NORTH FORK JOHN DAY RIVER BASIN ANADROMOUS FISH HABITAT

ENHANCEMENT PROJECT

Annual Report for April 2007 – March 2008

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ABSTRACT

The Confederated Tribes of the Umatilla Indian Reservation North Fork John Day Anadromous Fish Enhancement Project continued to develop and implement habitat improvements during 2007 using guidance from the John Day Subbasin Plan, Mid-Columbia Steelhead Recovery plan, and others that prioritized restoration efforts. The coordinated efforts of private landowners, public entities such as the North Fork John Day Watershed Council, Umatilla National Forest, Wallowa-Whitman National Forest, and Grant Soil and Water Conservation District provided cost share opportunities and better utilized available resources to implement restoration efforts resulting in regular monitoring and maintenance where riparian easements are in place. During 2007 three stock watering ponds were constructed, an upland fencing project was developed, and riparian fencing and culvert replacements will be implemented in 2008 and 2009. The project also contributed financial support to a joint mine tailing restoration with the Umatilla National Forest and Grant Soil and Water Conservation District using funds secured through the Pacific Coast Salmon Recovery Fund (National Oceanic and Atmospheric Administration). An easement was obtained in April 2008 on Camas Creek near Ukiah, Oregon and three grant applications were submitted (one funded for $58,000.00 with two in review) in support of restoration efforts in 2008 and 2009.

ACKNOWLEDGMENTS

The Confederated Tribes of the Umatilla Indian Reservation wish to thank the Bonneville Power Administration for funding the project and its personnel John Baugher, Nancy Weintraub and others for their assistance. We would also like to give thanks to the North Fork John Day Watershed Council for providing a forum for tribal input and promoting the Confederated Tribes of the Umatilla Indian Reservation's the Project) habitat recovery efforts; the Umatilla National Forest and its employees (Fishery Biologists Kathy Ramsey and Kristie Groves, Hydrologists Caty Clifton and Ed Farren, Range Managers Tom Thompson and Brad Lathrop) for cooperative restoration efforts and providing information, Farm Services Agency's Josh Hanning and the Natural Resources Conservation Service's Chet Hadley, Colleen Winchester, and Lorraine Vogt, and Jeff Neal, Tim Unterwegner and Terra Schultz with the Oregon Department of Fish and Wildlife.

Thanks also to Confederated Tribes of the Umatilla Indian Reservation staff, whose cooperation and contributions are evident in this report. Special thanks to Delbert Jones, James Bill and Randy Bonifer in assisting with monitoring efforts and implementing and maintaining improvements, to Brandi Weaskus, Julie Burke Celeste Reeves, and Michelle Thompson for administrative support, and Gary James and Jim Webster for support and guidance. We would like to acknowledge cooperating landowners, Steve Berrey, Betty Standley, Richard and Dorothy Allstott, Bill Neal, Robin, Mary Lou, Andy and Bill Fletcher, and Forrest Rhinehart who supported our efforts by providing their properties for habitat enhancements.

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INTRODUCTION

The Confederated Tribes of the Umatilla Indian Reservation's North Fork John Day River Habitat project (the project) has undertaken the task of protecting and enhancing habitat in the North Fork John Day (NFJD) basin to improve natural production of indigenous species in support of its mission to provide for First Foods. These efforts directly benefit Endangered Species Act listed threatened Mid-Columbia River Summer Steelhead (*Oncorhynchus mykiss*) and spring Chinook salmon (*Oncorhynchus tshawytscha*) and are expected to increase juvenile and adult freshwater survival and result in greater numbers during spring migration. Life history strategies and the effect of habitat restoration efforts for spring Chinook salmon are relatively easy to determine due to habitat accessibility during late spring, summer, and fall as compared to NFJD steelhead where inaccessible habitat during spawning in April and May makes this difficult. Current knowledge of Mid-Columbia Steelhead behaviour in the NFJD is primarily based upon Index Reaches used to extrapolate spawning activity. Significant portions of the NFJD Mid-Columbia Steelhead trout (Carmichael, R.W., 2006) and spring Chinook salmon populations reside in the NFJD Wilderness area and other protected areas that are relatively unaltered or minimally altered; thus, habitat conditions throughout the population could provide a suitable surrogate for identifying changes in life history strategies. Restoring degraded habitats and monitoring subsequent changes in the habitat and species should provide an estimate of our effect upon the NFJD steelhead population and support estimated spring Chinook and other species such as westslope cutthroat trout (*Oncorhynchus clarki lewisi)*, bull trout (*Salvelinus confluentus*), and redband trout (*Oncorhynchus mykiss*) life strategies.

Cooperative habitat restoration efforts with private and public entities have also benefited resident trout, other aquatic life, and terrestrial wildlife by restoring the floodplain, riparian areas and in-stream, and upland habitats in cooperation with private and public entities. Deficits in habitat are addressed according to land management protocols and priority area strategies outlined in the Columbia BM RC&DA (2005), Carmichael, R.W., 2006, and forest and basin plans, among others. Such collaborative efforts reduce the burden of habitat restoration upon a single entity. It improves efforts through additional input and consideration by technical specialists, provides cost share opportunities, and educates private and public individuals and groups on the value of singular and cooperative habitat restoration efforts.

To date, the project has constructed approximately 16.8 miles of riparian fencing, 23 off-stream water developments, and reactivated two wells. These improvements have enhanced approximately ten stream miles and 708 acres of riparian and floodplain habitat on private properties. Along with private landowners, cooperation with other groups such as the North Fork John Day Watershed Council (NFJDWC) on which the project holds a dedicated seat, the Umatilla National Forest (UNF), and Wallowa Whitman National Forest (WNF) are proving useful for identifying additional restoration opportunities. These relationships also allow the project to disburse information regarding their endeavors to develop trust with small rural communities within the NFJD Basin. For example, the NFJDWC has proven invaluable for reaching out to the 1200 people residing within the basin that would otherwise be reluctant to cooperate.

