (tentative)

2007: decision to proceed w/ RSW, initiate construction (tentative)

139

552 **Dworshak Dissolved Gas Abatement Study (CORPS)**

2003: draft report

2004: Final Report

142

365 **McNary Forebay Temperature Improvements (CORPS)**

2003: CFD Model development

2004: Technical Report

Hydro

144

243 1994-033-00 **Fish Passage Center (BPA)**

2003: 1) Provide design, oversight, and data analysis of information collected through the conduct of the annual Smolt Monitoring Program (SMP). 2) Perform Section 10 ESA permit application and reporting requirements for SMP and CSS studies. 2) Perform daily operation and maintenance of FPC web site and long term data base of annual fish migration and river environment information for distribution of data region wide. 3) Perform data analysis and prepare Annual Status Report for Comparative Survival Study (CSS) as directed by the CSS Oversight Committee of the fisheries management agencies and tribes. 4) Prepare FPC Annual Report summarizing fish migration, fish passage operations, and river environment information collected through the SMP.

2004: 1) Provide design, oversight, and data analysis of information collected through the conduct of the annual Smolt Monitoring Program (SMP). 2) Perform Section 10 ESA permit application and reporting requirements for SMP and CSS studies. 2) Perform daily operation and maintenance of FPC web site and long term data base of annual fish migration and river environment information for distribution of data region wide. 3) Perform data analysis and prepare Annual Status Report for Comparative Survival Study (CSS) as directed by the CSS Oversight Committee of the fisheries management agencies and tribes. 4) Prepare FPC Annual Report summarizing fish migration, fish passage operations, and river environment information collected through the SMP.

2005: 1) Provide design, oversight, and data analysis of information collected through the conduct of the annual Smolt Monitoring Program (SMP). 2) Perform Section 10 ESA permit application and reporting requirements for SMP and CSS studies. 2) Perform daily operation and maintenance of FPC web site and long term data base of annual fish migration and river environment information for distribution of data region wide. 3) Perform data analysis and prepare Annual Status Report for Comparative Survival Study (CSS) as directed by the CSS Oversight Committee of the fisheries management agencies and tribes. 4) Prepare FPC Annual Report summarizing fish migration, fish passage operations, and river environment information collected through the SMP.

2006: 1) Provide design, oversight, and data analysis of information collected through the conduct of the annual Smolt Monitoring Program (SMP). 2) Perform Section 10 ESA permit application and reporting requirements for SMP and CSS studies. 2) Perform daily operation and maintenance of FPC web site and long term data base of annual fish migration and river environment information for distribution of data region wide. 3) Perform data analysis and prepare Annual Status Report for Comparative Survival Study (CSS) as directed by the CSS Oversight Committee of the fisheries management agencies and tribes. 4) Prepare FPC Annual Report summarizing fish migration, fish passage operations, and river environment information collected through the SMP.

2007: 1) Provide design, oversight, and data analysis of information collected through the conduct of the annual Smolt Monitoring Program (SMP). 2) Perform Section 10 ESA permit application and reporting requirements for SMP and CSS studies. 2) Perform daily operation and maintenance of FPC web site and long term data base of annual fish migration and river environment information for distribution of data region wide. 3) Perform data analysis and prepare Annual Status Report for Comparative Survival Study (CSS) as directed by the CSS Oversight Committee of the fisheries management agencies and tribes. 4) Prepare FPC Annual Report summarizing fish migration, fish passage operations, and river environment information collected through the SMP.

317 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

144

328 **Fish Passage Plan Development and Implementation (CORPS)**

2003: Annual update and implemention of Fish Passage Plan.

2004: Annual update and implemention of Fish Passage Plan.

2005: Annual update and implemention of Fish Passage Plan.

2006: Annual update and implemention of Fish Passage Plan.

2007: Annual update and implemention of Fish Passage Plan.

333 **Non-Routine Maintenance of Ice Harbor Lock and Dam Fish Passage Facilities (CORPS)**

2003: Contractor replace south shore fish pump hydraulic systems. Award contract for fabrication of new fish pump dewatering bulkheads. Award contract for replacement of adult collection system entrance hoists. Prepare contract to replace powerhouse adult collection channel dewatering valves.

2004: Award 4 year contracts for rehabbing south shore adult fish pumps, rehabbing 2 pumps per year. Contractor to replace north shore fish pump hydraulic system. Contract for replacement of powerhouse adult collection channel drain valves during winter maintenance period. Project personnel replace powerhouse collection channel diffuser gratings. Prepare contract to rehab powerhouse collection channel diffuser valves.

2005: Continue contracts to rehab south shore fish pumps, 2 pumps per year. Contract to rehab powerhouse adult collection channel diffuser valves.

2006: Continue contracts to rehab south shore fish pumps, 2 pmps per year. Prepare contract for installing new adult collection channel control system.

2007: Continue contracts to rehab south shore fish pumps, 2 pumps per year. Contract for installation of new adult collection channel control system.

334 **Operation and Maintenance of Ice Harbor Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

338 **Operation and Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

144

345 **Non-Routine Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Prepare contract plans and specifications for painting juvenile fish facility dewatering structure.

2004: Contract for painting juvenile fish facility dewatering structure. Prepare contract plans and specifications for installing new water and sewer lines to juvenile fish facilities.

2005: Award contract and install new water and sewer lines to juvenile fish facilities.

2006: Prepare contract plans and specifications for overhauling ESBs's.

2007: Award 2 year contract to overhaul ESBS, with 1/2 being overhauled in FY 2007.

346 **Operation and Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

352 **Non-Routine Maintenance of Lower Granite Lock and Dam Fish Passage Facilities (CORPS)**

2003: Finish preparing contract and contract to paint the interior holds of 2 8000-series fish barges.

2004: Contract painting interior holds of 2 8000-seiresfish barges.

2005: Prepare contract for overhauling ESBS's. Prepare contract for constructing 2 new 4000-series fish barges.

2006: Award contract to overhaul ESBS's, with 1/2 being overhauled in FY 2007. Award contract and begin construction of 2 new 4000-series fish barges.

2007: Continuing contract, overhaul second half of ESBS's. Finish construction of 2new 4000- series fish barges.

353 **Operation and Maintenance of Lower Granite Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

144

359 **Non-Routine Maintenance of Lower Monumental Lock and Dam Fish Passage Facilities (CORPS)**

2003: Continue contract for rehabbing adult fishpumps - rehab one fish pump. Prepare contract to install fish ladder handrails.

2004: Continue contract for rehabbing adult fish pumps - rehab one fish pump. Contract for installation for adult fish ladder handrails.

2005: Prepare contract for new adult collection channel control system.

2006: Contract installation of new adult collection channel control system.

360 **Operation and Maintenance of Lower Monumental Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

368 **Non-Routine Maintenance of McNary Lock and Dam Fish Passage Facilities (CORPS)**

2003: Contract and install new fish ladder tilting weir controls. Prepare contract for replacing mesh on VBS's.

2004: Prepare contract to replace south fish ladder rotovalves.

2005: Contract to replace mesh on one-half of the VBS's. Contract to replace south shore fish ladder rotovalves. Prepare contract to overhaul ESBS's. Prepare contract for rehabbing fish ladder tilting weirs.

2006: Continue contract to replace mesh on 2nd half of VBS's. Contract to rehab south fish ladder tilting weirs. Contract to overhaul 1/3 of ESBS's. Contract to rehab north fish ladder tilting weirs. Prepare contract for rehabbing adult fishway entrances.

2007: Continue contract to overhaul 1/3 of ESBS's. Contract to rehab north fish ladder tilting weirs. Contract to overhaul north shore fishway entrance. Prepare contract for rehabbing adult fish pumps.

369 **Operation and Maintenance of McNary Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

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378 **Spare Parts for Fish Passage Facilities (CORPS)**

2003: Procure spare parts as required. Contractor deliver spare winding for McNary Dam adult fish pumps.

2004: Procure spare parts as required.

2005: Procure spare parts as required.

2006: Procure spare parts as required.

2007: Procure spare parts as required.

380 **Operation and Maintenance of The Dalles Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

532 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

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316 **Non-Routine Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2004: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Preventative Maintenance Program.

2005: Rehabilitation of the Bradford Island and Cascades Island aging fishways. Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Design corrections for repair of second powerhouse adult fish ladder north monolith. Dredge second powerhouse forebay upstream of the AWS fish water units intakes.

2006: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Repair second powerhouse fish ladder north monolith.

2007: Use the new mechanized STS/VBS inspection system for timely inspections. Refurbish aging STS in the Bonneville second powerhouse. Complete repair of second powerhouse fish ladder north monolith.

Hydro

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317 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

333 **Non-Routine Maintenance of Ice Harbor Lock and Dam Fish Passage Facilities (CORPS)**

2003: Contractor replace south shore fish pump hydraulic systems. Award contract for fabrication of new fish pump dewatering bulkheads. Award contract for replacement of adult collection system entrance hoists. Prepare contract to replace powerhouse adult collection channel dewatering valves.

2004: Award 4 year contracts for rehabbing south shore adult fish pumps, rehabbing 2 pumps per year. Contractor to replace north shore fish pump hydraulic system. Contract for replacement of powerhouse adult collection channel drain valves during winter maintenance period. Project personnel replace powerhouse collection channel diffuser gratings. Prepare contract to rehab powerhouse collection channel diffuser valves.

2005: Continue contracts to rehab south shore fish pumps, 2 pumps per year. Contract to rehab powerhouse adult collection channel diffuser valves.

2006: Continue contracts to rehab south shore fish pumps, 2 pmps per year. Prepare contract for installing new adult collection channel control system.

2007: Continue contracts to rehab south shore fish pumps, 2 pumps per year. Contract for installation of new adult collection channel control system.

334 **Operation and Maintenance of Ice Harbor Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

337 **Non-Routine Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Rebuild powerhouse AWS fish water pumps.

2004: Rebuild powerhouse AWS fish water pumps.

2005: Rebuild powerhouse AWS fish water pumps.

2006: Rehabilitate 1/3 of STS and VBS

2007: Rehabilitate 1/3 of STS and VBS

Hydro

145

338 **Operation and Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

345 **Non-Routine Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Prepare contract plans and specifications for painting juvenile fish facility dewatering structure.

2004: Contract for painting juvenile fish facility dewatering structure. Prepare contract plans and specifications for installing new water and sewer lines to juvenile fish facilities.

2005: Award contract and install new water and sewer lines to juvenile fish facilities.

2006: Prepare contract plans and specifications for overhauling ESBs's.

2007: Award 2 year contract to overhaul ESBS, with 1/2 being overhauled in FY 2007.

346 **Operation and Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

352 **Non-Routine Maintenance of Lower Granite Lock and Dam Fish Passage Facilities (CORPS)**

2003: Finish preparing contract and contract to paint the interior holds of 2 8000-series fish barges.

2004: Contract painting interior holds of 2 8000-seiresfish barges.

2005: Prepare contract for overhauling ESBS's. Prepare contract for constructing 2 new 4000-series fish barges.

2006: Award contract to overhaul ESBS's, with 1/2 being overhauled in FY 2007. Award contract and begin construction of 2 new 4000-series fish barges.

2007: Continuing contract, overhaul second half of ESBS's. Finish construction of 2new 4000- series fish barges.

Hydro

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353 **Operation and Maintenance of Lower Granite Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

359 **Non-Routine Maintenance of Lower Monumental Lock and Dam Fish Passage Facilities (CORPS)**

2003: Continue contract for rehabbing adult fishpumps - rehab one fish pump. Prepare contract to install fish ladder handrails.

2004: Continue contract for rehabbing adult fish pumps - rehab one fish pump. Contract for installation for adult fish ladder handrails.

2005: Prepare contract for new adult collection channel control system.

2006: Contract installation of new adult collection channel control system.

360 **Operation and Maintenance of Lower Monumental Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

368 **Non-Routine Maintenance of McNary Lock and Dam Fish Passage Facilities (CORPS)**

2003: Contract and install new fish ladder tilting weir controls. Prepare contract for replacing mesh on VBS's.

2004: Prepare contract to replace south fish ladder rotovalves.

2005: Contract to replace mesh on one-half of the VBS's. Contract to replace south shore fish ladder rotovalves. Prepare contract to overhaul ESBS's. Prepare contract for rehabbing fish ladder tilting weirs.

2006: Continue contract to replace mesh on 2nd half of VBS's. Contract to rehab south fish ladder tilting weirs. Contract to overhaul 1/3 of ESBS's. Contract to rehab north fish ladder tilting weirs. Prepare contract for rehabbing adult fishway entrances.

2007: Continue contract to overhaul 1/3 of ESBS's. Contract to rehab north fish ladder tilting weirs. Contract to overhaul north shore fishway entrance. Prepare contract for rehabbing adult fish pumps.

Hydro

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369 **Operation and Maintenance of McNary Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

378 **Spare Parts for Fish Passage Facilities (CORPS)**

2003: Procure spare parts as required. Contractor deliver spare winding for McNary Dam adult fish pumps.

2004: Procure spare parts as required.

2005: Procure spare parts as required.

2006: Procure spare parts as required.

2007: Procure spare parts as required.

379 **Non-Routine Maintenance of The Dalles Lock and Dam Fish Passage Facilities (CORPS)**

2003: Begin installation of new lifting cable and extensions for the main entrance gates.

2005: Contract for new window cleaning brushes for the fish count stations windows. Prepare designs for rehabilitating the north shore fish ladder. Procure new main fish ladder entrance gates. Prepare designs for new weir guides.

2006: Install new window cleaning brushes on the fish count stations windows. Contract for rehabilitation of the north shore fish ladder. Install new main fish ladder entrance gates. Install new weir guides.

2007: Finish contract for the rehabilitation of the north shore fish ladder.

380 **Operation and Maintenance of The Dalles Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

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532 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

553 **Temperature Modeling Plan Alternative Snake River Operations (CORPS)**

2003: Phase 1 - Plan Development - Final Report

2004: Phase 2 - Model Development - Progress Report

2005: Phase 2 - Model Development - Progress Report

2006: Phase 2 - Baseline/Alternative Analysis -Progress Report

2007: Phase 2 - Alternative Analysis Draft Final Report

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334 **Operation and Maintenance of Ice Harbor Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

346 **Operation and Maintenance of Little Goose Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

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353 **Operation and Maintenance of Lower Granite Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

360 **Operation and Maintenance of Lower Monumental Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

369 **Operation and Maintenance of McNary Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

503 **Bonneville 2nd PH fish unit trash rake (CORPS)**

2003: complete construction

2004: complete post-construction evaluation

509 **Bonneville 2nd PH gatewell debris removal (CORPS)**

2003: none

2004: P&S for test facility and contract award

2005: continue installation

2006: complete installation, initiate testing

Hydro

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515 **John Day Screens (CORPS)**

2003: complete prototype testing

2004: complete P&S for permanent screens, award contract (tentative)

2005: continue construction, test debris issues (tentative)

2006: continue construction (tentative)

2007: complete construction, 1st year post-construction tests (tentative)

532 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

185

321 **Delayed Mortality of Juveniles (CORPS)**

2005: Final Report

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

186

321 **Delayed Mortality of Juveniles (CORPS)**

2005: Final Report

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

Hydro

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146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

191

314 **Adult Fish Counting at Mainstem Columbia and Snake River Projects (CORPS)**

2003: Implement annual fish counting program.

2004: Implement annual fish counting program.

2005: Implement annual fish counting program.

2006: Implement annual fish counting program.

2007: Implement annual fish counting program.

317 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

338 **Operation and Maintenance of John Day Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

Hydro

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380 **Operation and Maintenance of The Dalles Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

532 **Operation and Maintenance of Bonneville Lock and Dam Fish Passage Facilities (CORPS)**

2003: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2004: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2005: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2006: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

2007: Routine operation of fish passage facilities. Routine maintenance of fish passage facilities.

192

146 2001-003-00 **Installation of Adult PIT-tag Detection Systems (BPA)**

2003: 1) Install adult PIT detection systems in all ladders at John Day, Little Goose, and Lower Monumental. 2) Design adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary. 3) Cost-share the adult PIT detector installation at Priest Rapids and Chandler if determined to be necessary.

2004: 1) Install adult PIT detection systems at counting windows at Bonneville and McNary if determined to be necessary.

2005: 1) Improve adult PIT detection systems where necessary.

2006: Closeout project.

Hydro

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235 1989-107-00 **Statistical Support for Salmonid Survival Studies (CORPS)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2004: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2005: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2006: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2007: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

Hydro

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237 1990-080-00 **Columbia River Basin PIT Tag Information System (BPA)**

2003: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2004: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2005: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2006: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

2007: 1.0 Operate and maintain the centralized Columbia River Basin-wide database for PIT-tagged Fish (at Gladstone, OR). 2.0 Install, operate and maintain permanent interrogation systems and provide the interrogation data to PTAGIS in near-real time (at Kennewick, WA). 3.0 Provide coordination and support for research projects that depend upon selective segregation of fish by code (SxC) at Columbia Basin fish collection facilities. 4.0 Provide training, system information, coordination, consultation and support for all Columbia Basin PIT tag research projects through the development of user manuals, newsletters, workshops, videos, etc. 5.0 Manage the purchase and distribution of PIT tags and PIT tag detection equipment for all NWPPC FWP projects. 6.0 Provide additional support actions related to PIT tag data recovery, System-wide Planning and Coordination and Public Outreach. 7.0 Project Administration and Management.

522 **Adult PIT tag program (Bonn, The dalles, John Day) (CORPS)**

2003: complete biological evaluations, initiate modifications to Bonn system, initiate design for John Day system

2004: complete installation at John Day, initiate design for the The Dalles system

2005: complete The Dalles installation

2006: complete evaluations

Hydro

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145 1983-319-00 **New Marking and Monitoring Techniques (BPA)**

2003: 1) Continue development of small-stream PIT detection with capability of remote location. 2) Initiate development of a high-flow and high-Q PIT detection system for the Bonneville Corner Collector. 3) Initiate development of a next generation PIT detection transceiver with numerous additional capabilities.

2004: 1) Continue development of small-stream PIT detection with capability of remote location. 2) Continue development of a high-flow and high-Q PIT detection system for the Bonneville Corner Collector and other applications. 3) Continue development of a next generation PIT detection transceiver with numerous additional capabilities.

2005: 1) Continue development of small-stream PIT detection with capability of remote location. 2) Continue development of a high-flow and high-Q PIT detection system for various applications. 3) Complete development of a next generation PIT detection transceiver with numerous additional capabilities.

2006: 1) Complete development of a small-stream PIT detection system with capability of deployment in remote locations. 2) Continue development of various PIT detection systems as needed.

2007: 1) Continue development of various PIT detection systems as needed.

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321 **Delayed Mortality of Juveniles (CORPS)**

2005: Final Report

544 **Juvenile salmon transportation evaluations (CORPS)**

2003: Lower Granite Transport Evaluation, spring chinook and steelhead - finish

Habitat

149

1 1985-062-00 **Passage Improvement Evaluation - Phase II Screens (BPA)**

2003: Task I-A, Field Evaluations of fish screens. Task I-B, Problem identification protocol task

2004: Task I-A, Field Evaluations of fish screens. Task I-B, Problem identification protocol task

4 1991-057-00 **Fabricate and Install Yakima Basin Phase II Fish Sreens (BPA)**

2003: Fabricate and install fish screening devices that meet State and Federal fish protection criteria.

5 1991-075-00 **Yakima Phase II Screens - Construction (BPA)**

2003: Provide engineering designs, schedules, budgets, and construction management for individual screens - develop conceptual plans/gain landowner agreement with design; prepare designs and specifications; obtain permits and coordinate for NEPA and ESA clearances; award and supervise administration of construction contract. Construct screens by contract.

2004: Provide engineering designs, schedules, budgets, and construction management for individual screens - develop conceptual plans/gain landowner agreement with design; prepare designs and specifications; obtain permits and coordinate for NEPA and ESA clearances; award and supervise administration of construction contract. Construct screens by contract.

6 1992-009-00 **Operate & Maintain (O&M)Yakima Basin Phase Ii Fish Screens (BPA)**

2003: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

2004: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

2005: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

2006: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

8 1995-033-00 **O&M Of Yakima Phase II Fish Facilities* (BPA)**

2003: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

2004: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

2005: A. Routine and major maintenance of irrigation screens. B. Technical assistance to screen owners to ensure proper operation. C. Implement and maintain O&M agreements with landowners.

14 1997-053-00 **Toppenish-Simcoe Instream Flow Restoration and Assessment (BPA)**

2003: Adaptively update project management plan. Implement Management Plan. Operations and Maintenance. Monitoring and Evaluation. Quarterly and Annual Reports

2004: Adaptively update project management plan. Implement Management Plan. Operations and Maintenance. Monitoring and Evaluation. Quarterly and Annual Reports

2005: Adaptively update project management plan. Implement Management Plan. Operations and Maintenance. Monitoring and Evaluation. Quarterly and Annual Reports

2006: Adaptively update project management plan. Implement Management Plan. Operations and Maintenance. Monitoring and Evaluation. Quarterly and Annual Reports

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16 1998-034-00 **Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Reestablish Safe Access into Tributaries of the Yakima S**

2003: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

2004: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

2005: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

2006: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

19 2002-022-00 **YKFP Big Creek Passage & Screening (BPA)**

2003: Complete installation of screens and related structures.

21 2002-025-00 **Yakima Tributary Access and Habitat Program (Objective 1: Early Actions) (BPA)**

2003: Meet and coordinate with are landowners and irrigators to coordinate on actions. Identify prioritized sites through surveys. Organize tributary teams and work plans to address passage problems. Prepare design plans for screens. Prepare construction plans, implement contracts in coordination with landowners. Install new screens on irrigation diversions.

39 1983-436-00 **Umatilla Passage O&M (BPA)**

2003: 1.) Operate and maintain adult trapping and passage facilities; 2.) operate and maintain juvenile trapping and passage facilities

2004: 1.) Operate and maintain adult trapping and passage facilities; 2.) operate and maintain juvenile trapping and passage facilities

2005: 1.) Operate and maintain adult trapping and passage facilities; 2.) operate and maintain juvenile trapping and passage facilities

2006: 1.) Operate and maintain adult trapping and passage facilities; 2.) operate and maintain juvenile trapping and passage facilities

2007: 1.) Operate and maintain adult trapping and passage facilities; 2.) operate and maintain juvenile trapping and passage facilities

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40 1988-022-00 **Umatilla River Fish Passage Operations (BPA)**

2003: 1.) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2.) Operate adult trapping facilities and provided return data; 3.) collect and transport broodstock for Umatilla hatchery programs; 4.) annual report.

2004: 1.) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2.) Operate adult trapping facilities and provided return data; 3.) collect and transport broodstock for Umatilla hatchery programs; 4.) annual report.

2005: 1.) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2.) Operate adult trapping facilities and provided return data; 3.) collect and transport broodstock for Umatilla hatchery programs; 4.) annual report.

2006: 1.) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2.) Operate adult trapping facilities and provided return data; 3.) collect and transport broodstock for Umatilla hatchery programs; 4.) annual report.

2007: 1.) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2.) Operate adult trapping facilities and provided return data; 3.) collect and transport broodstock for Umatilla hatchery programs; 4.) annual report.

44 1989-027-00 **Repay Power for Umatilla Basin Project (BPA)**

2003: 1) Provide power for operation of Columbia river exchange pumps

2004: 1) Provide power for operation of Columbia river exchange pumps

2005: 1) Provide power for operation of Columbia river exchange pumps

2006: 1) Provide power for operation of Columbia river exchange pumps

2007: 1) Provide power for operation of Columbia river exchange pumps

46 1996-011-00 **Juvenile Screens Smolt Traps on the WW River also reference 2000-033-00 (BPA)**

2003: 1) Construct Milton Ditch pipeline project; 2) Design Bergevin Williams, Old Lowden and Titus screens/ladders; 3) Provide O&M of all completed facilities

2004: 1) Design/build Hofer, Bergevin Williams, Old Lowden and Titus; 2) Provide O&M of all completed facilities

2005: 1) Provide O&M of all completed facilites

2006: 1) Provide O&M of all completed facilites

2007: 1) Provide O&M of all completed facilites

52 2000-033-00 **Walla Walla River Fish Passage Operations (BPA)**

2003: 1) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2) Operate adult trapping facilities and provided return data; 3) Annual report.

2004: 1) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2) Operate adult trapping facilities and provided return data; 3) Annual report.

2005: 1) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2) Operate adult trapping facilities and provided return data; 3) Annual report.

2006: 1) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2) Operate adult trapping facilities and provided return data; 3) Annual report.

2007: 1) Operate and monitor juveniles screen sites, juvenile bypasses, and adult ladders to ensure adequate passage conditions; 2) Operate adult trapping facilities and provided return data; 3) Annual report.

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54 2001-039-00 **Walla Walla Basin Screening (BPA)**

2003: 1) Design of remainder of phase 1 and all phase 2 screens; 2) Landowner agreements and permits for all remaining screens; 3) Install all remaining screens; 4) Project construction evaluated.

55 2001-075-00 **Increase Instream Flows to Dewatered Stream Reaches in the Walla Walla Basin (BPA)**

2003: 1) All water rights purchased/leased.

56 2002-036-00 **Walla Walla River Flow Restoration (BPA)**

2003: 1) Low/temp data anaysis summary from monitoring program.

2004: 1) Low/temp data anaysis summary from monitoring program.

2005: 1) Low/temp data anaysis summary from monitoring program.