Bonneville Power Administration (BPA) initially approved the project in 2000 with on-the-ground actions following in 2001 to provide partial mitigation for the loss of native salmon and steelhead resulting from the construction of dams on the Columbia River. Additional habitat restoration funds are secured through additional sources such as the US Department of Agriculture (USDA) and their Farm Services Agency (FSA) and Natural Resources Conservation Service (NRCS) programs, Oregon Watershed Enhancement Board (OWEB), Oregon Department of Fish and Wildlife (ODFW), U.S. Bureau of Reclamation (BOR), the U.S. Army Corps of Engineer (Corps) and other private or public. In an effort to reduce costs associated with overhead the project shares vehicles and equipment with:

(1) BPA Project #198710001 – CTUIR's Umatilla River Basin Anadromous Fish Habitat Enhancement Project
(2) BPA Project #199604601 – CTUIR's Walla Walla Basin Habitat Enhancement Project
(3) BPA Project #199608300 – CTUIR's Grande Ronde Basin Habitat Enhancement Project

The UNF (North Fork John Day Ranger District) also provides office space for the project technician and storage space.

This annual report covers work accomplished under the project by the project from April 1, 2007 through March 31, 2008.

SITE DESCRIPTION

The NFJD River (Figure 1.) is the largest tributary to the John Day River flowing westerly for 180 kilometers to join the mainstem near Kimberly, Oregon. The NFJD River's basin covers 47,885 square kilometers consisting of 37% private lands, 62% federal, and 1% state lands. The NFJD has been designated as a Wild and Scenic River from Camas Creek upstream to the head waters including one portion classified as "Wild," two as "Scenic," and two as "Recreational." These segments are primarily managed by the UNF and WNF. State Scenic Waterways, designated by the State of Oregon, stretch from Monument, OR upstream to the NFJD Wilderness boundary and on the Middle Fork John Day River from the confluence with the North Fork John Day River upstream to the Crawford Creek bridge. The Middle Fork John Day River (MFJD) (Figure I) flowing into the NFJD is generally considered and primarily managed as a separate system by ODFW, the Confederated Tribes of the Warm Springs Reservation of Oregon, and The Nature Conservancy.

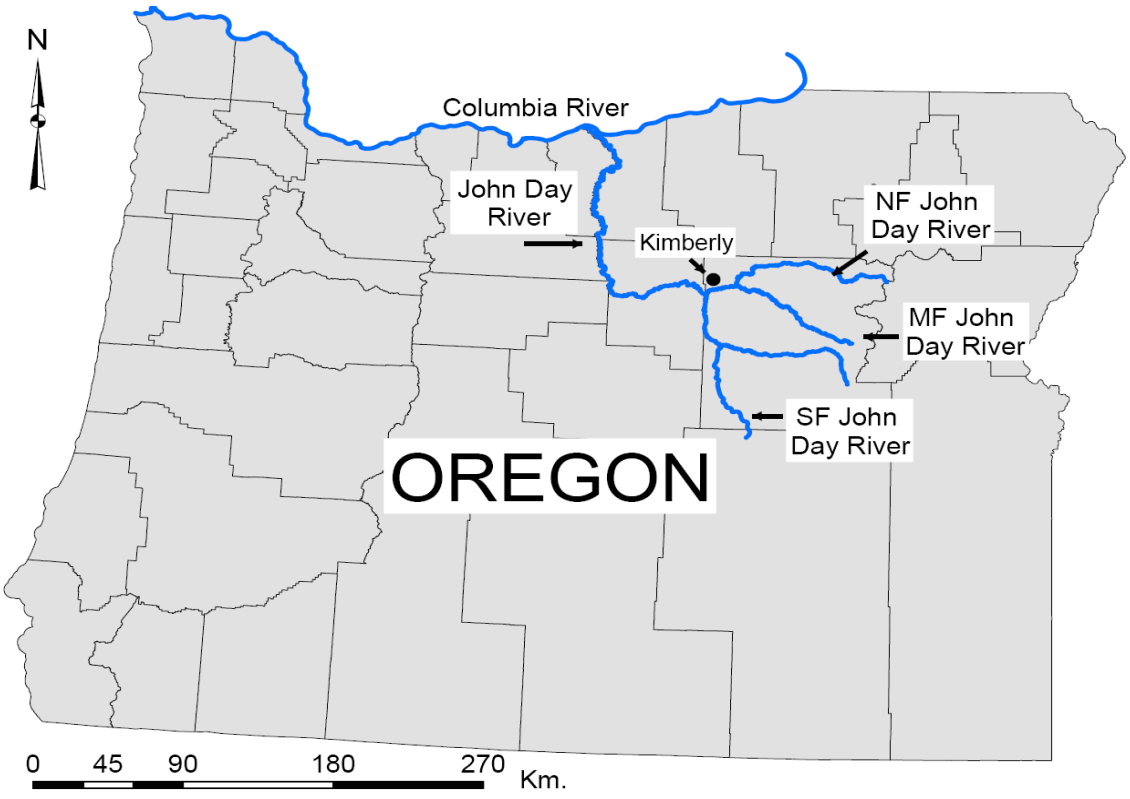

Figure I. Regional map showing the John Day Basin.

The NFJD contains fifteen 5th Field HUC's (Figure II) of which five, the Upper and Lower Camas Creek, Desolation Creek, Granite Creek, and North Fork/Potamas Creek units are considered 'priority' areas for the purpose of concentrating the projects restoration efforts. The project currently maintains six easements with landowners on the NFJD, Deer, Camas, Owens, and Snipe Creeks (Figure III, Appendix I).

Diverse land forms and geology range from 558 meters at the mouth to 2530 meters in elevation in the headwaters and consist of Columbia River Basalts, oceanic crust, volcanic materials, historic river and lake deposits, and recent river and landslide deposits. The North Fork John Day basin has a continental climate influenced by maritime weather patterns in the higher

elevation areas which are characterized by low winter and high summer temperatures, low to moderate average annual precipitation and dry summers. Climate ranges from sub-humid in the upper elevations to semi-arid in the lower elevations with 0.33 to 0.5 meters annually contributing 60% of the flow in the lower John Day River, primarily through November and March. Mean annual temperatures are 3° C in the upper sub-basin and 14° C in the lower sub-basin and range from <-18° C in the winter to over 38° C during the summer. The average frost-free period is 50 days in the upper sub-basin and 200 days in the lower sub-basin. The Blue Mountains in the basin's higher elevations produce a range of microclimates unlike the lower basins typical warmer and more stable patterns.