81 1993-062-00 **Custer Soil & Water Conservation District Salmon River Fish Passage Enhancement (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

82 1994-015-00 **Idaho Fish Screen Improvement (BPA)**

2003: 1. Complete surveys, designs, of Idaho's Anadromous fish corridors. 2. Reduce the number of gravel push-up diversion dams by consolidation and elimination of irrigation ditches. 3. Maximize any rearing habitat in appropriate irrigation canals. 4. Reconnect streams to anadromous fish corridors. 5. Install and evaluate alternative fish screens. 6. Construction & installation of all unscreened gravity and pump intakes in Idaho's anadromous fish corridors.

2004: 1. Complete surveys, designs, of Idaho's Anadromous fish corridors. 2. Reduce the number of gravel push-up diversion dams by consolidation and elimination of irrigation ditches. 3. Maximize any rearing habitat in appropriate irrigation canals. 4. Reconnect streams to anadromous fish corridors. 5. Install and evaluate alternative fish screens. 6. Construction & installation of all unscreened gravity and pump intakes in Idaho's anadromous fish corridors.

83 1994-017-00 **Idaho Model Watershed Habitat Improvement Project (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

Habitat

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85 1996-007-00 **Upper Salmon River Diversion Consolidation Program (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

86 1996-077-02 **Protect and Restore Lolo Creek Watershed (BPA)**

2003: 1. Restore and enhance critical riparian and in-stream habitat to reduce sedimentation and stream temperatures. 2. Restore hydrologic connectivity and fish passage within the Lolo Creek watershed. 3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.

2004: 1. Restore and enhance critical riparian and in-stream habitat to reduce sedimentation and stream temperatures. 2. Restore hydrologic connectivity and fish passage within the Lolo Creek watershed. 3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.

100 2000-036-00 **Protect & Restore Mill Creek (BPA)**

2003: 1. Restore meadow and riparian plant communities to enhance fish and wildlife habitat. 2. Return passage to inaccessible tributary habitat and alleviate sediment sources associated with culverts.

2004: 1. Restore meadow and riparian plant communities to enhance fish and wildlife habitat. 2. Return passage to inaccessible tributary habitat and alleviate sediment sources associated with culverts.

110 1996-042-00 **Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek (BPA)**

2003: (1)Completion of engineering design of Okanogan River Pump Station, drawings, estimates of construction costs. (2)Engineering design of replacement of Salmon Lake Feeder Canal.(3) NRCS engineer design Middle Reach bank stabilization projects. Develop farm management plans that are congruent with reparian restoration.(4) Lower reach channel reconstruction.

114 2000-001-00 **Anadromous Fish Habitat & Passage in Omak Creek (BPA)**

2003: Propose the implementation of a plan to restore 40-mils of historical anadromous fish habitat (summer steelhead) by improving land management practices and conducting restoration activities that accelerate recovery of the Omak Creek watershed.

115 2000-002-00 **Remove Barriers/Restore Instream Habitat on Chumstick Creek (BPA)**

2003: Plan and design 12 barrier removal/stream restoration projects.Implement construction of projects designed. Complete Riparian Plantings.

2004: Construction/implementation, O&M, M&E.

2005: O&M and M&E

2006: O&M and M&E

120 2002-029-00 **Fish Passage on WDFW Lands in Yakima (BPA)**

2003: 1. Fish passage inventory on WDFW lands. 2. Design/engineer corrective action and complete NEPA/permits.

2004: 1. Repair or replace fish passage structures prioritized to create fish access to the maximum possible miles of stream habitat.

Habitat

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127 1993-066-00 **NE Oregon Pump Screening (BPA)**

2003: 1) Design and construct 21 fish screening sites

2004: 1) Design and construct 21 fish screening sites

2005: 1) Design and construct 21 fish screening sites

2006: 1) Design and construct 21 fish screening sites

128 1998-017-00 **Eliminate Gravel Push-up Dams in Lower North Fork John Day (BPA)**

2003: Construct 3 alternative irrigation systems eliminating the need for push up dams in the North Fork John Day River

2004: Construct 3 alternative irrigation systems eliminating the need for push up dams in the North Fork John Day River

2005: Construct 3 alternative irrigation systems eliminating the need for push up dams in the North Fork John Day River

129 1998-018-00 **John Day Watershed Restoration Program (USBR)**

2003: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

2004: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

2005: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

2006: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

134 2000-015-00 **Oxbow Ranch Acquisition (BPA)**

2003: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2004: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2005: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2006: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

136 2001-023-00 **15 Mile Water Rights Acquisition (BPA)**

2003: 1) Public outreach, stream prioritization, and data base management 2) monitoring new and existing water rights 3) acquisition of new water rights

137 2001-040-00 **Wagner Ranch Acquisition (BPA)**

2003: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2004: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2005: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2006: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

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138 2001-041-00 **Forrest Ranch Acquisition (BPA)**

2003: O&M

2004: O&M

2005: O&M

2006: O&M

140 1999-008-00 **Columbia Plateau Water Rights Acquisition (BPA)**

2003: 1)Public outreach, stream prioritizatio and data base 2) monitoring existing and new water rights 3) acquisition of new2 water rights

2004: 1)Public outreach, stream prioritizatio and data base 2) monitoring existing and new water rights 3) acquisition of new2 water rights

197 1992-026-01 **Little Sheep Creek Lg Wood Placement and Culvert Replacement (BPA)**

2003: Project complete

246 2000-013-00 **Evaluate An Experimental Re-Introduction of Sockeye Salmon into Skaha Lake (BPA Short Title: Eval Reintroduction Skaha Lake) (BPA)**

2003: Year 4: Objective 1 - Complete Disease Risk Assessment: 1A. -Compare the disease and infection status of fish above and below the dams, specifically, presence of whirling disease agent (Myxobolus cerebralis). 1B- Review results of field work and analysis.

2004: TBD

2005: TBD

2006: TBD

2007: TBD

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262 1994-008-06 **Implement Tucannon River Model Watershed Plan to Restore Salmonid Habitat (Work contracted under 1999-001-00, (BPA)**

2003: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2004: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2005: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2006: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

268 2001-038-00 **Gourlay Creek Dam Fish Ladder (BPA)**

2003: NA - project completed

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271 2001-064-00 **Improve Stream Flow and Passage for Simcoe Creek Steelhead (BPA)**

2003: Passage facility maintenance?

2004: Passage facility maintenance?

2005: Passage facility maintenance?

2006: Passage facility maintenance?

2007: Passage facility maintenance?

272 2002-020-00 **Fabricate and Install New Huntsville Mill Fish Screen (BPA)**

2003: 1) Renovate screening facility. 2) Install new screen. 3) Revegetate site

2004: O&M/M&E (to assure screen is working properly)

2005: O&M/M&E

2006: O&M/M&E

383 **Beaver Creek Water Acquisitions (USBR)**

2006: Acquire water as available

2007: Acquire water as available

384 **Campbell Diversions (USBR)**

2003: Preliminary designs and negotiate agreements

2004: Final designs, NEPA compliance, Sec. 7 consultation, permits

2005: Construct project

385 **Chelan County/Wenatchee IFIM Study (USBR)**

2003: Initiate study funding

2004: Complete study

387 **Chewuch Ditch Diversion Structure (USBR)**

2005: Initiate project

2006: Complete designs, NEPA compliance, Sec. 7 consultation, permits, agreements

2007: Construct project

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388 **Chumstick Diversions (USBR)**

2003: Initiate project discussions

2004: Initiate preliminary designs

2006: Finalize designs, NEPA compliance, Sec. 7 consultations, agreements and permits and construct project

2007: Finalize designs, NEPA compliance, Sec. 7 consultations, agreements and permits and construct project

389 **Entiat IFIM Studies (USBR)**

2003: Initiate project funding

390 **Fort-Thurlow Pump Exchange (USBR)**

2003: Final designs, NEPA compliance, Sec 7 consultation, permits, agreements

2004: Complete project

391 **Fulton Diversion Structure (USBR)**

2003: Initiate project discussion

2005: Preliminary designs

2006: Final designs, NEPA compliance, Sec. 7 consulation, permits, agreements

2007: Construct project

392 **Gold Creek Screen and Diversion (USBR)**

2005: Initiate project

2006: Final designs, NEPA compliance, Sec. 7 consultation, permits, agreements

2007: Project construction

393 **L-13 Diversion Replacement (USBR)**

2003: Complete designs, NEPA compliance, Sec. 7 consultation, permits, construct project

394 **L-13 Headgate (USBR)**

2003: Preliminary and final designs, complete NEPA compliance, Sec. 7 consultation, permits, construction completed

395 **L-13 Screen (USBR)**

2003: Complete screen replacement project including preliminary and engineering design, NEPA compliance, Sec. 7 consultations, permit assistance, and construction

396 **L-18 Headgate (USBR)**

2003: Preliminary and final designs, complete NEPA compliance, Sec. 7 consultation, permits, construction completed

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397 **L-20 Headgate (USBR)**

2003: Initiate and complete project including preliminary and final engineering design, NEPA compliance, Sec. 7 consultation, permit assistance, and construction

398 **L-3 Diversion Replacement (USBR)**

2003: Construct project

399 **L-35A Diversion Replacement (USBR)**

2003: Complete designs, NEPA compliance, Sec. 7 consultation, permits, construct project

400 **L-35A Headgate (USBR)**

2003: Preliminary and final designs, complete NEPA compliance, Sec. 7 consultation, permits, construction completed

401 **L-35A Screen (USBR)**

2003: Complete screen replacement project including preliminary and engineering design, NEPA compliance, Sec. 7 consultations, permit assistance, and construction

402 **L-3A Diversion Replacement (USBR)**

2003: Construct project

403 **L-3A0 Diversion Replacement (USBR)**

2003: Complete designs, NEPA compliance, Sec. 7 consultation, permits, construct project

404 **L-3 Headgate (USBR)**

2003: Preliminary and final designs, complete NEPA compliance, Sec. 7 consultation, permits, construction completed

405 **L-6/S14 Water Exchange (USBR)**

2003: Complete all designs and compliance requirements; construct project.

406 **L-9 Diversion Replacement (USBR)**

2003: Initiate project

2004: Complete designs, NEPA compliance, Sec. 7 consultation, permits, construct project

407 **L-9 Headgate (USBR)**

2003: Preliminary and final designs, complete NEPA compliance, Sec. 7 consultation, permits, construction completed

408 **Marracci/Washington Department of Fish and Wildlife Diverson (USBR)**

2003: Initiate project including preliminary designs, NEPA compliance, Sec. 7 consultation

2004: Final designs, permits, agreement, construction

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409 **USGS Hydrologic Model Upgrades (USBR)**

2003: Assist USGS funding

410 **Methow Valley Irrigation District Methow River Screen (USBR)**

2003: Initiate project

2004: Final design, NEPA compliance, Sec. 7 consultation, permits, and agreements

2005: Project construction

411 **Methow Valley Irrigation District Twisp River Screen (USBR)**

2003: Initiate project coordination

2004: Preliminary and final designs, NEPA compliance, Sec. 7 consultations, permits and agreements

2005: Project construction

412 **Methow Valley Irrigation District Twisp River Pump Exchange (USBR)**

2003: Preliminary design and initiate NEPA compliance, Sec 7 consultation

2004: Final design, complete NEPA, Sec. 7, agreements and permits

2005: Project construction

413 **Middle Fork John Day Gaging Stations (USBR)**

2003: Initiate project

2004: Continue project

2005: Continue project

2006: Continue project

2007: Continue project

414 **Middle Fork John Day IFIM Study (USBR)**

2003: Initiate study

2004: Continue study

2005: Continue study

2006: Continue study

2007: Continue study

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415 **Mission Diversions (USBR)**

2003: Initiate project discussions

2005: Initiate preliminary designs

2006: Finalize designs, NEPA compliance, Sec. 7 consultations, agreements and permits and construct project

2007: Finalize designs, NEPA compliance, Sec. 7 consultations, agreements and permits and construct project

416 **Methow Valley Irrigation District Methow River Diversion (USBR)**

2003: Initiate project

2005: Complete engineering designs, NEPA compliance, Sec. 7 consultation, permits, agreeements

2006: Construct project

417 **Methow Valley Irrigation District Twisp River Diversion (USBR)**

2003: Initiate project

2005: Complete engineering designs, NEPA, Sec 7 consultation, permits, agreements

2006: Construct project

418 **North Fork John Day River IFIM Studies (USBR)**

2004: Initiate studies

2005: Continue studies

2006: Continue studies

2007: Continue studies

419 **Okanogan Gaging Stations (USBR)**

2003: Support funding for Okanogan County stream gages for continued data collection

420 **Panama Ditch Screen Replacement (USBR)**

2003: Initiate project

2004: Complete engineering designs, NEPA compliance, Sec. 7 consultations, permits and agreements.

2005: Project construction

Habitat

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421 **Strawberry Creek Complex Screen Replacement (USBR)**

2003: Initiate project including design engineering

2004: Continue design, NEPA compliance, Sec. 7 consultation, permits, agreements, construction

2005: Continue design, NEPA compliance, Sec. 7 consultation, permits, agreements, construction

2006: Continue design, NEPA compliance, Sec. 7 consultation, permits, agreements, construction

2007: Continue design, NEPA compliance, Sec. 7 consultation, permits, agreements, construction

422 **Upper John Day Gaging stations (USBR)**

2003: Initiate

2004: Continue program

2005: Continue program

2006: Continue program

2007: Continue program

423 **Upper John Day IFIM study (USBR)**

2003: Initiate study

2004: Continue study

2005: Continue study

2006: Complete study

424 **USBR Entiat Subbasin Program Management (USBR)**

2003: Initiate program and establish coordination and compliance procedures

2004: Program management and future year project identification

2005: Program management and future year project identification

2006: Program management and future year project identification

2007: Program management and future year project identification

Habitat

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425 **USBR Lemhi program management (USBR)**

2003: Continue program management; complete programmatic environmental assessment, fund specific projects.

2004: Continue program management; complete programmatic Sec. 7 consultations.

2005: Continue program management.

2006: Continue program management.

2007: Continue program management.

426 **USBR Little Salmon Subbasin Program Management (USBR)**

2004: Initiate program and establish coordination and compliance procedures

2005: Program management and future year project identification

2006: Program management and future year project identification

2007: Program management and future year project identification

427 **USBR Methow program management (USBR)**

2003: Program management, identify and fund specific projects.

2004: Program management.

2005: Program management.

2006: Program management.

2007: Program management.

428 **USBR Middle Clearwater Subbasin Program Management (USBR)**

2003: Initiate program and establish coordination and compliance procedures

2004: Program management and future year project identification

2005: Program management and future year project identification

2006: Program management and future year project identification

2007: Program management and future year project identification

Habitat

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429 **USBR Middle Fork John Day program management (USBR)**

2003: Program management.

2004: Program management.

2005: Program management.

2006: Program management.

2007: Program management.

430 **USBR North Fork John Day Program Management (USBR)**

2003: Initiate program and establish coordination and compliance procedures

2004: Program management and future year project identification

2005: Program management and future year project identification

2006: Program management and future year project identification

2007: Program management and future year project identification

431 **USBR Upper John Day Program Management (USBR)**

2003: Program management.

2004: Program management.

2005: Program management.

2006: Program management.

2007: Program management.

432 **USBR Upper Salmon program management (USBR)**

2003: Continue program management, complete programmatic NEPA

2004: Continue program management, complete programmatic Sec. 7 consultations

2005: Continue program management

2006: Continute program management

2007: Continue program management

Habitat

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433 **USBR Wenatchee Subbasin Program Management (USBR)**

2003: Program management and future year project identification

2004: Program management and future year project identification

2005: Program management and future year project identification

2006: Program management and future year project identification

2007: Program management and future year project identification

434 **Williams Creek Diversion Replacements (USBR)**

2003: Initiate project

2004: Complete designs, NEPA compliance, Sec. 7 consultation, permits, construct project

435 **Williams Creek Headgate Projects (USBR)**

2003: Project initiation

2004: Complete preliminary and final engineering designs, NEPA compliance, Sec 7. consultation, permit assistance, and construction

436 **Williams Creek Screens (USBR)**

2003: Initiate projects.

2004: Complete preliminary and final engineering designs, complete NEPA, complete Sec. 7 consultation, assist with permits, construction.

479 **Yakima-Klickitat Fisheries Project - Manastash Creek Fish Passage and Screening (BPA)**

2003: 1. Construct and install weirs/fishways for fish passage. 2. Construct and install screens for irrigation diversions

2004: 1. Construct and install weirs/fishways for fish passage. 2. Construct and install screens for irrigation diversions

555 **Salmon River Aquatic Ecosystem Restoration (CORPS)**

2003: Initial Construction (3 Sites)

2004: Construction at additional sites

2005: Continued Construction - new sites

2006: Monitoring

2007: Monitoring

Habitat

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559 **SW Washington Streams Section 206 (CORPS)**

2003: Initiate feasibility study

2004: Complete plans and specs, initiate construction

2005: Complete construction

560 **Trout Creek Section 206 (CORPS)**

2003: Complete construction

561 **Walla Walla GI Feasibility Study (CORPS)**

2005: Feasibility report completed

562 **Asotin County Riparian Buffer and Couse and Tenmile Creeks Protection and Implementation Project (BPA)**

2003: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

2004: P1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

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2006: 1. Reduce instream summer water temperature to 18 c. 2. Increase quality of pools w/ LWD to nine pools per mile. 3. Reduce sediment deposition in spawning gravels by reducing cropland erosion and stabilizing streambanks.

573 **Holistic Restoration of Critical Habitat on Non-federal Lands in the Pahsimeroi Watershed, Idaho (BPA)**

2003: Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

574 **Holistic Restoration of Critical Habitat on Non-federal Lands in the Lemhi Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

Habitat

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575 **Holistic Restoration of Critical Habitat on Non-federal Lands, East Fork Salmon Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

576 **Holistic Restoration of Habitat on Non-federal Lands, Middle Salmon-Panther Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

577 **Holistic Restoration of Critical Habitat on Non-federal Lands, Upper Salmon Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

581 **Evaluation of 1872 Water Rights to Supplement Flows Between Basins (BPA)**

2003: Develop restoration plan on Beaver, Shorer, and Frazer creeks.

2004: Restore fish passage on Beaver, Shorer and Frazer creeks.

2005: Restore fish passage on Beaver, Shorer and Frazer creeks. Develop and implement a monitoring plan.

583 **Restore Passage on Private Lands in Beaver Creek Drainage to Benefit Spring Chinook, Steelhead and Bulltrout (BPA)**

2003: Develop restoration plan on Beaver, Shorer, and Frazer creeks.

2004: Restore fish passage on Beaver, Shorer and Frazer creeks.

2005: Restore fish passage on Beaver, Shorer and Frazer creeks. Develop and implement a monitoring plan.

587 **Entiat IFIM Studies (USBR)**

2003: Initiate project funding

Habitat

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588 **Lemhi Subbasin IFIM studies (USBR)**

2003: Continue studies

2004: Continue studies

2005: Continue studies

2006: Continue studies

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13 1997-051-00 **Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Yakima Side Channels (BPA)**

2003: Protect priority habitats through acquisition, and purchase of conservation easements. Restore Yakima River/Naches River mainstem connectivity with protected lands, were possible, based on work plan. Restore and/or enhance the function of other side channel habitats, as identified following protection of such lands. Monitor habitat funcition on protected and restored lands. Update management plan(s) for protected lands. Prepare quarterly and annual report.

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Habitat

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16 1998-034-00 **Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Reestablish Safe Access into Tributaries of the Yakima S**

2003: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

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2006: A report detailing the location, description and number of migration barriers and unscreened diversions in ten Yakima subbasin tributaries. This report will be provided in increments as addenda to the management plan and as surveys are completed. Identify sites and structures that provide migratory access for juvenile and adult anadromous salmonids, in all tributaries deemed economically feasible for fixing. Install irrigation diversion screens to provide safe access to tributaries, by preventing entrainment into irrigation ditches. Develop conservation easements and property acquisition on habitats with high functional value. Coordinate with lasdowners on fencing to protect riparian habitat from improper grazing. Prepare quarterly and annual reports on project efforts and results, including number of miles of tributary rearing habitat that is regained through the fishway/screening and habitat protection efforts. Update the Project Management Plan.

110 1996-042-00 **Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek (BPA)**

2003: (1)Completion of engineering design of Okanogan River Pump Station, drawings, estimates of construction costs. (2)Engineering design of replacement of Salmon Lake Feeder Canal.(3) NRCS engineer design Middle Reach bank stabilization projects. Develop farm management plans that are congruent with reparian restoration.(4) Lower reach channel reconstruction.

119 2002-018-00 **Tapteal Bend Riparian Corridor Restoration (BPA)**

2003: Operation and Maintenance

2004: Operation and Maintenance

2005: Operation and Maintenance

2006: Operation and Maintenance

Habitat

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132 1998-022-00 **Pine Creek Ranch Acquisition (BPA)**

2003: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

2004: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

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2006: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

134 2000-015-00 **Oxbow Ranch Acquisition (BPA)**

2003: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2004: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2005: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2006: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

137 2001-040-00 **Wagner Ranch Acquisition (BPA)**

2003: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2004: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2005: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

2006: 1) Gather baseline information to assist in the monitoring and the development of a plan 2) Protect and manage the ranch resources. A property plan will be completed

562 **Asotin County Riparian Buffer and Couse and Tenmile Creeks Protection and Implementation Project (BPA)**

2003: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

2004: P1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

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2006: 1. Reduce instream summer water temperature to 18 c. 2. Increase quality of pools w/ LWD to nine pools per mile. 3. Reduce sediment deposition in spawning gravels by reducing cropland erosion and stabilizing streambanks.

Habitat

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564 **Protect and Restore the Asotin Creek Watershed (BPA)**

2003: 1. Identify partnerships with the Umatilla National Forest (UNF), Asotin County Conservation District (ACCD) and private landowners and finalize cost-share and agency responsibilities for watershed restoration work. 2. Survey, assess and identify roads on forest service and private forested land for obliteration or improvements. This task would be a collaborative effort with the UNF, ACCD and private landowners. 3. Reduce the risk for further stream channel degradation from mass wasting and surface erosion related to 22.04 miles of identified roads for obliteration on Forest Service land and further identified roads on forest service and private land.

2004: 1. Identify partnerships with the Umatilla National Forest (UNF), Asotin County Conservation District (ACCD) and private landowners and finalize cost-share and agency responsibilities for watershed restoration work. 2. Survey, assess and identify roads on forest service and private forested land for obliteration or improvements. This task would be a collaborative effort with the UNF, ACCD and private landowners. 3. Reduce the risk for further stream channel degradation from mass wasting and surface erosion related to 22.04 miles of identified roads for obliteration on Forest Service land and further identified roads on forest service and private land. 1. Monitor and evaluate road obliteration implementation and effectiveness in cooperation with the UNF and ACCD.

2005: 1. Identify partnerships with the Umatilla National Forest (UNF), Asotin County Conservation District (ACCD) and private landowners and finalize cost-share and agency responsibilities for watershed restoration work. 2. Survey, assess and identify roads on forest service and private forested land for obliteration or improvements. This task would be a collaborative effort with the UNF, ACCD and private landowners. 3. Reduce the risk for further stream channel degradation from mass wasting and surface erosion related to 22.04 miles of identified roads for obliteration on Forest Service land and further identified roads on forest service and private land. 1. Monitor and evaluate road obliteration implementation and effectiveness in cooperation with the UNF and ACCD.

2006: 1. Identify partnerships with the Umatilla National Forest (UNF), Asotin County Conservation District (ACCD) and private landowners and finalize cost-share and agency responsibilities for watershed restoration work. 2. Survey, assess and identify roads on forest service and private forested land for obliteration or improvements. This task would be a collaborative effort with the UNF, ACCD and private landowners. 3. Reduce the risk for further stream channel degradation from mass wasting and surface erosion related to 22.04 miles of identified roads for obliteration on Forest Service land and further identified roads on forest service and private land. 1. Monitor and evaluate road obliteration implementation and effectiveness in cooperation with the UNF and ACCD.

573 **Holistic Restoration of Critical Habitat on Non-federal Lands in the Pahsimeroi Watershed, Idaho (BPA)**

2003: Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

574 **Holistic Restoration of Critical Habitat on Non-federal Lands in the Lemhi Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

575 **Holistic Restoration of Critical Habitat on Non-federal Lands, East Fork Salmon Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

Habitat

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576 **Holistic Restoration of Habitat on Non-federal Lands, Middle Salmon-Panther Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

2004: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

577 **Holistic Restoration of Critical Habitat on Non-federal Lands, Upper Salmon Watershed, Idaho (BPA)**

2003: Characterize existing conditions and trends within the watershed, and identify data gaps. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawals along streams on non-federal lands. Improve critical habitats and survival rates for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temperatures. Implement the monitoring program.

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152

79 1992-026-03 **Upper Salmon Basin Watershed Project Administration/Implementation Support (BPA)**

2003: 1. Guide Subbasin Assessment and plan on Upper Salmon River Basin which includes the Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 2. Prioritize habitat actions (projects) based on subbasin assessment and plan for Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 3. Coordination of watershed issues in relation to ESA listed fish species across jurisdictional responsibilities. 4. Operation and Maintenance coordination and oversight. 5. Prepare projects for protection, restoration and complexity of fish habitat.