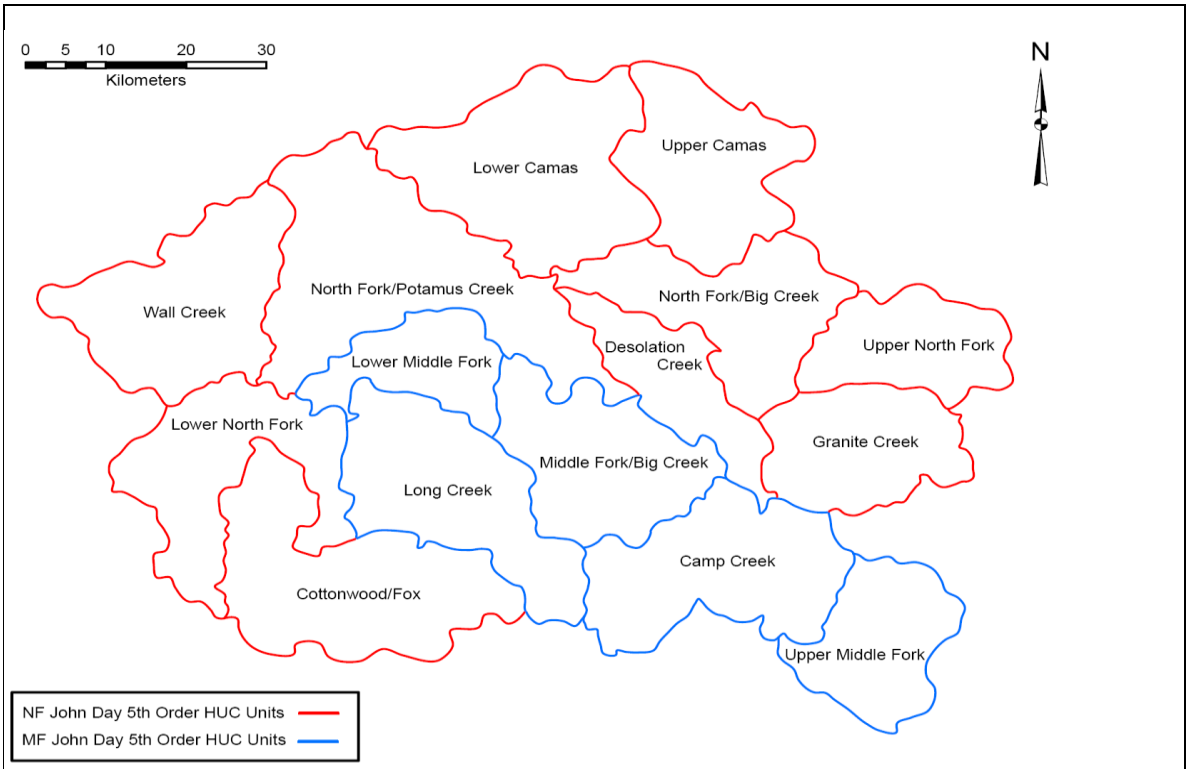

Figure II. NFJD 5th field HUC's

Historically, the John Day River was one of the most significant anadromous fish producers in the Columbia River Basin (CRITFC 1995) due to its stability, strong summer stream flows, high water quality, and heavy riparian cover. Riparian areas were densely populated with aspen, poplar, willow, and cottonwood and beaver were abundant. Large spring and fall Chinook salmon migrations and numerous beaver sightings indicated the John Day River contained extensive in-stream habitat diversity. Resident trout species include westslope cutthroat, interior redband and bull trout. Changes in habitat favor introduced species such as smallmouth bass (*Micropterus dolomieui*) or non-salmonid species such as northern pikeminnow (*Ptychocheilus oregonensis*) and redside shiner (*Richardsonius balteatus*) in places historically dominated by salmonids. The NFJD currently holds the strongest native runs of spring Chinook salmon and summer steelhead in the Columbia River Basin with minimal influence from hatchery stocks. Anadromous fish harvest in the NFJD is limited to a small tribal subsistence fishery for spring Chinook salmon.

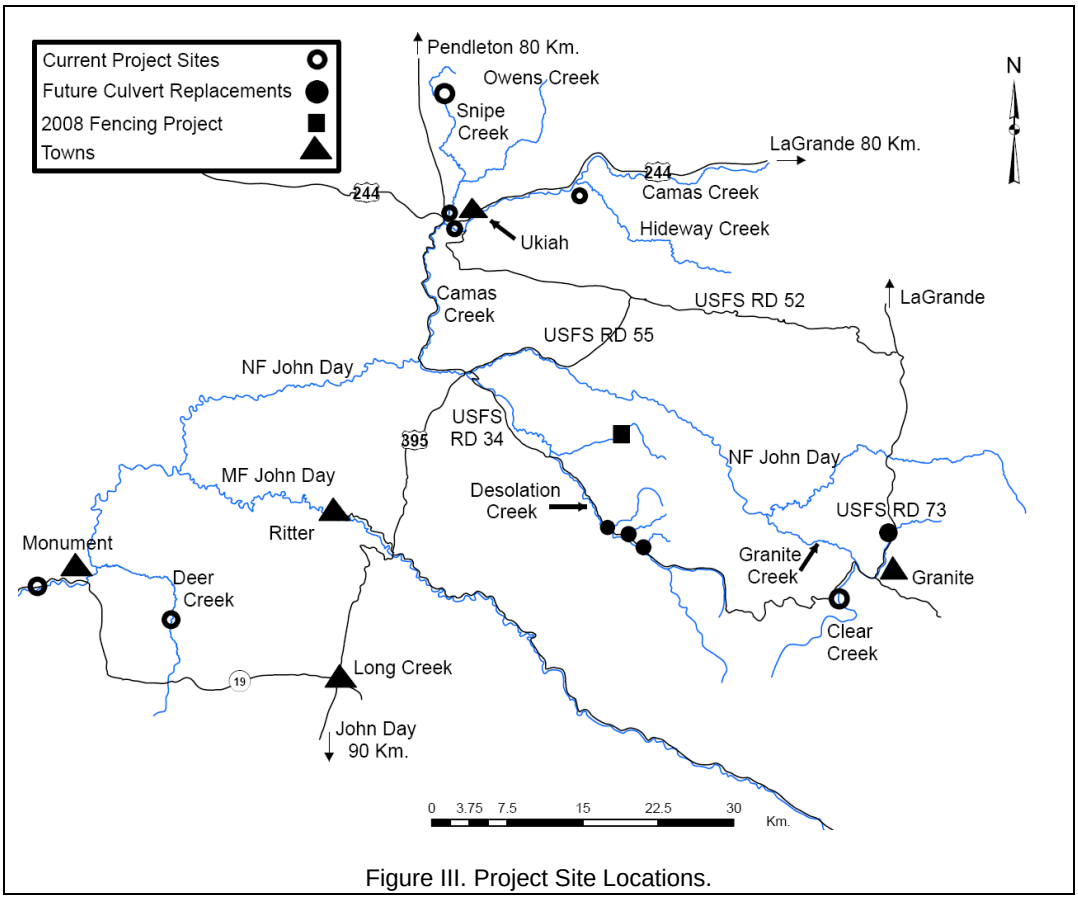

Figure III. Project Site Locations.