2004: 1. Guide Subbasin Assessment and plan on Upper Salmon River Basin which includes the Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 2. Prioritize habitat actions (projects) based on subbasin assessment and plan for Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 3. Coordination of watershed issues in relation to ESA listed fish species across jurisdictional responsibilities. 4. Operation and Maintenance coordination and oversight. 5. Prepare projects for protection, restoration and complexity of fish habitat.

98 2000-034-00 **Protect and Restore The North Lochsa Face Analysis Area Watersheds (BPA)**

2003: 1. Alleviate sediment input from road caused sources. 2. Breakdown of project information and peer review

2004: 1. Alleviate sediment input from road caused sources. 2. Breakdown of project information and peer review

99 2000-35-00 **Rehabilitate Newsome Creek Watershed - South Fork Clearwater River (BPA)**

2003: 1. Alleviate sediment input and potential from road sources. 2.Design rehabilitation for the upper channel reaches of Newsome Creek affected by past dredge mining. 3.Improve Fish Passage and alleviate potential culvert problems.

2004: 1. Alleviate sediment input and potential from road sources. 2.Design rehabilitation for the upper channel reaches of Newsome Creek affected by past dredge mining 3.Improve Fish Passage and alleviate potential culvert problems.

Habitat

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246 2000-013-00 **Evaluate An Experimental Re-Introduction of Sockeye Salmon into Skaha Lake (BPA Short Title: Eval Reintroduction Skaha Lake) (BPA)**

2003: Year 4: Objective 1 - Complete Disease Risk Assessment: 1A. -Compare the disease and infection status of fish above and below the dams, specifically, presence of whirling disease agent (Myxobolus cerebralis). 1B- Review results of field work and analysis.

2004: TBD

2005: TBD

2006: TBD

2007: TBD

255 1987-100-01 **Umatilla River Anadromous Fish Habitat Enhancement Project (BPA)**

2003: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2004: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2005: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2006: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

Habitat

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262 1994-008-06 **Implement Tucannon River Model Watershed Plan to Restore Salmonid Habitat (Work contracted under 1999-001-00, (BPA)**

2003: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2004: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2005: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2006: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

Habitat

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263 1994-018-07 **Garfield County Sediment Reduction and Riparian Improvement Program - (proposal) - funded under: 1999-021-00. 1997-088-00 (closed, but some 088 activities carried into 021 and 059 contracts) (BPA)**

2003: Similar, based on budget submitted - Planning = 1) Complete Pataha Creek Model Watershed Plan (PCMWP). 2) Implement Pataha Creek MWPa) Set up program with individual landowners - See implementation. 3) Coordinate PCMWP with the public and others to inform them about the program - a) Newsletters/newspaper-magazine articles, as applicable, b) Sponsor tours/workshops/ conferences, conduct PCMWP meetings, provide information and education with students. 4) Work with WSU on monitoring water quality to compare no-till, 2 pass seeding, and conventional seeding methods - a) Coordinate data collection, b) Operate water sediment samplers and electronic thermographs, c) Collect soil erosion data. 5) Coordinate salmon habitat work - a) Meet with landowners, Technical Adviory Committees, and WDFW, b) attend training into keep up to date on new techniques and opportunities.Implementation = 6) No till seeding (0-33% soil distrurbance - drill used to plant seed and fertilize). 7) Direct seeding (34-66% soil disturbance - 2 pass method- fertilizer then plant). 8) Critical Area seeding - grass seeding onto productive, but highly erodable land. Must remain in grass for 10 years to reduce erosion. Land that does not meet CRP criteria, or patches that are too small to be enrolled. 9) Pasture Planting - reduce erosion, but can be grazed. Usually used close to riparian areas to reduce near-stream erosion. Required to be pasture for 10 years. Often mets CREP criteria, but farmer was not interested in signing up with CREP (under which use for grazing is not be allowed). 10) Terrace rebuilding - reduce erosion by retiering land. 11) Pipeline and spring development. 12) Write Annual Report

2004: Reduced over the years as "land lock- up" agreements expire

2005: Reduced over the years as "land lock- up" agreements expire

2006: Reduced over the years as "land lock- up" agreements expire

264 1994-046-01 **Walla Walla River Basin Fish Habitat Enhancement (BPA)**

2003: No information provided in most recent proposal (FY2002) for outyear funding. The project sponsor suggested this was an error of omission, and that similar scopes in funding requests will be forthcoming in the future.

281 1997-080-00 **Asotin Creek Upland Sedimentation Reductin (BPA)**

2003: 105 Acres of Direct Seed planing

2004: 105 Acres of Direct Seed planing

2005: 105 Acres of Direct Seed planing

282 1997-086-00 **Asotin Watershed Upland BMP's (BPA)**

2003: 169 Acres of Direct Seed planing

2004: 169 Acres of Direct Seed planing

2005: 169 Acres of Direct Seed planing

Habitat

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283 1999-002-00 **Asotin Watershed Project Implementation (BPA)**

2003: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2004: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2005: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2006: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2007: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

284 1999-052-00 **Asotin Creek Five Year Minimum Till Program (BPA)**

2003: 773 Acres of Direct Seed planing

2004: 773 Acres of Direct Seed planing

2005: 773 Acres of Direct Seed planing

285 1999-060-00 **Asotin Watershed Upland BMP Implementation (BPA)**

2003: 5 Sediment Bains

2004: 5 Sediment Bains

2005: 5 Sediment Bains

571 **Potlatch River Watershed Restoration (BPA)**

2003: Complete Potlatch River watershed implementation plan.

2004: Complete Potlatch River watershed implementation plan.

Habitat

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7 1992-062-00 **Yakama Nation - Riparian/Wetlands Restoration (BPA)**

2003: Secure lands for habitat enhancement. Monitor and evalualte habitat land condition. Prepare site specific enhancement and management plans. Perform maintenance of secured lands consistent with enhancement plans. Prepare and submit quarterly and annual reports.

2004: Secure lands for habitat enhancement. Monitor and evalualte habitat land condition. Prepare site specific enhancement and management plans. Perform maintenance of secured lands consistent with enhancement plans. Prepare and submit quarterly and annual reports.

2005: Secure lands for habitat enhancement. Monitor and evalualte habitat land condition. Prepare site specific enhancement and management plans. Perform maintenance of secured lands consistent with enhancement plans. Prepare and submit quarterly and annual reports.

2006: Secure lands for habitat enhancement. Monitor and evalualte habitat land condition. Prepare site specific enhancement and management plans. Perform maintenance of secured lands consistent with enhancement plans. Prepare and submit quarterly and annual reports.

11 1996-035-00 **Satus Watershed Restoration (BPA)**

2003: Restore natural riparian and upland vegetation patterns. Reduce erosion. Improve wildlife habitat. Moderate the flow regime on fish bearing streams. Improve aquatic habitat. Monitor changes in fish populations, watershed behavior and results of restoration treatments. Prepare quarterly and annual report.

2004: Restore natural riparian and upland vegetation patterns. Reduce erosion. Improve wildlife habitat. Moderate the flow regime on fish bearing streams. Improve aquatic habitat. Monitor changes in fish populations, watershed behavior and results of restoration treatments. Prepare quarterly and annual report.

13 1997-051-00 **Yakama Nation Yakima/Klickitat Fisheries Project (YKFP) Yakima Side Channels (BPA)**

2003: Protect priority habitats through acquisition, and purchase of conservation easements. Restore Yakima River/Naches River mainstem connectivity with protected lands, were possible, based on work plan. Restore and/or enhance the function of other side channel habitats, as identified following protection of such lands. Monitor habitat funcition on protected and restored lands. Update management plan(s) for protected lands. Prepare quarterly and annual report.

2004: Protect priority habitats through acquisition, and purchase of conservation easements. Restore Yakima River/Naches River mainstem connectivity with protected lands, were possible, based on work plan. Restore and/or enhance the function of other side channel habitats, as identified following protection of such lands. Monitor habitat funcition on protected and restored lands. Update management plan(s) for protected lands. Prepare quarterly and annual report.

2005: Protect priority habitats through acquisition, and purchase of conservation easements. Restore Yakima River/Naches River mainstem connectivity with protected lands, were possible, based on work plan. Restore and/or enhance the function of other side channel habitats, as identified following protection of such lands. Monitor habitat funcition on protected and restored lands. Update management plan(s) for protected lands. Prepare quarterly and annual report.

2006: Protect priority habitats through acquisition, and purchase of conservation easements. Restore Yakima River/Naches River mainstem connectivity with protected lands, were possible, based on work plan. Restore and/or enhance the function of other side channel habitats, as identified following protection of such lands. Monitor habitat funcition on protected and restored lands. Update management plan(s) for protected lands. Prepare quarterly and annual report.

15 1998-033-00 **Restore Upper Toppenish Watershed (BPA)**

2003: Stablize headcuts, especially in headwater meadows. Retain sediment in incised and widened ephemeral and intermittent channels. Stablize sediment depsits with appropriate native vegetation. Enhance channel/floodplain interactions. Reduce fine sediment delivery to fish-bearing streams. Monitor/evaluation. Reports.

2004: Stablize headcuts, especially in headwater meadows. Retain sediment in incised and widened ephemeral and intermittent channels. Stablize sediment depsits with appropriate native vegetation. Enhance channel/floodplain interactions. Reduce fine sediment delivery to fish-bearing streams. Monitor/evaluation. Reports.

21 2002-025-00 **Yakima Tributary Access and Habitat Program (Objective 1: Early Actions) (BPA)**

2003: Meet and coordinate with are landowners and irrigators to coordinate on actions. Identify prioritized sites through surveys. Organize tributary teams and work plans to address passage problems. Prepare design plans for screens. Prepare construction plans, implement contracts in coordination with landowners. Install new screens on irrigation diversions.

Habitat

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22 2002-038-00 **Protect Normative Structure and Function of Critical Aquatic and Terrestrial Habitat (BPA)**

2003: Implementation of strategic plan following Council review and approval

2004: Implementation of strategic plan following Council review and approval

36 1997-056-00 **Lower Klickitat Riparian and In-Channel Habitat Enhancement Project (BPA)**

2003: A. Acquire and manage information to facilitate identification and prioritization of sites for restoration activities. Develop application to effectively and efficiently manage habitat data. Gather existing and when needed, generate new spatial data. Initiate linkage of spatial and habitat data; Identify data gaps - identify measures to fill them. Collect streamflow data on the Little Klick. River, Swale Ck, Summit Ck, White Ck. and Trout Ck. Identify and priortize subreaches for restoration in Swale Creek canyon. Assess amount of riparian habitat lost in swale Ck headwaters in period of record. Identify sites to restore floodplain connectivity on mainstem Klickitat R betw. RM 15 and 32. B. Protect, restore, and enhance priortiy wathersheds and reaches to increase reparian, wetland, and stream habitat quality. Protect areas of existing high-quality habitat condition and prevent further deterioration degraded habitats. Enhance areas of degraded stream channel and/or habitat condition. Revegetate streambank on the Little Klickitat River nean RM 20.5. C. Monitor project site-specific and basin-wide conditions to assess habitat trends and effectiveness of restoration activities. Monitor site-specific habitat conditons. Monitor basinwide habitat conditions. D. Reports - Prepare quaterly and annual reports

2004: A. Acquire and manage information to facilitate identification and prioritization of sites for restoration activities. Develop application to effectively and efficiently manage habitat data. Gather existing and when needed, generate new spatial data. Initiate linkage of spatial and habitat data; Identify data gaps - identify measures to fill them. Collect streamflow data on the Little Klick. River, Swale Ck, Summit Ck, White Ck. and Trout Ck. Identify and priortize subreaches for restoration in Swale Creek canyon. Assess amount of riparian habitat lost in swale Ck headwaters in period of record. Identify sites to restore floodplain connectivity on mainstem Klickitat R betw. RM 15 and 32. B. Protect, restore, and enhance priortiy wathersheds and reaches to increase reparian, wetland, and stream habitat quality. Protect areas of existing high-quality habitat condition and prevent further deterioration degraded habitats. Enhance areas of degraded stream channel and/or habitat condition. Revegetate streambank on the Little Klickitat River nean RM 20.5. C. Monitor project site-specific and basin-wide conditions to assess habitat trends and effectiveness of restoration activities. Monitor site-specific habitat conditons. Monitor basinwide habitat conditions. D. Reports - Prepare quaterly and annual reports

55 2001-075-00 **Increase Instream Flows to Dewatered Stream Reaches in the Walla Walla Basin (BPA)**

2003: 1) All water rights purchased/leased.

80 1993-035-01 **Enhance Fish, Riparian, and Wildlife Habitat Within the Red River Watershed (BPA)**

2003: 1. Secure conservation easements. This process includes hazardous substance surveys and appraisals on potential conservation easement properties. 2. Plant seedlings and willow poles. 3. Effectiveness Monitoring: Evaluate the performance of restoration work to stabilize the stream channel, restore floodplain function, enhance fish and wildlife habitat, and reestablish native riparian and wet meadow plant communities.

2004: 1. Secure conservation easements. This process includes hazardous substance surveys and appraisals on potential conservation easement properties. 2. Plant seedlings and willow poles. 3. Effectiveness Monitoring: Evaluate the performance of restoration work to stabilize the stream channel, restore floodplain function, enhance fish and wildlife habitat, and reestablish native riparian and wet meadow plant communities.

81 1993-062-00 **Custer Soil & Water Conservation District Salmon River Fish Passage Enhancement (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

Habitat

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83 1994-017-00 **Idaho Model Watershed Habitat Improvement Project (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

84 1994-050-00 **Salmon River Habitat Enhancement M & E (BPA)**

2003: 1. Decrease both surface and subsurface streambed sediment in Bear Valley Creek (BVC) (MF Salmon River) to less than 25% surface fines in low gradient reaches and less than 30% subsurface fines by volume. 2. Increase streambank cover and stability in BVC to bank stability greater than 80% with 75% of banks undercut. 3. Increase rearing area for anadromous fish in the Yankee Fork Salmon River (YFSR). 4. Incorporate the off-channel rearing area into a low-tech, bioenhancement facility for chinook salmon and steelhead in the YFSR. 5. Decrease both surface and subsurface streambed sediment in Herd Creek (HC) and Big Boulder Creek (BBC) (EF Salmon River) to less than 25% surface fines in low gradient reaches and less than 30% subsurface fines by volume. 6. Increase streambank cover and stability in HC and BBC to bank stability greater than 80% with 75% of banks undercut. Increase streambank cover and stability in HC and BBC. 7. Monitor habitat improvements and fish numbers.

2004: 1. Decrease both surface and subsurface streambed sediment in Bear Valley Creek (BVC) (MF Salmon River) to less than 25% surface fines in low gradient reaches and less than 30% subsurface fines by volume. 2. Increase streambank cover and stability in BVC to bank stability greater than 80% with 75% of banks undercut. 3. Increase rearing area for anadromous fish in the Yankee Fork Salmon River (YFSR). 4. Incorporate the off-channel rearing area into a low-tech, bioenhancement facility for chinook salmon and steelhead in the YFSR. 5. Decrease both surface and subsurface streambed sediment in Herd Creek (HC) and Big Boulder Creek (BBC) (EF Salmon River) to less than 25% surface fines in low gradient reaches and less than 30% subsurface fines by volume. 6. Increase streambank cover and stability in HC and BBC to bank stability greater than 80% with 75% of banks undercut. Increase streambank cover and stability in HC and BBC. 7. Monitor habitat improvements and fish numbers.

85 1996-007-00 **Upper Salmon River Diversion Consolidation Program (BPA)**

2003: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

2004: 1. This project has been restructured consistent with a geographic approach for project selection, planning, implementation. 2. Minimize losses and migratory delays or blockages of salmonids that are associated with irrigation diversion structures and water withdrawels along streams on non-federal lands. 3. Improve critical habitats for salmonids on non-federal lands by improving riparian conditions and reducing streambed sedimentation and water temprature.

86 1996-077-02 **Protect and Restore Lolo Creek Watershed (BPA)**

2003: 1. Restore and enhance critical riparian and in-stream habitat to reduce sedimentation and stream temperatures. 2. Restore hydrologic connectivity and fish passage within the Lolo Creek watershed. 3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.

2004: 1. Restore and enhance critical riparian and in-stream habitat to reduce sedimentation and stream temperatures. 2. Restore hydrologic connectivity and fish passage within the Lolo Creek watershed. 3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.

96 1999-019-00 **Holistic Restoration of the Twelvemile Reach of the Salmon River near Challis, Idaho (BPA)**

2003: Develop project designs for selected restoration opportunities. Quantify benefits at the watershed scale - particularly related to temperature and fine sediments. Implementation and restoration and bank stabilization work on 12 mile section of Salmon River. Restore meadow and riparian plant communities. Conservation/access easements.

2004: Develop project designs for selected restoration opportunities. Quantify benefits at the watershed scale - particularly related to temperature and fine sediments. Implementation and restoration and bank stabilization work on 12 mile section of Salmon River. Restore meadow and riparian plant communities. Conservation/access easements.

Habitat

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99 2000-35-00 **Rehabilitate Newsome Creek Watershed - South Fork Clearwater River (BPA)**

2003: 1. Alleviate sediment input and potential from road sources. 2.Design rehabilitation for the upper channel reaches of Newsome Creek affected by past dredge mining. 3.Improve Fish Passage and alleviate potential culvert problems.

2004: 1. Alleviate sediment input and potential from road sources. 2.Design rehabilitation for the upper channel reaches of Newsome Creek affected by past dredge mining 3.Improve Fish Passage and alleviate potential culvert problems.

100 2000-036-00 **Protect & Restore Mill Creek (BPA)**

2003: 1. Restore meadow and riparian plant communities to enhance fish and wildlife habitat. 2. Return passage to inaccessible tributary habitat and alleviate sediment sources associated with culverts.

2004: 1. Restore meadow and riparian plant communities to enhance fish and wildlife habitat. 2. Return passage to inaccessible tributary habitat and alleviate sediment sources associated with culverts.

110 1996-042-00 **Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek (BPA)**

2003: (1)Completion of engineering design of Okanogan River Pump Station, drawings, estimates of construction costs. (2)Engineering design of replacement of Salmon Lake Feeder Canal.(3) NRCS engineer design Middle Reach bank stabilization projects. Develop farm management plans that are congruent with reparian restoration.(4) Lower reach channel reconstruction.

114 2000-001-00 **Anadromous Fish Habitat & Passage in Omak Creek (BPA)**

2003: Propose the implementation of a plan to restore 40-mils of historical anadromous fish habitat (summer steelhead) by improving land management practices and conducting restoration activities that accelerate recovery of the Omak Creek watershed.

115 2000-002-00 **Remove Barriers/Restore Instream Habitat on Chumstick Creek (BPA)**

2003: Plan and design 12 barrier removal/stream restoration projects.Implement construction of projects designed. Complete Riparian Plantings.

2004: Construction/implementation, O&M, M&E.

2005: O&M and M&E

2006: O&M and M&E

119 2002-018-00 **Tapteal Bend Riparian Corridor Restoration (BPA)**

2003: Operation and Maintenance

2004: Operation and Maintenance

2005: Operation and Maintenance

2006: Operation and Maintenance

Habitat

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126 1984-021-00 **Protect and Enhance John Day Anadromous Fish (BPA)**

2003: 1) construct 6.5 miles of riparian protection fencing with 10 and 15 year lease agreements. 2)construct 6 off site water developments away from riparian area. 3)inspect 80 miles of fence and perform maintenance on 23 miles of fence. 4)complete maintenance on 5 off riparian site water developments 5) Complete mine tailings restoration on Granite Creek

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2006: 1) construct 6.5 miles of riparian protection fencing with 10 and 15 year lease agreements. 2)construct 6 off site water developments away from riparian area. 3)inspect 80 miles of fence and perform maintenance on 23 miles of fence. 4)complete maintenance on 5 off riparian site water developments 5) Complete mine tailings restoration on Granite Creek

129 1998-018-00 **John Day Watershed Restoration Program (USBR)**

2003: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

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2006: 1) construct 3 off site watering systems 2) Install 8 permanent irrigation diversions 3) remove 500 acres of Junipers to increase trib flows and decrease erosion 4) construct 2 miles of riparian fencing 5) complete one return flow cooling system

134 2000-015-00 **Oxbow Ranch Acquisition (BPA)**

2003: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2004: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2005: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

2006: 1 Manage the property according to the plan to include restoration, maintenance, and monitoring

135 2000-031-00 **North Fork John Day River Subbasin Anadromous Fish Habitat Enhancement Project (BPA)**

2003: Same as 01 except more miles of fence and more riparian easements - 1) Complete 12 miles of riparian fencing protection 2) Complete 4 off site water developments 3) Complete riparian easements

2004: Same as 01 except more miles of fence and more riparian easements - 1) Complete 12 miles of riparian fencing protection 2) Complete 4 off site water developments 3) Complete riparian easements

2005: Same as 01 except more miles of fence and more riparian easements - 1) Complete 12 miles of riparian fencing protection 2) Complete 4 off site water developments 3) Complete riparian easements

2006: Same as 01 except more miles of fence and more riparian easements - 1) Complete 12 miles of riparian fencing protection 2) Complete 4 off site water developments 3) Complete riparian easements

Habitat

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138 2001-041-00 **Forrest Ranch Acquisition (BPA)**

2003: O&M

2004: O&M

2005: O&M

2006: O&M

199 1992-026-01 **Grouse Creek Restoration (BPA)**

2003: Project Complete

255 1987-100-01 **Umatilla River Anadromous Fish Habitat Enhancement Project (BPA)**

2003: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2004: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2005: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2006: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

Habitat

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262 1994-008-06 **Implement Tucannon River Model Watershed Plan to Restore Salmonid Habitat (Work contracted under 1999-001-00, (BPA)**

2003: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

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2006: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

264 1994-046-01 **Walla Walla River Basin Fish Habitat Enhancement (BPA)**

2003: No information provided in most recent proposal (FY2002) for outyear funding. The project sponsor suggested this was an error of omission, and that similar scopes in funding requests will be forthcoming in the future.

Habitat

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283 1999-002-00 **Asotin Watershed Project Implementation (BPA)**

2003: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2004: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2005: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2006: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2007: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

288 2000-053-00 **Asotin Creek Riparian Planting (BPA)**

2003: Plant 20,000 trees within CREP riparian corridor

2004: Plant 20,000 trees within CREP riparian corridor

2005: Plant 20,000 trees within CREP riparian corridor

2006: Plant 20,000 trees within CREP riparian corridor

2007: Plant 20,000 trees within CREP riparian corridor

Habitat

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289 2000-054-00 **Asotin Creek Riparian Fencing Projects (BPA)**

2003: One mile of riparian corridor fence, develop 5 spring sources, and 10 off site watering troughs

2004: One mile of riparian corridor fence, develop 5 spring sources, and 10 off site watering troughs

2005: One mile of riparian corridor fence, develop 5 spring sources, and 10 off site watering troughs

2006: One mile of riparian corridor fence, develop 5 spring sources, and 10 off site watering troughs

2007: One mile of riparian corridor fence, develop 5 spring sources, and 10 off site watering troughs

290 2000-067-00 **Asotin Creek Channel, Floodplain and Riparian Restoration (BPA)**

2003: Two miles of CREP

562 **Asotin County Riparian Buffer and Couse and Tenmile Creeks Protection and Implementation Project (BPA)**

2003: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

2004: P1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

2005: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships.

2006: 1. Reduce instream summer water temperature to 18 c. 2. Increase quality of pools w/ LWD to nine pools per mile. 3. Reduce sediment deposition in spawning gravels by reducing cropland erosion and stabilizing streambanks.

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17 1999-013-00 **Ahtanum Creek Wastershed Assessment (BPA)**

2003: Maintain and protect existing high quality habitat areas (and the native populations inhabiting those areas). Restore degraded areas, and return natural ecosystem functions to the subbasin. Increase the information and knowledge needed to restore and manage fish, wildlife and their habitat. Finalize and deep update the habitat assessment plan. Prepare quarterly and annual report.

2004: Maintain and protect existing high quality habitat areas (and the native populations inhabiting those areas). Restore degraded areas, and return natural ecosystem functions to the subbasin. Increase the information and knowledge needed to restore and manage fish, wildlife and their habitat. Finalize and deep update the habitat assessment plan. Prepare quarterly and annual report.