The NFJD steelhead population currently occupies ten major spawning areas (including Upper and Lower Camas, Owens, Granite, and Desolation Creek) and five Minor Spawning areas distributed throughout the basin (Carmichael, R.W., 2006, StreamNet, 2007). Surveys indicate approximately 1,400 kilometers of the NFJD (StreamNet, 2007) and its tributaries are currently used for spawning and rearing, with index surveys showing consistent use over time. Index area spawning surveys from 1965 to 2005 on NFJD tributaries indicate returning adult steelhead in natural production areas ranged between 369 spawners in 1990 to 10,235 spawners in 1965 (Carmichael, R.W., 2006). While these numbers are somewhat variable over time, current populations appear to be substantially less productive then historic populations (Columbia BM RC&DA 2005) and show a long term decreasing trend. Declines in the basin's summer steelhead population warranted a threatened listing under the ESA in 1999 (The North and Middle Forks John Day River Local Advisory Committee 2002).

Surveys indicate approximately 300 kilometers (approximately 57% of total stream kilometers; StreamNet, 2007) of the NFJD and its tributaries and MFJD provide spawning and rearing habitat for Spring Chinook salmon with relatively consistent use over time. However, due to run and spawn timing specific areas may not be used consistently in response to limiting factors. For instance, Granite Creek has shown a long term decline in use for unknown reasons and habitat use in Camas Creek is opportunistic and responds to available flows and water temperatures. The MFJD suffered a die off of returning adults in 2007, likely due to elevated water temperatures (Unterwagner 2007).

Limiting habitat factors identified in the NFJD basin and designated in Carmichael (2006), Columbia BM RC&DA (2005), and various management plans include water quality (temperature, modified flows, nutrient input), in-stream habitat (structure, cover, sediment loading, channel morphology and processes,), and riparian health. Most streams in the NFJD basin are considered to be in relatively good condition, with the exception of elevated late summer water

temperatures that fall below Oregon Department of Environmental Quality standards. In general, most indicators of channel condition within the NFJD suggest the basin is “functioning at risk”. Limiting factors result from historical and current land management practices (mining, intensive agricultural practices due to cattle ranching, logging and road building practices, fire suppression, and flood.

Historic and current land use practices have reduced river stability, decreased high quality summer stream flows and water quality, reduced heavy riparian and floodplain cover, and compromised physical and biological processes related to these associations and structures. The losses of abundant riparian and flood plain vegetation and once robust beaver populations as well as large spring and fall Chinook salmon migrations suggest the NFJD has lost a significant amount of in-stream habitat diversity and potentially modified the hydrologic cycle. Changes in the hydrologic cycle can be attributed to altered riparian areas, floodplains, and stream morphology and processes are indicated by increased runoff, altered peak flow regimes, reduced ground water recharge and soil moisture storage, and low late-season flow and elevated water temperatures. Historic and current land uses, in combination with hydrologic changes, may have resulted in stream channel instability (i.e., channel widening and downcutting) in some portions of the NFJD. Habitats for wildlife have become increasingly fragmented, simplified in structure, and infringed on or dominated by non-native plants (ICBEMP 2000).

Habitat change has also resulted from a century of fire suppression activities and fire exclusion from the forest ecosystem resulting in greater forest stand densities than historic natural conditions. Dense stands are more susceptible to insect infestation, disease, and catastrophic stand replacement fires. Increased juniper encroachment into native grasslands resulting from similar disturbances increases evapo-transpiration and reduce stream flows. Roads created to facilitate logging operations and fire suppression have increased in-stream sedimentation from road erosion and disturbed areas during logging operations as well as fragmenting habitats in response to road and culvert installations.

Altered native habitat conditions also facilitate the spread of non-native and highly adaptable species. Nonetheless, habitat conditions on public lands and some private lands are generally considered to be improving through cooperative efforts between public and private landowners, tribal programs, federal, and state agencies, and groups such as Soil and Water Conservation Districts and Watershed Councils.

2007 ACCOMPLISHMENTS

In January, 2007, the previous project lead vacated the position and the project was managed by Jim Webster (CTUIR Habitat Supervisor) until the arrival of the new project lead in May, 2007. A description of individual Work Elements follows.

WE 114- Identify, Prioritize and Select Habitat Project Areas
In an effort to identify and prioritize new habitat restoration efforts project personnel obtained background information from numerous sources (county records, previous contacts, sub-basin and recovery plans, and consultation with landowners) and coordinated with the UNF and NFJDWC (eight meetings attended). These efforts resulted in five grant application submissions for cooperative efforts: 1 & 2) to OWEB between NFJDWC, UNF, and the project to construct 2.75 miles of riparian fencing on Kelsay Creek (a tributary of Desolation Creek) during 2008 which was recommended for funding in October 2007 but not funded and subsequently resubmitted in April 2008; 3) to EcoTrust for culvert replacements in the Granite and Desolation Creek basins as outlined in the 2007/09 project proposal to BPA which was fully funded, cost share provided by UNF and CTUIR; 4) submitted in April 2008 to OWEB to support culvert replacement implementation efforts previously mentioned in the Granite and Desolation Creek basins; 5) in April 2008 submitted a grant application to OWEB in support of upland well and cross fencing installations on the Rhinehart property. Additional projects have also been identified in cooperation with the UNF, WNF, and NFJDWC during 2008 and beyond when funding becomes available.

WE 92- Lease the Rhinehart Property (Upper Camas Creek and Lower Hidaway Creek)
During April 2008, Mr. Rhinehart entered into a fifteen year easement with CTUIR. Funds identified in the 2007 budget for this and related WE 40, 82 were reallocated; thus, additional funds will need to be identified so WE 165, 40, 82 can be implemented. The project site lies along Camas Creek approximately six miles upstream of Ukiah, Oregon and has been separated into two phases whereby Phase I will develop the upland stock watering facilities and cross fencing and Phase II will use in-stream channel modifications and riparian fencing to improve habitat and reduce cattle intrusions.

WE 92- Lease Private Lands within the Lower Camas, Upper Camas and Desolation Creek Geographic Areas
The project lead met with five landowners to discuss potential for cooperative restoration efforts on Lower Camas, Owens, Snipe, and Desolation Creeks. Discussions with two land owners on these creeks continue. The landowner on Desolation Creek is reluctant to enter into an easement until a course of action for managing the property has been decided in 2008.

WE 165- Produce Environmental Compliance Documentation for Herbicide Applications
Herbicide documentation required by BPA for 2007 and 2008 were submitted in January 2008. Weed control activities on Camas Creek were completed using a cooperative agreement between CTUIR, the City of Ukiah, OR and the UNF. BPA funds were not used for this action.

WE-122- Provide Technical Review of Partnership Documents
Efforts were made by project personnel to coordinate with NRCS and BOR staff to manage existing contracts, identify new opportunities for cost share opportunities and develop conservation plans on existing and potential projects. UNF grazing plans were also reviewed.

WE 40- Install Riparian Protection and Upland Rotation Fencing on Rhinehart Property
See WE-92

WE 82- Construct Upland Well on Rhinehart Property
See WE-92

WE 47- Plant Native Vegetation on the Fletcher Property
Confusion with regard to existing Cultural Resource permits and planting site locations for this Work Element were not rectified prior to calendar year 2008. A planting plan developed by the project lead during 2007 met approval by the landowner with support and recommendations from NRCS personnel. Trees have been purchased from the Tribal Nursery using 2007 funds and Cultural Resource permits for this action and the pond development noted in WE 35 will be obtained after April 2008 and prior to expected plantings in November 2008. Additional materials that aren't currently on hand will be obtained prior to planting trees.

We 34- Develop Upland Spring Site on Fletcher Property
The spring development was completed in mid October 2007. During this time the spring box's location was extremely muddy and difficult to install. Although water was flowing prior to winter closure, modifications to the spring box location are expected during 2008 in response to low flow conditions.

WE 35- Develop Upland Stock Watering Ponds on Fletcher Property
Incomplete water right applications for three upland stock watering ponds submitted in November of 2006 were returned by Oregon Department of Water Resources in November of 2006 and subsequently resubmitted in May of 2007 by the new project lead; water rights arrived during October of 2007. During September of 2007 problems were identified with the Cultural Resource Permits which caused a month delay in the construction of one impoundment. Two impoundments were created during October followed by the third in late November. Late fall and winter rains damaged the impoundments and indicated all three were not were not sealed by natural clays.

WE 22- Maintain Vegetation Within Existing Project Areas with Herbicides
A contract was awarded for weed control activities for easements on Snipe Creek, Owens Creek, Deer Creek and the NF John Day River. The properties were subsequently treated and inspected by the project lead. A cooperative agreement with the City of Ukiah provided weed control on lower Camas Creek for which BPA funds were not used.

WE 186- Maintain Project Area Fences
Fence inspection continued throughout 2007 and did not suffer any damage that wasn't immediately repaired. A temporary electric fence prohibiting access to Camas Creek and protect an area entered into FSA's CREP program on Mr. Fletcher's property required intensive maintenance on a regular basis.

WE 186- Maintain Project Area Water Developments
Water developments were maintained throughout 2007 and we will continue to coordinate with landowners to provide water prior to the start of grazing in an effort to reduce significant drawdown when initially filling the trough. A well on Mr. Neal's property will require sediment removal during 2008 to deepen the well. Partial replacement with rock will create a hard base facilitating future evacuations.

WE 26- Investigate Existing Project Areas for Livestock Trespass
Livestock trespass investigated several times a month through the contract period primarily resulted from off site cattle. The temporary electric fence noted in WE 186 (Maintain Project Area Fences) required daily inspections.

WE 157- Collect Data to Monitor Project Effectiveness
Monitoring efforts during 2007 were undertaken to provide a baseline for future efforts since little pre-project data exists. Sampling efforts included topographic maps for each monitoring site, longitudinal transects in the channel and cross section transects across the channel reaching 10m on either side of the stream, and photopoints. A summary of the collected data (Appendix II) represents post-implementation project data upon which we will elaborate during 2009 and 2010.

WE 159- Acquire and Submit Stream Temperature Data to NOAA
Temperature loggers were installed in June of 2007 and removed at the end of September 2007. Files were recovered from the loggers shortly thereafter and submitted to the MSWCD during October 2007.

WE 99- Provide Local Community-Based Outreach and Education
Outreach during 2007 primarily occurred through meetings with landowners and the NFJDWC meetings, newsletters, and information fairs.

WE 119- Produce Required Project Deliverables and Provide to BPA
SOW was submitted in December 2006, Budget followed in January 2008.

WE 132- Submit Annual Report for the period April 1, 2006 to March 31, 2007
See North Fork John Day River Anadromous Fish Habitat Enhancement Project, 2007 Annual Report.

DISCUSSION

This year brought on challenges that were met with various degrees of success. Three of the project sites (Snipe, Owens, Deer Creek) did not require any effort beyond regular communications with the landowner and monitoring efforts.

A non-work related injury temporarily reduced the project's effective personnel prior to constructing approximately one mile of temporary electric fence preventing cattle access through an area signed into CREP. This reduced our ability to maintain the fence and prevent trespass; as such, a temporary technician was brought on to assist with fence maintenance and monitoring data collection. The previously mentioned damage to stock watering ponds (WE 35) will be addressed during 2008. Insufficient bypass will be improved by installing culvert risers in two of the ponds and spillways upgraded to handle a 25 year event. One impoundment, initially created using gravels from a nearby levee removed during 2006 will be partially reconstructed with nearby native clays. The third pond could not be created as designed due to shallow bedrock and leaks. Native clays from a nearby site will be used to seal this pond and bolster the impoundment. To supplement this underdeveloped pond, a fourth will be created in 2008. Cultural Resource Surveys will be conducted in 2008 jointly with those required in WE 47.