18 2000-011-00 **Rock Creek Watershed Assessment and Restoration project. (BPA)**

2003: Implementation of proposed actions to address findings in assessment pending review of assessment plan (not anticipated until November 2002)

2004: Implementation of proposed actions to address findings in assessment pending review of assessment plan (not anticipated until November 2002)

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36 1997-056-00 **Lower Klickitat Riparian and In-Channel Habitat Enhancement Project (BPA)**

2003: A. Acquire and manage information to facilitate identification and prioritization of sites for restoration activities. Develop application to effectively and efficiently manage habitat data. Gather existing and when needed, generate new spatial data. Initiate linkage of spatial and habitat data; Identify data gaps - identify measures to fill them. Collect streamflow data on the Little Klick. River, Swale Ck, Summit Ck, White Ck. and Trout Ck. Identify and priortize subreaches for restoration in Swale Creek canyon. Assess amount of riparian habitat lost in swale Ck headwaters in period of record. Identify sites to restore floodplain connectivity on mainstem Klickitat R betw. RM 15 and 32. B. Protect, restore, and enhance priortiy wathersheds and reaches to increase reparian, wetland, and stream habitat quality. Protect areas of existing high-quality habitat condition and prevent further deterioration degraded habitats. Enhance areas of degraded stream channel and/or habitat condition. Revegetate streambank on the Little Klickitat River nean RM 20.5. C. Monitor project site-specific and basin-wide conditions to assess habitat trends and effectiveness of restoration activities. Monitor site-specific habitat conditons. Monitor basinwide habitat conditions. D. Reports - Prepare quaterly and annual reports

2004: A. Acquire and manage information to facilitate identification and prioritization of sites for restoration activities. Develop application to effectively and efficiently manage habitat data. Gather existing and when needed, generate new spatial data. Initiate linkage of spatial and habitat data; Identify data gaps - identify measures to fill them. Collect streamflow data on the Little Klick. River, Swale Ck, Summit Ck, White Ck. and Trout Ck. Identify and priortize subreaches for restoration in Swale Creek canyon. Assess amount of riparian habitat lost in swale Ck headwaters in period of record. Identify sites to restore floodplain connectivity on mainstem Klickitat R betw. RM 15 and 32. B. Protect, restore, and enhance priortiy wathersheds and reaches to increase reparian, wetland, and stream habitat quality. Protect areas of existing high-quality habitat condition and prevent further deterioration degraded habitats. Enhance areas of degraded stream channel and/or habitat condition. Revegetate streambank on the Little Klickitat River nean RM 20.5. C. Monitor project site-specific and basin-wide conditions to assess habitat trends and effectiveness of restoration activities. Monitor site-specific habitat conditons. Monitor basinwide habitat conditions. D. Reports - Prepare quaterly and annual reports

79 1992-026-03 **Upper Salmon Basin Watershed Project Administration/Implementation Support (BPA)**

2003: 1. Guide Subbasin Assessment and plan on Upper Salmon River Basin which includes the Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 2. Prioritize habitat actions (projects) based on subbasin assessment and plan for Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 3. Coordination of watershed issues in relation to ESA listed fish species across jurisdictional responsibilities. 4. Operation and Maintenance coordination and oversight. 5. Prepare projects for protection, restoration and complexity of fish habitat.

2004: 1. Guide Subbasin Assessment and plan on Upper Salmon River Basin which includes the Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 2. Prioritize habitat actions (projects) based on subbasin assessment and plan for Lemhi, Pahsimeroi, East Fork, Upper Salmon and Mid-Salmon/Panther Creek Watersheds. 3. Coordination of watershed issues in relation to ESA listed fish species across jurisdictional responsibilities. 4. Operation and Maintenance coordination and oversight. 5. Prepare projects for protection, restoration and complexity of fish habitat.

132 1998-022-00 **Pine Creek Ranch Acquisition (BPA)**

2003: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

2004: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

2005: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

2006: 1) Gather baseline information to assist in monitoring and the development of a property plan 2) initiate the development of a property management plan 3) protect and enhance the natural resources. 4) property management plan is to be completed

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246 2000-013-00 **Evaluate An Experimental Re-Introduction of Sockeye Salmon into Skaha Lake (BPA Short Title: Eval Reintroduction Skaha Lake) (BPA)**

2003: Year 4: Objective 1 - Complete Disease Risk Assessment: 1A. -Compare the disease and infection status of fish above and below the dams, specifically, presence of whirling disease agent (Myxobolus cerebralis). 1B- Review results of field work and analysis.

2004: TBD

2005: TBD

2006: TBD

2007: TBD

Habitat

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252 2002-051-00 **Subbasin Planning, Regional Level (BPA)**

2003: 1. Council will provide support to Regional Group by staffing and conducting meetings with regional coordination group; make reimbursements for necessary expenses for Regional Group meetings. 2. Council will establish a mechanism by which NMFS and the USFWS will review and endorse subbasin plans. Council will coordinate ESA recovery efforts and subbasin planning. 3. Council will coordinate/consult with the region's Indian Tribes. 4. Council will coordinate with resource management agencies regarding the relationship between subbasin planning and resource management planning 5. Council will coordinate with statewide/provincial/tribal coordination groups to establish appropriate coordination group(s) within each state. Conduct progress reviews; monitor funding allocations, and schedule progress on a statewide level. 6. Council will review and track progress of subbasin level work region-wide. Review statements of work, budgets and schedules for subbasin lead entities. Review subbasin allocation funding, progress reports and draft subbasin plans. Meet quarterly with statewide/provincial/tribal Coordination groups to review overall statewide progress. 7. Council will review the award of contracts with secondary entities within subbasins (co-leads or supporting organization) 8. Council will manage all subbasin and statewide/provincial/tribal level contracts. Prepare contracts and proposed amendments. Pay contractor invoices and prepare expenditure reports. Prepare and execute amendments to the master contract to reflect subcontract activities. 9. Council will initiate ISRP review and incorporate results into issue paper. 10. Council will initiate public review and incorporate results into issue paper. 11. Council will coordinate/consult with region's Indian Tribes for consistency with legal rights. 12. Council will coordinate with NMFS and USFWS for review and endorsement of subbasin plans for ESA use, where applicable. Incorporate results into issue paper. 13. Council will prepare final report and recommendation to Council for adoption of each subbasin plan. 14. Council will adopt subbasin plans into Fish and Wildlife Program, applying substantive and procedural requirements of the NW Power Act. II. Regional Technical Support Council will provide regional-level technical support basin-wide (assessment, coordination and information management) and provide out-of-subbasin assumptions. 1. Council will establish a regional technical group that will meet regularly to coordinate technical products associated for subbasin planning. 2. Council will provide staff support for regional and subbasin-level technical support. 3. Council will establish and maintain a liaison to coordinate subbasin planning with NMFS's Technical Review Teams and USFWS's bull trout recovery teams. 4. Council will provide written guidance to statewide/provincial/tribal technical support teams regarding procedures for implementing subbasin and province-level biological assessments, including sample products and descriptions of information sources and available analytical tools. 5. Council will establish and maintain an Ecosystem Diagnosis and Treatment (EDT) support function, including providing appropriate training for technical support team members in the scientific concepts and analytical tools that will be applied to subbasin assessment. 6. Council will establish and maintain a wildlife technical support function. 7. Council will maintain and enhance the Internet version of the EDT model, including EDT databases and online tools. 8. Council will establish and maintain a web-based system for accessing and transferring subbasin planning information. 9. Council will, through Bonneville, establish and maintain a system for managing and accessing spatial data over the Internet using Internet Mapping System (IMS) software. 10. Council will, through Bonneville, produce and provide basic geographic information system (GIS) products and services for subbasin planning. 11. Council will provide fish productivity and related species data to planners. 12. Council will provide library services to subbasin planning including dissemination of literature and storage of subbasin plan products.

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2004: 1. Council will provide support to Regional Group by staffing and conducting meetings with regional coordination group; make reimbursements for necessary expenses for Regional Group meetings. 2. . Council will establish a mechanism by which NMFS and the USFWS will review and endorse subbasin plans. Council will coordinate ESA recovery efforts and subbasin planning. 3. Council will coordinate/consult with the region's Indian Tribes. 4. Council will coordinate with resource management agencies regarding the relationship between subbasin planning and resource management planning 5. Council will coordinate with statewide/provincial/tribal coordination groups to establish appropriate coordination group(s) within each state. Conduct progress reviews; monitor funding allocations, and schedule progress on a statewide level. 6. Council will review and track progress of subbasin level work region-wide. Review statements of work, budgets and schedules for subbasin lead entities. Review subbasin allocation funding, progress reports and draft subbasin plans. Meet quarterly with statewide/provincial/tribal Coordination groups to review overall statewide progress. 7. Council will review the award of contracts with secondary entities within subbasins (co-leads or supporting organization) 8. Council will manage all subbasin and statewide/provincial/tribal level contracts. Prepare contracts and proposed amendments. Pay contractor invoices and prepare expenditure reports. Prepare and execute amendments to the master contract to reflect subcontract activities. 9. Council will initiate ISRP review and incorporate results into issue paper. 10. Council will initiate public review and incorporate results into issue paper. 11. Council will coordinate/consult with region's Indian Tribes for consistency with legal rights. 12. Council will coordinate with NMFS and USFWS for review and endorsement of subbasin plans for ESA use, where applicable. Incorporate results into issue paper. 13. Council will prepare final report and recommendation to Council for adoption of each subbasin plan. 14. Council will adopt subbasin plans into Fish and Wildlife Program, applying substantive and procedural requirements of the NW Power Act. II. Regional Technical Support - Council will provide regional-level technical support basin-wide (assessment, coordination and information management) and provide out-of-subbasin assumptions. 1. Council will establish a regional technical group that will meet regularly to coordinate technical products associated for subbasin planning. 2. Council will provide staff support for regional and subbasin-level technical support. 3. Council will establish and maintain a liaison to coordinate subbasin planning with NMFS's Technical Review Teams and USFWS's bull trout recovery teams. 4. Council will provide written guidance to statewide/provincial/tribal technical support teams regarding procedures for implementing subbasin and province-level biological assessments, including sample products and descriptions of information sources and available analytical tools. 5. Council will establish and maintain an Ecosystem Diagnosis and Treatment (EDT) support function, including providing appropriate training for technical support team members in the scientific concepts and analytical tools that will be applied to subbasin assessment. 6. Council will establish and maintain a wildlife technical support function. 7. Council will maintain and enhance the Internet version of the EDT model, including EDT databases and online tools. 8. Council will establish and maintain a web-based system for accessing and transferring subbasin planning information. 9. Council will, through Bonneville, establish and maintain a system for managing and accessing spatial data over the Internet using Internet Mapping System (IMS) software. 10. Council will, through Bonneville, produce and provide basic geographic information system (GIS) products and services for subbasin planning. 11. Council will provide fish productivity and related species data to planners. 12. Council will provide library services to subbasin planning including dissemination of literature and storage of subbasin plan products.

2005: 1. Council will provide support to Regional Group by staffing and conducting meetings with regional coordination group; make reimbursements for necessary expenses for Regional Group meetings. 2. Council will coordinate with statewide/provincial/tribal coordination groups to establish appropriate coordination group(s) within each state. Conduct progress reviews; monitor funding allocations, and schedule progress on a statewide level. 3. Council will adopt subbasin plans into Fish and Wildlife Program, applying substantive and procedural requirements of the NW Power Act. II. Regional Technical Support - Council will provide regional-level technical support basin-wide (assessment, coordination and information management) and provide out-of-subbasin assumptions. 1. Council will provide staff support for regional and subbasin-level technical support. 2. Council will establish and maintain a liaison to coordinate subbasin planning with NMFS's Technical Review Teams and USFWS's bull trout recovery teams. 3. Council will establish and maintain an Ecosystem Diagnosis and Treatment (EDT) support function, including providing appropriate training for technical support team members in the scientific concepts and analytical tools that will be applied to subbasin assessment. 4. Council will establish and maintain a wildlife technical support function. 5. Council will maintain and enhance the Internet version of the EDT model, including EDT databases and online tools. 6. Council will establish and maintain a web-based system for accessing and transferring subbasin planning information. 7. Council will, through Bonneville, establish and maintain a system for managing and accessing spatial data over the Internet using Internet Mapping System (IMS) software. 8. Council will, through Bonneville, produce and provide basic geographic information system (GIS) products and services for subbasin planning. 9. Council will provide fish productivity and related species data to planners. 10. Council will provide library services to subbasin planning including dissemination of literature and storage of subbasin plan products.

Habitat

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253 2002-051-00 **Subbasin Planning, Statewide/Provincial/Tribal Level (BPA)**

2003: I . Statewide (Provincial)/Tribal Coordination Council will provide support and funding for statewide/provincial/tribal coordination and project management for subbasin planning within each state. · Statewide/provincial/tribal groups in ID, MT, OR, WA will perform (a.) project management functions within each state and (b.) coordination. Specific tasks are outlined in detailed budget. II. Statewide Technical Support Council will provide analytical products and technical support to statewide coordination group and subbasin technical support teams · Council will assist with establishing technical support teams within each state, and further assist with developing a strategy that enables those teams to provide technical support to provinces and subbasins. · Technical support team(s) in Idaho will complete an assessment through the tasks identified in attached detailed budget. · Technical support team(s) in Montana will complete an assessment through the tasks identified in attached detailed budget. · Technical support team(s) in Oregon will complete an assessment through the tasks identified in attached detailed budget. · Technical support team(s) in Washington will complete an assessment through the tasks identified in attached detailed budget.

2004: Statewide Technical Support Council will provide analytical products and technical support to statewide coordination group and subbasin technical support teams · Council will assist with establishing technical support teams within each state, and further assist with developing a strategy that enables those teams to provide technical support to provinces and subbasins.

2005: Statewide Technical Support Council will provide analytical products and technical support to statewide coordination group and subbasin technical support teams

254 2002-051-00 **Subbasin Planning, Subbasin Level (BPA)**

2003: Council will administer contracts for subbasin level planning. Council will contract with subbasin lead entities to develop subbasin level plans.

2004: Council will administer contracts for subbasin level planning. Council will contract with subbasin lead entities to develop subbasin level plans.

Habitat

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255 1987-100-01 **Umatilla River Anadromous Fish Habitat Enhancement Project (BPA)**

2003: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2004: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2005: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

2006: Similar expected from budget projection. 1) Develop projects and cost shares with landowners, and local, state and federal agencies, 2) Secure riparian easements on and off reservation, 3) Fulfill permitting requirements: NEPA, cultural surveys, Biological Assessments, etc. as required. 4) Maintain or continue implementation of instream habitat enhancement projects - a) Station 29, b) Hartman. 5) Maintain riparian corridor fencing. 6) Construct new riparian corridor fencing. Harvey - 2 mi, Simenton - 0.5 mi, Wolfe 1.0 mi. 7) Develop off-stream watering sources for livestock and wildlife - a) S&M Farms (last 75%); b) 5 troughs Buckaroo C. 8) Plant native grasses and plants: 300 pounds grasss seed; purchase 3,900 trees. 9) Treat noxious weeds - 468 acres. 10) Monitor pre- and post-implemetnation comparisons - a) aquatic invertebrate inventory; b) plant photopoints; c) water temperatute; d) suspended sediments. 11) Meacham Creek Wastershed Assessment and Restoration Plan. 12) Umatilla River sub-basin Watershed Assessment. 13) Riparian Easements (>= 15 yrs) Simenton - 80 acres/ 0.5 RM Hachler - 10-20 acres/0.1 RM. 14) Annual Report.

Habitat

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262 1994-008-06 **Implement Tucannon River Model Watershed Plan to Restore Salmonid Habitat (Work contracted under 1999-001-00, (BPA)**

2003: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2004: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2005: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

2006: Similar expected from budget projection - 1) Upland Best management Implementation to reduce soil erosion (e.g., grass waterways, sediment basins, critical area plantings): a) direct seeding 3 continued, 0 new. 2) Riparian re-vegetation and enhancement: a) develop off-stream watering sites: b) fence 1,000 ft of riparian, c) plant 20,000 stems. 3) Monitoring and Evaluation - a) Pre- versus Post- implementation habitat quality surveys, b) Water Quality sampling, c) Six-year milesone (resurvey previous habitat units after habitat improvements). 4) Install instream habitat structures - a) Camp Wooten Phase 2. 5) Coordinate wateshed council activities on private and public lands including. 6) Coordinate watershed project identification, selection, design, development, prioritization and acceptance (including NRCS). 7) Direct and assist the planning and implementation of conservation management systems for producers in the model waershed area. 8) Develop list of potential projects for FY 2003. 9) Monitor/Evaluate all projects for effectiveness in meeting Plan goal and objectives. 10) Coordinate Information and Education program. 11) Tucannon River Model Watershed Administration. 12) Subbasin Planning Coordination. 13) Water savings, Irrigation efficiency, Update screens, Install water meters. 14) Annual Report

Habitat

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263 1994-018-07 **Garfield County Sediment Reduction and Riparian Improvement Program - (proposal) - funded under: 1999-021-00. 1997-088-00 (closed, but some 088 activities carried into 021 and 059 contracts) (BPA)**

2003: Similar, based on budget submitted - Planning = 1) Complete Pataha Creek Model Watershed Plan (PCMWP). 2) Implement Pataha Creek MWPa) Set up program with individual landowners - See implementation. 3) Coordinate PCMWP with the public and others to inform them about the program - a) Newsletters/newspaper-magazine articles, as applicable, b) Sponsor tours/workshops/ conferences, conduct PCMWP meetings, provide information and education with students. 4) Work with WSU on monitoring water quality to compare no-till, 2 pass seeding, and conventional seeding methods - a) Coordinate data collection, b) Operate water sediment samplers and electronic thermographs, c) Collect soil erosion data. 5) Coordinate salmon habitat work - a) Meet with landowners, Technical Adviory Committees, and WDFW, b) attend training into keep up to date on new techniques and opportunities.Implementation = 6) No till seeding (0-33% soil distrurbance - drill used to plant seed and fertilize). 7) Direct seeding (34-66% soil disturbance - 2 pass method- fertilizer then plant). 8) Critical Area seeding - grass seeding onto productive, but highly erodable land. Must remain in grass for 10 years to reduce erosion. Land that does not meet CRP criteria, or patches that are too small to be enrolled. 9) Pasture Planting - reduce erosion, but can be grazed. Usually used close to riparian areas to reduce near-stream erosion. Required to be pasture for 10 years. Often mets CREP criteria, but farmer was not interested in signing up with CREP (under which use for grazing is not be allowed). 10) Terrace rebuilding - reduce erosion by retiering land. 11) Pipeline and spring development. 12) Write Annual Report

2004: Reduced over the years as "land lock- up" agreements expire

2005: Reduced over the years as "land lock- up" agreements expire

2006: Reduced over the years as "land lock- up" agreements expire

264 1994-046-01 **Walla Walla River Basin Fish Habitat Enhancement (BPA)**

2003: No information provided in most recent proposal (FY2002) for outyear funding. The project sponsor suggested this was an error of omission, and that similar scopes in funding requests will be forthcoming in the future.

Habitat

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283 1999-002-00 **Asotin Watershed Project Implementation (BPA)**

2003: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2004: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2005: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2006: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

2007: Work Task #1. Coordinate activities in regards to fish habitat maintenance, enhancement and restoration in the Model Watershed area.Work Task #2. Ensure that the model watershed plan meets accepted environmental and biological standards.Work Task #3. Coordinate activities that keep people involved in the Model Watershed process.Work Task #4. Work with groups and individuals in the upper Asotin Creek basin to investigate expansion of the model watershed program.Work Task #5. Direct and assist with the planning and implementation of conservation management systems for ranchers in the model watershed area.Work Task #6. Coordinate with other agencies working on salmon habitat enhancement and restoration in the Model Watershed.

287 2000-047-00 **GIS Mapping of Asotin Creek Watershed Habitat Projects (BPA)**

2003: GIS map of all projects completed through 2003.

2004: GIS map of all projects completed through 2004.

2005: GIS map of all projects completed through 2005.

2006: GIS map of all projects completed through 2006.

2007: GIS map of all projects completed through 2007.

481 2002-028-00 **Conduct Watershed Assessments for Priority Watersheds on Private Lands in the Columbia Plateau (BPA)**

2003: 1.Develop request for assessment work. 2. Contract for watershed assessment.

2004: 1.Develop request for assessment work. 2. Contract for watershed assessment.

Habitat

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555 **Salmon River Aquatic Ecosystem Restoration (CORPS)**

2003: Initial Construction (3 Sites)

2004: Construction at additional sites

2005: Continued Construction - new sites

2006: Monitoring

2007: Monitoring

559 **SW Washington Streams Section 206 (CORPS)**

2003: Initiate feasibility study

2004: Complete plans and specs, initiate construction

2005: Complete construction

560 **Trout Creek Section 206 (CORPS)**

2003: Complete construction

561 **Walla Walla GI Feasibility Study (CORPS)**

2005: Feasibility report completed

571 **Potlatch River Watershed Restoration (BPA)**

2003: Complete Potlatch River watershed implementation plan.

2004: Complete Potlatch River watershed implementation plan.

580 **Restoring anadromous fish habitat in the Lapwai Creek watershed (BPA)**

2003: Initiate land owner contact and participation. Collect additional watershed planning information to proirotize BMP installation locations in tributaries. Complete BMP plans and ensure regulatory compliance. Supervise and inspect BMP installation. Complete BMP effectiveness on selected BMPs. Monitor stream temperature within the Lapwai Creek watershed.

2004: Initiate land owner contact and participation. Collect additional watershed planning information to proirotize BMP installation locations in tributaries. Complete BMP plans and ensure regulatory compliance. Supervise and inspect BMP installation. Complete BMP effectiveness on selected BMPs. Monitor stream temperature within the Lapwai Creek watershed.

2005: Initiate land owner contact and participation. Collect additional watershed planning information to proirotize BMP installation locations in tributaries. Complete BMP plans and ensure regulatory compliance. Supervise and inspect BMP installation. Complete BMP effectiveness on selected BMPs. Monitor stream temperature within the Lapwai Creek watershed.

2006: Initiate land owner contact and participation. Collect additional watershed planning information to proirotize BMP installation locations in tributaries. Complete BMP plans and ensure regulatory compliance. Supervise and inspect BMP installation. Complete BMP effectiveness on selected BMPs. Monitor stream temperature within the Lapwai Creek watershed.

Habitat

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69 2000-012-00 **Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations (BPA)**

2003: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2004: 1) Assess movement of adults among three spawning areasl; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2005: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2006: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2007: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

156

531 **Improve spawning conditions for chum salmon in the vicinity of Pierce/Ives Islands. (CORPS)**

2003: Finalization of a report by the COE team on actions the COE can undertake to improve chum spawning and production in the mainstem river and tribuataries immediately below Bonneville Dam. Implement coordinated actions.

2004: Complete assessment and prioritization of improvements for chum spawning potential.

2005: Prepare Plans and Specifications for any necessary high priority improvements for chum spawning potential.

2006: Prepare Plans and Specifications for any necessary high priority improvements for chum spawning potential.

2007: Prepare Plans and Specifications for any necessary high priority improvements for chum spawning potential.

Habitat

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69 2000-012-00 **Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations (BPA)**

2003: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2004: 1) Assess movement of adults among three spawning areasl; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2005: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2006: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

2007: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

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251 2002-012-00 **Lower Columbia River Habitat Assessment and Mapping (BPA)**

2003: 1. Complete construction of GIS data layers 2. Classified habitat data in GIS format on CD and other formats 3. Hold workshop, develop recommendations for final report 4. Final report on CD and hard copy to include, methods, results of habitat classification, results of habitat change over time, results of landscape analysis; and recommendations on habitat project selection, possible indicators and future actions

536 **Estuary General Investigation Study (CORPS)**

2003: Initiate Feasibility Study and Environmental Impact Statement

2004: Draft EIS complete

2005: Draft EIS public review

2006: Draft Feasibility Report

2007: Final Feasibility Report, EIS

537 **Estuary Mapping (CORPS)**

2003: Image Classification-classify satellite imagery for habitat type Image Classification-hyperspectral imagery Image Analysis

539 **Research: Columbia River Estuary (CORPS)**

2003: Review research, modify research needs

2004: Review research, modify research needs

Habitat

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536 **Estuary General Investigation Study (CORPS)**

2003: Initiate Feasibility Study and Environmental Impact Statement

2004: Draft EIS complete

2005: Draft EIS public review

2006: Draft Feasibility Report

2007: Final Feasibility Report, EIS

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533 **Brownsmead, Clatsop County OR, Section 1135 (CORPS)**

2003: Complete Planning and Design, Complete Construction

2004: Post construction

537 **Estuary Mapping (CORPS)**

2003: Image Classification-classify satellite imagery for habitat type Image Classification-hyperspectral imagery Image Analysis

161

539 **Research: Columbia River Estuary (CORPS)**

2003: Review research, modify research needs

2004: Review research, modify research needs

Hatchery

169

274 2002-047-00 **Artificial Production Review Evaluation (APRE) (BPA)**

2003: 6) Collect data/information. 7) Convene 2-day review workshop. 8) Revise data summaries with workshop review results. 9) Provide APRE draft recommendations. 10) Review APRE recommendations. 11) Finalize and produce a report with recommendations for APRE. 12) Finalize Phase 1 of the HGMPs for all Columbia River hatcheries funded by BPA or Mitchell Acts. Note: Final HGMPs are schedule to be completed in Sep 2003

336 **HGMP Development for Bonneville Fish Hatchery and Spring Creek National Fish Hatchery (CORPS)**

2003: HGMPs for Bonneville Fish Hatchery and Spring Creek National Fish Hatchery.

2005: Implement Hatchery Reforms

2006: Implement Hatchery Reforms

2007: Implement Hatchery Reforms

437 **HGMP Funding & Development-Leavenworth (USBR)**

2003: Complete HGMPs, submit to NMFS for review and approval.

171

438 **HGMPs Implementation - Leavenworth (USBR)**

2003: Implement any reforms in approved HGMP's

2004: Implement any reforms in approved HGMP's

2005: Operate according to approved HGMP's

2006: Operate according to approved HGMP's

2007: Operate according to approved HGMP's

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164 2001-049-00 **Safety-Net Coordinator (BPA)**

2003: Coordination and facilitation of the completion of the four-step artificial propagation contingency planning process described in RPA 175 (Safety-Net Artificial Propagtion Program [SNAPP]). Integration of SNAPP planning with Interior Columbia TRT planning.

165 2002-004-04 **Safety-Net Artificial Propagation Program - WDFW (BPA)**

2003: FY 2003 deliverables and budget dependent upon results of Extinction Risk Analysis (SNAPP Step 1) to be conducted in FY 2002.