Native vegetation plantings conducted in 2006 on the NFJD project site did not survive as expected. During November 2008, these trees and shrubs will be replanted using cost share funds from the original WHIP contract. Existing materials will be used when possible and site preparation including mowing and reducing competing vegetation will occur during the summer of 2008. In an effort to reduce mortality related to native vegetation planting efforts, the project has investigated the use of shade structure. The combination of weed mats, extreme heat and limited water created a lethal combination 2007 on the NFJD project site near Monument, OR. Trees planted in November of 2008 will be covered with shade netting during the summer of 2009 to reduce the effective sunlight between 50% and 80% and increase survival. Regular watering during this time should also reduce mortality.

Monitoring data was collected throughout July and August 2007. Data collected during 2008 and beyond will begin in late June after spring runs have decreased and end by 31 July. After approximately five years of data has been collected we expect to conduct a more detailed analysis, and sampling protocols will be modified depending upon site stability and recovery. Different analysis techniques may be investigated and it is not inconceivable that monitoring efforts may occur every three years thereafter to reduce monitoring costs as restoration sites stabilize and mature and additional restoration projects come on line. A detailed battery of pre-project data will be developed prior to initiating any restoration, beginning with the Kelsay Creek Fencing Project. This will include temperature monitoring and an analysis of historic and current information describing land management practices, geomorphology, and stream channel processes where available.

Clear Creek mine tailing removal continued through 2007 through cooperative efforts of the Umatilla National Forest, Grant SWCD, and the project. The project provided $20,000.00 of Pacific Coast Salmon Recovery Funds to the effort and expects to continue restoration efforts not limited to mine tailing removal in the Granite Creek basin.

The previous eight months have provided lessons for future efforts which will serve to improve project effectiveness. The Statement of Work was modified for 2008, reflecting our continual efforts throughout the year to secure easements, coordinate and implement projects, and provide for more realistic Milestones and Deliverables. Obtaining property ownership information, coordinating through on and off site visits, securing project funding, document review, and prioritizing projects blend into a continuous process throughout the year and may not result in an easement. However, smaller restoration projects may develop where easements currently exist or where easements are not required as with cooperative efforts with the UNF, WNF, or NFJDWC. Thus, setting a specific date to decide the following year's efforts is not realistic for the project at this time.

The project made a concerted effort during 2007 to utilize local resources (equipment and personnel) and will continue to do so. The potential for cooperative habitat restoration projects at this time is perhaps greatest with the UNF and WNF. Previous land management practices,

limited funding, and knowledgeable and technically oriented staff create an ideal setting for utilizing existing resources to restore high quality habitat with long term protection.

The project will continue to develop and implement restoration efforts in our 'priority' basins (Camas, Desolation, and Granite Creek) and on the NFJD and Deer Creek near Monument, Oregon. Additional areas considered for restoration efforts include several 5th field HUCs (Upper North Fork John Day and North Fork/Big Creek John Day). Projects in these areas will be considered on a case by case basis and depend on benefit to wildlife and available cost-share funds. The project will continue to recovery 'whole system' recovery, to address in-stream, riparian, floodplain, and upland components in a single project or in cooperation with agencies or groups addressing basin-wide restoration. This approach will provide a greater long term benefit then singular projects over a broad area.

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APPENDIX I

Project sites maintained during 2007 by the CTUIR's NFJD Habitat Project. (Modified from Shaw, 2007)

STREAM	LOCATION	STREAM MILES/ACRES	FENCE MILES	WATER GAPS	SPRING DEV.	NATIVE PLANTINGS
Snipe Creek (Lower Camas Creek)	T4S, R31E, Sec. 3 & 4 T3S, R31E, Sec. 32	0.8 (34.4 acres under CREP)	2.1	2	2; includes 1 well	Approx. 7500
Snipe Creek (Lower Camas Creek GA)	T4S, R31E, Sec. 3 & 10	1.4 (54 acres)	2.24	5	4	None; livestock exclusion in forested area
Owens Creek (Lower Camas Creek GA)	T5S, R31E, Sec. 10 & 15	0.3 (5.2 acres)	0.7	1	1; includes 1 well	Approx. 1800
Deer Creek (Cottonwood Creek GA)	T8S, R28E, Sec. 33 &34 T9S, R28E, Sec. 3&4	0.5 (22 acres) 2.1 (90.2 acres)	3.6	5	4	None; livestock exclusion in forested area
Deer Creek (Cottonwood Creek GA)	T8S, R28E, Sec. 32 & 33 T9S, R28E, Sec. 4	0.2 (9 acres) 2.2 (98 acres; with 41 acres in CREP)	5.1	6	11	Approx. 7500
Lower North Fork John Day River (LNF John Day GA)	T9, R27E, Section 7	0.54 (7.3 acres)	0.54	0	1	Approx. 4,220
Camas Creek (Lower Camas Creek GA)	T5S, R31E, S ½ of Section 15, SW ¼ of SW ¼ of Section 14, and N ½ Section 22	1 (388 acres)	1.5	0	3	Approx. 3,000
Clear Creek (Granite Creek GA)	Start 383568E, 4959967N, End 385092E, 4959108N	0.72 (13 acres)	N/A	N/A	N/A	Shall Occur In 2008

APPENDIX II

Monitoring Data collected during 2007.

Results from cross section surveys extended 10 meters onto either bank during 2007.