166 2002-004-00 **Safety-Net Artificial Propagation Program - CRITFC (BPA)**

2003: FY 2003 deliverables and budget dependent upon results of Extinction Risk Analysis (SNAPP Step 1) to be conducted in FY 2002.

167 2002-004-01 **Safety-Net Artificial Propagation Program - NPT (BPA)**

2003: FY 2003 deliverables and budget dependent upon results of Extinction Risk Analysis (SNAPP Step 1) to be conducted in FY 2002.

Hatchery

175

168 2002-004-02 **Safety-Net Artificial Propagation Program - IDFG (BPA)**

2003: FY 2003 deliverables and budget dependent upon results of Extinction Risk Analysis (SNAPP Step 1) to be conducted in FY 2002.

169 2002-004-03 **Safety-Net Artificial Propagation Program - SBT (BPA)**

2003: FY 2003 deliverables and budget dependent upon results of Extinction Risk Analysis (SNAPP Step 1) to be conducted in FY 2002.

176

47 1998-007-02 **Grande Ronde Supplementation - Lostine River Spring Chinook (BPA)**

2003: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

2004: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

2005: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

2006: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

2007: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

174 1998-010-06 **Captive Broodstock Artificial Propagation (BPA)**

2003: 1) Coordinate project with Federal & State agencies 2) M&E program with ODFW & CTUIR 3) Monitor abundance & timing of migratation of adult chinook salmon into the Lostine R 4) M&E the F1 generation offspring 5) Prepare quarterly reports and annual report

2004: 1) Coordinate project with Federal & State agencies 2) M&E program with ODFW & CTUIR 3) Monitor abundance & timing of migratation of adult chinook salmon into the Lostine R 4) M&E the F1 generation offspring 5) Prepare quarterly reports and annual report

2005: 1) Coordinate project with Federal & State agencies 2) M&E program with ODFW & CTUIR 3) Monitor abundance & timing of migratation of adult chinook salmon into the Lostine R 4) M&E the F1 generation offspring 5) Prepare quarterly reports and annual report

2006: 1) Coordinate project with Federal & State agencies 2) M&E program with ODFW & CTUIR 3) Monitor abundance & timing of migratation of adult chinook salmon into the Lostine R 4) M&E the F1 generation offspring 5) Prepare quarterly reports and annual report

2007: 1) Coordinate project with Federal & State agencies 2) M&E program with ODFW & CTUIR 3) Monitor abundance & timing of migratation of adult chinook salmon into the Lostine R 4) M&E the F1 generation offspring 5) Prepare quarterly reports and annual report

266 2000-019-00 **Tucannon River Spring Chinook Captive Broodstock Program (BPA)**

2003: Increase in M&E as data become available. Smaller % increase in O&M.

2004: Similar expected from budget projection.

2005: Similar expected from budget projection.

2006: Decreased scope due to fewer fish culture activities.

2007: Unknown

Hatchery

177

41 1988-053-04 **Northeast Oregon Hatchery Project (BPA)**

2003: 1) Issue draft and final EIS and ROD; 2) ChS facility final design; 3) Start construction on Lostine Hatchery; 4) Develop sockeye HMP.

2004: 1) Complete Lostine hatchery; 2) Start Imnaha (Marks Ranch) facility construction.

2005: 1) Complete Marks Ranch; 2) Imnaha satellite improvements; 3) Lostine adult collection facility; 4) Lookinglass Hatchery modifications).

2006: NA - reference 1998-007-02 O&M

43 1988-053-05 **Northeast Oregon Hatchery Project (BPA)**

2003: 1) Provide input on development of Master Plans, predesign, NEPA and final design for enhancement of anadromous salmonids in the Imnaha, Grande Ronde

2004: 1) Provide input on development of Master Plans, predesign, NEPA and final design for enhancement of anadromous salmonids in the Imnaha, Grande Ronde

2005: 1) Provide input on development of Master Plans, predesign, NEPA and final design for enhancement of anadromous salmonids in the Imnaha, Grande Ronde

2006: 1) Provide input on development of Master Plans, predesign, NEPA and final design for enhancement of anadromous salmonids in the Imnaha, Grande Ronde

49 1998-007-03 **Grande Ronde Satellite Facility O&M (BPA)**

2003: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report

2004: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report.

2005: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report.

2006: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report.

2007: 1) Annual operating plan finalized; 2) Adult spring chinook broodstock collected; 3) Fish transported for holding and to spawning grounds; 4) Juveniles acclimated and released to stream; 5) Annual report.

51 1998-007-04 **Grande Ronde Spring Chinook Supplementation Program (BPA)**

2003: 1) Annual operating plan; 2) Collect ChS broodstock from Lostine, uper Grande Ronde and Catherine Creek traps and transport to Lookingglass for holding; 3) Hold and spawn broodstock at Lookingglass; 4) Incubate and rear 360,000 endemic ChS juveniles using conventional methods; 5) Transport juveniles back to acclimation sites for acclimation and release.

2004: 1) Annual operating plan; 2) Collect ChS broodstock from upper Grande Ronde and Catherine Creek traps and transport to Lookingglass for holding; 3) Hold and spawn broodstock at Lookingglass; 4) Incubate and rear juveniles; 5) Transport juveniles back to acclimation sites for acclimation and release.

2005: 1) Annual operating plan; 2) Collect ChS broodstock from upper Grande Ronde and Catherine Creek traps and transport to Lookingglass for holding; 3) Hold and spawn broodstock at Lookingglass; 4) Incubate and rear juveniles; 5) Transport juveniles back to acclimation sites for acclimation and release.

2006: 1) Annual operating plan; 2) Collect ChS broodstock from upper Grande Ronde and Catherine Creek traps and transport to Lookingglass for holding; 3) Hold and spawn broodstock at Lookingglass; 4) Incubate and rear juveniles; 5) Transport juveniles back to acclimation sites for acclimation and release.

2007: 1) Annual operating plan; 2) Collect ChS broodstock from upper Grande Ronde and Catherine Creek traps and transport to Lookingglass for holding; 3) Hold and spawn broodstock at Lookingglass; 4) Incubate and rear juveniles; 5) Transport juveniles back to acclimation sites for acclimation and release.

Hatchery

177

57 1988-053-01 **Northeast Oregon Hatchery Project (BPA)**

2003: 1) Issue draft and final EIS and ROD; 2) ChS facility final design; 3) Start construction on Lostine Hatchery; 4) Develop sockeye HMP.

2004: 1) Complete Lostine hatchery; 2) Start Imnaha (Marks Ranch) facility construction.

2005: 1) Complete Marks Ranch; 2) Imnaha satellite improvements; 3) Lostine adult collection facility; 4) Lookinglass Hatchery modifications).

2006: NA - reference 1998-007-02 O&M

158 1990-093-00 **Genetic Analysis of Onchorhynchus nerka (Modifed to Include Chinook Salmon) (BPA)**

2003: Monitoring and evaluation of Snake River sockeye population genetics, assessment of mitochondrial DNA variation among Salmon River spring/summer chinook salmon, and assessment of nuclear genetic variation among Salmon River spring/summer chinook salmon

2004: Monitoring and evaluation of Snake River sockeye population genetics, assessment of mitochondrial DNA variation among Salmon River spring/summer chinook salmon, and assessment of nuclear genetic variation among Salmon River spring/summer chinook salmon

2005: Monitoring and evaluation of Snake River sockeye population genetics, assessment of mitochondrial DNA variation among Salmon River spring/summer chinook salmon, and assessment of nuclear genetic variation among Salmon River spring/summer chinook salmon

2006: Monitoring and evaluation of Snake River sockeye population genetics, assessment of mitochondrial DNA variation among Salmon River spring/summer chinook salmon, and assessment of nuclear genetic variation among Salmon River spring/summer chinook salmon

2007: Monitoring and evaluation of Snake River sockeye population genetics, assessment of mitochondrial DNA variation among Salmon River spring/summer chinook salmon, and assessment of nuclear genetic variation among Salmon River spring/summer chinook salmon

160 1991-072-00 **Redfish Lake Sockeye Salmon Captive Broodstock Program (BPA)**

2003: Develop captive broodstocks from Redfish Lake anadromous sockeye salmon. Culture broodstocks. Determine the contribution hatchery-produced sockeye salmon make toward recovery. Describe O. nerka population characteristics for Sawtooth Valley lakes in relation to carrying capacity and broodstock program supplementation efforts. Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program.Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program. Transfer technology.

2004: Develop captive broodstocks from Redfish Lake anadromous sockeye salmon. Culture broodstocks. Determine the contribution hatchery-produced sockeye salmon make toward recovery. Describe O. nerka population characteristics for Sawtooth Valley lakes in relation to carrying capacity and broodstock program supplementation efforts. Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program.Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program. Transfer technology.

2005: Develop captive broodstocks from Redfish Lake anadromous sockeye salmon. Culture broodstocks. Determine the contribution hatchery-produced sockeye salmon make toward recovery. Describe O. nerka population characteristics for Sawtooth Valley lakes in relation to carrying capacity and broodstock program supplementation efforts. Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program.Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program. Transfer technology.

2006: Develop captive broodstocks from Redfish Lake anadromous sockeye salmon. Culture broodstocks. Determine the contribution hatchery-produced sockeye salmon make toward recovery. Describe O. nerka population characteristics for Sawtooth Valley lakes in relation to carrying capacity and broodstock program supplementation efforts. Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program.Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program. Transfer technology.

2007: Develop captive broodstocks from Redfish Lake anadromous sockeye salmon. Culture broodstocks. Determine the contribution hatchery-produced sockeye salmon make toward recovery. Describe O. nerka population characteristics for Sawtooth Valley lakes in relation to carrying capacity and broodstock program supplementation efforts. Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program.Determine the origin of wild and broodstock O. nerka to provide maximum effectiveness in their utilization within the broodstock program. Transfer technology.

Hatchery

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161 1992-040-00 **Redfish Lake Sockeye Salmon Captive Broodstock Rearing and Research (BPA)**

2003: Maintain anadromous Redfish Lake sockeye salmon in a safety-net captive broodstock program and provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed stock in Idaho.

2004: Maintain anadromous Redfish Lake sockeye salmon in a safety-net captive broodstock program and provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed stock in Idaho.

2005: Maintain anadromous Redfish Lake sockeye salmon in a safety-net captive broodstock program and provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed stock in Idaho.

2006: Maintain anadromous Redfish Lake sockeye salmon in a safety-net captive broodstock program and provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed stock in Idaho.

2007: Maintain anadromous Redfish Lake sockeye salmon in a safety-net captive broodstock program and provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed stock in Idaho.

171 1996-043-00 **Johnson Creek Artificial Propagation & Enhancement (BPA)**

2003: 1) Rear 10,000 Johnson Creek Summer Chinook smolts 2) Construct rearing facilities 3) Collect & analyze recruits per spawner 4) Collect & analyze information on abundance, selected life history patterns, & spatial distribution of Johnson Creek juvenile summer chinook salmon & steelhead 5) Collect & analyze baseline information of genetic patterns of, supplementation vs. natural summer chinook salmon & steelhead 6) Monitor smolt production in the hatchery to evaluate health status, growth rates, & condition factors to compare supplementatin fish with natural fish 7) Determine effectiveness of the supplemented hatchery summer chinook salmon to increase the overall population of Johnson Creek summer chinook salmon & compare to natural fish 8) Prepare 3 Quarterly Reports and an annual report

2004: 1) Rear 100,000 Johnson Creek Summer Chinook smolts 2) Construct hatchery & acclimation facilities 3) Collect & analyze recruits per spawner 4) Collect & analyze information on abundance, selected life history patterns, & spatial distribution of Johnson Creek juvenile summer chinook salmon & steelhead 5) Collect & analyze baseline information of genetic patterns of, supplementation vs. natural summer chinook salmon & steelhead 6) Monitor smolt production in the hatchery to evaluate health status, growth rates, & condition factors to compare supplementation fish with natural fish 7) Determine effectiveness of the supplemented hatchery summer chinook salmon to increase the overall population of Johnson Creek summer chinook salmon & compare to natural fish 8) Prepare 3 Quarterly Reports and an annual report

2005: 1) Rear 100,000 Johnson Creek Summer Chinook smolts 2) Collect & analyze recruits per spawner 3) Collect & analyze information on abundance, selected life history patterns, & spatial distribution of Johnson Creek juvenile summer chinook salmon & steelhead 4) Collect & analyze baseline information of genetic patterns of, supplementation vs. natural summer chinool salmon & steelhead 5) Monitor smolt production in the hatchery to evaluate health status, growth rates, & condition factors to compare supplementation fish with natural fish 6) Determine effectiveness of the supplemented hatchery summer chinook salmon to increase the overall population of Johnson Creek summer chinook salmon & compare to natural fish 7) Prepare 3 Quarterly Reports and an annual report

2006: 1) Rear 100,000 Johnson Creek Summer Chinook smolts 2) Collect & analyze recruits per spawner 3) Collect & analyze information on abundance, selected life history patterns, & spatial distribution of Johnson Creek juvenile summer chinook salmon & steelhead 4) Collect & analyze baseline information of genetic patterns of, supplementation vs. natural summer chinool salmon & steelhead 5) Monitor smolt production in the hatchery to evaluate health status, growth rates, & condition factors to compare supplementation fish with natural fish 6) Determine effectiveness of the supplemented hatchery summer chinook salmon to increase the overall population of Johnson Creek summer chinook salmon & compare to natural fish 7) Prepare 3 Quarterly Reports and an annual report

2007: 1) Rear 100,000 Johnson Creek Summer Chinook smolts 2) Collect & analyze recruits per spawner 3) Collect & analyze information on abundance, selected life history patterns, & spatial distribution of Johnson Creek juvenile summer chinook salmon & steelhead 4) Collect & analyze baseline information of genetic patterns of, supplementation vs. natural summer chinook salmon & steelhead 5) Monitor smolt production in the hatchery to evaluate health status, growth rates, & condition factors to compare supplementation fish with natural fish 6) Determine effectiveness of the supplemented hatchery summer chinook salmon to increase the overall population of Johnson Creek summer chinook salmon & compare to natural fish 7) Prepare 3 Quarterly Reports and an annual report

Hatchery

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172 1997-038-00 **Listed Stock Chinook Salmon Gamete Preservation (BPA)**

2003: 1) Collect male chinook salmon gamete samples; strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 30 samples/natural spawning aggregate/yr 2) Collect male steelhead gamete samples. Strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 20 samples/natural spawning aggregate per yr. 3) Construct a Regional Salmonid Germplasm Repository for populations listed under the ESA.

2004: 1) Collect male chinook salmon gamete samples; strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 30 samples/natural spawning aggregate/yr 2) Collect male steelhead gamete samples. Strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 20 samples/natural spawning aggregate per yr

2005: 1) Collect male chinook salmon gamete samples; strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 30 samples/natural spawning aggregate/yr 2) Collect male steelhead gamete samples. Strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 20 samples/natural spawning aggregate per yr

2006: 1) Collect male chinook salmon gamete samples; strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 30 samples/natural spawning aggregate/yr 2) Collect male steelhead gamete samples. Strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 20 samples/natural spawning aggregate per yr

2007: 1) Collect male chinook salmon gamete samples; strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 30 samples/natural spawning aggregate/yr 2) Collect male steelhead gamete samples. Strive for 100 samples/spawning aggregate in hatchery scenarios every yr and 20 samples/natural spawning aggregate per yr

173 1996-010-05 **Pittsburgh Landing Fall Chinook Acclimation Facility (BPA)**

2003: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 400,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2004: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 400,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2005: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 400,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2006: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 400,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2007: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 400,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

175 1996-010-07 **Capt. John Rapid's Fall Chinook Acclimation Facility (BPA)**

2003: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2004: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2005: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2006: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2007: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

Hatchery

177

176 1996-010-08 **Big Canyon Fall Chinook Acclimation Facility (BPA)**

2003: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2004: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2005: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2006: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

2007: 1) Acclimate/release 150,000 Snake River Fall Chinook yearlings from Lyons Ferry Hatchery 2) Submit quarterly reports and annual report 3) Acclimate/release 1,000,000 sub-yearlings Snake R Fall Chinook from Lyons Ferry Hatchery

276 1998-010-01 **Grande Ronde Basin Spring Chinook Salmon Captive Broodstock Program (BPA)**

2003: High risk of extinction due to small size of population, warrants management of actions to preserve & maintain genetic material of Snake River Spring/Summer-run Chinook. Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinooksalmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery

2004: High risk of extinction due to small size of population, warrants management of actions to preserve & maintain genetic material of Snake River Spring/Summer-run Chinook. Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinooksalmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery

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2006: High risk of extinction due to small size of population, warrants management of actions to preserve & maintain genetic material of Snake River Spring/Summer-run Chinook. Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinooksalmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery

2007: High risk of extinction due to small size of population, warrants management of actions to preserve & maintain genetic material of Snake River Spring/Summer-run Chinook. Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinooksalmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery

277 1997-001-00 **Idaho Chinook Salmon Captive Rearing (BPA)**

2003: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages

2004: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages

2005: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages

2006: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages

2007: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages

Hatchery

177

279 1996-067-00 **Manchester Spring Chinook Broodstock Project (BPA)**

2003: same

2004: same

2005: same

2006: same

2007: same

198

177 1982-013-01 **Coded-Wire Tag Recovery Program (BPA)**

2003: 1. Recover CWTs from adults returning to the Columbia River. 2. Estimate total number of salmon landed in Columbia River commercial and sport fisheries and returning to escapement areas. 3. Summarize and analyze data collected under Objectives 1 and 2. 4. CWT Recovery in Oregon Ocean Chinook and coho Fisheries . 5. Determine total Oregon ocean commercial troll and sport effort and landings by time/area from expansions of sampled data in both fisheries. 6. Summarize annual effort, landings, and CWT data to determine stocks represented in Oregon ocean salmonid fisheries. 7. Process fish heads containing CWTs. 8. CWT Recovery Data Delivery. 9. Provide regional CWT data management. 10. Provide regional coordination of marking programs.

2004: 1. Recover CWTs from adults returning to the Columbia River. 2. Estimate total number of salmon landed in Columbia River commercial and sport fisheries and returning to escapement areas. 3. Summarize and analyze data collected under Objectives 1 and 2. 4. CWT Recovery in Oregon Ocean Chinook and coho Fisheries . 5. Determine total Oregon ocean commercial troll and sport effort and landings by time/area from expansions of sampled data in both fisheries. 6. Summarize annual effort, landings, and CWT data to determine stocks represented in Oregon ocean salmonid fisheries. 7. Process fish heads containing CWTs. 8. CWT Recovery Data Delivery. 9. Provide regional CWT data management. 10. Provide regional coordination of marking programs.

2005: 1. Recover CWTs from adults returning to the Columbia River. 2. Estimate total number of salmon landed in Columbia River commercial and sport fisheries and returning to escapement areas. 3. Summarize and analyze data collected under Objectives 1 and 2. 4. CWT Recovery in Oregon Ocean Chinook and coho Fisheries . 5. Determine total Oregon ocean commercial troll and sport effort and landings by time/area from expansions of sampled data in both fisheries. 6. Summarize annual effort, landings, and CWT data to determine stocks represented in Oregon ocean salmonid fisheries. 7. Process fish heads containing CWTs. 8. CWT Recovery Data Delivery. 9. Provide regional CWT data management. 10. Provide regional coordination of marking programs.

Harvest

107

299 2001-058-00 **Removal of Ghost Fishing Nets - Feasibility (BPA)**

2003: TBD

164

292 1993-060-00 **Select Area Fishery Evaluation (BPA)**

2003: 1. Scope suitabiltiy of expanding sites for rearing and release of salmon at six potential sites. 2. Continue to collect and anlayze homing and straying information from current net-pen and lower Columbia River hatchery programs. 3. Evaluate the suitability of use of Willamette and Cowlitz stock spring chinook, SAB (Rogue Stock) fall chinook for optimal use in select area fishing sites.

2004: TBD

2005: TBD

296 2001-007-00 **Evaluate Live Capture Selective Harvest Methods (BPA)**

2003: 1.Continue to estimate and compare the long-term survival of adult spring chinook captrued and released from tooth-tangle nets. 2. Review and refine objectives as appropriate based upon results from 2002.

2004: TBD

166

299 2001-058-00 **Removal of Ghost Fishing Nets - Feasibility (BPA)**

2003: TBD

167

296 2001-007-00 **Evaluate Live Capture Selective Harvest Methods (BPA)**

2003: 1.Continue to estimate and compare the long-term survival of adult spring chinook captrued and released from tooth-tangle nets. 2. Review and refine objectives as appropriate based upon results from 2002.

2004: TBD

299 2001-058-00 **Removal of Ghost Fishing Nets - Feasibility (BPA)**

2003: TBD

RME

048

465 **AFEP; Kelt Research, Unaccounted Adult Loss and Straying and Marine Mammal Monitoring (CORPS)**

2003: Fund Kelt, Marine Mammal, and Adult General Migration

2004: Fund high priorities based on research results and review

2005: Fund high priorities based on research results and review

2006: Fund high priorities based on research results and review

2007: Fund high priorities based on research results and review

050

465 **AFEP; Kelt Research, Unaccounted Adult Loss and Straying and Marine Mammal Monitoring (CORPS)**

2003: Fund Kelt, Marine Mammal, and Adult General Migration

2004: Fund high priorities based on research results and review

2005: Fund high priorities based on research results and review

2006: Fund high priorities based on research results and review

2007: Fund high priorities based on research results and review

082

335 **Ice Harbor Survival Studies (CORPS)**

2003: 12000000

083

335 **Ice Harbor Survival Studies (CORPS)**

2003: 12000000

104

325 **Estuary PIT tag recovery (CORPS)**

2003: Annual Report and PITAGIS upload.

2004: Annual Report and PITAGIS upload.

2005: Annual Report and PITAGIS upload.

2006: Annual Report and PITAGIS upload.

RME

105

542 **Juvenile Salmon Temperature Studies (CORPS)**

2003: Temperature Impacts Biological Indicators

106

465 **AFEP; Kelt Research, Unaccounted Adult Loss and Straying and Marine Mammal Monitoring (CORPS)**

2003: Fund Kelt, Marine Mammal, and Adult General Migration

2004: Fund high priorities based on research results and review

2005: Fund high priorities based on research results and review

2006: Fund high priorities based on research results and review

2007: Fund high priorities based on research results and review

107

66 1998-010-03 **Spawning Distribution of Fall Chinook Salmon Released as Yearlings above Lower Granite Dam (BPA)**

2003: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2004: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2005: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2006: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

RME

107

234 1989-107-00 **Statistical Support for Salmonid Survival Studies (BPA)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

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RME

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RME

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232 1987-127-00 **Smolt Monitoring by Federal and Non-Federal Agencies (BPA)**

2003: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

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335 **Ice Harbor Survival Studies (CORPS)**

2003: 12000000

141

542 **Juvenile Salmon Temperature Studies (CORPS)**

2003: Temperature Impacts Biological Indicators

RME

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542 **Juvenile Salmon Temperature Studies (CORPS)**

2003: Temperature Impacts Biological Indicators

149

144 2002-033-00 **John Day Recovery Monitoring (BPA)**

2003: 1. Digital maps of the riparian areas, wetland features, stream channel boundaries etc. for mainstem streams within the John Day subbasin. 2. Several new water quality monitoring stations on mainstem streams in the John Day subbasin. 3. 10 piezometers installed on Oxbow Ranch. 4. Surface flow, temperature, and groundwater elevation data to compare flood vs. sprinkler irrigation operations.

2004: 1. Surface flow, temperature, and groundwater elevation data to compare flood vs. sprinkler irrigation operations. 2. Data analysis and annual report of results.

152

159 1991-071-00 **Snake River Sockeye Salmon Habitat and Limmological Research (BPA)**

2003: Limnological monitoring in Redfish, Pettit, Alturas, and Stanley lakes, ID. Fertilize Redfish, Pettit, and Alturas lakes. Monitoring of O. nerka population characteristics and densities in Sawtooth Valley lakes.

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155

64 1994-069-00 **Estimate production potential of fall chinook salmon in the Hanford Reach of the Columbia River (BPA)**

2003: 1) Define production potential of fall chinook salmon that spawn in the Hanford Reach. 2) Identify indicators of ecosystem health/processes for the Hanford Reach and evaluate existing conditions and capacity estimates relative to those indicators.

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RME

155

484 2000-012-00 **Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations (BPA)**

2003: 1) Assess movement of adults among three spawning areas; 2) Determine abundance and baseline biological characteristics of adult chum salmon; 3) Determine chum smolt production and abundance in Hardy Creek, Hardy Creek spawning channel, Hamilton Springs, and main stem Columbia River near Ives Island; 4) Evaluate habitat parameters associated with chum salmon spawning success

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RME

158

247 1998-014-00 **Ocean Survival of Salmonids (BPA)**

2003: 1. Long-term observations - a. Conduct mesoscale surveys, b. Predator and forage fish surveys, c. Top trophic predators, d. Salmon growth, e. Endocrine assessment, f. Genetic stock assessment, g. Pathogen assessment, h. Prey resources & stomach content. 2. Fine scale process studies - a. Role of fronts, b. Diel studies, c. Pycnocline studies , d. Estury fronts. 3. Spatial and temporal features of the Columbia River plume - a. Develop and calibrate plume circulation model, b. Field demonstration of plume model, c. Construct simulation database, d. Develop physical habitat metrics, e. Circulation forcasts, f. Physical habitats using historical and remote data. 4. Coupled physical-biological modeling - a. Adapt and validate LTM for plume, b. Develop and validate spatially explicit model, c. Reconstruct spatial-temporal histories. 5. Develop management scenarios - a. Define management scenarios, b. Construct simulation datbase, c. Analysis of management scenarios.