Camas Creek				
Transect 39.62 - Right	100% Grass			
Transect 39.62 - Left	75% Gravel	24% Grass	1% Sedge	
Transect 150.27 - Right	60% Gravel	30% Grass	5% Willow	5% Hawthorn
Transect 150.27 - Left	90% Grass	10% Dirt		
Transect 245.67 - Right	65% Grass	25% Gravel	5% Sedge	5% Water
Transect 254.67 - Left	45% Gravel	45% Grass	5% Sedge	5% Hawthorn
Upper Snipe Creek				
Treated Transect 1 - Right	75% Rose	25% Grass		
Treated Transect 1 - Left	50% Rose	40% Grass	10% Alder	
Treated Transect 2 - Right	50% Rush	50% Snowberry		
Treated Transect 2 - Left	45% Rose	35% Grass	20% Rush	
Treated Transect 3 - Right	45% Grass	20% Grande Fir	20% Snowberry	15% Rush
Treated Transect 3 - Left	85% Snowberry	10% Grande Fir	5% Rush	
Treated Transect 4 - Right	75% Snowberry	20% Grande Fir	5% Grass	
Treated Transect 4 - Left	45% Snowberry	35% Gooseberry	20% Rush	
Transect 24.4 - Right	60% Dirt	40% Pine		
Transect 24.4 - Left	100% Grass			
Transect 12.9 - Right	40% Conifer	40% Woody Debris	20% Rose	
Transect 12.9 - Left	100% Grass			
Lower Snipe Creek				
Upper Treated Transect 1 - Right	100% Grass			
Upper Treated Transect 1 - Left	100% Grass			
Upper Treated Transect 30.48 - Right	100% Grass			
Upper Treated Transect 30.48 - Left	100% Grass			
Upper Treated Transect 60.96 - Right	100% Grass			
Upper Treated Transect 60.96 - Left	100% Grass			
Upper Transect 91.44 - Right	100% Grass			
Upper Transect 91.44 - Left	100% Grass			
Lower Treated Transect 1 - Right	100% Grass			
Lower Treated Transect 1 - Left	100% Grass			
Lower Treated Transect 30.48 - Right	100% Grass			
Lower Treated Transect 30.48 - Left	100% Grass			
Lower Treated Transect 60.96 - Right	100% Grass			
Lower Treated Transect 60.96 - Left	100% Grass			
Lower Transect 91.44 - Right	100% Grass			
Lower Transect 91.44 - Left	100% Grass			
Upper H2O Gap - Right	100% Grass			
Upper H2O Gap - Left	100% Grass			
Lower H2O Gap - Right	100% Grass			
Lower H2O Gap - Left	100% Grass			

Deer Creek				
Upper Treated Right	100% Grass			
Upper Treated Left	75% Grass	25% Sage		
Lower Treated Right	100% Grass			
Lower Treated Left	95% Riparian	5% Sage		
H2O Gap Right	95% Grass	5% Willow		
H2O Gap Left	100% Grass			

Results from 2006 tree plantings on the North Fork John Day River Project Site.

Species	**# Planted**	**# Surviving**	**% Survival**
Black Cottonwood	1095	9	0.8
Rose	125	12	9.6
Choke Cherry	350	3	0.8
Blue Elderberry	235	0	0
Red Osier Dogwood	75	0	0

Results from 2002 tree plantings on the Lower Snipe Creek Project Site.

Species	**# Planted**	**# Surviving**	**% Survival**
Black Cotttonwood	500	0	0.0
Rose	Good	Good	-
Blue Elderberry	100	0	0.0
Red Osier Dogwood	500	15	3.0
Pondorosa Pine	5000	871	17.4
Aspen	500	224	44.8
Willow	2000	452	22.6
Current	500	0	0.0
Mock Orange	100	0	0.0

Results from longitudinal habitat survey results for restoration sites during 2007. Data was averaged where multiple habitat types existed within a reach.

	Habitat Type	Depth	Wet Width	Length	Bank Full Width	Flood Prone Width	Right Bank Stability	Left Bank Stability	% Organics	% Silt	% Sand	% Gravel	% Cobble	% Rubble	% Boulder	% Bedrock	% Shade Left	% Shade Center	% Shade Right	Wood Class	Species Present
Camas Creek																					
Treated	Riffle	0.1	6.8	20.4	28.9	>100	3	3	14	4	17	35	17	13	0	0	< 5	< 5	< 5	1	Zeros
Treated	Glide	0.2	7.1	58.1	25.7	>100	3	3	7	5	22	47	14	5	0	0	< 5	< 5	< 5	1	Zeros
Treated	Idle Pool	0.1	2.8	22.7	13.8	>100	3	3	30	35	13	23	0	0	0	0	< 5	< 5	< 5	1	Zeros
Treated	Side Pool	0.6	4.5	7.0	25.2	>100	3	3	7	27	13	46	7	0	0	0	< 5	< 5	< 5	1	Zeros
Treated	Run	0.1	7.7	45.0	37.2	>100	3	3	10	30	11	36	13	0	0	0	< 5	< 5	< 5	1	Zeros
Treated	Side Channel	0.1	5.6	11.1	39.2	>100	4	3	60	40	0	0	0	0	0	0	< 5	< 5	< 5	1	Zeros
Upper Snipe Creek																					
Upper Treated	Dry Channel	30.5	3.5	21.7	3.0	3.0	Not Sampled	Not Sampled	0	20	50	30	0	0	0	0	37	15	45	3	None
Lower Treated	Riffle	0.1	0.8	6.1	2.1	11.4	Not Sampled	Not Sampled	12	6	28	35	16	3	0	0	21	58	58	2	None
Lower Treated	Glide	0.2	1.0	6.1	2.1	11.7	Not Sampled	Not Sampled	4	37	29	18	8	4	0	0	34	76	74	3	None
Lower Treated	Side Pool	0.4	1.2	3.3	2.7	9.0	Not Sampled	Not Sampled	5	35	23	16	13	8	0	0	18	0	27	1	None
Upper H2O Gap	Riffle	0.1	1.4	9.4	2.2	8.5	Not Sampled	Not Sampled	14	25	20	18	18	5	0	0	40	70	70	2	None
Upper H2O Gap	Glide	0.1	0.9	3.2	2.0	8.4	Not Sampled	Not Sampled	3	52	16	8	18	3	0	0	20	25	70	1	None
Upper H2O Gap	Side Pool	0.2	1.0	1.8	1.7	6.7	Not Sampled	Not Sampled	0	60	5	25	10	0	0	0	0	100	70	3	None
3rd H2O Gap	Riffle	0.1	1.0	7.1	2.7	23.3	Not Sampled	Not Sampled	5	28	13	35	14	5	0	0	23	40	63	2	None
3rd H2O Gap	Glide	0.2	1.2	10.4	2.1	24.8	Not Sampled	Not Sampled	8	65	10	10	8	0	0	0	20	20	70	1	None
3rd H2O Gap	Side Pool	0.2	1.2	2.6	1.2	19.3	Not Sampled	Not Sampled	5	51	22	17	5	0	0	0	50	70	50	2	None
Lower Snipe Creek																					
Upper Transect	Dry Channel	0.0	0.0	29.5	3.5	21.7	3	3	15	0	65	20	0	0	0	0	37	15	45	3	None

Lower Treated	Dry Channel	0.0	0.0	30.5	2.4	10.3	2	2	0	47	39	8	3	3	0	0	23	17	23	1	None
Lower H2O Gap	Dry Channel	0.0	0.0	10.6	7.5	13.6	2	2	20	60	20	0	0	0	0	0	0	0	10	1	None
Upper H2O Gap	Dry Channel	0.0	0.0	9.6	3.2	26.1	2	2	0	20	80	0	0	0	0	0	5	0	5	1	None
Deer Creek																					
Upper Treated	Riffle	0.1	0.9	15.3	1.3	10.7	3	3	25	0	10	10	20	30	5	0	30	10	30	1	Zeros
Upper Treated	Split Channel	0.1	0.3	6.8	2.7	10.7	3	3	20	30	0	30	20	0	0	0	80	70	80	1	Zeros
Upper Treated	Back Pool	0.7	2.4	20.0	2.4	10.4	3	3	10	90	0	0	0	0	0	0	30	0	30	1	Zeros
Upper Treated	Dry Channel	0.0	0.0	5.0	2.4	48.2	3	3	15	75	0	10	0	0	0	0	10	0	10	1	Zeros
Lower Treated	Riffle	0.1	1.2	11.8	2.0	21.8	4	3	30	20	0	10	30	12.5	5	0	40	15	40	1	Zeros
Lower Treated	Run	0.0	2.5	13.3	2.0	14.8	4	4	65	35	0	0	0	0	0	0	45	45	50	1	Zeros
H2O gap	Riffle	0.2	1.2	11.8	2.6	9.8	3	3	30	30	5	20	10	5	0	0	40	20	40	1	Zeros

Results from cross section habitat surveys for restoration sites during 2007.

	Habitat Type	Land Use	Wet Width	Bank Full Width	Flood Prone Width	Right Bank Stability	Left Bank Stability	% Organics	% Silt	% Sand	% Gravel	% Cobble	% Rubble	% Boulder	% Bedrock	% Shade Left	% Shade Center	% Shade Right	Wood Class	Species Present
Camas Creek																				
Transect 39.62	Glide	Riparian Protection	5.8	33.6	>100	4	3	10	20	20	45	5	0	0	0	< 5	< 5	< 5	1	None
Transect 150.27	Glide	Riparian Protection	7.4	24.1	>100	3	4	0	0	10	60	30	0	0	0	< 5	< 5	< 5	1	None
Transect 245.67	Riffle	Riparian Protection	14.8	25.3	>100	4	3	4	4	24	44	24	0	0	0	< 5	< 5	< 5	1	None
Upper Snipe Creek																				
Treated Transect 1	Riffle	Riparian Protection	1.5	2.0	3.9	Not Sampled	Not Sampled	40	5	10	40	5	0	0	0	20	50	80	2	None
Treated Transect 2	Riffle	Riparian Protection	0.5	3.7	3.7	Not Sampled	Not Sampled	5		35	60	0	0	0	0	20	0	20	1	None
Treated Transect 3	Riffle	Riparian Protection	0.9	1.5	7.9	Not Sampled	Not Sampled	20	5	40	30	5	0	0	0	50	20	10	1	None

Treated Transect 4	Riffle	Riparian Protection	1.3	4.6	4.6	Not Sampled	Not Sampled	5	50	5	15	15	10	0	0	5	0	50	1	None
H2O Gap Transect 12.9	Riffle	Heavy Grazing	0.6	2.3	23.2	Not Sampled	Not Sampled	0	5	15	35	5	40	0	0	100	50	0	1	None
H2O Gap Transect 24.4	Glide	Heavy Grazing	1.2	1.7	25.6	Not Sampled	Not Sampled	10	60	10	15	5	0	0	0	20	20	70	1	None
Lower Snipe Creek																				
Upper Treated Transect 0	Dry Channel	Riparian Protection	0.0	1.8	59.3	2	2	10	90	0	0	0	0	0	0	10	0	10	1	None
Upper Treated Transect 30.48	Dry Channel	Riparian Protection	0.0	1.2	22.9	2	2	0	80	20	0	0	0	0	0	20	0	20	1	None
Upper Treated Transect 60.96	Dry Channel	Riparian Protection	0.0	1.0	39.8	2	2	0	100	0	0	0	0	0	0	40	10	40	1	None
Upper Treated Transect 91.44	Dry Channel	Riparian Protection	0.0	1.9	39.2	2	2	30	70	0	0	0	0	0	0	10	0	10	1	None
Lower Treated Transect 0	Dry Channel	Riparian Protection	0.0	2.8	12.1	2	2	40	50	10	0	0	0	0	0	10	0	10	1	None
Lower Treated Transect 30.48	Dry Channel	Riparian Protection	0.0	1.8	12.7	2	2	30	65	5	0	0	0	0	0	10	0	5	1	None
Lower Treated Transect 60.96	Dry Channel	Riparian Protection	0.0	2.5	11.1	2	2	10	90	0	0	0	0	0	0	10	0	20	1	None
Lower Treated Transect 91.44	Dry Channel	Riparian Protection	0.0	3.1	11.5	2	2	20	80	0	0	0	0	0	0	10	0	5	1	None
Lower H2O Gap	Dry Channel	Light Grazing	0.0	8.3	13.6	2	2	0	85	15	0	0	0	0	0	5	0	5	1	None
Upper H2O Gap	Dry Channel	Light Grazing	0.0	3.2	26.1	2	2	0	20	80	0	0	0	0	0	5	0	5	1	None
Deer Creek																				
Upper Transect	Riffle	Riparian Protection	1.2	2.2	9.8	3	3	10	40	0	40	10	0	0	0	30	0	30	1	Zeros
Lower Transect	Riffle	Riparian Protection	1.4	1.7	19.2	4	4	20	60	0	20	0	0	0	0	40	0	10	1	Zeros
H2O Gap	Riffle	Light Grazing	1.2	2.6	9.8	3	3	40	30	0	10	20	0	0	0	10	0	70	1	Zeros