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174 Pt.4

66 1998-010-03 **Spawning Distribution of Fall Chinook Salmon Released as Yearlings above Lower Granite Dam (BPA)**

2003: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2004: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2005: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2006: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

RME

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9 1995-063-25 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation - Yakima Subbasin (BPA)**

2003: 1. Natural Production - Develop and implement methods of detecting indices of increasing natural production, as well as methods of detecting a realized increase in natural production, with specified statistical power. 2. Harvest - Develop methods to detect increases in harvest of YKFP targeted stocks. 3. Genetics - Develop methods of detecting significiant pre- and post- supplementation genetic changes in targeted stocks as reflected by changes in extinction risk, within-stock genetic variability, between-stock genetic variability, and domestication. 4. Ecological Interactions - Determine if impacts to non-target taxa can be kept within specified biological limits, and determine if biotic interactions limit ability of supplementation to increase natural production.

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34 1995-063-35 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only) (BPA)**

2003: Monitoring And Evaluation - Juvenile salmonid population surveys. Mobile juvenile monitoring - rotary traps. Spawning ground surveys. Scale analysis. Sediment impact analysis on habitat. Fish passage "obstruction" inventory; Water quality inventory; habitat production assessment. Genetics - DNA data collection/analysis on steelhead. Ecological Interactions - Pathogen sampling. Reports

2004: Monitoring And Evaluation - Juvenile salmonid population surveys. Mobile juvenile monitoring - rotary traps. Spawning ground surveys. Scale analysis. Sediment impact analysis on habitat. Fish passage "obstruction" inventory; Water quality inventory; habitat production assessment. Genetics - DNA data collection/analysis on steelhead. Ecological Interactions - Pathogen sampling. Reports

45 1990-005-01 **Umatilla Natural Production M&E (BPA)**

2003: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

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2007: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

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48 1998-007-02 **Grande Ronde Supplementation - Lostine River Spring Chinook M&E (BPA)**

2003: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2004: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2005: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2006: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2007: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

122 1996-019-00 **Second-Tier Database Support (BPA)**

2003: 1. Provide optional information integration services to FWP and ESA participants. 2. Provide Internet-based electronic data integration services to generate data sets needed by FWP and ESA modeling, monitoring, and evaluation efforts. 3. Provide monitoring and evaluation products and services (via the Internet) on single and associated FWP-funded and ESA-mandated activities. Support Federal abilities to independently make and evaluate decisions committing federal resources. 4. Provide the public Internet interface to DART (Data Access in Real-Time). DART permits interactive selection of data items, time frame, presentation format, etc. from an integrated subset of historical and current fishery, hydraulic, project operation, and environmental information vital to year-round planning and in-season decision-making for operation of the Federal Columbia River Power System. 5. Real-time operations support. 6. Tool development. 7. Planning and coordination

2004: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

2005: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

2006: 1. DART operations and regional support. 2. Real-time operations. 3. Tool development. 4. Planning and coordination

2007: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

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563 **Assess Salmonids in the Asotin Creek Watershed (BPA)**

2003: 2. Evaluate bull trout use of Asotin Creek watershed.

2004: 1. Estimate escapement of hatchery and wild steelhead and salmon into the Asotin Creek drainage above George Creek. 3. Coordinate with comanagers the development of a spring chinook reintroduction plan for Asotin Creek. 2. Evaluate bull trout use of Asotin Creek watershed.

2005: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships. 2. Evaluate bull trout use of Asotin Creek watershed. 5. Continue / expand steelhead genetic sampling and analysis within the subbasin to determine the reproductive contributions by hatchery fish. Sample adult chinook were appropriate

2006: 2. Document juvenile steelhead life history patterns and survival rates and smolt production from Asotin Creek. 2. Evaluate bull trout use of Asotin Creek watershed. 4. Evaluate smolt-to-adult return rates and parent to progeny rates of naturally produced steelhead / salmon in Asotin Creek. 6. Implement, with comanagers, the spring chinook reintroduction plan for Asotin Creek. 7. Coordinate, compile, analyze and report results.

567 **Evaluate Factors Influencing Bias and Precision of Chinook Salmon Redd Counts (BPA)**

2004: Determine the true number of chinook salmon redds within study reaches. Evaluate the effectiveness of a mark-resight approach for measuring the bias and precision of chinook salmon redd counts. Quantify sources of error in ground-based chinook salmon redd counts. Evaluate the influence of environmental and habitat characteristics on sightability of chinook salmon redds.

572 **Chinook Salmon Smolt Survival and Smolt to Adult Return Rate Quantification, South Fork Salmon River, Idaho (BPA)**

2003: Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze baseline information of genetic characteristics/patterns upper SFSR summer chinook salmon. Compile and analyze South Fork Salmon River Basin SAR and R/S estimates using data from Secesh River, Johnson Creek, and upper SFSR studies to get a combined SFSR Basin estimate.

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578 **Evaluating stream habitat using the Nez Perce Tribe Fisheries/Watershed Watershed Monitoring and Evaluation Plan (BPA)**

2003: Determine the quality and extent of habitat available to anadromous and resident fishes. Resolve uncertainties in juvenile abundances. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions.

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453 **John Day Basin Aerial Imagery Project (USBR)**

2003: Imagery analysis

459 **TRT Digital Satellite Imagery Project (USBR)**

2003: Imagery Analysis

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9 1995-063-25 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation - Yakima Subbasin (BPA)**

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34 1995-063-35 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only) (BPA)**

2003: Monitoring And Evaluation - Juvenile salmonid population surveys. Mobile juvenile monitoring - rotary traps. Spawning ground surveys. Scale analysis. Sediment impact analysis on habitat. Fish passage "obstruction" inventory; Water quality inventory; habitat production assessment. Genetics - DNA data collection/analysis on steelhead. Ecological Interactions - Pathogen sampling. Reports

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45 1990-005-01 **Umatilla Natural Production M&E (BPA)**

2003: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

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48 1998-007-02 **Grande Ronde Supplementation - Lostine River Spring Chinook M&E (BPA)**

2003: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

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2007: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

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50 1998-007-03 **Grande Ronde Supplementation - Catharine Creek and Upper Grande Ronde M&E (BPA)**

2003: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2004: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2005: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2006: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2007: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

66 1998-010-03 **Spawning Distribution of Fall Chinook Salmon Released as Yearlings above Lower Granite Dam (BPA)**

2003: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2004: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2005: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2006: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

156 1989-096-00 **Genetic Monitoring and Evaluation Program for Supplemented Populations of Salmon and Steelhead in the Snake Ri**

2003: Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

2004: Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

2005: Same as 2001, except preparation of final report rather than annual report. Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

162 1993-056-00 **Research on Captive Broodstock Programs for Pacific Salmon (BPA)**

2003: Conduct research to improve natural reproductive success, improve olfactory imprinting, improve physiological development and maturation, improve in-culture survival of juveniles (prevention and control of disease), and evaluate inbreeding and inbreeding depression. Report results.

2004: Conduct research to improve natural reproductive success, improve olfactory imprinting, improve physiological development and maturation, improve in-culture survival of juveniles (prevention and control of disease), and evaluate inbreeding and inbreeding depression. Report results.

2005: Conduct research to improve natural reproductive success, improve olfactory imprinting, improve physiological development and maturation, improve in-culture survival of juveniles (prevention and control of disease), and evaluate inbreeding and inbreeding depression. Report results.

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163 2000-071-00 **Analyzing Behavioral Changes During Salmonid Domestication (BPA)**

2003: Conduct behavorial and physiological tests of juveniles with varying histories of hatchery rearing, analyze data, and report results in Final Report

170 1983-350-03 **New Perce Tribal Hatchery; M & E (BPA)**

2003: 1) Determine if program targets for contribution rate of hatchery fish are being achieved 2) Determine the increases in natural production that results from supplementation of chinook salmon & relate them to limiting factors 3) Estimate ecological & genetic impacts to fish populations 4) Determine how harvest opportunities can be optimized 5) Effectively communicate M&E program approach & findings to resource mngrs

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233 1987-401-00 **Assessment of Smolt Condition: Biological and Environmental Interactions (BPA)**

2003: 1.0 Provide science support and technical assistance to federal, state, and Tribal fishery agencies to determine if juvenile salmonid condition is determined by biological and environmental interactions that are distinguishable from genetic effects. 2.0 Determine if juvenile salmonids of the same genetic origin show differential growth and condition under varied controlled environmental conditions. 3.0 Determine if juvenile salmonids of the same species of different genetic origin show differential growth and condition under similar environmental conditions. 4.0 Determine if juvenile salmonids of the same genetic origin show differential emigration behavior or seawater survival when reared in different, controlled rearing environments. 5.0 Technology transfer through technical reports, publications and organization and conduct of annual smolt workshop.

2004: More work expected from budget projection.

2005: Considerably more work expected from budget projection.

2006: Less work expected from budget projection.

2007: Less work expected from budget projection.

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256 1989-098-00 **Idaho Supplementation Studies - salmon (BPA)**

2003: All IDFG data are collected in Crooked Fork Creek, Colt Killed (White Sand) Creek, Marsh Creek, Pahsimeroi Creek, Lemhi River, Upper Salmon River, Sotuh Fork Salmon River: 1) Estimate juvenile salmon outmigration; 2) Estimate survival to lower Snake River dams; 3) Conduct redd and carcass counts; 4) Release chinook: a) Smolts into upper Salmon River, East Fork Salmon River, South fork Salmon River, and Pahsimeroi River. b) summer parr into Pete King Creek, and Squaw Creek. c) presmolts into Red River and Crooked River. d) evaulate early rearing and volitional release in Stolle Ponds. 5) develop small-scale experiments to compare behavioral interactions between natural and hatchery fish with Univ. of ID. 6) Annual Report.

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257 1989-098-01 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection -All USFWS data are collected in Pete King Creek (PKC) and Clear Creek(CC): 1) Estimate juvenile salmon outmigration (CC). 2) Estimate survival to lower Snake River dams (CC). 3) Conduct redd and carcass counts (CC and PKC). 4) Release chinook: a) smolts into CC; b) summer parr into PKC. 5) Estimate parr abumdance (CC and PKC). 6) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 7) Annual Report.

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258 1989-098-02 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

2004: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

2005: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

2006: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

259 1989-098-03 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2004: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2005: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2006: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

261 1991-073-00 **Idaho Natural Production Monitoring and Evaluation - previously 1989-098-00 (BPA)**

2003: More work expected from budget projection -includes construction

2004: Generally similar expected from budget projection

2005: Generally similar expected from budget projection

2006: Less work expected from budget projection

RME

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273 2002-030-00 **Develop Progeny Marker for Salmonids to Evaluate Supplementation (BPA)**

2003: 2) Test new marker on hatchery- raised, adult, females steelhead to determine whether it can be incorporated into the otoliths of their progeny. 3) Analyze data gathered from the experimental trials and report results.

2004: 2) Test new marker on hatchery- raised, adult, females steelhead to determine whether it can be incorporated into the otoliths of their progeny. 3) Analyze data gathered from the experimental trials and report results.

2005: Original project proposal suggests completion in 2004.

275 1992-026-04 **Investigate Early Life History of Spring Chinook Salmon and Summer Steelhead in the Grande Ronde River Basin (BPA)**

2003: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.

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2006: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.

2007: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.

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452 **Fish Production/Flow Analysis (USBR)**

2003: Methodology Report

2003: Methodology Report

454 **Pushup Dam Research - John Day Basin (USBR)**

2003: Monitor, analyze, evaluate effects of push up dam removal

458 **Effectiveness Monitoring Prioritization Project (USBR)**

2003: Identify and pritorize research projects

RME

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563 **Assess Salmonids in the Asotin Creek Watershed (BPA)**

2003: 2. Evaluate bull trout use of Asotin Creek watershed.

2004: 1. Estimate escapement of hatchery and wild steelhead and salmon into the Asotin Creek drainage above George Creek. 3. Coordinate with comanagers the development of a spring chinook reintroduction plan for Asotin Creek. 2. Evaluate bull trout use of Asotin Creek watershed.

2005: 1. Coordinate Asotin County and Riparian Buffer Projects Prioritization and Planning. 2. Implement 22 new CRP / CREP riparian buffer system agreements with participating landowners on 26 Miles of stream (52 miles of streambank) to improve 1,323 riparian acres . 3. Secure additional funding and cooperative partnerships. 2. Evaluate bull trout use of Asotin Creek watershed. 5. Continue / expand steelhead genetic sampling and analysis within the subbasin to determine the reproductive contributions by hatchery fish. Sample adult chinook were appropriate

2006: 2. Document juvenile steelhead life history patterns and survival rates and smolt production from Asotin Creek. 2. Evaluate bull trout use of Asotin Creek watershed. 4. Evaluate smolt-to-adult return rates and parent to progeny rates of naturally produced steelhead / salmon in Asotin Creek. 6. Implement, with comanagers, the spring chinook reintroduction plan for Asotin Creek. 7. Coordinate, compile, analyze and report results.

572 **Chinook Salmon Smolt Survival and Smolt to Adult Return Rate Quantification, South Fork Salmon River, Idaho (BPA)**

2003: Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze baseline information of genetic characteristics/patterns upper SFSR summer chinook salmon. Compile and analyze South Fork Salmon River Basin SAR and R/S estimates using data from Secesh River, Johnson Creek, and upper SFSR studies to get a combined SFSR Basin estimate.

2004: Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze baseline information of genetic characteristics/patterns upper SFSR summer chinook salmon. Compile and analyze South Fork Salmon River Basin SAR and R/S estimates using data from Secesh River, Johnson Creek, and upper SFSR studies to get a combined SFSR Basin estimate.

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2006: Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze information on abundance, selected life history characteristics/patterns, and spatial distribution of upper South Fork Salmon River juvenile summer chinook salmon. Collect and analyze baseline information of genetic characteristics/patterns upper SFSR summer chinook salmon. Compile and analyze South Fork Salmon River Basin SAR and R/S estimates using data from Secesh River, Johnson Creek, and upper SFSR studies to get a combined SFSR Basin estimate.

578 **Evaluating stream habitat using the Nez Perce Tribe Fisheries/Watershed Watershed Monitoring and Evaluation Plan (BPA)**

2003: Determine the quality and extent of habitat available to anadromous and resident fishes. Resolve uncertainties in juvenile abundances. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions.

2004: Determine the quality and extent of habitat available to anadromous and resident fishes. Resolve uncertainties in juvenile abundances. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions. Evaluate effectiveness of restoration projects for producing long-term watershed improvements. Use the data and trends developed to provide guidance for subbasin planning and future land management decisions.

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9 1995-063-25 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation - Yakima Subbasin (BPA)**

2003: 1. Natural Production - Develop and implement methods of detecting indices of increasing natural production, as well as methods of detecting a realized increase in natural production, with specified statistical power. 2. Harvest - Develop methods to detect increases in harvest of YKFP targeted stocks. 3. Genetics - Develop methods of detecting significiant pre- and post- supplementation genetic changes in targeted stocks as reflected by changes in extinction risk, within-stock genetic variability, between-stock genetic variability, and domestication. 4. Ecological Interactions - Determine if impacts to non-target taxa can be kept within specified biological limits, and determine if biotic interactions limit ability of supplementation to increase natural production.

2004: Natural Production - Develop and implement methods of detecting indices of increasing natural production, as well as methods of detecting a realized increase in natural production, with specified statistical power. 2. Harvest - Develop methods to detect increases in harvest of YKFP targeted stocks. 3. Genetics - Develop methods of detecting significiant pre- and post- supplementation genetic changes in targeted stocks as reflected by changes in extinction risk, within-stock genetic variability, between-stock genetic variability, and domestication. 4. Ecological Interactions - Determine if impacts to non-target taxa can be kept within specified biological limits, and determine if biotic interactions limit ability of supplementation to increase natural production.

2005: 1. Natural Production - develop and implement methods of detecting indices of increasing natural production, as well as methods of detecting a realized increase in natural production, with specified statistical power. 2. Harvest - Develop methods to detect increases in harvest of YKFP targeted stocks. 3. Genetics - Develop methods of detecting significiant pre- and post- supplementation genetic changes in targeted stocks as reflected by changes in extinction risk, within-stock genetic variability, between-stock genetic variability, and domestication. 4. Ecological Interactions - Determine if impacts to non-target taxa can be kept within specified biological limits, and determine if biotic interactions limit ability of supplementation to increase natural production.

34 1995-063-35 **Yakima/Klickitat Fisheries Project Monitoring And Evaluation (Klickitat Only) (BPA)**

2003: Monitoring And Evaluation - Juvenile salmonid population surveys. Mobile juvenile monitoring - rotary traps. Spawning ground surveys. Scale analysis. Sediment impact analysis on habitat. Fish passage "obstruction" inventory; Water quality inventory; habitat production assessment. Genetics - DNA data collection/analysis on steelhead. Ecological Interactions - Pathogen sampling. Reports

2004: Monitoring And Evaluation - Juvenile salmonid population surveys. Mobile juvenile monitoring - rotary traps. Spawning ground surveys. Scale analysis. Sediment impact analysis on habitat. Fish passage "obstruction" inventory; Water quality inventory; habitat production assessment. Genetics - DNA data collection/analysis on steelhead. Ecological Interactions - Pathogen sampling. Reports

45 1990-005-01 **Umatilla Natural Production M&E (BPA)**

2003: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

2004: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

2005: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

2006: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

2007: 1) Monitor adult steelhead spawning; 2) Estimate run timing of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Annual report

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48 1998-007-02 **Grande Ronde Supplementation - Lostine River Spring Chinook M&E (BPA)**

2003: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2004: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2005: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2006: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

2007: 1) Monitor and evaluate juvenile hatchery production and performance; 2) Collect baseline information on environmental conditions in the Lostine River; 3) Collect and analyze information on abundance, genetic and life history characteristics of the Lostine River wild spring chinook salmon population and compare with that of the returning hatchery fish; 4) Monitor and evaluate the operation of adult collection (weir and trap) for adverse impacts to resident and/or anadromous fish populations in the Lostine River; 5) Annual report

50 1998-007-03 **Grande Ronde Supplementation - Catharine Creek and Upper Grande Ronde M&E (BPA)**

2003: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2004: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2005: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2006: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

2007: 1) Evaluate acclimated juvenile spring chinook salmon performance; 2) Evaluate life history differences between wild and hatchery-origin (F1) adult spring chinook salmon; 3) Describe life history characteristics and genetics of adult summer steelhead collected at weirs; 4) Evaluate environmental factors affecting migration or survival of anadromous salmonids; 5) Evaluate weir effects on fish migration or behavior; 6) Annual report.

RME

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59 1991-029-00 **The effects of summer flow augmentation on the migratory behavior and survival of juvenile Snake River fall chinook**

2003: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation. 2) Understand how summer flow augmentation affects water temperature, water velocity, juvenile fall chinook salmon migratory behavior, and juvenile fall chinook survival salmon in Lower Granite Reservoir.

2004: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation. 2) Understand how summer flow augmentation affects water temperature, water velocity, juvenile fall chinook salmon migratory behavior, and juvenile fall chinook survival salmon in Lower Granite Reservoir.

2005: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation.

2006: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation.

66 1998-010-03 **Spawning Distribution of Fall Chinook Salmon Released as Yearlings above Lower Granite Dam (BPA)**

2003: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2004: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2005: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2006: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

76 2002-031-00 **Growth Rate Modulation in Spring Chinook Salmon Supplementation (BPA)**

2003: 1) Estimate incidence of precocious maturation and developmental physiology in wild Yakima River spring chinook salmon; 2) Estimate Incidence of age 1+ precocious male maturation in the Yakima Hatchery population. 3) Experimental control of precocious maturation through growth rate modulation in a conservation hatchery.

2004: 1) Estimate incidence of precocious maturation and developmental physiology in wild Yakima River spring chinook salmon; 2) Estimate Incidence of age 1+ precocious male maturation in the Yakima Hatchery population. 3) Experimental control of precocious maturation through growth rate modulation in a conservation hatchery.

2005: 1) Experimental control of precocious maturation through growth rate modulation in a conservation hatchery.

2006: 1) Experimental control of precocious maturation through growth rate modulation in a conservation hatchery.

95 1999-018-00 **Characterize and quantify residual steelhead in the Clearwater River, Idaho (BPA)**

2003: 1. Determine if a relation exists between in-river conditions (flow and temperature) to emigration success, residualism rate, and persistence of residual steelhead.

156 1989-096-00 **Genetic Monitoring and Evaluation Program for Supplemented Populations of Salmon and Steelhead in the Snake Riv**

2003: Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

2004: Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

2005: Same as 2001, except preparation of final report rather than annual report. Collect genetic samples from wild and hatchery Snake River spring/summer chinook and steelhead populations, conduct genetic analyses, quantify genetic changes in hatchery populations, evaluate genetic impacts of supplementation on natural/wild stocks, estimate reproductive success of hatchery and wild steelhead, and prepare annual report

RME

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162 1993-056-00 **Research on Captive Broodstock Programs for Pacific Salmon (BPA)**

2003: Conduct research to improve natural reproductive success, improve olfactory imprinting, improve physiological development and maturation, improve in-culture survival of juveniles (prevention and control of disease), and evaluate inbreeding and inbreeding depression. Report results.

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163 2000-071-00 **Analyzing Behavioral Changes During Salmonid Domestication (BPA)**

2003: Conduct behavorial and physiological tests of juveniles with varying histories of hatchery rearing, analyze data, and report results in Final Report

170 1983-350-03 **New Perce Tribal Hatchery; M & E (BPA)**

2003: 1) Determine if program targets for contribution rate of hatchery fish are being achieved 2) Determine the increases in natural production that results from supplementation of chinook salmon & relate them to limiting factors 3) Estimate ecological & genetic impacts to fish populations 4) Determine how harvest opportunities can be optimized 5) Effectively communicate M&E program approach & findings to resource mngrs

2004: 1) Determine if program targets for contribution rate of hatchery fish are being achieved 2) Determine the increases in natural production that results from supplementation of chinook salmon & relate them to limiting factors 3) Estimate ecological & genetic impacts to fish populations 4) Determine how harvest opportunities can be optimized 5) Effectively communicate M&E program approach & findings to resource mngrs

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2006: 1) Determine if program targets for contribution rate of hatchery fish are being achieved 2) Determine the increases in natural production that results from supplementation of chinook salmon & relate them to limiting factors 3) Estimate ecological & genetic impacts to fish populations 4) Determine how harvest opportunities can be optimized 5) Effectively communicate M&E program approach & findings to resource mngrs

2007: 1) Determine if program targets for contribution rate of hatchery fish are being achieved 2) Determine the increases in natural production that results from supplementation of chinook salmon & relate them to limiting factors 3) Estimate ecological & genetic impacts to fish populations 4) Determine how harvest opportunities can be optimized 5) Effectively communicate M&E program approach & findings to resource mngrs

233 1987-401-00 **Assessment of Smolt Condition: Biological and Environmental Interactions (BPA)**

2003: 1.0 Provide science support and technical assistance to federal, state, and Tribal fishery agencies to determine if juvenile salmonid condition is determined by biological and environmental interactions that are distinguishable from genetic effects. 2.0 Determine if juvenile salmonids of the same genetic origin show differential growth and condition under varied controlled environmental conditions. 3.0 Determine if juvenile salmonids of the same species of different genetic origin show differential growth and condition under similar environmental conditions. 4.0 Determine if juvenile salmonids of the same genetic origin show differential emigration behavior or seawater survival when reared in different, controlled rearing environments. 5.0 Technology transfer through technical reports, publications and organization and conduct of annual smolt workshop.

2004: More work expected from budget projection.

2005: Considerably more work expected from budget projection.

2006: Less work expected from budget projection.

2007: Less work expected from budget projection.

RME

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256 1989-098-00 **Idaho Supplementation Studies - salmon (BPA)**

2003: All IDFG data are collected in Crooked Fork Creek, Colt Killed (White Sand) Creek, Marsh Creek, Pahsimeroi Creek, Lemhi River, Upper Salmon River, Sotuh Fork Salmon River: 1) Estimate juvenile salmon outmigration; 2) Estimate survival to lower Snake River dams; 3) Conduct redd and carcass counts; 4) Release chinook: a) Smolts into upper Salmon River, East Fork Salmon River, South fork Salmon River, and Pahsimeroi River. b) summer parr into Pete King Creek, and Squaw Creek. c) presmolts into Red River and Crooked River. d) evaulate early rearing and volitional release in Stolle Ponds. 5) develop small-scale experiments to compare behavioral interactions between natural and hatchery fish with Univ. of ID. 6) Annual Report.

2004: All IDFG data are collected in Crooked Fork Creek, Colt Killed (White Sand) Creek, Marsh Creek, Pahsimeroi Creek, Lemhi River, Upper Salmon River, Sotuh Fork Salmon River: 1) Estimate juvenile salmon outmigration; 2) Estimate survival to lower Snake River dams; 3) Conduct redd and carcass counts; 4) Release chinook: a) Smolts into upper Salmon River, East Fork Salmon River, South fork Salmon River, and Pahsimeroi River. b) summer parr into Pete King Creek, and Squaw Creek. c) presmolts into Red River and Crooked River. d) evaulate early rearing and volitional release in Stolle Ponds. 5) develop small-scale experiments to compare behavioral interactions between natural and hatchery fish with Univ. of ID. 6) Annual Report.

2005: All IDFG data are collected in Crooked Fork Creek, Colt Killed (White Sand) Creek, Marsh Creek, Pahsimeroi Creek, Lemhi River, Upper Salmon River, Sotuh Fork Salmon River: 1) Estimate juvenile salmon outmigration; 2) Estimate survival to lower Snake River dams; 3) Conduct redd and carcass counts; 4) Release chinook: a) Smolts into upper Salmon River, East Fork Salmon River, South fork Salmon River, and Pahsimeroi River. b) summer parr into Pete King Creek, and Squaw Creek. c) presmolts into Red River and Crooked River. d) evaulate early rearing and volitional release in Stolle Ponds. 5) develop small-scale experiments to compare behavioral interactions between natural and hatchery fish with Univ. of ID. 6) Annual Report.

2006: All IDFG data are collected in Crooked Fork Creek, Colt Killed (White Sand) Creek, Marsh Creek, Pahsimeroi Creek, Lemhi River, Upper Salmon River, Sotuh Fork Salmon River: 1) Estimate juvenile salmon outmigration; 2) Estimate survival to lower Snake River dams; 3) Conduct redd and carcass counts; 4) Release chinook: a) Smolts into upper Salmon River, East Fork Salmon River, South fork Salmon River, and Pahsimeroi River. b) summer parr into Pete King Creek, and Squaw Creek. c) presmolts into Red River and Crooked River. d) evaulate early rearing and volitional release in Stolle Ponds. 5) develop small-scale experiments to compare behavioral interactions between natural and hatchery fish with Univ. of ID. 6) Annual Report.

257 1989-098-01 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection -All USFWS data are collected in Pete King Creek (PKC) and Clear Creek(CC): 1) Estimate juvenile salmon outmigration (CC). 2) Estimate survival to lower Snake River dams (CC). 3) Conduct redd and carcass counts (CC and PKC). 4) Release chinook: a) smolts into CC; b) summer parr into PKC. 5) Estimate parr abumdance (CC and PKC). 6) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 7) Annual Report.

2004: Similar expected from budget projection -All USFWS data are collected in Pete King Creek (PKC) and Clear Creek(CC): 1) Estimate juvenile salmon outmigration (CC). 2) Estimate survival to lower Snake River dams (CC). 3) Conduct redd and carcass counts (CC and PKC). 4) Release chinook: a) smolts into CC; b) summer parr into PKC. 5) Estimate parr abumdance (CC and PKC). 6) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 7) Annual Report.

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258 1989-098-02 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

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2005: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

2006: Similar expected from budget projection - All NPT data are collected in: Secesh River (SER), Lake Creek (LAC), Lolo Creek (LLC), Newsome Creek (NC), Johnson Creek (JC), Fishing Creek (FC), Bear Creek (BC), Eldorado Creek (EC), Yoosa Creek (YC), Slate Creek (SLC) - 1) Estimate juvenile salmon outmigration (CC) - a) Operate traps in SR, b) Assist wth trap operation (LLC, NC, JC). 2) Estimate survival to lower Snake River dams (SR). 3) Conduct redd and carcass counts (SR, LAC, Jc, FC, BC, LLC, EC, YC, NC, SLC). 4) Estimate parr abumdance (CC and PKC). 5) Collect returning adults at Kooskia Hatchery and pass a portion upstream. 6) Collect genetic samples. 7) Annual Report.

259 1989-098-03 **Idaho Supplementation Studies - salmon (BPA)**

2003: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2004: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2005: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

2006: Similar expected from budget projection - All SBT data are collected in: W.Fork Yankee Fk Salmon R. (WF), E.Fork Salmon River (EF), Upper Salmon River (USR). 1) Estimate juvenile survival to lower Snake River dams (WF, EF). 2) Conduct redd and carcass counts. 3) Estimate parr abumdance. 4) Collect returning adults at weirs. 5) Annual Report

261 1991-073-00 **Idaho Natural Production Monitoring and Evaluation - previously 1989-098-00 (BPA)**

2003: More work expected from budget projection -includes construction

2004: Generally similar expected from budget projection

2005: Generally similar expected from budget projection

2006: Less work expected from budget projection

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273 2002-030-00 **Develop Progeny Marker for Salmonids to Evaluate Supplementation (BPA)**

2003: 2) Test new marker on hatchery- raised, adult, females steelhead to determine whether it can be incorporated into the otoliths of their progeny. 3) Analyze data gathered from the experimental trials and report results.

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2005: Original project proposal suggests completion in 2004.

275 1992-026-04 **Investigate Early Life History of Spring Chinook Salmon and Summer Steelhead in the Grande Ronde River Basin (BPA)**

2003: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.

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2007: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.

278 1991-055-00 **NATURES [Formerly Supplementation Fish Quality (Yakima)] (BPA)**

2003: Develop and evaluate fish culture techniques for a natural rearing enhancement system that increases the postrelease survival of artificially propagated salmon

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2007: Develop and evaluate fish culture techniques for a natural rearing enhancement system that increases the postrelease survival of artificially propagated salmon

280 2001-047-00 **Reintroduction success of steelhead from captive propagation and release strategies (BPA)**

2003: Determine the relative reproductive performance of captively reared and sea-ranched (smolt- relaease) steelhead from anadromous and sequestered populations. Evaluate Adult Reproductive Success: -Quantify adult breeding behavior -Determine adult-to-parr reproduction success by DNA analysis. Evaluate Juvenile Behavioral Characteristics: -Quantify juvenile social behavior

RME

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242 1993-029-00 **Estimate Survival for the Passage of Juvenile Salmonids Through Dams and Reservoirs of the Lower Snake and Columbia Rivers Short BPA Title: Survival Estimates Through Dams and Reservoirs (BPA)**

2003: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Provide estimate of survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Provide estimate of survival and travel time for subyearling fall chinook salmon from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

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244 1996-020-00 **Comparative Survival Rate Study (CSS) of Hatchery PIT Tagged Chinook & Comparative Survival Study BPA Short Tit Spring/Summer Chinook in Hatcheries (BPA)**

2003: 1) Conduct PIT tag marking of ~497,500 hatchery and wild juvenile chinook salmon and steelhead at CSS study hatcheries and smolt traps, scan returning adults for PIT tags at CSS study hatcheries and weirs, and upload data files to PSMFC PTAGIS database. 2) Perform annual refinement and preparation of CSS study design that is responsive to any questions on analysis and review comments. 3) Analyze data and prepare Annual CSS Status Report in cooperation with the Fish Passage Center. 4) Comply with ESA Section 10 permit requirements.

2004: To be determined.

2005: To be determined.

2006: To be determined.

2007: To be determined.

RME

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141 1998-016-00 **Salmonid Productivity, Escapement, Trend, and Habitat Monitoring in the Oregon Portion of the Columbia Plateau Pr**

2003: 1. Measurements of abundance and distribution of juvenile O. mykiss in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Measurements of some salmonid habitat attributes in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Estimates of total steelhead redds in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 3. Estimate of steelhead smolt production in the upper mainstem and Middle Fork John Day. 4. Up to 5,000 steelhead smolts PIT-tagged in the John Day subbasin. 5. Age distribution of steelhead smolts based on scale analysis. 6. Estimates of John Day steelhead smolt migration timing and survival past Columbia R. dams.

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234 1989-107-00 **Statistical Support for Salmonid Survival Studies (BPA)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2004: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

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2004: To be determined.

2005: To be determined.

2006: To be determined.

2007: To be determined.

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2004: To be determined.

2005: To be determined.

2006: To be determined.

2007: To be determined.

372 **Multiple Bypass Accumulative Impacts (CORPS)**

2003: Data Review Report

2006: Final Report

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59 1991-029-00 **The effects of summer flow augmentation on the migratory behavior and survival of juvenile Snake River fall chinook**

2003: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation. 2) Understand how summer flow augmentation affects water temperature, water velocity, juvenile fall chinook salmon migratory behavior, and juvenile fall chinook survival salmon in Lower Granite Reservoir.

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2005: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation.

2006: 1) Provide information to fishery managers to maximize the effectiveness of summer flow augmentation.

77 2002-032-00 **Investigating passage of ESA-listed juvenile fall chinook salmon at Lower Granite Dam during winter when the fish b inoperable (BPA)**

2003: 1) Refine non-lethal methods for identifying the age at saltwater entry for unmarked Snake River fall chinook salmon adults collected at Lower Granite from 1998 to 2001, and then assess the importance of the holdover strategy to adult returns to the Snake; 2) Determine if holdover wild fall chinook salmon smolts pass Lower Granite Dam during the winter when the fish bypass systems are shut down.

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242 1993-029-00 **Estimate Survival for the Passage of Juvenile Salmonids Through Dams and Reservoirs of the Lower Snake and Columbia Rivers Short BPA Title: Survival Estimates Through Dams and Reservoirs (BPA)**

2003: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Provide estimate of survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Provide estimate of survival and travel time for subyearling fall chinook salmon from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

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465 **AFEP; Kelt Research, Unaccounted Adult Loss and Straying and Marine Mammal Monitoring (CORPS)**

2003: Fund Kelt, Marine Mammal, and Adult General Migration

2004: Fund high priorities based on research results and review

2005: Fund high priorities based on research results and review

2006: Fund high priorities based on research results and review

2007: Fund high priorities based on research results and review

RME

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566 **Adult Steelhead Status Monitoring - Imnaha River Subbasin (BPA)**

2005: Assess the feasibility/validity of remote monitoring approaches to quantify adult steelhead escapement in select tributaries of the Imnaha River subbasin.

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247 1998-014-00 **Ocean Survival of Salmonids (BPA)**

2003: 1. Long-term observations - a. Conduct mesoscale surveys, b. Predator and forage fish surveys, c. Top trophic predators, d. Salmon growth, e. Endocrine assessment, f. Genetic stock assessment, g. Pathogen assessment, h. Prey resources & stomach content. 2. Fine scale process studies - a. Role of fronts, b. Diel studies, c. Pycnocline studies , d. Estury fronts. 3. Spatial and temporal features of the Columbia River plume - a. Develop and calibrate plume circulation model, b. Field demonstration of plume model, c. Construct simulation database, d. Develop physical habitat metrics, e. Circulation forcasts, f. Physical habitats using historical and remote data. 4. Coupled physical-biological modeling - a. Adapt and validate LTM for plume, b. Develop and validate spatially explicit model, c. Reconstruct spatial-temporal histories. 5. Develop management scenarios - a. Define management scenarios, b. Construct simulation datbase, c. Analysis of management scenarios.

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234 1989-107-00 **Statistical Support for Salmonid Survival Studies (BPA)**

2003: 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

2004: Expected to continue similar to 2003 - 1.0 Maintainence of statistical software and Internet access. 1.1 Maintain SURPH.2 software 1.2 Maintain USER.2 software. 1.3 Respond to user requests. 1.4 Adapt software to changing computing environment. 2.0 Improvements to statistical software. 1.1 Expand USER.2 capabilities 1.2 Expand data input capabilities. 1.3 Expand SURPH.2 capabilities. 3.0 Provide guidance on adult survival studies to FWP and Northwest fisheries community. 3.1 Adult PIT PIT-tag capabilities. 3.2 Adult radiotelemetry evaluations. 4.0 Evaluation of high-flow PIT-tag capabilities. 5.0 Provide technology transfer through the preparation of technical reports, publications in the professional literature, and statistical consulting to the fisheries community on tagging and fish tracking studies.

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247 1998-014-00 **Ocean Survival of Salmonids (BPA)**

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510 **Estuary study (CRFM) (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: research report

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247 1998-014-00 **Ocean Survival of Salmonids (BPA)**

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510 **Estuary study (CRFM) (CORPS)**

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2004: research report

2005: research report

2006: research report

2007: research report

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510 **Estuary study (CRFM) (CORPS)**

2003: research report

2004: research report

2005: research report

2006: research report

2007: research report

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122 1996-019-00 **Second-Tier Database Support (BPA)**

2003: 1. Provide optional information integration services to FWP and ESA participants. 2. Provide Internet-based electronic data integration services to generate data sets needed by FWP and ESA modeling, monitoring, and evaluation efforts. 3. Provide monitoring and evaluation products and services (via the Internet) on single and associated FWP-funded and ESA-mandated activities. Support Federal abilities to independently make and evaluate decisions committing federal resources. 4. Provide the public Internet interface to DART (Data Access in Real-Time). DART permits interactive selection of data items, time frame, presentation format, etc. from an integrated subset of historical and current fishery, hydraulic, project operation, and environmental information vital to year-round planning and in-season decision-making for operation of the Federal Columbia River Power System. 5. Real-time operations support. 6. Tool development. 7. Planning and coordination

2004: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

2005: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

2006: 1. DART operations and regional support. 2. Real-time operations. 3. Tool development. 4. Planning and coordination

2007: 1. DART operations and regional support. 2. Real-time operations support. 3. Tool development. 4. Planning and coordination

RME

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123 1988-108-04 **Pacific Northwest Hydropower Data Base and Analysis System (NWHS) (BPA)**

2003: Maintain the currency of NWHS project information through processing of all incoming FERC site or project update or new application information; Pursue quality improvement of the NWHS data base through the replacement of erroneous or missing data with valid information; Assist with requirements definition, design, development, and maintenance of system to track Performance Indicators as identified in the Direct Funding agreements for the FCRPS; Prepare and provide written monthly and annual reports.

2004: Maintain the currency of NWHS project information through processing of all incoming FERC site or project update or new application information; Pursue quality improvement of the NWHS data base through the replacement of erroneous or missing data with valid information; Assist with requirements definition, design, development, and maintenance of system to track Performance Indicators as identified in the Direct Funding agreements for the FCRPS; Prepare and provide written monthly and annual reports.

2005: Maintain the currency of NWHS project information through processing of all incoming FERC site or project update or new application information; Pursue quality improvement of the NWHS data base through the replacement of erroneous or missing data with valid information; Assist with requirements definition, design, development, and maintenance of system to track Performance Indicators as identified in the Direct Funding agreements for the FCRPS; Prepare and provide written monthly and annual reports.

2006: Maintain the currency of NWHS project information through processing of all incoming FERC site or project update or new application information; Pursue quality improvement of the NWHS data base through the replacement of erroneous or missing data with valid information; Assist with requirements definition, design, development, and maintenance of system to track Performance Indicators as identified in the Direct Funding agreements for the FCRPS; Prepare and provide written monthly and annual reports.

2007: Maintain the currency of NWHS project information through processing of all incoming FERC site or project update or new application information; Pursue quality improvement of the NWHS data base through the replacement of erroneous or missing data with valid information; Assist with requirements definition, design, development, and maintenance of system to track Performance Indicators as identified in the Direct Funding agreements for the FCRPS; Prepare and provide written monthly and annual reports.

124 1998-011-00 **Montana Natural Heritage Program (BPA)**

2003: 2003 Montana Natural Heritage Program Element Occurrence File of sensitive species data and other available species data with an updated data dictionary and other relevant documentation.

2004: 2004 Montana Natural Heritage Program Element Occurrence File of sensitive species data and other available species data with an updated data dictionary and other relevant documentation.

2005: 2005 Montana Natural Heritage Program Element Occurrence File of sensitive species data and other available species data with an updated data dictionary and other relevant documentation.

2006: 2006 Montana Natural Heritage Program Element Occurrence File of sensitive species data and other available species data with an updated data dictionary and other relevant documentation.

2007: 2007 Montana Natural Heritage Program Element Occurrence File of sensitive species data and other available species data with an updated data dictionary and other relevant documentation.

125 2001-017-00 **Idaho Conservation Data Center (BPA)**

2003: 2003 Idaho Natural Heritage Program Occurrence File with updated data dictionary, and any other available data on sensitive species

2004: 2004 Idaho Natural Heritage Program Occurrence File with updated data dictionary, and any other available data on sensitive species

2005: 2005 Idaho Natural Heritage Program Occurrence File with updated data dictionary, and any other available data on sensitive species

2006: 2006 Idaho Natural Heritage Program Occurrence File with updated data dictionary, and any other available data on sensitive species

2007: 2007 Idaho Natural Heritage Program Occurrence File with updated data dictionary, and any other available data on sensitive species

RME

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242 1993-029-00 **Estimate Survival for the Passage of Juvenile Salmonids Through Dams and Reservoirs of the Lower Snake and Columbia Rivers Short BPA Title: Survival Estimates Through Dams and Reservoirs (BPA)**

2003: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Provide estimate of survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Provide estimate of survival and travel time for subyearling fall chinook salmon from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

2004: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Estimate survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Estimate survival and travel time for subyearling fall chinook from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

2005: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Estimate survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Estimate survival and travel time for subyearling fall chinook salmon from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

2006: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Estimate survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 4.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

2007: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Estimate survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 4.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

466 **Regional Database (CORPS)**

2003: Modifiecations of the selected WQ database.

2004: Enter one-fourth of district WQ data an post on Web.

2005: Enter one-third of district and division WQ data and post on Web.

2006: Enter three-quarters of all Corps WQ data an post on Web.

2007: All Corps WQ data in Corps database and accessable by Web.

RME

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53 2000-039-00 **Walla Walla Natural Production M&E (BPA)**

2003: 1) Monitor adult steelhead and bull trout spawning; 2) Estimate run timing and survival of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Monitor adult steelhead and bull trout movements throughout the Walla Walla basin with radio telementry techniques; 7) Annual report.

2004: 1) Monitor adult steelhead and bull trout spawning; 2) Estimate run timing and survival of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Monitor adult steelhead and bull trout movements throughout the Walla Walla basin with radio telementry techniques; 7) Annual report.

2005: 1) Monitor adult steelhead and bull trout spawning; 2) Estimate run timing and survival of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Monitor adult steelhead and bull trout movements throughout the Walla Walla basin with radio telementry techniques; 7) Annual report.

2006: 1) Monitor adult steelhead and bull trout spawning; 2) Estimate run timing and survival of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Monitor adult steelhead and bull trout movements throughout the Walla Walla basin with radio telementry techniques; 7) Annual report.

2007: 1) Monitor adult steelhead and bull trout spawning; 2) Estimate run timing and survival of juvenile steelhead using PIT tags; 3) Estimate juvenile salmonid abundance and rearing densities; 4) Monitor stream temperatures; 5) Determine age growth and life history characteristics of bull trout, salmon and steelhead in the Umatilla River Basin; 6) Monitor adult steelhead and bull trout movements throughout the Walla Walla basin with radio telementry techniques; 7) Annual report.

66 1998-010-03 **Spawning Distribution of Fall Chinook Salmon Released as Yearlings above Lower Granite Dam (BPA)**

2003: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2004: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2005: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

2006: 1. Provide researchers and managers with accurate counts of fall chinook salmon redds upriver of Lower Granite Dam

141 1998-016-00 **Salmonid Productivity, Escapement, Trend, and Habitat Monitoring in the Oregon Portion of the Columbia Plateau Pr**

2003: 1. Measurements of abundance and distribution of juvenile O. mykiss in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Measurements of some salmonid habitat attributes in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Estimates of total steelhead redds in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 3. Estimate of steelhead smolt production in the upper mainstem and Middle Fork John Day. 4. Up to 5,000 steelhead smolts PIT-tagged in the John Day subbasin. 5. Age distribution of steelhead smolts based on scale analysis. 6. Estimates of John Day steelhead smolt migration timing and survival past Columbia R. dams.

2004: 1. Measurements of abundance and distribution of juvenile O. mykiss in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Measurements of some salmonid habitat attributes in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Estimates of total steelhead redds in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 3. Estimate of steelhead smolt production in the upper mainstem, Middle Fork, and North Fork John Day. 4. Up to 5,000 steelhead smolts PIT-tagged in the John Day subbasin. 5. Age distribution of steelhead smolts based on scale analysis. 6. Estimates of John Day steelhead smolt migration timing and survival past Columbia R. dams.

2005: 1. Measurements of abundance and distribution of juvenile O. mykiss in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Measurements of some salmonid habitat attributes in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 2. Estimates of total steelhead redds in the John Day subbasin and potentially in the Deschutes, Umatilla, and Walla Walla subbasins. 3. Estimate of steelhead smolt production in the upper mainstem, Middle Fork, and North Fork John Day. 4. Up to 5,000 steelhead smolts PIT-tagged in the John Day subbasin. 5. Age distribution of steelhead smolts based on scale analysis. 6. Estimates of John Day steelhead smolt migration timing and survival past Columbia R. dams.

RME

199

232 1987-127-00 **Smolt Monitoring by Federal and Non-Federal Agencies (BPA)**

2003: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

2004: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

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2006: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

2007: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

238 1991-028-00 **Monitoring Smolt Migrations of Wild Snake River Spring/Summer Salmon (BPA)**

2003: Similar scope of work expected.

2004: Similar scope of work expected.

2005: Similar scope of work expected.

2006: Similar scope of work expected.

2007: Similar scope of work expected.

RME

199

240 1991-051-00 **Monitoring and Evaluation Statistical Support (BPA)**

2003: 1.0 Provide in-season statistical support. 1.1 Provide real-time run-timing predictions. 1.2 Provide annual review of run-timing predictions. 2.0 Statistical analysis of historical tagging data. 2.1 Provide post-season outmigration estimation. 2.2 Provide analysis of smolt-to-adult ratios (SARs). 2.3 Sample size software. 3.0 Provide statistical support for region. 3.1 Provide statistical consultation. 3.2 Continued statistical evaluation of performance standards to improve decision analysis for assessing RPA compliance.

2004: 1.0 Provide in-season statistical support. 1.1 Provide real-time run-timing predictions. 1.2 Provide annual review of run-timing predictions. 2.0 Statistical analysis of historical tagging data. 2.1 Provide post-season outmigration estimation. 2.2 Provide analysis of smolt-to-adult ratios (SARs). 2.3 Sample size software. 3.0 Provide statistical support for region. 3.1 Provide statistical consultation. 3.2 Continued statistical evaluation of performance standards to improve decision analysis for assessing RPA compliance.

2005: 1.0 Provide in-season statistical support. 1.1 Provide real-time run-timing predictions. 1.2 Provide annual review of run-timing predictions. 2.0 Statistical analysis of historical tagging data. 2.1 Provide post-season outmigration estimation. 2.2 Provide analysis of smolt-to-adult ratios (SARs). 2.3 Sample size software. 3.0 Provide statistical support for region. 3.1 Provide statistical consultation. 3.2 Continued statistical evaluation of performance standards to improve decision analysis for assessing RPA compliance.

2006: 1.0 Provide in-season statistical support. 1.1 Provide real-time run-timing predictions. 1.2 Provide annual review of run-timing predictions. 2.0 Statistical analysis of historical tagging data. 2.1 Provide post-season outmigration estimation. 2.2 Provide analysis of smolt-to-adult ratios (SARs). 2.3 Sample size software. 3.0 Provide statistical support for region. 3.1 Provide statistical consultation. 3.2 Continued statistical evaluation of performance standards to improve decision analysis for assessing RPA compliance.

2007: 1.0 Provide in-season statistical support. 1.1 Provide real-time run-timing predictions. 1.2 Provide annual review of run-timing predictions. 2.0 Statistical analysis of historical tagging data. 2.1 Provide post-season outmigration estimation. 2.2 Provide analysis of smolt-to-adult ratios (SARs). 2.3 Sample size software. 3.0 Provide statistical support for region. 3.1 Provide statistical consultation. 3.2 Continued statistical evaluation of performance standards to improve decision analysis for assessing RPA compliance.

RME

199

242 1993-029-00 **Estimate Survival for the Passage of Juvenile Salmonids Through Dams and Reservoirs of the Lower Snake and Columbia Rivers Short BPA Title: Survival Estimates Through Dams and Reservoirs (BPA)**

2003: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Provide estimate of survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Provide estimate of survival and travel time for subyearling fall chinook salmon from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

2004: 1.0 Provide estimates of survival for releases of juvenile yearling spring/summer chinook salmon and steelhead (both hatchery and wild) through the Snake and Lower Columbia Rivers using the SR Model. 2.0 Estimate survival from McNary Dam tailrace to John Day tailrace for juvenile subyearling fall chinook salmon during the summer migration. 3.0 Estimate survival and travel time for subyearling fall chinook from Pittsburg Landing and Billy Creek on the free flowing Snake River through the lower Snake River. 4.0 Extend survival estimates to Bonneville Dam tailrace using PIT tag pair trawl detections. 5.0 Provide information transfer to the fisheries community by presentations at meetings and workshops, by personal contact, by memorandum, by annual and final reports to the Bonneville Power Administration, and through peer-reviewed scientific publications.

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244 1996-020-00 **Comparative Survival Rate Study (CSS) of Hatchery PIT Tagged Chinook & Comparative Survival Study BPA Short Tit Spring/Summer Chinook in Hatcheries (BPA)**

2003: 1) Conduct PIT tag marking of ~497,500 hatchery and wild juvenile chinook salmon and steelhead at CSS study hatcheries and smolt traps, scan returning adults for PIT tags at CSS study hatcheries and weirs, and upload data files to PSMFC PTAGIS database. 2) Perform annual refinement and preparation of CSS study design that is responsive to any questions on analysis and review comments. 3) Analyze data and prepare Annual CSS Status Report in cooperation with the Fish Passage Center. 4) Comply with ESA Section 10 permit requirements.

2004: To be determined.

2005: To be determined.

2006: To be determined.

2007: To be determined.

RME

199

245 1997-015-01 **Title Present Scope: Imnaha River Smolt Monitoring Program. Title for proposed expanded scope: Imnaha Smolt Sur to Adult Return Rate Quantification (BPA)**

2003: Same as 2002 unless scope of project changes. 1) Determine juvenile spring emigration timing of chinook salmon and steelhead smolts from the Imnaha River by operating permanent emigrant Imnaha River trap at rkm 7, March 15 to June 5, in cooperation with LSRCP. 2) Determine the emigration timing of previously PIT tagged natural and hatchery chinook salmon and steelhead smolts through interrogations at the lower Imnaha River trap. 3) Provide smolt-monitoring information to the FPC, LSRCP, NEOH M&E and PTAGIS. 4) In cooperation with the LSRCP program, PIT tag over 27,000 smolts to determine the arrival timing, travel time, and survival of natural and hatchery chinook salmon and steelhead released in the Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams.

2004: Same as 2002 unless scope of project changes. 1) Determine juvenile spring emigration timing of chinook salmon and steelhead smolts from the Imnaha River by operating permanent emigrant Imnaha River trap at rkm 7, March 15 to June 5, in cooperation with LSRCP. 2) Determine the emigration timing of previously PIT tagged natural and hatchery chinook salmon and steelhead smolts through interrogations at the lower Imnaha River trap. 3) Provide smolt-monitoring information to the FPC, LSRCP, NEOH M&E and PTAGIS. 4) In cooperation with the LSRCP program, PIT tag over 27,000 smolts to determine the arrival timing, travel time, and survival of natural and hatchery chinook salmon and steelhead released in the Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams.

2005: Same as 2002 unless scope of project changes. 1) Determine juvenile spring emigration timing of chinook salmon and steelhead smolts from the Imnaha River by operating permanent emigrant Imnaha River trap at rkm 7, March 15 to June 5, in cooperation with LSRCP. 2) Determine the emigration timing of previously PIT tagged natural and hatchery chinook salmon and steelhead smolts through interrogations at the lower Imnaha River trap. 3) Provide smolt-monitoring information to the FPC, LSRCP, NEOH M&E and PTAGIS. 4) In cooperation with the LSRCP program, PIT tag over 27,000 smolts to determine the arrival timing, travel time, and survival of natural and hatchery chinook salmon and steelhead released in the Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams.

2006: Same as 2002 unless scope of project changes. 1) Determine juvenile spring emigration timing of chinook salmon and steelhead smolts from the Imnaha River by operating permanent emigrant Imnaha River trap at rkm 7, March 15 to June 5, in cooperation with LSRCP. 2) Determine the emigration timing of previously PIT tagged natural and hatchery chinook salmon and steelhead smolts through interrogations at the lower Imnaha River trap. 3) Provide smolt-monitoring information to the FPC, LSRCP, NEOH M&E and PTAGIS. 4) In cooperation with the LSRCP program, PIT tag over 27,000 smolts to determine the arrival timing, travel time, and survival of natural and hatchery chinook salmon and steelhead released in the Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams.

2007: Same as 2002 unless scope of project changes. 1) Determine juvenile spring emigration timing of chinook salmon and steelhead smolts from the Imnaha River by operating permanent emigrant Imnaha River trap at rkm 7, March 15 to June 5, in cooperation with LSRCP. 2) Determine the emigration timing of previously PIT tagged natural and hatchery chinook salmon and steelhead smolts through interrogations at the lower Imnaha River trap. 3) Provide smolt-monitoring information to the FPC, LSRCP, NEOH M&E and PTAGIS. 4) In cooperation with the LSRCP program, PIT tag over 27,000 smolts to determine the arrival timing, travel time, and survival of natural and hatchery chinook salmon and steelhead released in the Imnaha River subbasin to Lower Granite, Little Goose, Lower Monumental, and McNary Dams.

542 **Juvenile Salmon Temperature Studies (CORPS)**

2003: Temperature Impacts Biological Indicators

Table 2b : 2003-2007 Project Deliverables by USFWS BiOp Actions

RPA	*BiopID*	*Project Title*

Hydro

10.A.1.2

590 **Hungry Horse Operations (USBR)**

2003: Fill Hungry Horse to within 0.5 foot of the flood control rule (VARQ) on April 10. 2. Refill Hungry Horse to elevation 3560 feet by June 30. 3. Provide water for flow augmentation and observe summer draft limit of 3540 feet. 4. Limit Hungry Horse outflow to minimum flow after August 31. 5. Interim implementation of VARQ while complete EIS. 6. Constrain Hungry Horse operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 7. Reduce "double peak" below Hungry Horse

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10.A.2.1

371 **Monitoring of Bull Trout at Mainstem Projects (CORPS)**

2003: Count bull trout as part of the adult fish counting program at the four lower Columbia River and four lower SnakeRiver projects. Record the presence of bull trout at all mainstem project smolt monitoring facilities. Extend adult fish counting at Lower Monumental and Little Goose dams to include year round counting of bull trout.

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Hydro

10.A.2.2

371 **Monitoring of Bull Trout at Mainstem Projects (CORPS)**

2003: Count bull trout as part of the adult fish counting program at the four lower Columbia River and four lower SnakeRiver projects. Record the presence of bull trout at all mainstem project smolt monitoring facilities. Extend adult fish counting at Lower Monumental and Little Goose dams to include year round counting of bull trout.

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2007: Count bull trout as part of the adult fish counting program at the four lower Columbia River and four lower SnakeRiver projects. Record the presence of bull trout at all mainstem project smolt monitoring facilities.

Resident Fish

10.2

463 **Libby Operations Sturgeon (CORPS)**

2003: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

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2006: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

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Resident Fish

10.6

471 2002-008-00 **Reconnection of floodplain slough habitat to the Kootenai River (BPA)**

2003: 1. Design/construct a connection between the Kootenai River and an adjacent slough.

2004: Monitor project and report results

2005: Monitor project and report results

2006: Monitor project and report results

496 2002-009-00 **Lake Pend Oreille Predation Research (BPA)**

2003: Balance the pelagic predator and prey populations at a standing stock of less than 1 kg/ha predator to 6 kg/ha prey. Redefine the point of balance for predators and prey in Lake Pend Oreille where kokanee survival drops below 50% for any year class. Research and implement methods for the removal of rainbow trout that will not impact bull trout, until balance point is reached (currently thought to be 1:6). the competition between bull trout and other predatory fish. Kokanee survival rates over 50% would indicate forage is not in limited supply.

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2005: Monitoring?

2006: Monitoring?

498 2002-011-00 **Implement Floodplain Operational Loss Assessment, Protection, Mitigation and Rehabilitation on the Lower Kootena Ecosystem (BPA)**

2003: Review, analyze and select research projects that will best assess operational losses in the Lower Kootenai River Watershed and are regionally applicable .2)Assess historic (early 1900's) and current condition and status of floodplain vegetation types, slough, pocket water and associated watercourses within the Lower Kootenai River Watershed by 2003. 3) Produce hydrologic models for the floodplain and each natural analogue stream course by 2003. 4) Develop a framework for regional floodplain operational loss assessments by 2004, with the use of Lower Kootenai River floodplain operational assessment, EDT, and normative analogue comparisons during 2003. 5)Plan and establish a trust fund or other funding strategy for securing management rights, and operations and maintenance to mitigate priority floodplain habitat areas by 2005.

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2006: Review, analyze and select research projects that will best assess operational losses in the Lower Kootenai River Watershed and are regionally applicable . 5)Plan and establish a trust fund or other funding strategy for securing management rights, and operations and maintenance to mitigate priority floodplain habitat areas by 2005.

Resident Fish

10.8

143 2002-006-00 **Evaluate Bull Trout Movements in the Tucannon and Lower Snake Rivers (BPA)**

2003: 1) Radio tags implanted in 20-40 bull trout captured at or downstream of the Tucannon Hatchery weir, April-July. 2) Migration histories of radio-tagged bull trout in and among the Lower Monumental, adjacent reservoirs of the lower Snake R., and the Tucannon R. 3) Estimates of fallback/entrainment of radio-tagged bull trout at Little Goose and Lower Monumental dams. 4) Estimates of losses of bull trout due to movement out of Lower Granite pool.

2004: 1) Radio tags implanted in 20-40 bull trout captured at or downstream of the Tucannon Hatchery weir, April-July. 2) Migration histories of radio-tagged bull trout in and among the Lower Monumental, adjacent reservoirs of the lower Snake R., and the Tucannon R. 3) Estimates of fallback/entrainment of radio-tagged bull trout at Little Goose and Lower Monumental dams. 4) Estimates of losses of bull trout due to movement out of Lower Granite pool.

2005: 1) Migration histories of radio-tagged bull trout in and among the Lower Monumental, adjacent reservoirs of the lower Snake R., and the Tucannon R. 2) Estimates of fallback/entrainment of radio-tagged bull trout at Little Goose and Lower Monumental dams. 3) Estimates of losses of bull trout due to movement out of Lower Granite pool.

10.A.1.1

462 **Libby Operations Bull Trout (CORPS)**

2003: 1. Constrain Libby operations to minimize adverse effects of flow fluctuations on bull trout, including year-round min. flows and ramping rates and seasonal water management. 2. Provide 6000 cfs minimum for bull trout during July and August if Koocanusa elevations are below salmon guidelines and salmon augmentation will not occur. Increased flows may be determined through TMT if additional water were available.

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584 1995-004-00 **Libby Mitigation Plan (BPA)**

2003: Quarterly and Annual Reports

2004: Quarterly and Annual Reports

2005: Quarterly and Annual Reports

2006: Quarterly and Annual Reports

2007: Quarterly and Annual Reports

Resident Fish

10.A.1.2

585 1991-019-03 **Hungry Horse Mitigation - Habitat (BPA)**

2003: Quarterly, and Annual Reports

2004: Quarterly, and Annual Reports

2005: Quarterly, and Annual Reports

2006: Quarterly, and Annual Reports

2007: Quarterly, and Annual Reports

10.A.1.4

491 1994-047-00 **Lake Pend Oreille Fishery Recovery Project (BPA)**

2003: Recover kokanee abundance so that a harvest of 750,000 fish can be maintained on an annual basis. This would require an adult kokanee population of 3.7 million fish and an egg-to-fry survival rate exceeding 3.6%. Have no net change in the amount of shoreline spawning gravel due to erosion or siltation during this experiment (maintain 1.7 million sq. feet). Increase the warm water fish population in the Pend Oreille River seven fold. Monitor baseline limnological factors which influence the lake's fish populations. Improve hatchery stocking program so that it contributes 375,000 kokanee to the harvest.

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10.A.3.2

488 1987-407-00 **Dworshak Integrated Rule Curves/M&E (BPA)**

2006: Refine the Dworshak Rule Curve Evaluation Model (DRCEM) based on recommendations from Barber and Juul (2001). Identify and update appropriate integrated Dworshak operations (Integrated Rule Curve). Institute appropriate integrated operations.

Resident Fish

11.A.1.1.b

462 **Libby Operations Bull Trout (CORPS)**

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11.A.1.4.a

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Resident Fish

11.A.1.4.b

491 1994-047-00 **Lake Pend Oreille Fishery Recovery Project (BPA)**

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496 2002-009-00 **Lake Pend Oreille Predation Research (BPA)**

2003: Balance the pelagic predator and prey populations at a standing stock of less than 1 kg/ha predator to 6 kg/ha prey. Redefine the point of balance for predators and prey in Lake Pend Oreille where kokanee survival drops below 50% for any year class. Research and implement methods for the removal of rainbow trout that will not impact bull trout, until balance point is reached (currently thought to be 1:6). the competition between bull trout and other predatory fish. Kokanee survival rates over 50% would indicate forage is not in limited supply.

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2005: Monitoring?

2006: Monitoring?

11.A.1.4.d

491 1994-047-00 **Lake Pend Oreille Fishery Recovery Project (BPA)**

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Resident Fish

11.A.3.1.d

143 2002-006-00 **Evaluate Bull Trout Movements in the Tucannon and Lower Snake Rivers (BPA)**

2003: 1) Radio tags implanted in 20-40 bull trout captured at or downstream of the Tucannon Hatchery weir, April-July. 2) Migration histories of radio-tagged bull trout in and among the Lower Monumental, adjacent reservoirs of the lower Snake R., and the Tucannon R. 3) Estimates of fallback/entrainment of radio-tagged bull trout at Little Goose and Lower Monumental dams. 4) Estimates of losses of bull trout due to movement out of Lower Granite pool.

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11.A.3.1.f

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2005: 1) Migration histories of radio-tagged bull trout in and among the Lower Monumental, adjacent reservoirs of the lower Snake R., and the Tucannon R. 2) Estimates of fallback/entrainment of radio-tagged bull trout at Little Goose and Lower Monumental dams. 3) Estimates of losses of bull trout due to movement out of Lower Granite pool.

Resident Fish

8.1.a

463 **Libby Operations Sturgeon (CORPS)**

2003: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

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2007: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

Resident Fish

8.1.f

492 1994-049-00 **Improving the Kootenai River Ecosystem (BPA)**

2003: Initiate NEPA permitting process to accommodate Kootenai River ecosystem restoration research, monitoring and management activities. Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Test the feasibility of a Kootenai River controlled nutrient addition experiment. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2004: Initiate NEPA permitting process to accommodate Kootenai River ecosystem restoration research, monitoring and management activities. Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2005: Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2006: Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

8.1.g

464 **Seek USFWS concurrence on water storage (CORPS)**

2003: Concurrance has Occured

2004: Concurrance has Occured

2005: Concurrance has Occured

2006: Concurrance has Occured

2007: Concurrance has Occured

Resident Fish

8.2.a.1

490 1988-065-00 **Kootenai River Fisheries Recovery Investigations (BPA)**

2003: Test Null Hypothesis: survival of larval sturgeon released over sand substrate is higher than larvae released over cobble substrate. Determine how changes in Kootenay Lake elevation effects white sturgeon spawning location. Will cost share with USGS. Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Test null hypothesis that high winter flows do not cause stress in burbot and impair reproductive fitness. Test null hypothesis under laboratory conditions that various flows and temperatures do not cause stress in burbot and impair reproductive fitness. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Determine affective means of sampling larval burbot and white sturgeon. Determine the contribution of mainstem rainbow, Westslope cutthroat, and bull trout spawners to the Idaho reach of the Kootenai River downstream of the Montana border. Enhance spawning habitat in the mainstem Kootenai R. and/or tributaries and evaluate. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

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Resident Fish

8.2.a.8

490 1988-065-00 **Kootenai River Fisheries Recovery Investigations (BPA)**

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584 1995-004-00 **Libby Mitigation Plan (BPA)**

2003: Quarterly and Annual Reports

2004: Quarterly and Annual Reports

2005: Quarterly and Annual Reports

2006: Quarterly and Annual Reports

2007: Quarterly and Annual Reports

Resident Fish

8.2.a.9

489 1988-064-00 **Kootenai River White Sturgeon Study and Experimental Aquaculture (BPA)**

2003: Implement planning process for second facility to be used for: 1) additional rearing space for white sturgeon produced in the conservation aquaculture program and 2) restoration/preservation of declining native fish populations. Provide compensatory harvest opportunities for Tribal members while actions are implemented to benefit declining native fish stocks. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

2004: Establish an experimental white sturgeon population outside the current occupied range. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

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Resident Fish

8.2.a.9

490 1988-065-00 **Kootenai River Fisheries Recovery Investigations (BPA)**

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Resident Fish

8.2.c

463 **Libby Operations Sturgeon (CORPS)**

2003: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

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Resident Fish

8.3.b

463 **Libby Operations Sturgeon (CORPS)**

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Resident Fish

8.3.d

489 1988-064-00 **Kootenai River White Sturgeon Study and Experimental Aquaculture (BPA)**

2003: Implement planning process for second facility to be used for: 1) additional rearing space for white sturgeon produced in the conservation aquaculture program and 2) restoration/preservation of declining native fish populations. Provide compensatory harvest opportunities for Tribal members while actions are implemented to benefit declining native fish stocks. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

2004: Establish an experimental white sturgeon population outside the current occupied range. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

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Resident Fish

8.3.d

490 1988-065-00 **Kootenai River Fisheries Recovery Investigations (BPA)**

2003: Test Null Hypothesis: survival of larval sturgeon released over sand substrate is higher than larvae released over cobble substrate. Determine how changes in Kootenay Lake elevation effects white sturgeon spawning location. Will cost share with USGS. Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Test null hypothesis that high winter flows do not cause stress in burbot and impair reproductive fitness. Test null hypothesis under laboratory conditions that various flows and temperatures do not cause stress in burbot and impair reproductive fitness. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Determine affective means of sampling larval burbot and white sturgeon. Determine the contribution of mainstem rainbow, Westslope cutthroat, and bull trout spawners to the Idaho reach of the Kootenai River downstream of the Montana border. Enhance spawning habitat in the mainstem Kootenai R. and/or tributaries and evaluate. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

2004: Test Null Hypothesis: survival of larval sturgeon released over sand substrate is higher than larvae released over cobble substrate. Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Test null hypothesis that high winter flows do not cause stress in burbot and impair reproductive fitness. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Determine affective means of sampling larval burbot and white sturgeon. Determine the contribution of mainstem rainbow, Westslope cutthroat, and bull trout spawners to the Idaho reach of the Kootenai River downstream of the Montana border. Enhance spawning habitat in the mainstem Kootenai R. and/or tributaries and evaluate. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. Evaluate the potential to reduce the temperature of Deep Creek to develop a resident trout fishery. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

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584 1995-004-00 **Libby Mitigation Plan (BPA)**

2003: Quarterly and Annual Reports

2004: Quarterly and Annual Reports

2005: Quarterly and Annual Reports

2006: Quarterly and Annual Reports

2007: Quarterly and Annual Reports

Resident Fish

8.3.f

463 **Libby Operations Sturgeon (CORPS)**

2003: 1. Store water and supply, at a minimum, flows in May through July based upon a water availability or "tiered" approach, per the final Sturgeon Recovery Plan. 2. Regulate flows from Libby, consistent with existing laws and orders, to maximize the probability of significant sturgeon recruitment. 3. During sturgeon recruitment flow periods, allow local inflow to supplement Libby Dam releases to the maximum extent feasible, while assuring public safety by monitoring water levels throughout relevant areas of the basin. 4. Keep Bonners Ferry Stage below 1764 during sturgeon pulse 5. Limit daily load-following in Libby outflow to not damage downstream levees. Provide public outreach materials. 6. Seek opportunities to reduce the second peak flow created by July/August salmon flow through Kootenay Lake, perhaps via a Libby-Arrow water exchange. 7. Fulfill USFWS annual operational guidelines prior to and during the sturgeon spawning/incubation period. Specific release recommendations will be developed in consultation with action agencies and submitted annually via the TMT or similar process.

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Resident Fish

8.3.g

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Resident Fish

8.3.i

494 2002-002-00 **Assess Feasibility of Enhancing White Sturgeon Spawning Substrate Habitat, Kootenai R., Idaho (BPA)**

2003: Design, construction, implementation, monitoring and evaluation of in-stream structures which would potentially enhance habitat for white sturgeon spawningDevelop sediment-transport models, develop spawning habitat substrate improvement scenarios, and assess the feasibility of habitat enhancement.

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8.3.j

494 2002-002-00 **Assess Feasibility of Enhancing White Sturgeon Spawning Substrate Habitat, Kootenai R., Idaho (BPA)**

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2006: Design, construction, implementation, monitoring and evaluation of in-stream structures which would potentially enhance habitat for white sturgeon spawning

8.4.a

489 1988-064-00 **Kootenai River White Sturgeon Study and Experimental Aquaculture (BPA)**

2003: Implement planning process for second facility to be used for: 1) additional rearing space for white sturgeon produced in the conservation aquaculture program and 2) restoration/preservation of declining native fish populations. Provide compensatory harvest opportunities for Tribal members while actions are implemented to benefit declining native fish stocks. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

2004: Establish an experimental white sturgeon population outside the current occupied range. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

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Resident Fish

8.4.b

489 1988-064-00 **Kootenai River White Sturgeon Study and Experimental Aquaculture (BPA)**

2003: Implement planning process for second facility to be used for: 1) additional rearing space for white sturgeon produced in the conservation aquaculture program and 2) restoration/preservation of declining native fish populations. Provide compensatory harvest opportunities for Tribal members while actions are implemented to benefit declining native fish stocks. Monitor, evaluate, and report genetic variability and diversity of hatchery white sturgeon juveniles produced and wild broodstock spawned in the Kootenai Hatchery. (Recovery measure 2.23) (Addresses ISRP concerns about genetics.) Monitor and evaluate survival, condition, growth, movement, and habitat use of hatchery reared juvenile white sturgeon released into the Kootenai River. (Recovery measure 3.31) Monitor and evaluate hatchery water quality (Recovery measure 2.22) Monitor and evaluate animal health of hatchery reared juvenile white sturgeon (Recovery measure 2.24.242)

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Resident Fish

8.4.b

490 1988-065-00 **Kootenai River Fisheries Recovery Investigations (BPA)**

2003: Test Null Hypothesis: survival of larval sturgeon released over sand substrate is higher than larvae released over cobble substrate. Determine how changes in Kootenay Lake elevation effects white sturgeon spawning location. Will cost share with USGS. Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Test null hypothesis that high winter flows do not cause stress in burbot and impair reproductive fitness. Test null hypothesis under laboratory conditions that various flows and temperatures do not cause stress in burbot and impair reproductive fitness. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Determine affective means of sampling larval burbot and white sturgeon. Determine the contribution of mainstem rainbow, Westslope cutthroat, and bull trout spawners to the Idaho reach of the Kootenai River downstream of the Montana border. Enhance spawning habitat in the mainstem Kootenai R. and/or tributaries and evaluate. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

2004: Test Null Hypothesis: survival of larval sturgeon released over sand substrate is higher than larvae released over cobble substrate. Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Test null hypothesis that high winter flows do not cause stress in burbot and impair reproductive fitness. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Determine affective means of sampling larval burbot and white sturgeon. Determine the contribution of mainstem rainbow, Westslope cutthroat, and bull trout spawners to the Idaho reach of the Kootenai River downstream of the Montana border. Enhance spawning habitat in the mainstem Kootenai R. and/or tributaries and evaluate. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. Evaluate the potential to reduce the temperature of Deep Creek to develop a resident trout fishery. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

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2006: Evaluate the use of artificial substrates and instream structures to improve white sturgeon egg and larval survival and relocate sturgeon spawning. Test null hypothesis that winter operation of Libby Dam does not effect burbot migration distance or travel rate. Measure test and control in travel time, km/day. Estimate the number of burbot from Bonners Ferry, ID, to Kootenay Lake, BC. and provide estimate of recruitment and survival. Large scale sampling, within two refernence reaches, to determine the pre-fertilization and post-fertilization status of the fish community, trophic structure, densities, standing stocks, and the population dynamics of salmonids. M&E experimental flows for sturgeon spawning and rearing, determine the minimum flow that will provide spawning and rearing habitat for Kootenai River white sturgeon and bring off a successful year class. M&E implementation of a recovery strategy for burbot as prescribed in the Recovery Strategy for burbot.

Resident Fish

8.4.b

492 1994-049-00 **Improving the Kootenai River Ecosystem (BPA)**

2003: Initiate NEPA permitting process to accommodate Kootenai River ecosystem restoration research, monitoring and management activities. Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Test the feasibility of a Kootenai River controlled nutrient addition experiment. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2004: Initiate NEPA permitting process to accommodate Kootenai River ecosystem restoration research, monitoring and management activities. Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2005: Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

2006: Initiation of a controlled, large-scale nutrient enhancement effort in the mainstem Kootenai River, downstream of Montana-Idaho border. Evaluate the productivity within the Kootenai River before and after a large-scale nutrient supplementation experiment if warranted by results of mesocosm experiments. Monitor key water quality parameters, with an emphasis on macro-nutrients.

RME

10.A.3.1

232 1987-127-00 **Smolt Monitoring by Federal and Non-Federal Agencies (BPA)**

2003: 1) Conduct annual Smolt Monitoring Program (SMP) at seven mainstem Snake and Columbia River dams, Lewiston Snake River trap, Lower Grande Ronde trap, and White Bird trap on the Salmon River. (Note: Imnaha River trap is another SMP site operated by the Nez Perce Tribe (NPT) under Project 1997-015-01). 2) Perform PIT tagging of ~25,500 juvenile fish at five hatcheries and upload data files to PSMFC databsase (USFWS tagging support component). 3) Transmit daily juvenile fish passage, sampling, marking, and other biological and hydrological data to online databases at Fish Passage Center (FPC) and Pacific States Marine Fisheries Commission (PSMFC) for distribution region wide. 4) Comply with ESA Section 10 sampling and reporting requirements at all monitiring sites. 5) Participating agencies and organizations prepare and submit annual reports to PSMFC summarizing SMP activities and data collected at each monitoring site for use in compiling FPC annaul report.

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RME

11.A.2.1.b

232 1987-127-00 **Smolt Monitoring by Federal and Non-Federal Agencies (BPA)**

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RME

11.A.3.1.a

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